

Project Name | Rule Revisions Workshop
To | CLFLWD Board of Managers
Cc | Mike Kinney, District Administrator
From | Greg D. Graske, P.E. & Carl K. Almer
Regarding | Review of Draft Revisions

Date | May 4, 2017

The purpose of the rules workshop is to recap the substantive changes that were made based on feedback from the Board and the Technical advisory committee and then request additional feedback on remaining substantive policy items. A draft redlined version of the rules is attached. Comments listed as “BOARD DISCUSSION” are the specific items warranting further direction from the Board before proceeding with draft revisions.

Rule 2.0 Stormwater Management

Numerous revisions have been included in the current draft redlines based on feedback from both the TAC and direction from the Board at the last Rules Workshop. The general intent is to standardize the triggers such that they are simpler to understand and to make sure we are capturing the sites that would have the most impact to downstream resources. With respect to the performance standards the intent was to maintain the current level of stormwater outcomes for new development while providing some flexibility for redevelopment and public road projects. For redevelopment and public road projects the draft standards are more closely aligned with MIDs and surrounding watershed districts. For new development the draft standards remain stricter than MIDs standards.

The proposed revisions should reduce the need for variances and not create a barrier to redevelopment which the City of Forest Lake has expressed concerns about, while at the same time achieving water quality improvements for these sites. Also the rules will more explicitly state what types of practices can be used with a sequencing of desired treatment.

Regarding the stormwater impact fee, the intent of the proposed revisions (work-in-progress) is to combine water quality treatment and volume control into one commodity – a “stormwater management volume”. This was a desired outcome based on previous discussions with the Board and TAC which should limited the need for variances.

Rule 3.0 Erosion & Sediment Control

Based on feedback from the TAC and the Board the proposed trigger for an erosion control permit was lowered from the 200 CY threshold to 50 CY to be in line with municipal ordinances and to allow the District to assist in difficult situations or violations. The proposed language of the rule was also tightened up with much of the language coming from the MIDs standards.

Rule 5.0 Shoreline & Streambank Alterations

The District does not currently issue permits under this rule given section 5.2.2. Section 5.2.2 only allows for District permitting if the District holds a DNR General Permit covering shoreline and stream bank alterations and the District’s General Permit excuses property owners from a DNR Individual Permit if the property owner holds a District Permit. The intent appears to be to avoid duplication of

permitting efforts. Further input from the Board is warranted regarding issuance of permits under this rule.

Some members of the TAC felt watershed districts are better suited to address shoreline issues, but there was not consensus that regulation was the most successful approach to address this issue. Some felt that education might be a better path than regulation for certain types of activities.

At the previous Board Workshop there was a similar discussion and debate as to whether the Board should regulate what the DNR and Cities are supposed to be regulating and whether new regulation or education would be more effective. The Board asked that we meet with the DNR to discuss their role and the potential for a District general permit that would excuse property owners from the DNR individual permit requirement if the property owner holds a District permit.

We met with the DNR and discussed their role in permitting shoreline alterations and discussed the concerns that the watershed has had about shoreland activities occurring around District lakes. Based on our meeting with DNR it appears that DNR permitting is very rare in the District either because many types of alterations can be done without a permit if they meet certain standards, or simply because landowners are not aware that a permit is needed. This seems to be similar to what we hear from the cities. Either they don't find out about the activity until the work is already done or certain vegetation management does not require local approval.

It appears that the District could simply start implementing its current shoreline rule by removing section 5.2.2, however this may not capture the activities (such that vegetation clearing) that are of concern to the Board. Revising the rule to capture any type of vegetation alteration (above or below the OHW) along the shorelines of waterbodies might be controversial to lake residents and District staff has expressed concerns about how this would be implemented practically. As such, the Board may want to weigh the workload and costs of various options that might be considered. District staff has also discussed the idea of providing property tax incentives for those that do maintain a natural shoreline along with a more intensive educational program. We would like to discuss these topics and get further direction from the Board prior to making significant alterations to the shoreline rule triggers or rule language.

COMFORT LAKE - FOREST LAKE WATERSHED DISTRICT RULES

Adopted December 18, 2008

Amended March 24, 2011

(2017 Amendment Working Draft – May 5, 2017)

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INTRODUCTION

The Comfort Lake - Forest Lake Watershed District (the "District") adopts these Rules and Regulations as required by Minnesota Statute 103D.341 to accomplish the purposes in Chapter 103D, implement the powers of the managers, and the policies of the District as contained in the District Watershed Management Plan (the "Plan").

RELATION OF WATERSHED DISTRICT TO MUNICIPALITIES

The District recognizes that the primary control and determination of appropriate land uses is the responsibility of the municipalities. Accordingly, the District will coordinate permit application reviews involving land development only after it is first demonstrated that the application has been submitted to the city where the land is located. It is the intention of the managers to ensure that development of land within the District proceeds in conformity with these Rules, in addition to conforming with the development guides and plans adopted by municipalities.

The District shall exercise control over development by its permit program described in these rules to ensure the maintenance of needed water storage areas, their shorelines, and protection of existing natural topography and vegetative features in order to preserve them for present and future beneficial uses.

The District will review and permit projects sponsored or undertaken by municipalities and other governmental units, and will require permits of the contractor in accordance with these Rules for governmental projects which have an impact on water resources of the District. These projects include but are not limited to, land development, road, trail and utility construction.

The District desires to serve as technical advisors to the municipal officials in the preparation of local surface water management plans and the review of individual development proposals prior to investment of significant public or private funds. To promote a coordinated review process between the District and the municipalities, the District encourages the municipalities to involve the District early in the planning process. The District's comments do not eliminate the need for permit review and approval if otherwise required under these rules. The District intends to coordinate with each municipality to ensure that property owners and other permit applicants are aware of the permit requirements of both bodies. By coordinating, the District and municipalities also can avoid duplication, conflicting requirements and unnecessary costs for permit applicants and taxpayers.

The District urges municipalities to develop, as rapidly as possible, local surface water management plans, providing a coordinated system of managing surface water on a regional or subwatershed basis consistent with their local water management plan and the District's Rules.

DEFINITIONS

[For the purpose of these rules, the words "must", "shall", and "will" are mandatory and not permissive.](#)

["Applicant" means the owner of land submitting an application under the provisions of these rules.](#)

["Agricultural activity" means the use of land for the production of agronomic, horticultural or](#)

silvicultural crops, including nursery stock, sod, fruits, vegetables, flowers, forages, cover crops, grains, and Christmas trees. Agricultural activity also includes animal husbandry and grazing.

“Atlas 14” means the Precipitation Frequency Estimates released by the National Weather Service Hydrometeorological Studies Design Center. Volume 8, released in 2013, provides precipitation frequency estimates for many Midwestern states including Minnesota.

“Bed of waterbody” means all portions of a waterbody located below the ordinary high-water level.

“Best management practices (BMPs)” means the most effective and practicable means of erosion prevention and sediment control, and water quality management practices that are the most effective and practicable means to control, prevent, and minimize degradation of surface water, including avoidance of impacts, construction-phasing, minimizing the length of time soil areas are exposed, prohibitions, pollution prevention through good housekeeping, and other management practices published by state or designated area-wide planning agencies.

“Better Site Design” means the control and management of stormwater quantity and quality through the application of Better Site Design Techniques as outlined in the current version of the Minnesota Stormwater Manual: <http://stormwater.pca.state.mn.us/index.php/Main> Page Better Site Design includes: preservation of natural areas; site reforestation; stream and shoreland buffers; open space design; disconnection of impervious cover; rooftop disconnection; grass channels; stormwater landscaping; compost and amended soils; impervious surface reduction; and trout stream protection.

“Bioengineering” means the use of live plant materials to provide erosion control, slope and stream bank stabilization, landscape restoration, and wildlife habitat. These techniques are used alone or in conjunction with conventional engineering techniques.

“Buffer” means an upland area adjacent to a lake, stream or wetland that is maintained in or restored to primarily native vegetation.

“Common plan of development or sale” means a contiguous area where multiple separate and distinct land disturbing activities may be taking place at different times, on different schedules, but under one proposed plan. One plan is broadly defined to include design, permit application, advertisement or physical demarcation indicating that land-disturbing activities may occur.

“Critical duration flood event” means the 100-year precipitation or snow melt event with a duration resulting in the maximum 100 year return period water surface elevation. The critical duration flood event is generally either the 100-year, 24 hour rainfall event as found in NOAA Atlas 14 or the ten-day snow melt event assumed to be 7.2 inches of runoff occurring on frozen ground (CN=100); however, other durations (e.g., 6-hour) may result in the maximum 100 year return period water surface elevation.

“Development” means alteration of land contours or the placement of one or more structures or surfaces on a single parcel, or on contiguous parcels pursuant to a common scheme. Development includes any land disturbance, or development or redevelopment of impervious surface, including but not limited to road and/or parking lot construction or reconstruction.

“Development, new” Any development that results in the conversion of land that is currently prairie, agriculture, forest, or meadow and has less than 15% impervious surface. Land that was previously developed, but now razed and vacant, will not be considered new development.

“Developed site” means a parcel or portion of a parcel containing one or more structures or impervious surfaces and may contain associated landscaped or actively maintained vegetated areas.

“Dewatering” means the removal of surface or ground water to dry and/or solidify a construction site to enable construction activity. Dewatering may require a Minnesota Department of Natural Resources (DNR) water appropriation permit, and if dewatering water is contaminated, discharge of such water may require an individual MPCA NPDES/SDS permit.

“Distributed CN-value approach” means an approach that separately assigns a curve number to each land use to more accurately reflect volume and timing of site-generated runoff. Impervious surfaces directly connected to stormwater conveyances may not be grouped together with disconnected impervious and pervious areas for calculation of drainage area curve numbers.

“Energy dissipation” means methods employed at pipe outlets to prevent erosion caused by the rapid discharge of water scouring soils. Examples include, but are not limited to: concrete aprons, riprap, splash pads, and gabions that are designed to prevent erosion.

“Erosion prevention” means measures employed to prevent erosion. Examples include but not limited to: soil stabilization practices, limited grading, mulch, temporary erosion protection or permanent cover, and construction phasing.

“Facility” means any part of a natural or constructed system contributing under the stormwater management plan to meeting a standard of Section 2.4.

“Feasible” means technically achievable at a cost, in the District’s determination, not substantially disproportionate to the stormwater management benefit to be gained.

“Floodplain” means the area adjoining a watercourse or water basin that has been or would be covered by a flood expected to occur on an average frequency of the 100-year recurrence interval. ~~An applicable delineation in the District’s Hydrologic and Hydraulic study (SRF 2005) shall govern.~~

“Fully Reconstructed Impervious Surface” means areas where impervious surfaces have been removed down to and disturb the underlying native soils. Activities such as structure renovation, and mill, reclamation and overlay projects are not considered fully reconstructed impervious surfaces. In addition, paving of an existing rural-section, gravel road is not considered a fully reconstructed impervious surface. In addition, other maintenance activities such as catch basin and pipe repair/replacement and pedestrian ramp improvements shall not be considered fully reconstructed impervious surfaces.

“General development lake” means a lake so designated by the Minnesota DNR pursuant to Minn. Rules 6120.3000.

“Green Infrastructure” means a wide array of practices at multiple scales that manage wet weather and that maintains or restores natural hydrology by infiltrating, evapotranspiring, or harvesting and using stormwater. On a regional scale, green infrastructure is the preservation or restoration of natural landscape features, such as forests, floodplains and wetlands, couples with policies such as infill and redevelopment that reduce overall imperviousness in a watershed. On a local scale, green infrastructure consists of site and neighborhood-specific practices, such as bioretention, trees, green roofs, permeable pavements and cisterns.

“Groundwater-dependent natural resource” (GDNR) means a feature with surface emergence of

groundwater at a spring or seepage area, sufficiently mineral rich to support a plant community or aquatic ecosystem listed in the Appendix to these Definitions. Information used to identify a GDNR includes Minnesota Land Cover Classification System plant community data, information on known springs and groundwater seepages, wetland function and value assessments, flow and water quality data and site inspection data.

“Impervious surface” means a surface that has been compacted or covered with a layer of material, or is likely to become compacted from expected use, so that it is highly resistant to infiltration by water and 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, tennis courts, basketball courts, swimming pools, building roofs, covered decks, and other structures.

“Land Disturbance” Any activity on property that results in a change or alteration in the existing ground cover (both vegetative and non-vegetative) and/or the existing soil topography. Land disturbing activities include, but are not limited to, development, redevelopment, demolition, construction, reconstruction, clearing, grading, filling, stockpiling, excavation and borrow pits. ~~Road milling/overlay~~ Mill, reclamation and overlay of impervious surfaces and routine vegetation management activities ~~will~~ are not ~~be~~ considered land disturbance. The use of land for new or continuing agricultural activity, home gardens, and landscaping adjacent to existing structures shall not constitute a land disturbance.

“Lowest basement floor elevation” means the lowest floor of the lowest enclosed area. An unfinished or flood resistant enclosure, used solely for parking of vehicles, building access, or storage in an area other than a basement area is not considered a building’s lowest basement floor.

“Landlocked basin” means a basin localized depression that does not have a natural outlet at or below the water elevation of the 10-day runoff (snowmelt) event with a 100-year return frequency using the 2000 Washington County Topographic Survey and Chisago County Topographic Survey.

“Manage 1,” as a wetland classification, means a wetland that does not qualify as a “Preserve” wetland but that meets one or more of the following rating levels pursuant to the most current version of Minnesota Routine Assessment Method (MnRAM) or other method approved by the District:

Function or Value	Rating
Vegetative Diversity	High
Wildlife Habitat	High
Fish Habitat	High
Aesthetics/education/recreation/cultural AND Wildlife Habitat	High <u>AND</u> Medium
Stormwater Sensitivity AND Vegetative Diversity	High <u>AND</u> Medium
Vegetative Diversity AND Maintenance of Hydrologic Regime	Medium <u>AND</u> High

“Manage 2,” as a wetland classification, means a wetland that does not qualify as a “Preserve” or “Manage 1” wetland but that meets one or more of the following rating levels pursuant to the

most current version of Minnesota Routine Assessment Method (MnRAM) or other method approved by the District:

“Manage 3,” as a wetland classification, means a wetland that does not qualify as a “Preserve,” “Manage 1” or “Manage 2” wetland.

“Mapped natural community” means a natural community identified in “Natural Communities and Rare Species Map for Washington and Chisago County” (Minnesota Department of Natural Resources, Natural Heritage Program, 1990), or in a natural resources inventory using the same protocol as established by the Minnesota Department of Natural Resources.

“Middle zone” is a vegetative buffer zone that extends from the upland edge of the streamside zone to the interior edge of the outer zone of a watercourse.

Function or Value	Rating
Wildlife Habitat	Medium
Fisheries Habitat	Medium
Aesthetics/education/recreation/cultural AND Wildlife Habitat	Medium <u>AND</u> Low

“Mill, reclamation and overlay” means the removal of the top layer(s) of an impervious surface (e.g. roadway, parking lot, sport court) by mechanical means, followed by the placement of a new layer of impervious surface, without disturbance of the underlying native soil.

“Natural environment lake” means a lake so designated by the Minnesota DNR pursuant to Minn. Rules 6120.3000.

“National Pollutant Discharge Elimination System (NPDES)” means the program for issuing, modifying, revoking, reissuing, terminating, monitoring, and enforcing permits under the Clean Water Act (Sections 301, 318, 402, and 405) and 33 CFR §§ 1317, 1328, 1342, and 1345.

“Normal wetted perimeter” means the area of a conveyance, such as a ditch, channel, or pipe that is in contact with water during flow events that are expected to occur from a two-year, 24 hour storm event.

“Operator” means the person designated by the owner, who has day to day operational control and/or the ability to modify project plans and specifications related to the SWPPP. The operator must be names on the permit as the Permittee.

“NURP standard” means the design criteria developed pursuant to the Nationwide Urban Runoff Program (U.S. EPA, 1983) and published by the Minnesota Pollution Control Agency in Protecting Water Quality in Urban Areas 1991” (sections 4.1-4 through 4.1-7), as may be amended.

“Ordinary high-water level” or "OHWL" means the boundary of a public water or wetland as determined by the Department of Natural Resources, and is an elevation indicating the highest water level that has been maintained for a sufficient period of time to leave evidence on the landscape, commonly indicated by a change from predominantly aquatic to predominantly terrestrial vegetation. For watercourses, the ordinary high-water level is the elevation of the top of bank of the channel. For basins and flowages, it is the operating elevation of the summer pool. If the DNR has not defined an OHWL, the District, with DNR consultation, will establish the

elevation for the purpose of the permit application.

“Outer zone” is a vegetative buffer zone that extends from the upland edge of the middle zone of a watercourse to a point specified in these Rules.

“Owner” means the person or party possessing the title of the land on which the construction activities will occur; or if the construction activity is for a lease, easement, or mineral rights license holder, the party or individual identified as the lease, easement or mineral rights license holder; or the contracting government agency responsible for the construction activity.

“Permanent cover” means surface types that will prevent soil failure under erosive conditions. Examples include: gravel, asphalt, concrete, rip rap, roof tops, perennial cover, or other landscaped material that will permanently arrest soil erosion. A uniform perennial vegetative cover (e.g., evenly distributed, without large bare areas) with a density of 70% of the background vegetative cover for the area must be established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures. Permanent cover does not include the practices listed under temporary erosion protection.

“Permittee” means a person or persons, firm, or governmental agency or other entity that signs the application submitted to the CLFLWD and is responsible for compliance with the terms and conditions of the construction permit.

~~“Public water” has the definition at Minnesota Statutes § 103G.005, subd. 15.~~

“Pre-development” means at the time preceding creation of impervious surface or substantial change in site hydrology or infiltration by alteration of site vegetation or contour.

“Preserve,” as a wetland classification, means a wetland meeting any of the following rating levels pursuant to the most current version of Minnesota Routine Assessment Method (MnRAM) or other method approved by the District:

Function or Value	Rating
Vegetative Diversity	Exceptional
Wildlife Habitat	Exceptional
Fish Habitat	Exceptional
Aesthetics/education/recreation/cultural AND Wildlife Habitat	Exceptional <u>AND</u> High
Stormwater Sensitivity AND Vegetative Diversity	Exceptional <u>AND</u> Medium or greater
Vegetative Diversity AND Maintenance of hydrologic regime	High <u>AND</u> High or greater

“Public linear project” means a publicly sponsored project involving a roadway, sidewalk, trail or utility not part of a common plan of development.

“Public water” means all water basins and watercourses that are described in Minnesota Statutes § 103G.005, subd. 15.

“Receiving water” means the first of the following types of surface waters encountered by stormwater runoff from a site: a lake or stream designated as a public water, public wetland or

[wetland.](#)

“Recreational development lake” means a lake so designated by the Minnesota DNR pursuant to Minn. Rules 6120.3000.

“Revegetation” means the planting of native indigenous species.

[“Retain” means manage stormwater on site using a low-impact development approach so that the rate and volume of predevelopment stormwater reaching receiving waters is unchanged.](#)

[“Saturated soil” means the highest seasonal elevation in the soil that is in a reduced chemical state because of soil voids being filled with water. Saturated soil is evidenced by the presence of redoximorphic features or other information.](#)

[“Sediment control” means methods employed to prevent sediment from leaving the site. Sediment control practices include: silt fences, sediment traps, earth dikes, drainage swales, check dams, subsurface drains, bio rolls, rock logs, compost logs, storm drain inlet protection, and temporary or permanent sedimentation basins.](#)

“Shore impact zone” means land located between the OHWL of a public water and a line parallel to it at a distance defined under MN Rule 6120.

“Site” means the parcel or parcels of land on which the activity subject to District permitting is to occur. If subdivision triggers District permitting, the site is the area being subdivided. For an independent roadway, trail or other linear project, “site” means the area of right-of-way held and to be acquired for the project for the section or sections of roadway or trail to be disturbed.

“Site design practice” means a method of managing stormwater peak flow, flow volume or quality listed in Appendix 2.1 to Rule 2.0.

“Steep slope” means land with an average slope in the direction of flow exceeding twelve (12) percent over a distance of 50 feet or more or land defined as steep slope in the corresponding County Soil Survey (Chisago or Washington County), as amended.

[“Stormwater” \(as defined under Minn. Rule 7077.0105 subp. 41\(b\)\) means precipitation runoff, stormwater runoff, snowmelt runoff, and any other surface runoff and drainage.](#)

[“Stormwater Pollution Prevention Permit” \(SWPPP\) means a plan for stormwater management that includes erosion prevention BMPs, sediment control BMPs, and permanent stormwater management systems that, when implemented, will decrease soil erosion on a parcel of land, and decrease off-site nonpoint pollution.](#)

“Stream” means a natural or altered natural watercourse. “Stream buffer zone” means a streamside zone, middle zone or outer zone.

“Streamside zone” is a vegetative buffer zone that extends from the ordinary high-water mark of a watercourse to the interior edge of the middle zone.

“Structure” means anything that is constructed or placed on the ground and that is, or is intended, to remain for longer than a brief, temporary period of time.

“Subdivision” means the separation of an area, parcel, or tract of land under single ownership into two or more parcels, tracts, lots.

“Subwatershed” means an area wholly or partly within the Comfort Lake - Forest Lake watershed defined by the drainage of all surface flows to a common waterbody.

“Surface water or waters” means all streams, lakes, ponds, marshes, wetlands, reservoirs, springs, rivers, drainage systems, waterways, watercourses, and irrigation systems whether natural or artificial, public or private, except that surface waters do not include treatment basins or ponds that were constructed from upland.

“Temporary erosion protection” means methods employed to prevent erosion during construction activities. Examples of temporary erosion protection include: straw, wood fiber blanket, wood chips, vegetation, mulch and rolled erosion control products.

“Thalweg” means the line connecting the points of lowest bed elevation in the direction of flow.

“Utility” means a facility for transmitting water, wastewater, steam, gas, electricity or similar commodities, including but not limited to cable access television and data transmission lines.

“Underground waters (Groundwater)” means water contained below the surface of the earth in the saturated zone including, without limitation, all waters whether under confined, unconfined, or perched conditions, in near surface unconsolidated sediment or regolith, or in rock formations deeper underground. The term groundwater shall be synonymous with underground water.

“Waterbody” means a watercourse or waterbasin.

“Waterbasin” means an enclosed natural depression with definable banks, capable of retaining water.

“Watercourse” means any definable channel including a natural channel, altered natural channel or artificial channel that has definable beds and banks capable of conducting confined runoff from adjacent land.

“Waters of the State” (as defined in Minn. Stat. § 115.01 subd. 22) means all streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, drainage systems and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, which are contained within, flow through, or border upon the state or any portion thereof.

“Wetland” (as defined in Minn. R. 7050.0130 subd. F) means land transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. It includes all areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. A wetland (a) is predominated by hydric soils; (b) is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions; and (c) under normal circumstances, supports a prevalence of hydrophytic vegetation. A wetland is a waterbasin if it meets the definition of that term.

“Wetland Conservation Act or WCA” means the Minnesota Wetland Conservation Act of 1991 as amended. Wetlands shall be delineated using the methods outlined in the U.S. Army Corps of Engineers Wetlands Delineation Manual.

DEFINITIONS – APPENDIX

Groundwater-Dependent Natural Resource Types (Following Minnesota Land Cover Classification System protocol)

Cold water trout stream	semipermanently flooded
Spring creek	Wet prairie seepage subtype - saturated soils
Groundwater-dependent lake	Calcareous seepage fen
Tamarack swamp seepage subtype	Calcareous seepage fen boreal subtype
Tamarack swamp minerotrophic subtype	Calcareous seepage fen prairie subtype
Tamarack swamp sphagnum subtype	Poor fen
White cedar swamp seepage subtype	Poor fen sedge subtype
Black spruce bog	Poor fen patterned fen subtype
Black spruce bog intermediate subtype	Rich fen
Black spruce bog raised subtype	Rich fen sedge subtype
Black ash swamp seepage subtype	Rich fen floating-mat subtype - saturated soils
Mixed hardwood swamp seepage subtype	Rich fen patterned fen subtype
Scrub tamarack poor fen	Open bog Open sphagnum bog schlenke subtype
Birch bog, spiraea temporarily flooded shrubland	Graminoid bog Wet meadow floating mat subtype
Shrub fen	Rich fen floating-mat subtype - semipermanently flooded
Poor fen shrub subtype	Rich fen floating-mat subtype - intermittently exposed
Rich fen shrub subtype	Rich fen floating-mat subtype - permanently flooded
Wet brush-prairie seepage subtype	Talus slope algific subtype Seepage meadow Wet cliff Moderate cliff
Shrub swamp seepage subtype	Midwest sedimentary dripping cliff
Alder swamp - saturated soils	Saline spring mud flats
Birch bog, spiraea shrubland - saturated soils	
Alder swamp	
Birch bog, spiraea shrubland - seasonally flooded	
Birch bog, spiraea shrubland -	

1.0 PROCEDURAL REQUIREMENTS

Comment [CA1]: ADMIN

Validate/Update all Rule & Section cross-references throughout entire document.

1.1 Application Required. Any person undertaking any activity for which a permit is required by these Rules shall first submit for review a permit application, engineering design data and such other information to the District as may be required by these Rules to determine whether the improvements are in compliance with the criteria established by these Rules. All permit applications must bear the original signature of the landowner.

1.2 Applicability of Rules. The following is a summary of the applicability of specific District rules. Please review carefully the more detailed provisions of the individual rules to determine how each rule applies to a given project.

Comment [CA2]: BOARD DISCUSSION

Should the applicability exemptions list in Resolution 08-12-01 or updated exemptions regarding permit in process or having received previous plat approval be incorporated here instead of by resolution?

1.2.1 Stormwater Management (Rule 2.0):

- (a) Residential subdivision or development of three (3) or more lots ~~within one thousand (1000) feet of a public water and residential subdivision or development of four (4) or more lots elsewhere.~~
- (b) Non-residential or multi-residential development, including smaller individual sites that are part of common plan of development that may be constructed at different times, and road and other public linear projects ~~not connected to a development parcel, that creating create~~ new impervious surface or ~~disturbing-fully reconstructs~~ existing impervious surface that, in the aggregate, exceeds five thousand (5,000) square feet:
 - i. ~~One (1) acre or five (5) percent of a site (whichever is less) within one thousand (1000) feet of a public water; or~~
 - ii. ~~One (1) acre or twenty five (25) percent of a site (whichever is less) elsewhere.~~

(c) Any project requiring a variance from the current local impervious surface zoning requirements for the property.

~~(e)~~(d) If the proposed project disturbs more than 50 percent of the site or fully reconstructs more than 50 percent of the existing impervious surface, tThe criteria of section 2.4 will apply to ~~all existing and new impervious surface on the entire~~ project site. Otherwise, the criteria will apply only to the newly developed and redeveloped portions of the project site. Notwithstanding, for ~~road and other public~~ linear projects, the criteria will only apply to net-new and fully reconstructed impervious surfaces will be considered. For the purpose of this rule, mill, reclamation and overlay ~~of hard surface~~ is not considered new or fully reconstructed impervious surface. In addition, paving of an existing rural-section, gravel road is not considered new or fully reconstructed impervious surface. However, ~~road or other hard surface that is reconstructed~~ impervious surface reconstruction and rehabilitation methods that by removing remove and replace the pavement layer and subgrade layers and and exposing disturb the underlying native soil during the process is considered new-fully reconstructed impervious surface.

Comment [CA3]: BOARD DISCUSSION

This applicability criteria has not been discussed with the Board to date but worth consideration. If accepted, we would recommend addition of a simple worksheet for demonstration of stormwater management standard compliance.

1.2.2 Erosion Control (Rule 3.0):

Any grading, filling, or other land disturbing activity that involves:

- (a) ~~the grading, filling, or other land alteration activities which involve m~~ Movement of more than ~~two hundred fifty (20050)~~ cubic yards of earth or erodible material.
- (b) Surface disturbance or removal of vegetative cover on ~~one quarter five thousand (1/4 5,000) acre square feet~~ or more of land ~~within one thousand (1000) feet of a public water or one (1) acre or more of disturbance elsewhere.~~

(c) Any project with wetland impacts, grading within public waters, grading within buffers or within 40-feet of the bluff line.

(d) Any project requiring a variance from the current local impervious surface zoning requirements for the property.

1.2.3 Lake, Stream, and Wetland Buffer (Rule 4.0):

Any lot containing land within the buffer zone of any General Development Lake, Recreational Development Lake, Natural Environment Lake, stream or wetland within the watershed; and

- (a) that results from subdivision of land into two or more buildable lots on or after February 1, 2009; or
- (b) that is subject to land disturbance for the purpose of a new primary use for which (i) a rezoning or (ii) a land use variance for lot hard surface percentage or structure setback from a wetland or surface water resource has been approved on or after February 1, 2009.

1.2.4 Shoreline & Streambank Alteration (Rule 5.0):

- (a) Construction or installation of a shoreline or streambank stabilization partially or wholly below the ordinary high water mark of a natural or altered natural watercourse defined as a public water or a waterbasin.
- (b) Notwithstanding subsection 1.2.4(a), a District permit under Rule 5.0 is required only if: (a) a Minnesota Department of Natural Resources public waters work general permit covering shoreline and streambank alterations is in effect; and (b) the general permit excuses property owners from the DNR individual permit requirement if they hold a District permit.

1.2.5 Watercourse and Basin Crossing (Rule 6.0):

Any use of the beds of any waterbody within the District for the placement of roadways, utilities, water control structures.

1.2.6 Floodplain and Drainage Alteration (Rule 7.0):

- (a) Any alteration or filling of land below the 100-year flood elevation of any wetland, public water, stormwater management basin, or landlocked subwatershed unless a permit is received from the appropriate local government unit in accordance with a state-approved floodplain management ordinance.
- (b) Any artificial redirection of flow across drainage boundaries or obstruction of the natural flow of surface water.

1.2.7 Wetland Management (Rule 8.0):

Permit required from Wetland Conservation Act (WCA) Local Government Unit (LGU) for activities that may impact wetlands. Activities conducted in wetlands may require a permit from the District under the other Rules of the District, see Rules 2.0 through 7.0 in particular.

1.3 Forms. Permit applications shall be submitted using forms provided by the District. Forms are available from the District Office located at 220 North Lake Street, Forest Lake, Minnesota, 55025 or on the District's website at www.clflwd.org. Permit applications shall be addressed to:

Comfort Lake - Forest Lake Watershed
District 220 North Lake Street
Forest Lake, Minnesota, 55025

1.4 Action by Board of Managers. The managers shall act within sixty (60) days of receipt of a completed application and complete set of required exhibits. No application is considered

Comment [CA4]: BOARD DISCUSSION

Education vs. Regulation? Further discussion is necessary in light of our meeting with MNDNR regarding the pros/cons of a MNDNR General Permit for the District as well as the goals of the Board in potential enforcement of this rule.

complete unless all required items listed in each applicable rule are submitted in the form acceptable to the District. The District will provide written notice to applicant of any missing items needed to complete the application, within fifteen (15) business days from receipt of application.

1.5 Conformity with Local Requirements. The District encourages the developer to seek District input starting at the concept stage, [including any pre-application meetings required by a Local Governing Unit or other regulatory entities.](#)

1.6 Notification Process. A certified list of property owners obtained from Washington County and/or Chisago County who reside adjacent to the subject property, and all property owners within five hundred (500) feet of the property boundary of a proposed project, must be submitted before an application is considered complete. District staff will send notice of the proposed project to the individuals on the mailing list for the applicant at the applicant's expense. A copy of the list will be retained with the application at the District office. If the project is proposed within the shoreland management area of a lake with a formal lake association known by the District, the District will notify the lake association of the application.

1.7 Alternative Notification. The Board, upon written request from the applicant, may approve alternative notification for any of the following projects.

- (a) A linear project, including but not limited to a road, sidewalk or trail, one-half mile or more in length.
- (b) A project on a parcel or contiguous parcels with an area of one hundred (100) acres or more, where no more than five (5) percent of the area will be disturbed, provided the disturbed area does not include a wetland.
- (c) A project where the applicant proposes to combine notification under this Rule with notification required under the approval procedures of another governmental body.

The applicant must demonstrate that an alternative means of notification will provide adequate notice to residents near the proposed activity.

1.8 Permit Renewals and Transfers. Work must be performed under an active permit. If a permit approval requires conditions to be met before the permit will issue, those conditions must be met within sixty (60) days of approval. A permit expires one year from the date the permit is issued unless the permit states otherwise or the permit is suspended or revoked. To renew or transfer a permit, the permittee must submit a written request to the District prior to the permit expiration date, stating the reason for the renewal or transfer. The Board, in its discretion, may grant a permit for a duration longer than one (1) year if a request to do so is included in the duly-noticed application.

1.9 Regular Meetings. District meeting schedules, notices, and agendas can be obtained from the District's website (clflwd.org) or by contacting the District office.

1.10 Permit Decisions. Permit decisions will be made by the Board of Managers except as the Board, by written resolution, may delegate to the District administrator.

- (a) [Activities subject to these rules shall not commence until a permit has been issued by the District.](#)
- (b) [If the District determines that the application meets the requirements of these rules, the District may issue approval authorizing the project or activity.](#)
- (c) [If the District determines that the application does not meet the requirements of these rules the application shall be denied. If the application is denied, the applicant will be notified of the denial in writing including reasons for the denial. Once denied, a new](#)

application shall be resubmitted for approval before any activity may begin.

1.11 Modification of Permits. The applicant shall amend an approved ESC Plan or SWPPP to include additional information such as additional or modified BMPs designed to correct problems whenever:

- (a) There is a change in design, construction, operation, maintenance, weather or seasonal conditions that has a significant effect on the discharge of pollutants to surface water or underground water.
- (b) Inspections or investigations by site operators, local, state or federal officials indicate the plans are not effective in eliminating or significantly minimizing the discharge of pollutants to surface water or underground water or that the discharges are causing water quality standard exceedances.
- ~~(c)~~ (c) The soil erosion control or stormwater management measures are not achieving the general objectives of minimizing pollutants in stormwater discharges associated with construction activity.

Comment [CA5]: ADMIN / LEGAL

Does this need further revision – denial is not the only potential action... table, conditional approval, extend for 60-days, etc. Is there value in incorporating all these details?

2.0 STORMWATER MANAGEMENT

2.1 Purposes and Policy. It is the policy of the District to:

- 2.1.1 Preserve natural infiltration, groundwater recharge and subsurface flows that support groundwater dependent resources including lakes, streams, channels, wetlands, plant communities and drinking water supplies;
- 2.1.2 Work toward restoration of natural hydrology;
- 2.1.3 Limit off-site stormwater flow volume to prevent down-gradient flooding and impacts to waters within the Comfort Lake - Forest Lake watershed; and
- 2.1.4 Require management of stormwater flow to limit sediment, nutrient and metals concentrations conveyed to ground and surface waters and promote water quality.
- 2.1.5 Minimize connectivity of impervious surfaces to stormwater conveyance systems and preserve the natural hydrology of landlocked basins to minimize basin and downgradient flood risk.
- 2.1.6 Assure that property owners control rate and volume of stormwater runoff originating from their property so that surface water and groundwater quantity and quality is protected, soil erosion is minimized, flooding potential is reduced, and thermal impacts are reduced.
- 2.1.7 Encourage land use practices that consider the groundwater, surface water and associated natural resources in the decision making process.
- 2.1.8 Work with all communities and non-community public water supply systems as they develop and implement their wellhead protection plan.
- 2.1.9 Limit activities that result in the loss of locally unique groundwater dependent resources.
- 2.1.10 Follow general recommendations presented in the applicable county groundwater plan.

2.2 Applicability. Subject to an exception in section 2.7, an approved Stormwater Management Permit shall be required prior to any proposed land development activity that meets any of the following criteria~~the requirements of this section apply to:~~

- (a) Residential subdivision or development of three (3) or more lots ~~within one thousand (1000) feet of a public water and residential subdivision or development of four (4) or~~

~~more lots elsewhere.~~

(b) Non-residential or multi-residential development, including smaller individual sites that are part of common plan of development that may be constructed at different times, and road and other public linear projects ~~not connected to a development parcel that, creating create~~ new impervious surface or ~~disturbing~~ fully reconstructs existing impervious surface that, in the aggregate, exceeds five thousand (5,000) square feet.

~~— (j) One (1) acre or five (5) percent of a site (whichever is less) within one thousand (1000) feet of a public water; or~~

~~i. — (ii) One (1) acre or twenty five (25) percent of a site (whichever is less) elsewhere.—~~

(c) Any project requiring a variance from the current local impervious surface zoning requirements for the property.

~~(b)~~(d) If the proposed project disturbs more than 50 percent of the site or fully reconstructs more than 50 percent of the existing impervious surface, the standards of section 2.4 will apply to the entire project site. Otherwise, the standards will apply only to the newly developed and redeveloped portions of the project site. Notwithstanding, for road and other linear projects, the standards will only apply to new and fully reconstructed impervious surfaces. For the purpose of this rule, mill and overlay is not considered new or fully reconstructed impervious surface. However, impervious surface reconstruction and rehabilitation methods that remove and replace pavement and subgrade layers and disturb the underlying native soil during the process is considered fully reconstructed impervious surface. ~~The criteria of section 2.4 will apply to all existing and new impervious surface on the project site. Notwithstanding, for road and other linear projects, only net new surface will be considered. For the purpose of this rule, mill and overlay of hard surface is not considered new surface. However, road or other hard surface that is reconstructed by removing the pavement layer and exposing the underlying soil is considered new surface.~~

2.3 Regulation. Before commencing any activity described at section 2.2, a developer of land for any use, residential, commercial, industrial, institutional, ~~or public~~, or other uses, shall submit a stormwater management plan to the District in conformity with the requirements of this Rule, and secure a permit from the District. The District encourages the developer to seek District input starting at the concept stage.

2.4 Standards.

2.4.1 Management Standards. An applicant for a stormwater management permit must demonstrate to the District that the proposed land-altering activity ~~will~~ shall meet the following stormwater performance standards:

(a) All projects shall maintain the peak stormwater flow rate from each point of discharge from the site for a 24-hour precipitation event with a return frequency of 2, 10, ~~and or~~ 100 years ~~in the drainage area in which the site is located~~ at or below the peak stormwater flow rate calculated in accordance with subsection 2.5.4.

(b) New Development.

i. Maintain stormwater flow volume from each point of discharge from the site for a 24-hour precipitation event with a return frequency of 2-years, or 5-years within a landlocked basin or an area that drains to a landlocked basin, at or below the pre-

development stormwater flow volume, calculated in accordance with subsection 2.5.4.

- (a)ii. Provide water quality Best Management Practices (BMPs) sized to infiltrate and/or detain the stormwater flow volume generated by the 2 year, 24-hour event under the developed condition for all points where discharges leave a site. For that portion of the 2 year, 24-hour event stormwater flow volume that is not required to be infiltrated under paragraph 2.4.1(b)(i), water quality BMPs or additional infiltration BMPs will be incorporated. The order of preference for water quality BMPs is biofiltration, filtration, wetland treatment system, extended detention, and wet detention in accordance with NURP standards.
- iii. Decrease phosphorus loading by fifty (50) percent from existing conditions for sites with agricultural activity and maintain or lower phosphorus loading from existing conditions for projects on undeveloped sites.
- (c) **Redevelopment.** Redevelopment that creates or fully reconstructs impervious surfaces shall capture and treat onsite 1.1 inches of runoff from the new and/or fully reconstructed impervious surfaces, calculated in accordance with subsection 2.5.5.
- (d) **Public Linear Projects.** Public linear projects that create new and/or fully reconstructed impervious surfaces, shall capture and treat the larger of the following, calculated in accordance with subsection 2.5.5:
 - i. 0.55 inches of runoff from the new and fully reconstructed impervious surfaces.
 - (b)ii. 1.1 inches of runoff from the net increase in impervious area on the site.
- ~~(e) Maintain stormwater flow volume from each point of discharge from the site for a 24-hour precipitation event with a return frequency of 2 years, or 5 years within a landlocked basin or an area that drains to a landlocked basin, at or below the pre-development stormwater flow volume, calculated in accordance with subsection 2.5.4.~~
- ~~(d) Decrease phosphorus loading by fifty (50) percent from existing conditions for developed sites or sites with agricultural activity and not increase phosphorus loading from existing on all other sites.~~
- (e) All projects shall maintain the bounce in water level ~~or~~ and duration of inundation, during a 24-hour precipitation event ~~of critical duration with a return frequency of 2, 5, or 100 years~~ for the specified return periods utilizing NOAA Atlas 14 in the drainage area in which the site is located, for any downstream lake or wetland within the limit specified for the lake or wetland susceptibility class as follows:

Comment [CA6]: ENGINEERING

Incorporate exception for HSG C & D soils, contaminated soils and other issues incompatible with infiltration. No guidance needed for sizing of other mechanisms of treatment – the standard is the 2-yr, 24-hr event (ii).

Suseptibility Wetland Management Class	Permitted Bounce for 2-Year and 10-Year Events	Inundation Period for 1.5 2-Year event	Inundation Period for 10- & 100-Year or Greater Events
Preserve Wetland	Pre-development	Existing	Existing
	-		
Manage 1 Wetland	Pre-development + 0.5 feet	Existing plus 1 day	Existing plus 2 days
	-		
Manage 2 Wetland	Pre-development + 1.0	Existing plus 2 days	Existing plus 14 days

	feet		
	—		—
Manage 3 Wetland and Lakes	No limit	Existing plus 7 days	Existing plus 21 days

Source: State of Minnesota Stormwater Advisory Group, “Stormwater and Wetlands Planning and Evaluation Guidelines for Addressing Potential Impacts of Urban Stormwater and Snowmelt Runoff on Wetlands” (June 1997).

- 2.4.2 Obligation to Ensure Performance. To find that the standards of this rule have been met, the District may require as-built drawings or impose additional requirements as a specific condition of approval. The District may require monitoring or performance evaluation as a condition of approving a stormwater management practice that has not been adequately demonstrated in the proposed application.
- 2.4.3 Assurance of Downgradient Capacity. An applicant may be required to demonstrate that downgradient stormwater conveyance structures and features will be adequate to handle proposed peak flow or flow volume from the site.

2.5 Stormwater Management.

2.5.1 Sequence of Volume & Water Quality Management Methods. Applicant shall attempt to fully comply with the appropriate standards described in section 2.4. Volume reduction techniques considered shall include infiltration, rainwater reuse and harvesting, canopy interception and evapotranspiration, and additional techniques included in the MIDS calculator and the Minnesota Stormwater Manual. To meet the standards of section 2.4, site-based stormwater management methods shall be used in the following sequence. A preferred method shall be used to the degree feasible before a less-preferred method is used. Treatment in a regional facility shall be governed not by this subsection, but by subsection 2.7.3.

(a) First, the applicant shall comply with the stormwater volume reduction and/or water quality management standard to the maximum extent practicable on-site ~~through volume reduction methods approved by the District.~~ Options considered to achieve the standards shall examine the merits of relocating project elements to address, varying soil conditions, and other constraints across the site. If full compliance is not apparently possible due to any of the following factors, the applicant shall document these reason and submit to the District for review and validation of restriction that limit full onsite compliance.

- i. Karst geology
- ii. Shallow bedrock
- iii. High groundwater
- iv. Hotspots or contaminated soils
- v. Drinking Water Source Management Areas or within 200 feet of drinking water well
- vi. Zoning, setbacks or other land use requirements
- (a) vii. Poor soils (infiltration rates that are too low or high, problematic urban soils)

(b) If site constraints or restrictions limit full onsite compliance with the standard, ~~Second, for~~ the remaining volume reduction and/or water quality treatment required to fully meet the standard, the applicant shall comply with the volume

Comment [CA7]: ADMIN
Section 2.5 is a catch all and needs restructuring after content is deemed acceptable.

Comment [CA8]: BOARD DISCUSSION
Consider requiring that onsite TSS control is provided to the maximum extent practicable, even if sequencing leads to offsite mgmt. or SWIF.

Comment [CA9]: ADMIN
2.5.1 & 2.5.2 language cleanup necessary to merge water quality and volume into one commodity/credit term (i.e. “Stormwater Treatment Volume”).

This will clarify for public linear and redevelopment projects that offsite treatment, credits and payment into the SWIF satisfy the full standard (sect. 2.4).

Comment [CA10]: ADMIN
This is sequencing of preference for implementation location. Awkward location and reference to regional treatment.

Comment [CA11]: BOARD DISCUSSION
Municipalities have verbally stated they should be exempt from sequencing. Consider a sequencing exclusion for public linear projects (i.e. skip directly to SWIF)?

~~reduction standards~~ shall be provided at an offsite location or through the use of qualified ~~volume~~ banking credits as determined by subsection 2.5.2. Volume reduction and/or water quality treatment may be accomplished at another site outside of the project area or through the use of banked credits as long as it yields the same ~~volume reduction~~ benefit, and is approved by the District. Offsite compliance and banking credits shall be achieved in the following sequence:

- i. within the same subwatershed as the project site.
 - ii. within a subwatershed adjacent to the project site, or
 - iii. within the ~~Comfort Lake—Forest Lake Watershed~~ District.
- (c) Third, as a last alternative, for the remaining volume reduction and/or water quality treatment required, the applicant shall pay into the District's Stormwater Impact Fund. The required amount to contribute to the Stormwater Impact Fund will be set by resolution of the District Board, and amended from time to time, as the estimated cost of creating equivalent ~~volume reduction~~ benefit within the subwatershed under generally favorable conditions.
- i. Funds contributed to the Stormwater Impact Fund, will be spent within the subwatershed where the project impact occurred. If the managers thereafter conclude there is no reasonable opportunity to use the funds in that manner, they may in writing direct use of the funds as far as possible to serve similar water resource purposes within the same geographic area.
 - ii. Funds contributed to the Stormwater Impact Fund shall be allocated to volume reduction and water quality treatment projects by the District according to a stormwater impact fund implementation plan as approved by the District Board and amended from time to time.

~~1.5.1~~ 2.5.2 Volume & Water Quality Banking. Excess volume reduction or runoff retention achieved onsite, up to the volume of the five-year, 24-hour event, may be banked (credit) for use on other projects within the District that are unable to fully meet the District stormwater volume reduction standard onsite. Excess water quality treatment storage may not be banked for use on other projects.

The District has established and will maintain a list of available banked runoff retention Volume Credits.

- (a) Volume reduction or runoff retention achieved onsite in excess of the requirement of subsection 2.4.1 may be listed in the District's bank for use on other projects within the District that are unable fully to meet the volume reduction standard of subsection 2.4.1(b), on the project site.
- (b) Stormwater management facilities or practices relied upon to create Volume Credits must be included in the recorded maintenance instrument or maintenance plan specified in subsection 2.5.7.

- (c) Volume Credits may be utilized by permit applicants to meet the requirement of subsection 2.4.1(b) only after the applicant has demonstrated to the District that:
- i. One-half (1/2) inch of runoff from all new impervious surface on the parcel will be abstracted within parcel boundaries;
 - ii. Soil conditions and/or other site constraints prevent abstraction of additional runoff onsite. Infiltration is considered not feasible where soils do not support infiltration, documented soil contaminants preclude the use of infiltration practices, or there is inadequate separation from the water table.

Comment [CA12]: ADMIN

Again, credit terminology cleanup in this section is necessary – Stormwater Management Volume.

Comment [CA13]: ADMIN

Out of place sequencing requirements.

- iii. The facility or practice generating the credit is providing the level of volume control for which the applicant seeks credit.
- (d) Permit applicants are responsible for contacting a seller of Volume Credits and arranging the sale on terms established by the interested parties. The District will certify the sale through a form established by the District and completed by the buyer and seller of the Volume Credits.

~~1.5.2~~ 2.5.3

Site Design Practice Infeasibility. If a claim that a site design practice is infeasible rests on its inconsistency with a local ordinance or state standard, reasonable attempts to gain permission to incorporate the practice into site design must be documented. Satisfactory documentation includes denial of an exception or variance or a written statement by the authority that an exception or variance would be unlikely to be granted.

Comment [CA14]: ADMIN
Out of place feasibility / sequencing requirements.

2.5.4 Calculating Off-Site Stormwater Flow. To calculate off-site flow, Soil Conservation Service TR-20 method ~~is to~~ shall be used. For New Development projects, the CN-Curve Numbers values used to determine the pre-development rate and volume control standard under Rule 2.0 will be as follows:

~~2.5.3~~

Hydrologic Soil Group	Curve Number
A	30
B	58
C	71
D	78

For Public Linear and Redevelopment projects, Curve Numbers from NRCS Technical Release #55 (TR-55) representative of existing conditions, including impervious surfaces, may be utilized to assess runoff rate control compliance.

~~All assumptions for CN values and impervious surface area estimates must be clearly stated.~~ A distributed ~~CN value~~ Curve Number approach shall be used to calculate runoff flows (i.e. The runoff from pervious and impervious areas shall be modeled separately).

In determining Curve Numbers for the post-development condition, the Hydrologic Soil Group (HSG) of areas within the construction limits shall be shifted down one classification for HSG B (to HSG C) and ½ classification for HSG A (1/2 way between HSG A and HSG B) to account for the impacts of grading on soil structure unless the project specifications incorporate a District-approved method to restore soil structure (i.e. soil amendments). This requirement only applies to that part of a site that has not been disturbed or compacted prior to the proposed project. ~~An area of the site to be disturbed during construction shall be assigned a CN value corresponding to a soil permeability class one step below that of the undisturbed soil unless the permit specifies a District approved method to restore soil structure.~~

Comment [CA15]: ADMIN
Leaning on guidance from neighboring WDs, need to adopt soil amendment guidance with CLFLWD branding.

2.5.5 Public Linear & Redevelopment Stormwater Treatment Volume. The required stormwater treatment volume for Public Linear and Redevelopment Projects is determined as follows, where the Total Phosphorus (TP) Removal Factor is a function

of the BMP implemented as assigned in Table 2.5.5.

(a) Redevelopment

(i) If the proposed project disturbs more than 50 percent of the site or fully reconstructs more than 50 percent of the existing impervious surface:

$$\text{Required Treatment Volume (ft}^3\text{)} = \frac{\text{Entire Project Site Impervious Surface (ft}^2\text{)} \times 1.1 \text{ (in)}}{\text{TP Removal Factor} \div 12 \text{ (in/ft)}}$$

(ii) If the proposed project disturbs 50 percent or less of the site or fully reconstructs 50 percent or less of the existing impervious surface:

$$\text{Required Treatment Volume (ft}^3\text{)} = \frac{\text{Area of New and/or Fully Reconstructed Impervious Surface (ft}^2\text{)} \times 1.1 \text{ (in)}}{\text{TP Removal Factor} \div 12 \text{ (in/ft)}}$$

(b) Public Linear

The greater of the following:

(i) Required Treatment Volume (ft³) = Area of New and/or Fully Reconstructed Impervious Surface (ft²) x 0.55 (in) ÷ TP Removal Factor ÷12 (in/ft), or

(ii) Required Treatment Volume (ft³) = Net increase in Impervious Surface (ft²) x 1.1 (in) ÷ TP Removal Factor ÷12 (in/ft)

(c) For alternative Stormwater BMPs not found in Table 2.5.5 or to deviate from TP Removal Factors found in Table 2.5.5, the applicant may submit a TP Removal Factor, expressed as annual percentage removal efficiency, based on supporting technical data, for District approval.

<u>Table 2.5.5 TP REMOVAL FACTORS FOR PROPERLY DESIGNED BMPS</u>		
<u>BMP</u>	<u>BMP Design Variation</u>	<u>TP Removal Factor</u>
<u>Infiltration **</u>	<u>Infiltration Feature</u>	<u>1.00</u>
<u>Water Reuse **</u>	<u>Irrigation</u>	<u>1.00</u>
<u>Biofiltration</u>	<u>Underdrain</u>	<u>0.65</u>
<u>Filtration</u>	<u>Sand or Rock Filter</u>	<u>0.50</u>
<u>Stormwater Wetlands</u>	<u>Shallow Wetland</u>	<u>0.40</u>
	<u>Pond/Wetland</u>	<u>0.55</u>
<u>Stormwater Ponds ***</u>	<u>Wet Pond</u>	<u>0.50</u>
	<u>Multiple Pond</u>	<u>0.60</u>
<u>Source: Adapted from Table 7.4 from the Minnesota Stormwater Manual, MPCA.</u>		
<u>* Refer to MPCA Stormwater Manual for additional information on BMP performance. Removal factors shown are average annual TP percentage removal efficiencies intended solely for use in comparing the performance equivalence of various BMPs.</u>		
<u>** These BMPs reduce runoff volume.</u>		
<u>*** Stormwater ponds must also provide 2.5" of dead storage.</u>		

Comment [CA16]: ENGINEERING
Update per MN Stormwater Manual Guidance

~~1.5.4~~2.5.6 **Pretreatment.** An infiltration facility used to meet the standard of subsection 2.4.1(b) must be designed and maintained to provide for pretreatment of stormwater runoff. Pretreatment shall be sized to 25% of the infiltration volume.

~~1.5.5~~2.5.7 **Acquisition of Property or Contract Rights.** An applicant relying on on- or off-site facilities for complying with the standards of section 2.4 must possess all land access rights necessary for design, construction, and long-term operation and maintenance of the facilities.
This subsection does not apply to treatment in a regional facility pursuant to subsection 2.7.3(a).

~~1.5.6~~2.5.8 **Basin in Contributing Area to Groundwater-Dependent Natural Resource.** As the District develops the data to do so, it will by resolution of the Board of Managers adopt maps of the surface contributing areas of high-priority groundwater-dependent natural resources. If a stormwater basin is proposed within a mapped surface contributing area, it must contain and infiltrate the volume generated by a 2-year, 24-hour storm event, if feasible. The basin bottom must be at least three (3) feet above the seasonally high water table. If this infiltration standard is not met basin outflow must be non-erosive and routed through a subsurface system, flow spreader or other device that discharges water through or across the ground to lower discharge temperature to that of the ambient soil.

~~1.5.7~~2.5.9 **Stormwater Management Facility Maintenance Instrument.** If a developer proposes to construct a wet detention basin, infiltration or pretreatment facility, outlet structure, culvert, outfall structure, or other stormwater management facility in order to meet the requirements of this Rule, the developer must submit with the permit application a maintenance instrument. The maintenance instrument shall identify and protect areas of stormwater, detention, infiltration and overflow; specify the methods, schedule, and responsible parties for maintenance; provide for perpetual facility maintenance; and contain at a minimum the requirements in the District's standard maintenance declaration. The executed maintenance instrument must be recorded against the property deed with the County before permit issuance. If a municipal facility maintenance plan has been approved by the District and the municipality will maintain the facility, a separate maintenance instrument is not required.

~~2.5.8~~2.5.10 **Form of Recordation.** Rights under subsection 2.5.5, a maintenance instrument under subsection 2.5.8, and any commitment of indefinite duration that is a condition of a District permit shall be recorded against the property deed with the County as an easement or declaration in a form acceptable to the District. The recordation requirement does not apply to public permittees where these Rules specifically so state.

~~2.5.9~~2.5.11 **Conformance to Floodplain and Drainage Alteration Requirements.** In addition to all other legal requirements that may apply, all land-altering and related stormwater management activity pursuant to Rule 2.0 shall comply with freeboard requirements of Rule 7.0.

~~2.5.10~~2.5.12 **Stormwater Management Facility Construction Schedule.** The applicant must submit a construction schedule showing that stormwater management facilities required for compliance with Rule 2.0 will be constructed ~~contemporaneous~~concurrent to the work authorized by the permit. The District may use financial assurances in accordance with Section 10.0 of these Rules to guarantee the completion or complete

the construction of facilities that has not met the approved schedule.

2.6 Required Exhibits. The following items, submitted in duplicate and prepared by appropriate professionals or certified by a professional engineer registered in the State of Minnesota, registered land surveyors, or other appropriate professional shall accompany all permit applications submitted to the District pursuant to Rule 2.0

- 2.6.1 Property lines and delineation of lands under applicant's ownership;
- 2.6.2 For existing and proposed conditions, topography showing all off-site and on-site catchments contributing to surface flows onto or from the site;
- 2.6.3 The location, alignment and elevation of proposed and existing stormwater facilities;
- 2.6.4 Delineation of existing on-site wetland, shoreland, drain tiling and floodplain areas as defined in the Washington County FEMA base flood elevation mapping study (2008), or the most current District information which can be obtained by contacting the District offices or visiting the District website at cflwd.org;
- 2.6.5 Existing and proposed normal and 100-year water elevations on site;
- 2.6.6 Existing and proposed site contour elevations at two-foot intervals, related to NGVD, 1929 datum;
- 2.6.7 Elevation of the OHWL of each public water on the site, if determined by the Minnesota Department of Natural Resources, and of any legal buffer associated with the public water;
- 2.6.8 Construction plans and specifications for all proposed facilities including construction sequence;
- 2.6.9 A maintenance schedule for all proposed facilities;
- 2.6.10 Stormwater runoff rate analyses for the 2-, 5-, 10-, and 100-year critical events and runoff volume for the 2-year critical event under pre-settlement and proposed conditions, using Appendix 2.2 to simulate infiltration losses in designed practices;
- 2.6.11 All hydrologic, water quality, and hydraulic computations completed to design the proposed facilities, including a demonstration of conformance to standards in subsection 2.4.1 (c) in the site aggregate;
- 2.6.12 Delineation of any flowage and drainage easements and other property interests dedicated to stormwater management purposes, including, but not limited to, viable and current county or judicial ditches;
- 2.6.13 Documentation as to the status of a National Pollutant Discharge Elimination System stormwater permit for the project from the Minnesota Pollution Control Agency and provide the Storm Water Pollution Prevention Plan (SWPPP) as it becomes available;
- 2.6.14 Geotechnical information including soil maps, borings, site-specific recommendations, and other information necessary to evaluate the proposed stormwater management design;
- 2.6.15 Wetland function and value assessment for all impacted wetlands pursuant to the most current version of Minnesota Routine Assessment Method (MnRAM) or other method approved by the District; and
- 2.6.16 All exhibits shall be submitted in an electronic format as well as in hard copy. Exhibits for flowage and drainage easements shall be submitted as shapefiles.

2.7 Exceptions.

- 2.7.1 Performance Standard. The District may grant an exception to the sequencing requirements of subsection 2.5.1 providing applicant's demonstration, under subsection 2.5.1, that an alternative management technology or method will achieve

the same levels of performance and reliability as the method specified at subsection 2.5.1.

2.7.2 Variance. The District may grant a variance to any requirement of Rule 2.0 under Rule 11.0. A variance shall be limited to the extent necessary to put the property to a reasonable or economically viable use.

2.7.3 Regional Treatment. Management of site stormwater in a regional facility constitutes compliance with Rule 2.0 in any of the following circumstances:

- (a) Management is pursuant to and in accordance with a local water management plan or other stormwater management plan approved by the District.
- (b) An applicant has demonstrated infeasibility of on-site and off-site infiltration to fully meet the standard of subsection 2.4.1(b) and the District, in writing, finds that the proposed method of management would meet all standards of section 2.4 except for subsection 2.4.1(b).
- (c) Management is pursuant to and in accordance with a cooperative agreement with the District that explicitly recognizes alternative compliance with Rule 2.0 under specified conditions.

STORMWATER MANAGEMENT APPENDICES

APPENDIX 2.1

Inventory of Site Design Practices and Guidance on Their Use for Stormwater Management.

- A void conversion of high-permeability soils.
- Avoid soil compaction.
- Target high-permeability soils for infiltration.
- Use natural depressions and swales, except wetlands, for runoff storage and infiltration, with overflow to vegetated areas.
- Crown roads and driveways to encourage runoff to swales.
- Increase stormwater flow path length to waterbody or wetland.
- Use filter strips at edges of impervious surfaces, property boundaries, waterbodies and wetlands.
- Avoid curbs and gutters on roadways.
- Direct rain gutter downspouts to pervious surfaces or below-grade tiles.
- Use pervious surfaces for roads, driveways, parking areas and walkways.
- Design street widths less than 26 feet and appropriate for projected traffic load.
- Design streets for parking on one side only.
- Design streets with sidewalk on one side only.
- Limit road and driveway lengths.
- Design smaller (e.g., 9' x 18') parking stalls.
- Design for shared parking stalls and driveways.
- Reduce cul de sac radius and use pervious center; use T or V turnaround.
- Design with reduced structure setback and frontage.
- Preserve vegetation.
- Store stormwater runoff on-site.
- Decrease flow frequency, duration, and peak runoff rates.
- Avoid channel erosion

APPENDIX 2.2

Better Site Design

- To the maximum extent practicable, development projects shall be designed using the Better Site Design Techniques of the current version of the Minnesota Stormwater Manual.¹ Better Site Design involves techniques applied early in the design process to preserve natural areas, reduce impervious cover, distribute runoff and use pervious areas to more effectively treat stormwater runoff. Site design should address open space protection, impervious cover minimization, and runoff distribution, minimization, and utilization through considerations such as:
 1. Open space protection and restoration
 - conservation of existing natural areas (upland and wetland)
 - reforestation
 - re-establishment of prairies
 - restoration of wetlands
 - establishment or protection of stream, shoreline and wetland buffers
 - re-establishment of native vegetation into the landscape
 2. Reduction of impervious cover
 - reduce new impervious through redevelopment of existing sites and use of existing roadways, trails etc.
 - minimize street width, parking space size, driveway length, sidewalk width
 - reduce impervious surface footprint (e.g. two story buildings, parking ramp)
 3. Distribution and minimization of runoff
 - utilize vegetated areas for stormwater treatment (e.g. parking lot islands, vegetated areas along property boundaries, front and rear yards, building landscaping)
 - direct impervious surface runoff to vegetated areas or to designed treatment areas (roofs, parking, driveways drain to pervious areas, not directly to storm sewer or other conveyances)
 - encourage infiltration and soil storage of runoff through grass channels, soil compost amendment, vegetated swales, raingardens, etc.
 - plant vegetation that does not require irrigation beyond natural rainfall and runoff from the site
 4. Runoff utilization
 - capture and store runoff for use for irrigation in areas where irrigation is necessary

¹ Available at http://stormwater.pca.state.mn.us/index.php/Better_site_design.

APPENDIX 2.3
Design Infiltration Rates

Comment [CA17]: ADMIN
 Update per current MN Stormwater Manual table

Hydrologic Soil Group	Soil Textures*	Corresponding Unified Soil Classification**	Infiltration Rate [inches/hour]
A	Gravel, sand, sandy gravel, silty gravel, loamy sand, sandy loam	GW - Well-graded gravel or well-graded gravel with sand GP - Poorly graded gravel or poorly graded gravel with sand	1.63
		GM - Silty gravel or silty gravel with sand SW - Well-graded sand or well-graded sand with gravel SP - Poorly graded sand or poorly graded sand with gravel	0.8
B	Loam, silt Loam	SM - Silty sand or silty sand with gravel	0.6
		ML - Silt OL - Organic silt or organic silt with sand or gravel or gravelly organic silt	0.3
C	Sandy clay Loam	GC - Clayey gravel or clayey gravel with sand SC - Clayey sand or clayey sand with gravel	0.2
D	Clay, clay loam, silty clay loam, sandy clay, silty clay	CL - Lean clay or lean clay with sand or gravel or gravelly lean clay CH - Fat clay or fat clay with sand or gravel or gravelly fat clay OH - Organic clay or organic clay with sand or gravel or gravelly organic clay MH - Elastic silt or elastic silt with sand or gravel	< 0.2

Source: Minnesota Stormwater Manual (2005)

3.0 EROSION CONTROL

3.1 Policy. It is the policy of the Board of Managers to require erosion [and sediment control practices](#) for [all](#) land development activities to prevent the siltation and sedimentation of streams, channels, lakes, wetlands, and groundwater recharge areas in the District.

3.2 Applicability.

3.2.1 [Prior to any work commencing, a](#) All persons shall submit an [Erosion and Sediment Control Plan](#) to the District, and secure a permit from the District approving the erosion control plan for any grading, filling, or other land disturbing activity that involves:

- (a) Grading, filling, or other land alteration activity that involves movement of ~~more than two hundred (200)~~ [more than two hundred \(200\)](#) cubic yards [or more](#) of earth or erodible material.
- (b) [Surface disturbance or removal of vegetative cover on five thousand \(5,000\) square feet](#) ~~one quarter (1/4) acre~~ or more of land ~~within one thousand (1000) feet of a public water or one (1) acre or more of disturbance elsewhere.~~
- (c) [Any construction activity with wetland impacts, grading within public waters, grading within buffers, or grading within 40-feet of the bluff line.](#)
- (d) [Any project requiring a variance from the Local Governing Unit's zoning requirements for the property.](#)

3.2.2 [Any project that does not meet the regulatory thresholds established in Section 3.2.1 above, shall comply with the erosion and sediment control Best Management Practices set forth in Section 3.7 of these rules. Such projects should also consider, and implement where feasible, the Site Management Practices in Section 3.5 of these rules.](#)

~~3.2.3~~ **3.2.3 Regulation.** The [Erosion and Sediment Control Plan](#) must meet the following standards:

- 3.2.1 ~~The An~~ [erosion and sediment control plan](#) must be prepared by a qualified individual showing proposed methods of retaining waterborne sediments on site during the period of construction and showing how the site will be restored, covered, or revegetated after construction, including a timetable for completion;
- 3.2.2 The erosion [and sediment control plan](#) shall be consistent with the specifications of the MPCA manual "Protecting Water Quality in Urban Areas" and its current revisions. [The Plan shall also be consistent with the requirements and specifications of the NPDES/SDS Construction Stormwater General Permit and its current revisions;](#)
- 3.2.3 The erosion control plan will specify measures for indefinite stabilization of exposed [soil](#) and stockpiled earth and erodible materials in the event that site work is suspended. These measures will be implemented within 30 days of a request by the

District, unless, on the basis of permittee's written response and official inspection, the District finds that the site is active and actively managed under the erosion and sediment control plan. The District may set a later deadline for implementation if site conditions warrant.

~~3.3~~3.4 **Required Exhibits.** The following items, prepared by an appropriate professional, shall accompany all erosion and sediment control permit applications submitted to the District pursuant to Rule 3.0:

- 3.4.1 Property lines and delineation of lands under applicant's ownership;
- 3.4.2 Existing and proposed site contour elevations at two-foot intervals, related to NGVD, 1929 datum;
- 3.4.3 Documentation as to the status of a National Pollutant Discharge Elimination System stormwater permit for the project from the Minnesota Pollution Control Agency and provide the Storm Water Pollution Prevention Plan (SWPPP), if required, as it becomes available; and
- 3.4.4 An erosion and sediment control plan consistent with the standards of Sections 3.3 and 3.5.

~~3.4~~3.5 **Site Maintenance Practices.**

- 3.5.1 All ~~erosion and~~ sediment control measures shall be installed, and the District shall be given three business days' notice in writing, before any land disturbing activity ~~and~~ commences.
- 3.5.2 ~~Erosion-Sediment~~ control measures shall not be removed until after the project is complete and the District determines that all disturbed areas have been fully stabilized. Sediment control measures; ~~and~~ shall be removed within 14 days thereafter.;
- 3.5.3 Permanent wet detention basins used as temporary sedimentation basins during construction must be cleaned out after construction is complete and restored to their original design. Infiltration practices shall be protected from sedimentation and compaction during construction and shall remain offline until the contributing drainage area is stabilized.;
- 3.5.4 The permittee is responsible at all times for the maintenance and proper operation of all erosion and sediment control facilities and practices. On any property on which land-disturbing activity has occurred pursuant to a permit issued under this Rule, the permittee shall, at a minimum, inspect, maintain, and repair all disturbed surfaces and all erosion and sediment control facilities or practices, and all soil stabilization measures, until land-disturbing activity has ceased: ~~(1) every day~~ work-construction activity is performed on the site; ~~(2) after every rain event of one half inch (0.5") or more total precipitation, and (3) and~~ at least weekly when construction activity is not performed on the site; ~~until land-disturbing activity has ceased~~. Thereafter, the

permittee shall perform these responsibilities after every rain event of one half inch (0.5") or more total precipitation, and at least weekly, until vegetative cover is established.

3.5.5 All disturbed areas, exposed soils, ~~areas~~ and soil stockpiles must be stabilized. Stabilization must be initiated immediately to limit soil erosion whenever any construction activity has permanently or temporarily ceased on any portion of the site and will not resume for a period exceeding fourteen (14) calendar days. Stabilization must be completed no later than fourteen (14) calendar days after the construction activity in that portion of the site has temporarily or permanently ceased. Stabilization must be completed no later than twenty-four (24) hours after the construction activity has temporarily or permanently ceased in that portion of the site within two hundred (200) lineal feet of and tributary to a wetland, waterbody, a discernable surface drainage feature or a stormwater system inlet, ~~and with a continuous positive slope to that water feature, must be stabilized with erosion control measures, or temporary or permanent cover, within twenty-four (24) hours after connection to a surface water. All other disturbed portions of the site must be stabilized with erosion control measures, or temporary or permanent cover, within fourteen (14) days after construction activity in that area has temporarily or permanently ceased.~~ If an area is not permanently stabilized, it shall be managed in accordance with subsection 3.5.4.

3.5.6 The weekly inspection requirement of subsection 3.5.4, above, may be reduced to monthly between November 15 and snowmelt if site management conforms to the following:

- (a) Exposed soils are stabilized with established vegetation, straw or mulch, matting, rock, or other approved product such as rolled erosion control product. Seeding is encouraged, but alone is not sufficient.
- (b) Temporary and permanent ponds and sediment traps are graded to capacity before spring snowmelt. This does not include infiltration/filtration facilities, which must be kept free of sediment until the site is fully stabilized.
- (c) Sediment barriers are properly installed ~~at necessary~~ perimeter downslope of all graded areas where offsite transport of sediment may occur without control, and around sensitive locations within the project site.
- (d) Slopes and grades are properly stabilized with approved methods. Rolled erosion control products must be used on slopes greater than 3:1 (H:V) and where erosion conditions dictate.
- (e) Stockpiled soils and other materials subject to erosion are protected by established vegetation, anchored straw or mulch, rolled erosion control product or other durable covering; a barrier prevents movement of eroded materials from the location.
- (f) All construction entrances are properly stabilized.

(g) Snow management protects erosion and sediment control measures.

3.5.7 If a site is actively worked after November 15, all steep slope measures, downgradient and perimeter sediment controls, stockpile stabilization and sediment control measures, swales, channels, culvert outfalls and storm sewer inlets must be maintained in proper working condition at the end of each ~~work-day~~ [construction activities occur](#).

~~3.5~~ **3.6 Agricultural practices.**

- a. The erosion control measures described in section 3.2 of this Rule are not required for land that is used for agricultural activity, provided that a grass or natural vegetation buffer zone extending sixteen (16) feet or the width of an applicable shore impact zone, whichever wider, is maintained along any waterbody or wetland and no fertilizer is used in the zone.
- b. The Board further encourages the use of BMPs (e.g., vegetative swales) in order to slow the flow of the runoff water and allow particulates to settle out and water to infiltrate into the soil prior to discharging to waterbodies and wetlands. ~~These swales~~ [BMPs](#) can effectively remove small amounts of excess sediments, and associated nutrients and heavy metals.

3.7 Erosion and Sediment Control Best Management Practices

3.7.1 Any project that does not meet the regulatory thresholds established in Section 3.2.1 above, shall comply with the erosion and sediment control Best Management Practices set forth below. Such projects should also consider, and implement where feasible, the Site Management Practices in Section 3.5 of these rules.

- a. Create and implement a construction schedule and construction sequencing;
- b. Determine critical erosion areas and establish specific erosion and sediment control BMPs for these areas;
- c. Conduct regular (i.e. daily after rain events, otherwise weekly) site inspections to evaluate critical erosion areas, erosion control and prevention practices, and to discover new erosion areas;
- d. Minimize disturbance of natural soil cover and vegetation;
- e. Minimize, in area and duration, exposed soil and unstable soil conditions;
- f. Install and maintain sediment barriers around the site perimeter and at sensitive locations;
- g. Protect receiving water bodies and wetlands by using installing and properly maintaining erosion and sediment barriers, and placing riprap at outfalls;
- h. Protect storm sewer inlets
- i. Protect adjacent properties from sediment deposition;
- j. Minimize off-site sediment transport by trucks and equipment by using rock construction entrances, street sweeping, and truck wash down areas;
- k. Minimize work in and adjacent to waterbodies and wetlands;
- l. Maintain stable slopes

- [m. Grade slopes to drain away from waterbodies and wetlands;](#)
- [n. Avoid working on or creating steep slopes, and avoid high cuts and fills;](#)
- [o. Minimize disturbance to the surrounding soils, root systems, and trunks of trees adjacent to site activity that are intended to be left standing;](#)
- [p. Minimize the compaction of site soils;](#)
- [q. Stabilize exposed soil and soil stockpile areas using appropriate methods;](#)
- [r. Stabilize waterways and outlets \(including managing five-year, 24-hour event\);](#)
- [s. Horizontal slope grading;](#)
- [t. Design and install permanent erosion control.](#)

4.0 LAKE, STREAM, AND WETLAND BUFFER REQUIREMENTS

4.1 Purposes and Policy. The purpose of Rule 4.0 is to establish, maintain, and protect buffers adjacent to water resources in order to protect and improve the water quality, flow regime and habitat of the water resources in the Comfort Lake - Forest Lake Watershed District, consistent with the interest in avoiding undue disturbance to established public and private activities in littoral and riparian zones. Natural vegetation bordering the bed and banks of lakes, streams and wetlands serves a critical role in maintaining the ecological function of and societal benefits deriving from those water resources. Purposes served by vegetative buffers include bank and shoreline stabilization; erosion prevention; filtration of nutrients, sediments and other pollutants from storm flows; protection of stream beds and banks and mitigation of downstream flooding through moderation of peak flows both into and within the resource; regulation of in-stream temperatures; preservation of aquatic and terrestrial habitat; protection of scenic resources; and maintenance of property values.

4.2 Applicability.

- 4.2.1 Rule 4.0 applies to any lot containing land within the buffer zone of any General Development Lake, Recreational Development Lake, Natural Environment Lake, stream or wetland within the watershed; and
- (a) that results from subdivision of land into two or more buildable lots on or after February 1, 2009; or
 - (b) that is subject to land disturbance for the purpose of a new primary use for which (i) a rezoning or (ii) a land use variance for lot hard surface percentage or structure setback from a wetland or surface water resource has been approved on or after February 1, 2009.

A “new primary use” under this paragraph is defined as a change from one use category (single-family residential, multi-family residential, institutional, commercial, industrial or agricultural) to another; or a change of use within the same use category that, due to the new location or intensity of use, is likely in the Board of Managers’ determination to have a measurable adverse impact on downgradient lake, stream or wetland function. Construction of a structure or hard surface on an unimproved lot of record, or on an improved lot of record following removal of all or the essential part of an existing main structure, is a “new primary use” without a Board determination of adverse impact.

- 4.2.2 Within 45 days of plat recordation under paragraph 4.2.1(a), and before a land disturbance under paragraph 4.2.1(a) or (b), a buffer permit shall be obtained from the

District and an instrument incorporating the requirements of Rule 4.0 and approved by the District shall be recorded with the County.

4.2.3 A buffer shall be indicated by permanent, free-standing markers at the buffer's upland edge, with a design and text approved by Municipality and District staff in writing in order to maintain consistency throughout the community. A marker shall be placed at each lot line, with additional markers at an interval of no more than two hundred (200) feet. If a District permit is sought for a subdivision, the monumentation requirement will apply to each lot of record to be created. On public land or right-of-way, the monumentation requirement may be satisfied by the use of markers flush to the ground, breakaway markers of durable material, or a vegetation maintenance plan approved by City and District staff in writing in order to maintain consistency throughout the community.

4.2.4 Rule 4.0 applies in addition to, and not in place of, any local shoreland ordinance.

4.3 Zone Widths.

4.3.1 Subject to the special provisions in subsections 4.3.2 through 4.3.6, stream, wetland and lake buffer zones are as follows:

- (a) Stream (measured from top of bank) 75 feet
- (b) Lakes (measured from delineated OHWL)
 - (1) Natural environment lake 100 feet
 - (2) Recreational development lake 50 feet
 - (3) General development lake 25 feet
- (c) Wetlands; Based on the wetland function and value assessment the following will be buffer requirement (measured from delineated wetland edge)
 - (1) Preserve 100 feet
 - (2) Manage 1 75 feet
 - (3) Manage 2 50 feet
 - (4) Manage 3 25 feet
- (d) If a lake or wetland is a groundwater-dependent natural resource, the buffer will be one hundred (100) feet. If the stream is a groundwater-dependent natural resource, the streamside zone will be fifty (50) feet, and the middle zone one hundred (100) feet

4.3.2 Where a mapped natural community is associated with a stream, lake or wetland, the upland edge of the middle zone shall be as specified in subsection 4.3.1 or contiguous with the upland edge of the natural community area, whichever is greater.

4.3.3 Where a buffer zone encompasses all or part of a steep slope, the zone or buffer shall extend to the distance specified in subsection 4.3.1 or to the top of the slope, whichever is greater.

4.3.4 Where the 100-year floodplain extends further than the upland edge of the middle zone, the lake buffer or the wetland buffer as specified in subsection 4.3.1, the zone or buffer shall extend to the upland edge of the floodplain.

4.3.5 Where a lake or wetland is encompassed within or contiguous to a stream or lake to which Rule 4.0 applies, the most protective lake, stream, or wetland buffer shall apply.

4.3.6 The District may find compliance with the Rule if the wetland buffer, on average, meets the requirements of the Rule and is no less than fifty (50) percent of the required buffer width at any point. Only buffer up to two hundred (200) percent of the required width will be counted in determining average buffer. The averaged buffer

must be at least as protective of the water resources as the non-averaged buffer. *For example, a recreational development lake with a required fifty (50) foot buffer zone width would have a minimum twenty-five (25) foot buffer zone width and a maximum one hundred (100) foot buffer zone width that would count to the determined average. The total area of the averaged buffer zone must meet or exceed the total area of the required buffer zone.*

4.4 Required Exhibits. The following items shall accompany all permit applications submitted to the District pursuant to Rule 4.0:

- 4.4.1 Property lines and delineation of lands under applicant's ownership;
- 4.4.2 Delineation of existing on-site wetland, shoreland, and floodplain areas;
- 4.4.3 Elevation of the OHWL of each public water on the site, if determined by the Minnesota Department of Natural Resources and of any legally established buffer associated with the public water;
- 4.4.4 Existing and proposed site contour elevations at two-foot intervals, related to NGVD, 1929 datum;
- 4.4.5 Wetland function and value assessment for all wetlands subject to buffer pursuant to Minnesota Routine Assessment Method (MnRAM) 3.2 (including groundwater function) or other method approved by the District;
- 4.4.6 Site plan indicating location of applicable buffer zone; Buffer zone location exhibits shall be submitted as shapefiles.
- 4.4.7 Survey of existing buffer vegetation in accordance with subsection 4.5.2; and 24
- 4.4.8 Buffer Planting Plan in accordance with subsection 4.5.3.

4.5 Limitations in Buffer Zones.

- 4.5.1 Lake, Stream, and Wetland Buffers;. The following activities are prohibited within a lake, stream, or wetland buffer:
- (a) Creating impervious cover.
 - (b) Excavation or placing fill or debris, except for approved shoreline or streambank stabilization activities and temporary placement of fill or debris pursuant to duly-permitted work in the associated waterbody or wetland, in compliance with all conditions of the permit, and in compliance with section 4.6.
 - (c) Altering vegetation, except for (i) vegetative enhancements, as approved in writing by staff; and (ii) the removal of invasive exotic species or of trees for disease control, removal of safety hazards or revegetation. A tree larger than six inches in diameter at a point fifty-four (54) inches above the ground may be removed only on written authorization from District staff on a determination that the function of the buffer will not be diminished.
 - (d) Applying phosphorus-containing fertilizers, except on written authorization from District staff on a determination that phosphorus application is appropriate and will not injure the waterbody.
 - (e) Locating roads or utilities, except pursuant to a crossing of the associated watercourse in accordance with section 4.7. Structures and appurtenances associated with the road or utility shall not be located within the buffer unless no feasible alternative exists.
 - (f) Outlet, flood control and stormwater treatment facilities may be located within the buffer if so approved under Rule 2.0, except that a stormwater basin is not permitted within the buffer of a groundwater-dependent natural resource, unless the basin bottom is at least three (3) feet above the seasonal high water table, and the basin and

associated facilities are designed and maintained to infiltrate the two-year, 24-hour precipitation event.

4.5.2 At the time a buffer is created under Rule 4.0, the District may, depending on site specific conditions, require a planting or landscaping plan to establish adequate native vegetative cover for an area that:

- (a) Has vegetation composed more than thirty (30) percent of undesirable plant species (including, but not limited to reed canary grass, common buckthorn, purple loosestrife, leafy spurge, bull thistle, and other noxious weeds); or
- (b) Consists more than ten (10) percent of bare or disturbed soil or turf grass.

4.5.3 ~~Protection of b~~ Buffer areas described in this rule are to be maintained indefinitely. Where a planting or landscaping plan is required under subsection 4.5.2 or is otherwise needed, the buffer strip plantings must be identified on the site plan and shall comply with the following standards:

- (a) Buffer strips shall be planted with a site appropriate native seed mix as specified by BWSR, MnDOT, NRCS or SWCD, with the exception of a one-time planting with an annual nurse or cover crop such as oats or rye. Native trees and shrubs may be added to supplement ground cover.
- (b) The seed mix shall be broadcast according to BWSR, MnDOT, NRCS or SWCD specifications of the selected mix. The annual nurse or cover crop shall be applied at a minimum rate of thirty (30) pounds per acre. The seed mix selected for permanent cover shall be appropriate for soil site conditions and free of invasive species. BWSR, MnDOT, NRCS or SWCD approved mixtures appropriate for specific soil and moisture conditions can be used to meet these requirements.
- (c) The buffer ~~revegetation~~ revegetation plan shall specify the method for the seeding or planting of the grasses, shrubs, and forbs.
- (d) No fertilizer shall be used in establishing new buffer strips, except when necessary to establish acceptable buffer strip vegetation and then limited to amounts indicated by an accredited soil testing laboratory.
- (e) All disturbed areas shall be mulched and stabilized immediately. Mulch shall be anchored with a disk or tackifier.
- (f) Buffer strips (both natural and created) shall be protected by erosion and sediment control measures during construction in accordance with Rule 3.0.

4.5.4 Applicant may apply to District for grant monies or other District funds, when available, to offset a portion of the cost of re-stabilizing riparian buffer zones.

4.6 Temporary Alterations.

- 4.6.1 Compliance with Rule 3.0 is required, irrespective of the area or volume of earth to be disturbed.
- 4.6.2 Buffer zones and the location and extent of vegetation disturbance shall be delineated on the erosion control plan.
- 4.6.3 Alterations must be designed and conducted to ensure only the smallest amount of disturbed ground is exposed for the shortest time possible. Mulches or similar materials must be used for temporary soil coverage and permanent natural vegetation established as soon as possible.
- 4.6.4 Fill or excavated material shall not be placed to create an unstable slope.
- 4.6.5 When construction, land disturbance, fill or excavation activity occurs within the outer zone, the boundary between the outer and middle zones shall be demarcated

with siltation or other fencing to prevent disturbance of vegetation within the middle zone. When construction, land disturbance, fill or excavation activity occurs within the middle zone, the boundary between the middle and streamside zones shall be demarcated with siltation or other fencing to prevent disturbance of vegetation within the streamside zone.

4.7 Roads and Utilities.

- 4.7.1 A structure, impervious cover or right-of-way maintained permanently in conjunction with a crossing of the waterbody or wetland shall minimize the area of permanent vegetative disturbance to the degree feasible. Minimization includes, but is not limited to, approach roads and rights-of-way that are perpendicular to the crossing and of a minimum width consistent with use and maintenance access needs. 4.7.2 All work shall be in accordance with section 4.6.

4.8 Access to Waterbody or Wetland.

Access to a waterbody or wetland for a lawful private or public use of the resource may be created and maintained. All access surfaces within the buffer zone must be pervious and permanent vegetative disturbance shall be limited to that necessary for access in light of the nature and extent of the permitted use. No facility, other than a footpath or streambank/shoreline stabilization or a facility accessory to a permitted use of the waterbody or wetland and required by its nature to be adjacent to the water, may be located within the buffer zone. The access area must not exceed thirty (30) feet or fifty (50) percent of the lot width along the shoreline or streambank, whichever is less. The access area width should be only as wide as that needed for the intended purpose.

4.9 Trails in Buffer Zone.

The buffer may enclose a trail or a water quality facility on a demonstration that doing so will not significantly reduce the protection afforded the waterbody or wetland. A trail no more than ten (10) feet in width bordered by a pervious buffer of at least five (5) feet on each side is deemed to meet this requirement. The trail or water quality feature shall not count toward buffer width. A non-linear facility for general public use that is required by its nature to be adjacent to the water may be allowed in the buffer on a case-by-case basis if the impact to the buffer is minimized and the project will not negatively impact the lake, stream, or wetland.

5.0 SHORELINE & STREAMBANK ALTERATIONS

5.1 Policy. It is the policy of the District to:

- 5.1.1 Encourage the establishment and maintenance of natural vegetation on shorelines and streambanks and discourage use of other alteration of a shoreline or streambank unless erosion of the shoreline or streambank is occurring.
- 5.1.2 5.1.2 Assure that improvements or alterations of shoreline and streambank areas comply with accepted engineering principles to prevent erosion.
- 5.1.3 5.1.3 Preserve and, wherever feasible, enhance the ecological integrity and natural appearance of shoreline and streambank areas.

5.2 Regulation.

- 5.2.1 No person shall construct or install a shoreline or streambank stabilization partially or wholly below the ordinary high water mark of (a) a natural or altered natural watercourse defined as a public water; or (b) a waterbasin, without first securing

District approval and, if required, posting a financial assurance. Construction or installation of a shoreline or streambank stabilization wholly above the ordinary high water mark of a waterbody may require a permit under Rule 7.0.

- 5.2.2 Notwithstanding subsection 5.2.1, a District permit under Rule 5.0 is required only if:
- (a) a Minnesota Department of Natural Resources public waters work general permit covering shoreline and streambank alterations is in effect; and
 - (b) the general permit excuses from the DNR individual permit requirement property owners that hold a District permit.

5.3 Criteria for Bioengineering. The use of bioengineering is encouraged as an alternative to traditional engineered stabilization techniques for its cost advantage and ecological integrity. Bioengineering techniques should be used to the maximum extent possible under the following criteria.

- 5.3.1 The resultant project shall be structurally stable. Special emphasis shall be given to the stability of the toe of slope and protection of the shoreline and streambank during vegetation establishment.
- 5.3.2 Native vegetation shall be used in all cases. Preferable species include those that form dense root systems or can be planted from cuttings.
- 5.3.3 Bioengineering projects shall include a long-term maintenance plan which will ensure that small erosion spots are corrected and that establishment of native plant materials is successful.

5.4 Bioengineering Required Exhibits. The following exhibits shall accompany the bioengineering permit application (one full-size; one set-reduced to maximum size of 11" x 17"):

- 5.4.1 Site plan showing property lines, delineation of lands under ownership of the applicant; delineation of the existing shoreline; delineation of wetland within the project area; existing contour elevations (if available); and locations and lineal footage of the proposed bioengineering treatment;
- 5.4.2 Site plan prepared by a professional engineer, landscape architect registered in the State of Minnesota, or other qualified professional experienced in the field of shoreline and stream restoration detailing the proposed bioengineering treatment, drawn to scale, with the horizontal and vertical scales noted on the drawing. The detail should show the finished slope, distance lakeward of the bioengineering treatment, ordinary high water level elevation and material specifications; and
- 5.4.3 Detailed planting plan using native vegetation.

5.5 Criteria for Rip Rap Placement. The District favors the use of bioengineering techniques and combined bioengineering/riprap for as much of a shoreline stabilization project as fetch, slope, soil and other relevant conditions allow. Live plantings incorporated in shoreline bioengineering must be native aquatic vegetation and/or native upland plants. For those parts of a stabilization project for which riprap is proposed, a permit applicant must evaluate the use of bioengineering techniques, as well as a combination of bioengineering and riprap, and show that they have been determined to be unsuitable. In addition, rip rap placement shall comply with the following criteria:

- 5.5.1 Rip rap material is to be durable, natural stone common to the setting and of a gradation that will result in a stable shoreline embankment able to withstand ice and wave action.
- 5.5.2 The finished slope of the rock fragments, boulders and/or cobbles should not be

steeper than a ratio of three (3) feet horizontal to one (1) foot vertical (3:1) under normal conditions. Steeper slopes will generally require larger sized rip rap. The finished slope shall be no steeper than 2:1 (horizontal to vertical). Any rock/boulder stabilization project with a proposed finished slope steeper than 2:1 (horizontal to vertical) shall be evaluated in accordance with the conditions for retaining walls.

5.5.3 No rip rap or filter materials is to be placed more than (six) 6 feet waterward of the shoreline measured from the ordinary high water level (OHW) elevation under normal conditions. The encroachment into the water is the minimum amount necessary to provide protection and may not unduly interfere with the flow of water.

5.5.4 A transitional layer consisting of graded gravel, at least six (6) inches deep, and an appropriate geotextile filter fabric shall be placed between the soil material of the existing shoreline and the rip rap to prevent erosion of the embankment and to prevent settlement.

5.5.5 Rip rap placement shall not be attempted when underlying soils are not capable of supporting resulting loads. In these cases, a professional engineer registered in Minnesota should be consulted.

5.5.6 The thickness of the rip rap layers shall be at least 1.25 times the maximum stone diameter, exclusive of toe boulders at least fifty (50) percent buried.

5.5.7 The rip rap shall conform ~~with~~to the natural alignment of the shoreline (i.e., maintaining an undulating or meandering shoreline).

5.5.8 The design must reflect the engineering properties of the underlying soils and any soil corrections or reinforcements. For a shoreline, the design must conform to engineering principles for wave energy dispersion and resistance to deformation from ice pressure and movement, considering prevailing winds and fetch. For a streambank, the design shall conform to engineering principles for the hydraulic behavior of open channel flow, considering channel slope, velocity, tractive forces and upstream and downstream impacts.

5.5.9 Rip rap placement projects shall contain native vegetation planting within the rip rap in an area equal to or greater than twenty-five (25) percent of the overall area of the rip rap. The native vegetation planting plan shall be approved by District staff.

5.5.10 Materials used shall be non-polluting.

5.6 Rip Rap Required Exhibits. The following exhibits shall accompany the rip rap permit application (one full-size; one set-reduced to maximum size of 11" x 17"):

5.6.1 Site plan showing property lines, delineation of lands under ownership of the applicant; delineation of the existing shoreline; delineation of wetland within the project area; existing contour elevations (if available); and locations and lineal footage of the proposed rip rap treatment;

5.6.2 Cross-section detailing the proposed rip rap, drawn to scale, with the horizontal and vertical scales noted on the drawing. The detail should show the finished rip rap slope, transitional layer design and placement, distance lakeward of the rip rap placement, ordinary high water level elevation and material specifications;

5.6.3 Description of the underlying soil materials that will support the rip rap and, if the underlying soils will not support the rip rap, the recommendations of a qualified soils engineer;

5.6.4 Gradation, average diameter, quality and type of rip rap material to be used (normally, a Class III gradation is sufficient);

- 5.6.5 Gradation, quality and type of filter blanket material to be used (normally, Type I gradation is sufficient);
- 5.6.6 Manufacturer's material specifications for proposed geotextile fabric(s);
- 5.6.7 Detailed planting plan for native vegetation planting element of the project; and
- 5.6.8 Narrative and supporting documentation assessing the feasibility of bioengineering for the site.

5.7 Criteria for Retaining Walls.

- 5.7.1 A shoreline or streambank structure with a finished slope steeper than 2:1 (H:V), including but not limited to a rock, boulder or masonry installation, seawall, sheetpile structure or gabion basket, is subject to this section. A single course of riprap or other permanent material less than eighteen (18) inches in height is excepted.
- 5.7.2 A new retaining wall, or repair/reconstruction of an existing retaining wall that increases floodplain encroachment beyond that required by technically sound and accepted repair/reconstruction methods, is permitted only pursuant to a variance. The applicant must demonstrate there is no adequate stabilization alternative.
- 5.7.3 The location of the finished wall shall be verified with a certificate of survey prepared by a registered land surveyor,

5.8 Retaining Wall Required Exhibits. ~~A~~[An](#) application for retaining wall installation must contain an analysis of alternative solutions in addition to a structural/geotechnical analysis prepared by a professional engineer, practicing in civil engineering and registered in the State of Minnesota, showing that the design conforms to accepted engineering principals and will withstand expected ice and wave action and earth pressures.

5.9 Criteria for Laying Sandblankets. All permitted sandblanketing shall comply with the following standards.

- 5.9.1 The sandblanket installation shall comply with section 4.8 and the standards of the DNR for placement of a sandblanket without a public waters work permit.
- 5.9.2 Beaches that are operated by governmental entities, and available to the general public, shall be exempted from the following restrictions: (i) that sandblankets be no more than fifty (50) feet in width and (ii) that sandblankets be installed no more frequently than once every four years.
- 5.9.3 A natural zone of native shoreline plants of the same depth and equal to twenty (20) percent of the width of the sandblanket should be maintained adjacent to the sandblanket.

5.10 Sandblanket Required Exhibits. The following exhibits shall accompany the sandblanket permit application:

- 5.10.1 Site plan showing property lines, delineation of the work area, existing elevation contours of the adjacent upland area, delineation of wetland within the project area, ordinary high water elevation, and regional flood elevation (if available). All elevations must be reduced to NGVD (1929 datum); and
- 5.10.2 Profile, cross-sections and/or topographic contours showing existing and proposed elevations and proposed side slopes in the work area. (Topographic contours should be at intervals not greater than one (1) foot);

5.11 Criteria for Streambank Stabilization. Intact, vegetated and stable shorelines and streambanks provide valuable functions to the associated water resource including prevention of erosion, reinforcement of soils through root structure, trapping of nutrients and sediments, and provision of fish and wildlife habitat. The CLFLWD promotes the

preservation and enhancement of the ecological integrity and natural appearance of shorelines and streambanks with the intent of preventing erosion. When alteration is necessary, the CLFLWD encourages bioengineering, landscaping and preservation of natural vegetation practices.

All proposed streambank stabilization and restorations shall be designed with and in response to an intimate understanding of the aforementioned characteristics unique to the stream reach in question. The physical appearance and operation character of a stream is a product of the adjustment of the stream's boundaries to the magnitude of stream flow and erosional debris produced from the contributing watershed. The individual stream characteristics are further modified by the influence of channel materials, basin relief, and other features of valley morphology along with a local history of land use and sediment deposition.

The unique characteristics of each stream reach shall be fully considered in the design of a streambank stabilization.

5.12 Streambank Stabilization Required Exhibits. The following exhibits shall accompany the streambank stabilization permit application:

- 5.12.1 Site plan prepared by a professional engineer or a landscape architect registered in the State of Minnesota and experienced in the field of stream restoration showing property lines; the ordinary high water (OHW) elevation and floodplain elevation; existing streambank and contour elevations;
- 5.10.1 Stream cross-section(s) depicting entire floodprone width; detailing channel dimensions, such as bankfull stage and the dimension and placement of the proposed stabilization/restoration measure(s). A longitudinal profile depicting the thalweg and top of bank; detailing the dimension and placement of the proposed stabilization/restoration measure(s);
- 5.10.2 Material specifications including plant species and whether species are rooted, seed or cutting;
- 5.10.3 Stream classification and design calculations and documentation; and
- 5.10.4 Detail of proposed site-specific erosion and sediment control practices.

5.13 Other Shoreline Improvements. Types of shoreline improvements not specifically addressed by Rule 5.0 shall require a variance.

6.0 WATERCOURSE AND BASIN CROSSINGS

6.1 Policy. It is the policy of the District to discourage the use of lake beds and beds of waterbodies for the placement of roadways, utilities, water control structures, and associated structures.

6.2 Regulation. No person shall use the beds of any waterbody within the District for the placement of roadways, utilities, water control structures, and associated structures without first securing a permit from the District.

6.3 Criteria. Use of the bed:

- 6.3.1 For all public waters, shall meet a demonstrated public benefit;
- 6.3.2 Shall retain adequate hydraulic capacity;
- 6.3.3 Shall retain adequate navigational capacity;
- 6.3.4 Shall not adversely affect water quality;
- 6.3.5 Shall represent the "minimal impact" solution to a specific need with respect to all

other reasonable alternatives; and

6.3.6 Shall preserve fish and wildlife passage.

6.4 Required Exhibits. The following exhibits shall accompany the permit application:

6.4.1 Construction plans and specifications;

6.4.2 Analysis prepared by a professional engineer or qualified hydrologist showing the effect of the project on hydraulic capacity and water quality;

6.4.3 An erosion control and restoration plan; and

6.4.4 Copy of permit application to Department of Natural Resources, Army Corps of Engineers, and Wetland Conservation Act LGU, if required based on proposed activities.

6.5 Maintenance. A declaration or other recordable instrument stating terms for maintenance of stability and hydraulic and navigational capacity shall be approved by the District shall be recorded in the office of the county recorder or registrar before permit issuance. In place of recordation, a public permittee or a permittee without a property interest sufficient for recordation may assume the maintenance obligation by means of a written agreement with the District. The agreement shall state that if the ownership of the structure is transferred, the owner shall require the transferee to comply with this subsection

6.6 Coordination with other Government Agencies. The District will communicate with the Department of Natural Resources and Wetland Conservation Act LGUs in the review and approval of proposed activities.

7.0 FLOODPLAIN AND DRAINAGE ALTERATIONS

7.1 Policy. It is the policy of the District to:

7.1.1 promote the reasonable use of water resources, such that a landowner may dispose of surface water only in a manner that does not unreasonably burden other landowners;

7.1.2 preserve existing water storage capacity in the 100-year floodplain of all waterbodies and wetlands in the watershed to minimize the frequency and severity of high water;

7.1.3 prohibit development in the 100-year floodplain which will unduly restrict flood flows or aggravate known high water problems; and

7.1.4 preserve the natural hydrology of landlocked basins to minimize flooding risks to structures and ecological impacts within or downgradient of those basins.

7.2 Regulation. No person shall artificially redirect flow across drainage boundaries, nor obstruct the natural flow of surface water, without first obtaining a permit from the District. No person shall alter or fill land below the 100-year flood elevation of any stream, wetland, public water, stormwater management basin, or landlocked basin without first obtaining a permit from either:

(a) the District, or

(b) the appropriate local government unit in accordance with a state-approved floodplain management ordinance.

7.3 Criteria for Floodplain or Drainage Alterations.

7.3.1 Floodplain filling shall not cause a net decrease in flood storage capacity below the projected 100-year flood elevation. The fill volume shall be calculated by a professional engineer registered in the State of Minnesota or by a qualified hydrologist. All new residential, commercial, industrial, institutional buildings, and other habitable or non-habitable structures and stormwater management facilities

Comment [CA18]: BOARD DISCUSSION

Is the District confident that in its deference to municipalities with state-approved ordinances that said ordinance regulates all of these features? They may only cover FEMA-FIS designated 100-yr floodplain and floodway, not wetlands, stormwater basins and landlocked basins where a Zone has not been defined.

Consider adding to the Stormwater Rule, a provision for maintaining wetland and landlocked basin storage.

shall be constructed so that the lowest basement floor and lowest entry elevations of structures comply with the following:

Elevation	Regional Elevation		Detention Basins and Isolated Wetlands		Infiltration Basins			Rain-gardens
	100-yr	EOF	100-yr	EOF	Bottom	100-yr	EOF	EOF
Low Floor Freeboard	2 ft.	1 ft.	0 ft.	NA	0 ft.	NA	NA	NA
Low Opening Freeboard	NA	NA	2 ft.	1 ft.	NA	2 ft.	1 ft.	0.5 ft.

7.3.2 The minimum building elevation alternatively may be defined as the lowest grade elevation in contact with the structure rather than the lowest basement floor elevation for perched water basin situations if the following criteria are met:

- (a) Geologic mapping and all available data sources indicate the adjacent waterbody is not a surface expression of a regional water table but is a perched groundwater system;
- (b) The basement floor elevation will be four (4) feet above the currently observed ground water elevations in the area as demonstrated by two borings or observation wells located between each structure and the waterbody; and
- (c) The basement floor elevation will be two (2) feet above the elevation of any known historic high groundwater elevations for the area.

7.3.3 Within the drainage area to a landlocked basin, the separation between the lowest basement floor elevation and the 100-yr high water elevation cited in subsection 7.3.1, shall be at least three feet, unless the building is at least two feet above the basin overflow.

7.3.4 No person will alter stormwater flow at a property boundary by changing land contours, diverting or obstructing surface or channel flow, or creating a basin outlet, unless the District finds that the alteration will not have an unreasonable impact on an upgradient or downgradient landowner and will not adversely affect flood risk, basin or channel stability, groundwater hydrology, stream or channel baseflow, water quality or aquatic or riparian habitat.

7.4 Required Exhibits. The following exhibits shall accompany the permit application:

- 7.4.1 Site Plan indicating location of 100-year flood elevation of any wetland, public water, stormwater management basin, or landlocked basin on or directly adjacent to the property;
- 7.4.2 Site Plan and supporting calculations indicating location and volume of any floodplain impact and mitigation;
- 7.4.3 Site Plan indicating lowest floor elevations of all proposed structures; and
- 7.4.4 Analysis of impact of alterations to surface flow on upgradient and downgradient landowners, flood risk, basin or channel stability, groundwater hydrology, stream or channel baseflow, water quality or aquatic or riparian habitat.

8.0 WETLAND MANAGEMENT

Wetlands are important to the District's water resources because they reduce the likelihood of flood damage by functioning like natural sponges, storing water and slowly releasing it over time. Wetlands also help control increases in the rate and volume of runoff in urban areas and buffer shorelines against erosion. Wetlands help improve water quality by removing or retaining nutrients carried in surface runoff, processing organic wastes and reducing the amount of sediment before it reaches open water. Because of their value to surrounding water resources, natural wetlands should be protected from uses as primary discharge for untreated stormwater.

8.1 Policy. It is the policy of the Board of Managers to support the Wetland Conservation Act Local Governing Unit's efforts to:

- (a) Manage wetlands to achieve no-net loss in the quantity, quality, and biological diversity of wetlands in the District.
- (b) Increase the quantity, quality, and biological diversity of wetlands in the District by restoring or enhancing diminished or drained wetlands.
- (c) Avoid impacts from activities that destroy or diminish the quantity, quality, and biological diversity of District wetlands.
- (d) Replace affected wetlands where avoidance is not feasible and prudent.
- (e) Encourage natural vegetation around wetlands which is integral to maintaining the water quality and ecological functions that wetlands provide.
- (f) Follow general recommendations presented in the County Groundwater Plans

8.2 Wetland Impact Permits. Any wetland impact (filling, draining, ditching, dredging, or altering vegetation or grades in a buffer zone surrounding a wetland) is required to conform to the Wetland Conservation Act (WCA). The District does not currently serve as the Local Governing Unit (LGU) for WCA for any of the communities in the District, and therefore does not require the review of wetland impact, permit, and replacement/mitigation plans. Local Governing Unit regulations must be followed.

Activities conducted in wetlands may require a permit from the District under the other Rules of the District, see Rules 2.0 through 7.0 in particular.

8.3 Wetland replacement. The District urges wetland replacement, where permitted, shall be of the same or improved quality, type and function, and in accordance with the following prioritization for the location of the replacement wetland (both constructed and banked).

- (a) On site replacement is most preferred;
- (b) Within the same sub-watershed;
- (c) Within adjoining sub-watershed;
- (d) Within the District;
- (e) Outside of the District is the least preferred;

8.4 Technical Evaluation Panel. The District shall participate as able, in the activities and deliberations of the technical evaluation panel (TEP) in accordance to the WCA process.

9.0 FEES

9.1 Policy Findings. The Board of Managers finds that:

- 9.1.1 By encouraging applicants to seek permits for potential projects, the public benefits by improving or maintaining water quality and quantity of water resources in the District. Other benefits include reduced inspection and enforcement costs for

correcting unpermitted activities in violation of District rules, state and federal clean water laws.;

- 9.1.2 it is in the public interest that certain projects, be inspected and analyzed by District staff to provide the Board of Managers sufficient information to evaluate compliance with District goals and Rules and applicable law. The District's annual tax levy should not be used to pay such costs for these development projects; and
- 9.1.3 from time to time persons perform work requiring a permit from the District without a permit, and persons perform work in violation of an issued District permit. The costs of engineering inspection and analysis in such cases exceeds those costs where the applicant has complied with District requirements. The District's annual tax levy should not be used to pay such costs which are incurred because of a failure to meet District requirements.

9.2 Site Inspections. ~~A site inspection by District staff shall be performed in the following cases:~~

- 9.2.1 ~~commercial, industrial, or multi-family residential developments;~~
- 9.2.2 ~~single family residential developments greater than five (5) acres;~~
- 9.2.3 ~~any alterations of a floodplain;~~
- 9.2.4 ~~where any person performs any work for which a permit is required under these Rules without having first obtained a permit from the District, or, performs any work in violation of any terms or conditions of a permit issued by the District under these Rules; or~~
- 9.2.5 ~~any project which, due to its location, scope, or construction techniques, requires inspection as part of permit review or in order to determine compliance with District Rules and applicable law.~~

9.3 Calculation of Fees. In all cases described in section 9.2, the permittee, property owner, or person responsible for a violation shall pay to the District a non-refundable permit fee and cash escrow established to reflect the District's actual costs of permit application review and field inspection of the work, including investigation of the area affected by the work, analysis of the work, services of a consultant, including engineering and legal consultants, and activity performed to determine or secure compliance with the permit and District rules. The permit fee and escrow schedule will be established, and amended from time to time, by resolution of the Board of Managers.

9.4 Violation Procedures and Payment of Fees.

- 9.4.1 The enforcement of all unpermitted work will fall under Rule 12.0.
- 9.4.2 The District shall notify any person performing work described in subsection 9.2.4 of this Rule of the violation. If a permit has not been issued for the work, the person performing the work shall promptly apply for a permit and pay the permit application fee and cash escrow. If a permit has previously been issued, the Board may rescind the permit if it finds violations of permit terms.
- 9.4.3 On receipt of a permit application, exhibits and completion of any necessary inspection and analysis showing that the work to be performed is in accordance with District requirements, the Board may issue a permit. On permit approval, the Board shall notify the permit applicant of the fee due. The fee shall be paid to the District within thirty (30) days from the date of permit approval and shall be received by the District prior to actual issuance of the permit.
- 9.4.4 In cases where the permit approved by the Board requires further monitoring of the

project by District staff or consultants, the District shall notify the applicant of the monitoring fee due. The fee shall be paid to the District within thirty (30) days from the date of notice and failure to pay the fee shall constitute a violation of the permit terms and the Board may rescind the permit.

9.5 Recovery of Fee. In all cases, fees will be due within thirty (30) days of invoice by the District. The fee provided for in this Rule may be recovered by the District by any legal action authorized by law.

9.6 Governmental Agencies Exempt. The fee provided for in this Rule shall not be charged to any agency of the United States or any governmental unit in the State of Minnesota.

10.0 FINANCIAL ASSURANCES

Comment [CA19]: LEGAL – review warranted

10.1 Policy. It is the policy of the District to protect and conserve the water resources of the District by assuring compliance with the District’s Rules in the performance of activities within the District, and to assure compliance where necessary by requiring a ~~letter of credit or cash escrow~~ financial assurance with a permit application that is conditioned on adequate performance of the authorized activities and compliance with District Rules.

10.2 Form and Conditions of a Letter of Credit, Surety Bond or Cash Escrow.

10.2.1 The District may require a letter of credit, surety bond or cash escrow in a form approved by the District for an activity regulated under these Rules. A commercial assurance shall be from an issuer licensed to issue such assurances in Minnesota. The assurance shall be submitted by the permittee but the principal for a letter of credit need not be the permittee.

10.2.2 The assurance shall be in favor of the District and conditioned on the permittee’s performance of the activities authorized in the permit in compliance with all applicable laws, including the District’s Rules, the terms and conditions of the permit and payment when due of any fees or other charges authorized by law, including the District’s Rules. The assurance shall state that in the event the conditions of the assurance are not met, the District may make a claim against it.

10.2.3 The assurance must be valid and in force for at least the permit term.

10.2.4 The form of the financial assurance shall be one or a combination of the following to be determined by the District:

(a) Cash deposit - The first \$5,000 of the financial assurance for all work shall be by cash deposit to the District. The cash will be held by District in a separate account.

(b) Security deposit - Deposit, either with the District, a responsible escrow agent, or trust company, at the option of the District, either:

i. An irrevocable letter of credit, negotiable bonds of the kind approved for securing deposits of public money, or other instruments of credit from one or more financial institutions, subject to regulation by the state and federal government wherein said financial institution pledges funds are on deposit and guaranteed for payment.

ii. Cash in U.S. currency.

iii. Other forms and securities (e.g., disbursing agreement) as approved by the District.

Comment [CA20]: ADMIN / LEGAL

Standard practice of most WDs; ok with cash deposit requirement?

10.3 Assurance Amount. A standard assurance schedule shall be set and revised from time to time by the Board of Managers by resolution as the amount the Board deems necessary to cover the following potential costs to the District:

- (a) Application, field inspection, monitoring and related fees authorized under Minn. Stat. § 103D.345;
- (b) The cost of maintaining and implementing protective measures set forth in or incorporated into the permit; and
- (c) The cost of remedying damage resulting from permit noncompliance or for which the permittee otherwise is responsible.

10.4 Use of Assurance. The District may obtain and use funds in accordance with the procedures stated here and those stated in the bond, letter of credit or cash escrow agreement.

- (a) This financial assurance shall hold the district free and harmless from all suits or claims for damages resulting from the negligent grading, removal, placement or storage of rock, sand, gravel, soil or other like material within the District.
- (b) The District may apply the proceeds of any financial assurance it holds to reimburse its reasonable costs incurred including, but not limited to, administrative, ~~and~~ consultant costs, remedial work by the district of a contractor under contract with the District, and attorneys' fees. If the District's reasonable costs exceed the proceeds of financial assurances, the property owner will be responsible for the outstanding amount.
- (c) The District may access the financial assurance for remediation actions if any of the conditions listed below exist:
 - i. Abandonment. The Applicant ceases land disturbing activities and/or filling and abandons the work site prior to completion of the grading plan.
 - ii. Failure to implement the SWPPP or ESC Plan. The Applicant fails to conform to the grading plan and/or the SWPPP as approved by the District.
 - iii. Failure to perform. The techniques utilized under the SWPPP fail within one year of installation.
 - ~~i~~.iv. Failure to reimburse District. The Applicant fails to reimburse the District for corrective action taken.

10.5 Managing the Financial Assurance

- (a) If at any time during the course of the work the balance of the Financial Security falls below 50% of the total required deposit, the Applicant shall make another deposit in the amount necessary to restore the cash deposit to the required amount. If the Applicant does not bring the financial security back up to the required amount within seven (7) days after notification by the District that the amount has fallen below 50% of the required amount the District may:
 - i. Revoke permits - Revoke any permit issued by the District to the Applicant for the site in question or any other of the Applicant's sites within the District's jurisdiction.
- (b) Proportional reduction of the financial security. When more than one-third of the applicant's maximum exposed soil area achieves final stabilization, the District can reduce the total required amount of the financial security by one-third. When more than two-thirds of the applicant's maximum exposed soil area achieves final stabilization, the District can reduce the total required amount of the financial security to two-thirds of the initial amount. This reduction in financial security will be determined by the District.

10.6 Emergency Action. If circumstances exist such that noncompliance with these rules poses an immediate danger to the public health, safety and welfare, as determined by the District,

the District may take emergency preventative action. The District shall also take every reasonable action possible to contact and direct the applicant to take any necessary action. Any cost to the District for emergency action may be recovered from the applicant's financial security.

10.4 **10.7 Release of Financial Assurance.** On written notification of completion of a project, the District will inspect the project to determine if the project is constructed in accordance with the terms of the permit and District Rules. If the project is completed in accordance with the terms of the permit and District Rules and there is no outstanding balance for unpaid review, ~~and~~ inspection fees, and remedial work, the District will issue a letter of compliance and release the assurance. The District does not pay interest on assurances. If the District has not inspected the project and made a determination about the project's compliance with the above criteria within sixty (60) days of District receipt of written notification of project completion, the assurance is deemed released. In this event, the District will provide a written letter releasing the assurance if needed to meet the issuer's requirements.

11.0 VARIANCES

- 11.1 Variances Authorized.** The Board of Managers may hear requests for variances from the literal provisions of these Rules in instances where their strict enforcement would cause undue hardship because of circumstances unique to the property under consideration. The Board of Managers may grant variances where it is demonstrated that such action will be in keeping with the spirit and intent of these Rules. A variance shall contain conditions to prevent or mitigate adverse impacts from the activity.
- 11.2 Standard.** In order to grant a variance, the Board of Managers shall determine that the special conditions that apply to the structure or land in question do not apply generally to other land or structures in the District, that the granting of the variance will not merely serve as a convenience to the applicant, and that the variance will not impair or be contrary to the intent of these Rules. A hardship cannot be created by the landowner, the landowner's agent or representative, or a contractor. Economic hardship alone is not grounds for issuing a variance.
- 11.3 Term.** Unless terminated under section 11.5, a variance will remain valid for the same term as the permit of which it is a part.
- 11.4 Procedure.** The procedure for requesting a variance to the District's rules can be obtained from the contacting the District Administrator.
- 11.5 Violation.** A violation of any condition set forth in a variance shall be a violation of the District Rules and may terminate the variance.

12.0 **ENFORCEMENT**

Comment [CA21]: LEGAL – Review warranted

- 12.1 Administrative Order.** The District may issue a compliance order when it finds that a proposed or initiated project presents a serious threat of flooding, soil erosion, sedimentation, or adverse effect on water quality or otherwise violates any Rule of the District or condition of a District permit.
- 12.2 Violation of Rules a Misdemeanor.** Violation of these Rules, a stipulation agreement made, an enforcement order, or a permit issued by the Board of Managers pursuant to these Rules is a misdemeanor and violators are subject to a fine or imprisonment or both. Permits may be suspended until the applicant has corrected the violation. Each day that a separate

violation exists shall constitute a separate offense.

12.3 District Court Action. The Board of Managers may exercise all powers conferred upon it by Minnesota Statutes Chapter 103D in enforcing these Rules, including criminal prosecution, injunction, action to compel performance, restoration, abatement, or other appropriate action.

12.4 Notification of Failure of the Permit.

- (a) The District shall notify the permit holder of the failure of the permit's terms, standards or conditions.
- (b) Initial Contact. The initial contact will be to the party or parties listed on the permit application as contacts. Except during an emergency action, forty-eight (48) hours after notification by the District or seventy-two (72) hours after the failure of erosion and sediment control measures, whichever is less, the District, at its discretion, may begin corrective work. Such notification may be in writing; if it is verbal, a written notification shall follow as quickly as practical. If after making a good faith effort to notify the responsible party or parties, the District has been unable to establish contact, the District may proceed with corrective work. When conditions are such that time is of the essence in controlling erosion. During such a condition the District may take immediate action, and then notify the applicant as soon as possible.

12.5 Failure of the Permit.

- (a) Erosion Off-site. If erosion breaches the perimeter of the site, the applicant shall immediately develop a cleanup and restoration plan, obtain the right-of-entry from the adjoining property owner, and implement the cleanup and restoration plan within forty-eight (48) hours of obtaining the adjoining property owner's permission. In no case, unless written approval is received from the District, may more than seven (7) calendar days go by without corrective action being taken. If in the discretion of the District, the permit holder does not repair the damage caused by the erosion, the District may do the remedial work required. When restoration to wetlands and other resources are required, the applicant shall be required to work with the appropriate agencies to ensure that the work is done properly.
- (b) Erosion into Streets, Wetlands or Water Bodies. If eroded soils (including tracked soils from construction activities) enter or appear likely to enter streets, wetlands, or other water bodies, cleanup and repair shall be immediate. The applicant shall provide all traffic control and flagging required to protect the traveling public during the cleanup operations.
- (c) Failure to do Corrective Work. When an applicant fails to conform to any provision of this policy within the time stipulated, the District may take the following actions.
 - i. Stop Work Order. Issue a stop work order.
 - ii. Permit Revocation. Revoke any permit issued by the District to the applicant for the site in question or any other of the applicant's sites within the District's jurisdiction.
 - iii. Correction by District. Correct the deficiency or hire a contractor to correct the deficiency.
 - iv. The applicant shall reimburse the District for all costs incurred in correcting deficiencies. If payment is not made within thirty (30) days after costs are incurred by the District, payment will be made from the applicant's financial securities as described in Rule 10.

- ~~iv.~~ If there is an insufficient financial amount in the applicant's financial securities as described in Rule 10, the District may assess the remaining amount against the property. As a condition of the permit, the owner shall waive notice of any assessment hearing to be conducted by the District, concur that the benefit to the property exceeds the amount of the proposed assessment, and waive all rights by virtue of Minnesota Statute § 429.081 to challenge the amount or validity of assessment.

13.0 INSPECTIONS AND MAINTENANCE

13.1 Inspections and record keeping

- (a) Applicant responsibilities. The applicant is responsible for inspections and record keeping during and after construction for all privately-owned stormwater treatment practices on the site.
- (b) District inspections. The District reserves the right to conduct inspections on a regular basis to ensure that both temporary and permanent stormwater management and erosion and sediment control measures are properly installed and maintained prior to construction, during construction, and at the completion of the project. The District shall consider that mandatory inspections be conducted as follows:
 - i. Before any land disturbing activity begins
 - ii. Before or during the installation of permanent stormwater treatment systems
 - iii. At the completion of the project
 - iv. Prior to the release of financial securities

9.7 13.2 Site Inspections. A site inspection by District staff shall be performed in the following cases:

- ~~9.2.6~~ (a) Commercial, industrial, or multi-family residential developments;
- ~~9.2.7~~ (b) Single family residential developments greater than five (5) acres;
- ~~9.2.8~~ (c) Any alterations of a floodplain;
 - ~~A. Where any person performs any work for which a permit is required under these Rules without having first obtained a permit from the District, or, performs any work in violation of any terms or conditions of a permit issued by the District under these Rules; or~~
- (d)
- (e) Any project which, due to its location, scope, or construction techniques, requires inspection as part of permit review or in order to determine compliance with District Rules and applicable law.

~~9.2.9~~ z

13.3 Right of entry and inspection

- (a) The issuance of a permit constitutes a right-of-entry for the District or its authorized representative to enter upon the construction site. The applicant shall allow the District and its authorized representatives, upon presentation of credentials, to:
 - i. Enter upon the permitted site for the purpose of obtaining information, examining records, and conducting investigations or surveys;
 - ii. Bring such equipment upon the permitted development as is necessary to conduct such surveys and investigations;
 - iii. Examine and copy any books, papers, records, or memoranda pertaining to

activities or records required to be kept under the terms and conditions of the permit;

- iv. Inspect the stormwater pollution control measures;
- v. Sample and monitor any items or activities pertaining to stormwater pollution control measures; and
- vi. Correct deficiencies in stormwater and erosion and sediment control measures.

13.4 Long term inspection and maintenance of private stormwater facilities

- (a) **Maintenance Plan Required.** No private stormwater facilities may be approved unless a maintenance agreement is recorded against the title that defines who will conduct the maintenance, the type of maintenance necessary to ensure effective performance, and the maintenance intervals. All private stormwater facilities shall be inspected by the property owner and maintained in proper condition by the owner consistent with the performance goals for which they were originally designed.
 - i. **Facility Access.** The applicant shall obtain all necessary easements or other property interests to allow access to the facilities for inspection or maintenance for both the responsible party and the District or authorized representative.
 - ii. **Removal of Settled Materials.** All settled materials including settled solids, shall be removed from ponds, sumps, grit chambers, and other devices as necessary and disposed of properly.
 - iii. **Inspections.** All stormwater facilities within the District shall be inspected by the property owner at a frequency consistent with the maintenance plan. Inspection reports shall be provided to the District upon request.

13.5 Long term inspection and maintenance of public stormwater facilities

- (a) **Maintenance Plan Required.** No private stormwater facilities may be approved unless a maintenance agreement is recorded against the title that defines who will conduct the maintenance, the type of maintenance necessary to ensure effective performance, and the maintenance intervals.
- (b) **Acceptance of Publicly Owned Facilities.** Before work under the permit is deemed complete; the permittee must submit as-builts and a Maintenance Plan, recorded against the title demonstrating at the time of final stabilization that the stormwater facilities conform to design specifications. A final inspection shall be required before a local governmental unit accepts ownership of the stormwater facilities.
- (c) **Maintenance.** The local governmental unit shall perform maintenance of publicly owned stormwater facilities in accordance with the comprehensive stormwater management plan, the duly recorded maintenance agreement, and other regulatory requirements.

This is a true and correct copy of the Rules of the Comfort Lake - Forest Lake Watershed District as amended and adopted by the Board of Managers on ~~March 24~~ _____, ~~2011~~ 2017;

The Effective date for the District's adopted Rules shall be: ~~March 24~~ _____, ~~2011~~ 2017.

Jackie A. Anderson, President

Jon W. Spence, Vice President

Wayne S. Moe, Secretary

Stephen Schmaltz, Treasurer

~~Richard P. Damchik~~ Jackie McNamara, President
Assistant Treasurer

~~Jackie A. Anderson, Vice President~~

~~John T. Lynch, Treasurer~~

~~Jon W. Spence, Manager~~

Addendum A. Groundwater

A.1.1 Background. The Washington County Water Consortium initiated the process of developing model groundwater rules for future adoption by watershed districts located in Washington County in spring 2004. As part of this process, Emmons and Olivier Resources (EOR) produced a report for the Washington County Water Consortium entitled, “Incorporating Groundwater Protection into Watershed District Rules”.

The resulting report provided potential rule language pertaining to groundwater appropriations, volume control, groundwater quality, and groundwater dependent natural resources. The District’s proposed groundwater rules come directly from the EOR report.

Because the District rules do not have a section specifically addressing groundwater, language addressing the referenced groundwater issues are scattered throughout the rules discussing other topics (i.e. stormwater management). For this reason, this groundwater addendum consolidates all the district rules concerning groundwater into one place.

It is the general policy of the Board of Managers to follow general recommendations presented in the County Groundwater Plans (located in subsection 2.1.9 and section 4.1 of District rules). While Washington County does have an adopted groundwater plan, Chisago County currently does not. Chisago County started work on one in 2007 as part of the Chisago County Geologic Atlas project (in partnership with the Minnesota Geologic Survey and Minnesota Department of Natural Resources).

The following bullets represent specific language within the District’s rules pertaining to groundwater and details where each are located in the District’s rules. Each specific rule is categorized in the four headings used in the Washington Water Consortium EOR report; groundwater appropriations, volume control, groundwater quality, and groundwater dependent natural resources.

Groundwater Appropriations

Objective: To monitor the use of groundwater in areas where existing wells and/or groundwater dependent natural resources could be negatively impacted by overuse of groundwater. Negative impacts include reduced flow to surface water bodies, lowering of lake and wetland levels, or interference with other wells.

- To manage a sustainable water supply ensuring ample, high quality groundwater is available for residential, commercial, and natural resource needs. (Appropriations not specifically addressed in rules, however, volume control standards help maintain groundwater supply and protect groundwater quality).

Volume control

Objective: To control the rate and volume of stormwater runoff so that surface water and groundwater quantity and quality are protected, soil erosion is minimized, flooding potential is reduced, and thermal impacts are reduced. In addition, it is designed to address the

preservation of natural infiltration and recharge of groundwater to ensure that subsurface flows are maintained for groundwater dependent natural resources such as lakes, streams, wetlands, plant communities, and drinking water supplies

- Assure property owners control the rate and volume of stormwater runoff originating from their property so that surface water and groundwater quantity and quality is protected, soil erosion is minimized, flooding potential is reduced and thermal impacts are reduced (located in subsection 2.1.6 of rules).
- Preserve natural infiltration and recharge of groundwater and to maintain subsurface flows which maintain groundwater dependent resources including lakes, streams, wetlands, plant communities and drinking water supplies (located in subsection 2.1.1 of rules).

Groundwater Quality

Objective: To protect groundwater quality while promoting groundwater recharge. Many of the current stormwater management/water quality standards prohibit the use of volume control practices for groundwater in certain applications (e.g. commercial, industrial, and institutional land uses) due to the potential for groundwater contamination. This rule would allow for controlled infiltration in these areas by using best management practices (BMPs) to pre-treat the stormwater runoff before it is infiltrated.

Language included in the District rules pertaining to groundwater quality:

It is the policy of the District:

- Require management of stormwater flow to limit sediment, nutrient, and metals conveyed to the groundwater (located in subsection 2.1.4 of rules).
- Manage land-use activities to minimize adverse impacts to groundwater quality (located in subsections 2.1.7, 2.5.5, and 8.1 (f) of rules).
- The District will work with all communities and non-community public water supply systems as they develop and implement their wellhead protection plan (located in subsection 2.1.8 of District rules).

Groundwater Dependent Natural Resources

Objective: To protect the unique and sensitive resources found in Washington County. While there is some overlap in this standard with the volume control and groundwater quality standards, it addresses groundwater protection by providing specific criteria for vegetative buffers, stormwater management, water quality, and wetland bounce and duration.

- Promote groundwater/surface water management practices that protect the hydrologic functions of groundwater dependent resources (located in subsection 2.5.7 of District rules);
- Limit activities that result in the loss of locally/unique groundwater dependent resources (located in subsection 2.1.9 of District rules).
- Basin in Contributing Area to Groundwater-Dependent Natural Resource. A stormwater basin within the surface contributing area to a groundwater-dependent natural resource must contain and infiltrate the volume generated by a two-year, 24-hour storm event, if

feasible. The basin bottom must be at least three feet above the seasonally high water table. If this infiltration standard is not met, basin outflow must be non-erosive and routed through a subsurface system, flow spreader or other device that discharges water through or across the ground to lower discharge temperature to that of the ambient soil (located in 2.5.6 of District rules).

- If a lake or wetland is a groundwater-dependent natural resource, the buffer will be one hundred (100) feet. If the stream is a groundwater-dependent natural resource, the streamside zone will be fifty (50) feet, and the middle zone one hundred (100) feet (located in subsection 4.3.1 (d) of District rules).