

**Shingle Creek
And
West Mississippi**

Watershed Management Commissions

Rules and Standards

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**SHINGLE CREEK/WEST MISSISSIPPI
WATERSHED MANAGEMENT COMMISSIONS
RULES AND STANDARDS**

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POLICY STATEMENT

The Shingle Creek and West Mississippi Watershed Management Commissions are Joint Powers Associations of the State under the Minnesota Watershed Act, and watershed management organizations as defined in the Metropolitan Surface Water Management Act. These acts provide the Commissions with power to accomplish their statutory purpose: the conservation, protection, and management of water resources in the boundaries of the watersheds through sound scientific principles.

The Commissions have adopted a water resources management plan pursuant to the Acts. These Rules implement the plan's principles and objectives.

Land alteration and utilization can affect the rate and volume and degrade the quality of surface water runoff within the watersheds. Sedimentation from ongoing erosion and construction activities will reduce hydraulic capacity of waterbodies and degrade water quality. Water quality problems already exist in many waterbodies in the watershed. Several of the waterbodies have been designated by the State of Minnesota as Impaired Waters, and do not meet state water quality standards.

Activities that increase the rate or volume of stormwater runoff will aggravate existing flooding problems and contribute to new ones. Activities that degrade runoff quality will cause quality problems in receiving water. Activities that fill floodplain or wetland areas will reduce flood storage and hydraulic capacity of waterbodies and will degrade water quality by eliminating the filtering capacity of such areas.

These Rules and Standards protect the public health, welfare, and natural resources of the watershed by regulating the improvement or alteration of land and waters in the watershed to 1) reduce the severity and frequency of high water, 2) preserve floodplain and wetland storage capacity, 3) improve the chemical and physical quality of surface waters, 4) reduce sedimentation, 5) preserve the hydraulic and navigational capacities of waterbodies, 6) promote and preserve natural infiltration areas, and 7) preserve natural shoreline features. In addition to protecting natural resources, these Rules and Standards are intended to minimize future public expenditures on problems caused by the improvement or land and water alterations.

RELATIONSHIP WITH MUNICIPALITIES AND COUNTY

The Commissions recognize that the control and determination of appropriate land use is the responsibility of the municipalities and the county. The Commissions will review projects involving land-disturbing activities as requested by the local municipalities. The Commissions intend to be active in the regulatory process to ensure that water resources are managed in accordance with its goals and policies. The Commissions will require a project review for developments and improvements in the watershed that meet the thresholds specified in the Rules.

The Commissions desire to provide technical advice to the municipalities in the preparation of local stormwater management plans and the review of projects that may affect water resources prior to investment of significant public or private funds.

RULE A - DEFINITIONS

For the purposes of these Rules, unless the context otherwise requires, the following words and terms shall have the meanings set forth below. References in these Rules to specific sections of the Minnesota Statutes or Rules include amendments, revisions, or recodifications of such sections. The words “shall” and “must” are mandatory; the word “may” is permissive.

Abstraction. Removal of stormwater from runoff, by such methods as infiltration, evaporation, transpiration by vegetation, and capture and reuse, such as capturing runoff for use as irrigation water.

Agricultural Activity. The use of land to produce agronomic, horticultural or silvicultural crops, including nursery stock, sod, fruits, vegetables, flowers, cover crops, grains, Christmas trees, and grazing.

Alteration or Alter. When used in connection with public waters or wetlands, any activity that will change or diminish the course, current, or cross-section of public waters or wetlands.

Applicant. Any person or political subdivision that submits an application to the Commissions for a project review under these Rules.

Best Management Practices (BMPs). Techniques proven to be effective in controlling runoff, erosion and sedimentation including those documented in the Minnesota Construction Site Erosion and Sediment Control Planning Handbook (BWSR 1988), Protecting Water Quality in Urban Areas (MPCA 2000), and the Minnesota Stormwater Manual (MPCA 2005) as revised.

Biofiltration. Using living material to capture and/or biologically degrade or process pollutants prior to discharging stormwater, such as directing runoff through a vegetated buffer or to a rain garden or vegetated basin with an underdrain.

Bioretention. A terrestrial-based (upland, as opposed to wetland) water quality and water quantity control process. Bioretention employs a simplistic, site-integrated design that provides opportunity for runoff infiltration, filtration, storage and water uptake by vegetation.

Buffer Strip. An area of natural, unmaintained, vegetated ground cover abutting or surrounding a watercourse or wetland.

BWSR. The Minnesota Board of Water and Soil Resources.

Commission. The Shingle Creek or West Mississippi Watershed Management Commission, as applicable.

Commissioners. The Board of Commissioners of the Shingle Creek or West Mississippi Watershed Management Commissions.

Compensatory Storage. Excavated volume of material below the floodplain elevation required to offset floodplain fill.

Common Plan. A 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, under one proposed plan. A “common plan” may consist of non-contiguous separate projects. For discrete construction projects that are located within a larger common plan that are at least one fourth mile apart, each project (e.g., individual structure) can be treated as a separate plan of development or sale provided no land disturbing activity is proposed between the projects.

County. Hennepin County, Minnesota.

Dead Storage. The permanent pool volume of a water basin or the volume below the runout elevation of a water basin.

Detention Basin. Any natural or manmade depression for the temporary storage of runoff.

Development. The construction of any structure on or the subdivision of land.

Drain or Drainage. Any method for removing or diverting water from waterbodies, including excavation of an open ditch, installation of subsurface drainage tile, filling, diking, or pumping.

Erosion. The wearing away of the ground surface as a result of wind, flowing water, ice movement, or land disturbing activities.

Erosion and Sediment Control Plan. A plan of best management practices (BMPs) or equivalent measures designed to control runoff and erosion and to retain or control sediment on land during the period of land disturbing activities in accordance with the standards set forth in these Rules.

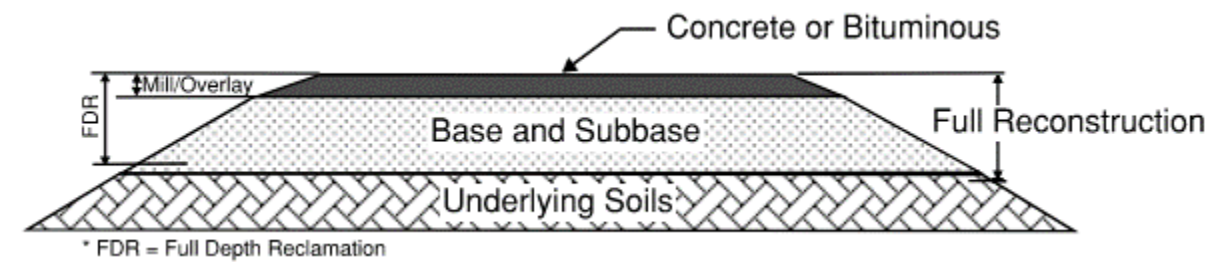
Excavation. The artificial removal of soil or other earth material.

Fill. The deposit of soil or other material by artificial means.

Filtration. A process by which stormwater runoff is captured, temporarily stored, and routed through a filter bed to improve water quality and slow down stormwater runoff.

Floodplain. The area adjacent to a waterbody that is inundated during a 100-year flood.

Fully Reconstructed Impervious. Areas where impervious surfaces have been removed down to the underlying soils. Activities such as structure renovation, mill and overlay projects, full depth reclamation projects, and other pavement rehabilitation projects that do not expose underlying soils beneath the structure, pavement, or activity are not considered fully reconstructed (see figure below). Maintenance activities such as catch basin repair/replacement, utility repair/replacement, pipe repair/replacement, lighting, and pedestrian ramp improvements are not considered fully reconstructed.



Full Depth Reclamation. A rehabilitation method in which the full thickness of the asphalt pavement is pulverized and blended with a predetermined portion of underlying materials (base and/or subbase) to provide an upgraded, homogeneous material.

Impaired Water. A waterbody that does not meet state water quality standards and that has been included on the MPCA Section 303(d) list of Impaired Waters of the state.

Impervious Surface. A surface compacted or covered with material so as to be highly resistant to infiltration by runoff. Impervious surface shall include roads, driveways and parking areas, whether or not paved, sidewalks greater than 3 feet wide, patios, tennis and basketball courts, swimming pools, covered decks and other structures. Open decks with joints at least ¼ inch wide, areas beneath overhangs less than 2 feet wide, and sidewalks 3 feet or less wide shall not constitute impervious surfaces under these Rules.

Infiltration. The passage of water into the ground through the soil.

Infiltration Area. Natural or constructed depression located in permeable soils that capture, store, and infiltrate the volume of stormwater runoff associated with a particular design event.

Interested Party. A person or political subdivision with an interest in the pending subject matter.

Land Disturbing Activity. 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. The use of land for agricultural activities shall not constitute a land disturbing activity under these Rules. Routine vegetation management, and pavement milling/overlay activities that

do not disturb the material beneath the pavement base will not be considered land disturbance or fully reconstructed impervious surface.

Landlocked Basin. A basin that is 1 acre or more in size and does not have a natural outlet at or below the 100-year flood elevation as determined by the 100-year, 10-day runoff event.

Linear Project. Linear projects are projects with construction of new or fully reconstructed roads, trails, sidewalks, or rail lines that are not part of a common plan of development or sale.

Low Opening. The low opening is the lowest elevation of an enclosed area, such as a basement, that allows surface water to into the enclosed area. Examples of low openings, include but are not limited to doors and windows. Foundation wall cracks, drainage seepage through drain tile, and sewer backup elevations are not low openings.

Member City. Any city wholly or partly within the Commission's boundary that has executed the Joint Powers Agreement.

MnDOT. The Minnesota Department of Transportation.

MPCA. The Minnesota Pollution Control Agency.

Municipality. Any city wholly or partly within the Commission's boundary.

NPDES. National Pollutant Discharge Elimination System.

NRCS. The Natural Resource Conservation Service.

NURP. The Nationwide Urban Runoff Program developed by the Environmental Protection Agency to study stormwater runoff from urban development.

Ordinary High Water Level (OHW). The elevation delineating the highest water level which has been maintained for a sufficient period of time to leave evidence upon the landscape. The ordinary high-water level is commonly the point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial. For watercourses, the OHW level is the elevation of the top of the bank of the channel. For reservoirs and flowages, the OHW level is the operating elevation for the normal summer pool. For Public Waters and Public Waters Wetlands, the Minnesota Department of Natural Resources (DNR) determines the OHW.

Owner. The owner of a parcel of land or the purchaser under a contract for deed.

Parcel. A parcel of land designated by plat, metes, and bounds, registered land survey, auditor's subdivision, or other accepted means and separated from other parcels or portions by its designation.

Person. Any individual, trustee, partnership, unincorporated association, limited liability company or corporation.

Political Subdivision. A municipality, county or other political division, agency or subdivision of the state.

Project. A space, parcel, or parcels of real property owned by one or more than one person which is being or is capable of being developed or redeveloped as a single project.

Public Health and General Welfare. Defined in Minnesota Statutes, Section 103D.011, Subdivisions 23 and 24.

Public Waters. Any waters as defined in Minnesota Statutes, Section 103G.005, Subdivision 15.

Public Waters Wetland. Any wetland as defined in Minnesota Statutes, Section 103G.005, Subdivision 15a.

Redevelopment. Land-disturbing activity that creates or replaces impervious surface on a parcel that is fully or partially occupied by buildings and/or impervious surface except for Linear Transportation Projects.

Runoff. Rainfall, snowmelt or irrigation water flowing over the ground surface.

Sediment. Soil or other surficial material transported by surface water as a product of erosion.

Sedimentation. The process or action of depositing sediment.

Shoreland Protection Zone. Land located within a floodplain or within 1,000 feet of the OHW of a public water or public waters wetland.

Site. A space, parcel, or parcels of real property owned by one or more than one person which is being or is capable of being developed or redeveloped as a single project.

Standard. A required level of quantity, quality, or value.

Stormwater Management Plan. A plan for the permanent management and control of runoff prepared and implemented in accordance with the standards set forth in these Rules.

Structure. Anything manufactured, constructed, or erected which is normally attached to or positioned on land, including portable structures, earthen structures, roads, water and storage systems, drainage facilities and parking lots.

Subdivision or Subdivide. The separation of a parcel of land into two or more parcels.

TMDL. The Total Maximum Daily Load is the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards. “TMDL” can also refer to a study that calculates that load, or to the allocation of that allowable load to its various sources. An Implementation Plan may be part of the TMDL study, or it may be a separate document that sets forth the steps that will be taken to achieve the TMDL.

Underlying Soils. Material located beneath the base and subbase layers of a road reconstruction project. Material located beneath the subbase could be native soils or fill material.

Volume Management. The retention and abstraction of a certain volume of stormwater runoff onsite through techniques such as infiltration, evapotranspiration, and capture and reuse.

Water Basin. An enclosed natural depression with definable banks capable of containing water that may be partly filled with public waters.

Waterbody. All water basins, watercourses and wetlands as defined in these Rules.

Watercourse. Any natural or improved stream, river, creek, ditch, channel, culvert, drain, gully, swale, or wash in which waters flow continuously or intermittently in a definite direction.

Water Resources Management Plan. The watershed management plan for the Commission adopted and implemented in accordance with Minnesota Statutes, Section 103B.231.

Watershed. Region draining to a specific watercourse or water basin.

Wetland. Land transitional between terrestrial and aquatic systems as defined in Minnesota Statutes, Section 103G.005, Subdivision 19.

Wetland Conservation Act (WCA). Minnesota Wetland Conservation Act of 1991 as amended.

RULE B - PROCEDURAL REQUIREMENTS

- 1. APPLICATION REQUIRED.** Any person, or political subdivision, undertaking an activity for which a project review is required by these Rules shall first submit to the applicable Commission a project review application, design data, plans, specifications, fees, and such other information and exhibits as may be required by these Rules. Project review applications shall be signed by the owner, or the owner’s authorized agent, except for activities of a political subdivision which may be signed by either the owner or the general contractor. All project review applications must be authorized by the municipality where the proposed project is located.
- 2. FORMS.** Project review applications shall be submitted on forms provided by the Commission. Forms are available at the Commission office or Web site.

- 3. ACTION BY COMMISSION.** The Commission shall act within 60 days after receipt of a complete application, including all required information, exhibits and fees. If a state or federal law or court order requires a process to occur before the Commission acts on an application, or if an application requires prior approval of a state or federal agency, the deadline for the Commission to act is extended to 60 days after completion of the required process or the required prior approval is granted. The Commission may extend the initial 60-day period by providing written notice of the extension to the applicant. The extension may not exceed 60 days unless approved by the applicant.
- 4. SUBMITTAL.** A complete project review application with all required information and exhibits shall be filed with the Commission at least 14 calendar days prior to the scheduled meeting date of the Commission. Late or incomplete submittals will be scheduled to a subsequent meeting date.
- 5. NOTIFICATION.** The Commission shall mail notice of the project review application to the owners of land located adjacent to the described activity, adjacent defined as located within the radius for which notice is required by the member city for review by its Planning Commission of site plan submittals, to a maximum of 300 feet (or 300 feet if the municipality does not require mailed notice of plan reviews), and to the member city or county with jurisdiction over the activity, at least 7 days prior to the scheduled meeting date of the Commission at which the application will be considered. The names and addresses of the owners to be notified shall be obtained by the applicant from the Hennepin County Office of Taxpayer Services and furnished to the Commission on mailing labels or electronic file with the project review application. The project review application will not be processed until the list of owners has been submitted. Notice may be waived by the member city if such a notification has been made as a part of the Planning Commission review process. Neither the failure to give mailed notice to any owner nor any defect in the notice shall invalidate an action by the Commission on a project review application.
- 6. CONDITIONS.** A project review may be approved subject to reasonable conditions to assure compliance with these Rules. The conditions may include a requirement that the applicant and owner enter into an agreement with the member city in a form acceptable to the Commission to a) specify responsibility for the construction and future maintenance of approved structures or facilities, b) document other continuing obligations of the applicant or owner, c) grant reasonable access to the proper authorities for inspection, monitoring and enforcement purposes, d) affirm that the Commission or other political subdivisions can require or perform necessary repairs or reconstruction of such structures or facilities, e) require indemnification of the Commission for claims arising from issuance of the approved project review or construction and use of the approved structures or facilities, and f) reimburse the reasonable costs incurred to enforce the agreement. Project reviews and agreements may be filed for record to provide notice of the conditions and continuing obligations.

7. **ISSUANCE OF PROJECT REVIEWS.** The Commission will issue a project review approval only after the applicant has satisfied all requirements of these Rules and paid all required fees.
8. **PROJECT REVIEW APPROVAL RENEWALS AND TRANSFERS.** Approval for a reviewed project is valid for one year from the date the applicant is advised in writing that the Commission has approved the project. To renew or transfer project review approval, the applicant must notify the Commission in writing, prior to the project approval expiration date, of the reason for the renewal or transfer request. The Commission may impose different or additional conditions on a renewal or deny the renewal in the event of a material change in circumstances.
9. **VALIDITY.** Issuance of a project review approval based on plans, specifications, or other data shall not prevent the Commission from thereafter requiring the correction of errors in the approved plans, specifications, and data, or from preventing any activity being carried on thereunder in violation of these Rules.
10. **MODIFICATIONS.** The applicant shall not modify the approved activity or plans and specifications on file with the Commission without the prior approval of the Commission.
11. **INSPECTION AND MONITORING.** After issuance of a project review approval, the Commission may perform such field inspections and monitoring of the approved activity as the Commission deems necessary to determine compliance with the conditions of the project review and these Rules. Any portion of the activity not in compliance shall be promptly corrected. In applying for a project review, the applicant consents to entry upon the land for field inspections and monitoring, or for performing any work necessary to bring the activity into compliance.
12. **SUSPENSION OR REVOCATION.** The Commission may suspend or revoke an approved project review issued under these Rules whenever the project review approval is issued in error or on the basis of incorrect information supplied, or in violation of any provision of these Rules, or if the preliminary and final project approvals received from the municipality or county are not consistent with the conditions of the approved project review.
13. **REGULAR MEETINGS.** Regular meetings of the Commission are held on the second Thursday of each month at 12:45 p.m., unless notice of a different date or time is given.
14. **SEVERABILITY.** If any provision of these Rules is adjudged unconstitutional or invalid by a court of competent jurisdiction, the remainder of these Rules shall not be affected thereby.

RULE C - GENERAL STANDARDS

1. **POLICY.** It is the policy of the Commission to protect the water resources of the watershed by requiring that all activities within the watershed comply with minimum standards for the protection of water quality and the environment.

2. **REGULATION.**
 - (a) All land disturbing activities, whether requiring a project review under these Rules or otherwise, shall be undertaken in conformance with BMPs and in compliance with the standards and criteria in these Rules.
 - (b) Project reviews are required of any land disturbing activity meeting the review thresholds set forth in Rule D Section 2.
 - (c) In areas that drain to Impaired Waters, TMDL Implementation Plans may include site-specific requirements for any land-disturbing activities that are in addition to these rules and standards.
 - (d) No person shall conduct land-disturbing activities without protecting adjacent property and waterbodies from erosion, sedimentation, flooding, or other damage.
 - (e) Development shall be planned and conducted to minimize the extent of disturbed area, runoff velocities, and erosion potential, and to reduce and delay runoff volumes. Disturbed areas shall be stabilized and protected as soon as possible and facilities or methods used to retain sediment on-site.
 - (f) When possible, existing natural watercourses and vegetated soil surfaces shall be used to convey, store, filter, and retain runoff before discharge into public waters or a stormwater conveyance system.
 - (g) When possible, runoff from roof gutter systems shall discharge onto lawns or other pervious surfaces to promote infiltration.
 - (h) Use of fertilizers, deicers, and pesticides in the shoreland protection zone shall be so done as to minimize runoff into public waters using earth material, vegetation, or both. No phosphorus fertilizer shall be used unless a soil nutrient analysis shows a need for phosphorus or in the establishment of new turf.
 - (i) When development density, topographic features, and soil and vegetation conditions are not sufficient to adequately handle runoff using natural features and vegetation, various types of constructed facilities such as diversions, settling basins, skimming devices, dikes, waterways, and ponds may be used. The Commission encourages designs using surface drainage, vegetation, and infiltration rather than buried pipes and man-made materials and facilities.
 - (j) Whenever the Commission determines that any land disturbing activity has become a hazard to any person or endangers the property of another, adversely affects water quality or any waterbody, increases flooding, or otherwise violates these Rules, the Commission shall notify the member city where the problem occurs and the member city shall require the owner of the land upon which the land disturbing activity is located, or

other person or agent in control of such land, to repair or eliminate such condition within the time period specified therein. The owner of the land upon which a land disturbing activity is located shall be responsible for the cleanup and any damages from sediment that has eroded from such land. The Commission may require the owner to submit a project review application under these Rules before undertaking any repairs or restoration.

RULE D - STORMWATER MANAGEMENT

1. **POLICY.** It is the policy of the Commission to control excessive rates and volumes of runoff, and protect water quality and biotic integrity by:
 - (a) Requiring that peak runoff rates not exceed existing conditions where stormwater discharges across the downgradient site boundary and does not exceed the capacity of downstream conveyance facilities or contribute to flooding.
 - (b) Managing subwatershed discharge rates and flood storage volumes to be consistent with the goals of the Commission's water resources management plan and the local water resources management plans.
 - (c) Controlling runoff rates by the use of regional or on-site detention or infiltration facilities where feasible.
 - (d) Reviewing stormwater management structures based on the 100-year critical storm event for the drainage area.
 - (e) Routing runoff to water treatment ponds or other acceptable facilities before discharging into waterbodies.
 - (f) Promoting the use of natural resources for storing runoff and improving water quality and other amenities where appropriate.
 - (g) Promoting natural infiltration of runoff.

2. **REGULATION.** No person or political subdivision shall commence a land disturbing activity or the development or redevelopment of land for the following types of projects without first submitting to and obtaining approval of a project review from the Commission or the city in which the project is located that incorporates a stormwater management plan for the activity, development or redevelopment:
 - (a) Plans of any land development or site development as set forth in Tables 2.1 and 2.2 below:

Table 2.1 Project review site size and disturbance area thresholds for all land uses except detached single-family residential.

All Land Uses Except Detached Single-Family Residential		
<i>Development Projects</i>		
City Project Review (site size)		Commission Project Review (site size)
0.5 acres to < 1 acre	≥ 1 acre to < 5 acres	≥5 acres
Abstract 1.1" runoff from all impervious surface	Meet Commission rate, volume, and water quality requirements for the entire site	Meet Commission rate, volume, and water quality requirements for the entire site
<i>Redevelopment Projects</i>		
City Project Review (disturbance area)		Commission Project Review (disturbance area)
0.5 acres to < 1 acre	≥ 1.0 acres to < 5 acre	≥5 acres
Incorporate permanent water quality BMPs	<50% disturbed	Meet Commission rate, volume, and water quality requirements for the disturbed area
	≥50% disturbed	Meet Commission rate, volume, and water quality requirements for the entire site
<i>Linear Projects</i>		
City Project Review		Commission Project Review
≥ 1.0 acres new and fully reconstructed impervious area if < 1.0 acres new impervious area OR ≥ 1.0 acres fully reconstructed impervious area		≥ 1.0 acres new impervious area
Meet Commission rate, volume, and water quality requirements for the new and/or fully reconstructed impervious area		Meet Commission rate, volume, and water quality requirements for the new impervious area

Table 2.2 Project review site size and disturbance area thresholds for detached single-family residential developments.

Detached Single-Family Residential Land Uses		
<i>Development Projects</i>		
City Project Review (site size)		Commission Project Review (site size)
≥ 1 acre to < 15 acres		≥15 acres
Meet Commission rate, volume, and water quality requirements for the entire site		Meet Commission rate, volume, and water quality requirements for the entire site
<i>Redevelopment Projects</i>		
City Project Review (disturbance size)		Commission Project Review (disturbance area)
≥ 1 acre to < 15 acres		≥15 acres
<i>Redevelopment projects</i>		
<50% disturbed	Meet Commission rate, volume, and water quality requirements for the disturbed area	Meet Commission rate, volume, and water quality requirements for the entire site
≥50% disturbed	Meet Commission rate, volume, and water quality requirements for the entire site	

- (b) For linear projects, the water quality volume must be calculated as the larger of one (1) inch times the new impervious surface or one-half (0.5) inch times the sum of the new and the fully reconstructed impervious surface. Where the entire water quality volume cannot be treated within the existing right-of-way, a reasonable attempt to obtain additional right-of-way, easement, or other permission to treat the stormwater during the project planning process must be made. Volume reduction practices must be considered first, as described in the General Stormwater Permit. Volume reduction practices are not required if the practices cannot be provided cost effectively. If additional right-of-way, easements, or other permission cannot be obtained, owners of construction activity must maximize the treatment of the water quality volume prior to discharge to downstream waterbodies.
- (1) For Linear projects that are *able* to meet the 1.0- or 0.5-inch water quality requirement, the applicant does not need to provide any further volume control or water quality analysis.
 - (2) For Linear projects that are *unable* to meet the 1.0- or 0.5-inch water quality requirement, the applicant needs to provide the following:
 - (i) Show that a reasonable attempt was made to meet the water quality requirement by providing:
 - (a) A summary of additional easements that could be acquired, if space and right-of-way is limiting the feasibility of constructing BMPs.
 - (b) A detailed summary of alternatives that were considered.
 - (ii) Maximize the treatment of the water quality volume
 - (a) At a minimum, the project needs to provide BMPs that provide rate control and limit TSS/TP Loads to existing conditions.
- (c) Plans of any land development or individual site development adjacent to or within a lake, wetland, or a natural or altered watercourse as listed in the final inventory of Protected Waters and Wetlands for Hennepin County, as prepared by the DNR. Projects impacting wetlands where the Commission acts as LGU for Wetland Conservation Act administration must be reviewed by the respective Commission regardless of size.
- (d) Plans for any land development or site development within the 100-year floodplain as defined by the Flood Insurance Study for the member city.
- (e) Plans of any land development or site development regardless of size, if such review is requested by a member city.
- (f) Single family developments of more than 15 acres that drain to more than one watershed, for that portion of the site draining into the Shingle Creek or West Mississippi Watershed.

3. **CRITERIA.** Stormwater management plans shall comply with the following criteria regarding runoff **rate control** restrictions, landlocked basin requirements, detention pond design criteria, **volume control** requirements, and **water quality** control requirements:
- (a) A hydrograph method based on sound hydrologic theory will be used to analyze runoff for the design or analysis of flows and water levels.
 - (b) **Rate Control:** Runoff rates for the proposed activity shall not exceed existing runoff rates for the 2-year, 10-year, and 100-year, 24-hour, and 100-year, 10-day critical storm events using Atlas 14 precipitation depths and MSE-3 storm distributions. Applicant must document the location and event depths used. If an approved local water management plan requires more restrictive rate control, then the more restrictive rate shall govern. Runoff rates may be restricted to less than the existing rates when necessary for the public health and general welfare of the watershed. Member cities and project review applicants shall not exceed discharge rates at City boundaries as determined in the Commission's hydrologic model.
 - (c) Regional detention basins shall be utilized to manage peak flow rates and meet water quality objectives when feasible.
 - (d) Analysis of flood levels, storage volumes and flow rates for waterbodies and detention basins shall be based on the range of rainfall and snow melt duration producing the critical flood levels and discharges.
 - (e) Landlocked water basins may be provided with outlets that:
 - (1) Retain a hydrologic regime complying with floodplain and wetland alterations.
 - (2) Provide sufficient storage below the outlet run-out elevation to retain back-to-back 100-year, 24-hour rainfalls and runoff above the highest anticipated groundwater elevation and provide 2 feet of freeboard for properties adjacent to the basin.
 - (3) Do not create adverse downstream flooding or water quality conditions.
 - (f) If detention basins are used to control rate of runoff they shall be designed to provide:
 - (1) An outlet structure to control the 2-year, 10-year, and 100-year critical storm events to predevelopment runoff rates. Said outlet structure will be required to control critical storm events to less than predevelopment runoff rates if downstream facilities have insufficient capacity to handle the increased flow.
 - (2) Alternative to (1), runoff may be directed to a downstream facility within the same hydrologic subwatershed that has sufficient capacity to provide the required rate control. This means that no rate control may be required for an individual development provided there is a regional facility designed and constructed to accommodate the flow from this property.
 - (3) An identified overflow spillway sufficiently stabilized to convey a 100-year critical storm event.
 - (4) A normal water elevation above the OHW of adjacent waterbodies.

- (5) Access for future maintenance.
 - (6) An outlet skimmer to prevent migration of floatables and oils for at least the two-year storm event. Baffled weirs and wooden skimmers are not allowed.
 - (7) The member city's ordinance prescribing a minimum low floor elevation above the pond's high-water level shall govern.
- (g) **Volume Control:** Volume control BMPs must be incorporated into the site design to minimize the creation of new impervious surface and reduce existing impervious surfaces, minimize the amount of directly connected impervious surface, preserve the infiltration capacity of the soil, and limit increases in runoff volume exiting the site to the extent feasible considering site-specific conditions.
- (1) Design and placement of volume control BMPs shall be done in accordance with the Minnesota Stormwater Manual guidance and requirements.
 - (2) Stormwater runoff volume abstraction via infiltration shall be provided onsite in the amount equivalent to 1.1-inch times the sum of the new and fully reconstructed impervious surfaces required to be treated in accordance with Tables 2.1 and 2.2. The required stormwater runoff volume shall be calculated as follows:

$$\text{Required Volume (ft}^3\text{)} = \text{Impervious surfaces (ft}^2\text{)} \times 1.1(\text{in}) \times 1/12 \text{ (ft/in)}$$

- (i) If infiltration is prohibited or not advisable for the project, filtration BMPs can be used to meet the volume and water quality requirements.
 - (a) If filtration of the water quality volume is deemed necessary through alternative compliance sequencing, the required stormwater runoff volume shall be multiplied by 1.82 (i.e. 55% filtration credit) and the filtration BMP shall provide this storage volume below the invert of the low overflow outlet of the BMP (perforated drain pipes for filtration will not be considered the low overflow outlet).
 - (b) If iron-enhanced sand is used as a filtration media, the required stormwater runoff volume shall be multiplied by 1.25 (i.e. 80% filtration credit), and the filtration BMP shall provide this storage volume below the invert of the low overflow outlet of the BMP pipes for filtration will not be considered the low overflow outlet).
 - (c) Iron-enhanced media shall include a minimum of 5% of iron filings by weight and shall be uniformly blended with filtration media.
 - (d) Other enhanced filtration media, including mechanical treatment devices (MTDs), may be considered and credited per guidance within the Minnesota Stormwater Manual.

- (ii) For volume control BMPs, runoff must be infiltrated or filtered within 48 hours using accepted BMPs for infiltration, such as infiltration trenches, rainwater gardens, or infiltration basins. Infiltration volumes and facility sizes shall be calculated based on the measured infiltration rate determined by a double-ring infiltrometer test(s) conducted to the requirements of ASTM Standard D3385 at the proposed bottom elevation of the infiltration area. Other testing methods may be used with the approval of the Commission's Engineer. The measured infiltration rate shall be divided by the appropriate correction factor selected from the Minnesota Stormwater Manual. This site investigation must be conducted by a licensed soil scientist or engineer.
- (iii) A post-construction percolation test must be performed on each infiltration practice and must demonstrate that the constructed infiltration rate meets or exceeds the design infiltration rate prior to project acceptance by the city.
- (iii) Infiltration areas will be limited to the horizontal areas subject to prolonged wetting.
- (iv) Areas of permanent pools tend to lose infiltration capacity over time and will not be accepted as an infiltration practice.
- (v) Stormwater runoff must be pretreated to remove solids before discharging to volume control BMPs to maintain the long-term viability and effectiveness of the BMP. Additional information on sizing and approaches can be found within the Minnesota Stormwater Manual.
- (vi) Design and placement of infiltration BMPs shall be done in accordance with the Minnesota Stormwater Manual and latest guidance from the Minnesota Department of Health.
- (vii) Constructed bioretention and infiltration practices such as rain gardens, infiltration trenches, and infiltration benches shall be designed in accordance with the Minnesota Stormwater Manual.
- (viii) Where infiltration is not advisable or infeasible due to site conditions, biofiltration must be provided for that part of the abstraction volume that is not abstracted by other BMPs. Where biofiltration is infeasible, at a minimum filtration through a medium that incorporates organic material, iron filings, or other material to reduce soluble phosphorus must be provided.
- (ix) Alternative to (2), runoff may be directed to a downstream facility within the same hydrologic subwatershed that has sufficient capacity to provide the required volume management. This means that no volume management may be required for an individual development provided there is a regional facility designed and constructed to accommodate the volume from this property
- (x) Credit towards compliance with the abstraction requirement in (2) may be achieved by meeting post construction soil quality and amendment depth

requirements. Areas that will be subjected to clearing, grading, or compaction that will not be covered by impervious surface, incorporated into a drainage facility, or engineered as structural fill or slope may be included in the credit calculation if they meet post construction soil quality and amendment depth requirements. The applicant may compute a credit of 0.5 inches over the soil amendment area and apply that toward the abstraction volume requirement.

- (a) A minimum 8-inch depth of compost amended soil or imported topsoil shall be placed in all areas of the project site being considered for the abstraction credit. Before the soil is placed, the subsoil must be scarified (loosened) at least 4 inches deep, with some incorporation of the amended soil into the existing subsoil to avoid stratified layers.
 - (b) Soil amendment may be achieved by either mixing 2 inches of approved compost into the 8 inches of soil depth, or by mixing a custom-calculated amount of compost to achieve 8 inches of compacted soil depth with a minimum organic content of five percent.
 - (c) The amended areas must pass a 12-inch probe test during the site final inspection. Once amended, soil areas must be protected from recompaction.
- (h) Water Quality Control: The water quality requirement is met if the project meets the volume control requirement outlined in 3(g).
- (1) Where infiltration is not advisable or infeasible due to site conditions, biofiltration must be provided for that part of the abstraction volume that is not abstracted by other BMPs. Where biofiltration is infeasible, at a minimum filtration through a medium that incorporates organic material, iron fillings, or other material to reduce soluble phosphorus must be provided.
 - (2) There shall be no net increase in total phosphorus (TP) or total suspended solids (TSS) from pre-development land cover to post-development land cover. Pre-development land cover is defined as the predominant land cover over the previous 10 years.
 - (i) Full abstraction of 1.1 inches of runoff from all impervious surfaces will satisfy (h).
 - (ii) If it is not feasible to achieve the full 1.1-inch abstraction requirement, a combination of BMPs may be used to achieve the no-net-increase requirement using a water quality calculation method as outlined in the Minnesota Stormwater Manual.
 - (iii) If permanent sedimentation and water quality ponds are used, they shall be designed to the standards set forth in the Minnesota Stormwater Manual.
 - (iv) Runoff may be directed to a downstream facility within the same hydrologic subwatershed that has sufficient capacity to provide the required treatment. This means that no treatment may be required for an individual development provided there is a regional facility designed and constructed to accommodate the flow from this property.

4. WAIVERS.

- (a) The Commission may waive the on-site runoff rate, volume and water quality control design criteria as noted above, if a municipality has an off-site stormwater facility that provides equivalent control and treatment of runoff that conforms to Commission standards.
- (b) The design criteria for infiltration may be waived for sites with total impervious surface of less than one acre if infiltration BMPs have been incorporated to the maximum extent possible.

5. EXHIBITS. The following exhibits shall accompany the project review application in electronic .pdf format:

- (a) Property lines and delineation of lands under ownership of the applicant.
- (b) Delineation of the subwatershed contributing runoff from off-site, proposed, and existing subwatersheds on-site, emergency overflows and watercourses.
- (c) Proposed and existing stormwater facilities location, alignment, and elevation.
- (d) Delineation of existing on-site wetland, marsh, shoreland and floodplain areas.
- (e) For applications proposing infiltration or filtration as a stormwater management practice, identification, description, results of double-ring infiltrometer tests, and permeability and approximate delineation of site soils in both existing and proposed as-developed condition.
- (f) Existing and proposed ordinary high and 100-year water elevations on-site.
- (g) Existing and proposed site contour elevations at 2-foot intervals, referenced to NAVD (1988 datum).
- (h) Construction plans and specifications of all proposed stormwater management facilities, including design details for outlet controls.
- (i) Runoff volume and rate analysis for the 2-year, 10-year, and 100-year critical storm events, existing and proposed.
- (j) All hydrologic, water quality and hydraulic computations made in designing the proposed stormwater management facilities.
- (k) Narrative addressing incorporation of volume management BMPs.
- (l) Applications requesting an abstraction credit must include a Soil Management Plan (SMP) that shall include a site map indicating areas where soils will be amended, and calculations for soil volumes to be stockpiled and amounts and specifications of amendment or topsoil to be imported to achieve specified minimum organic matter content.

(m) Delineation of any ponding, flowage or drainage easements, or other property interests, to be dedicated for stormwater management purposes.

6. **MAINTENANCE.** All stormwater management structures and facilities shall be maintained in perpetuity to assure that the structures and facilities function as originally designed. The owner of any water quality treatment device if not a governmental unit shall provide to the member city, in a form acceptable to the Commission, a recordable agreement detailing an operations and maintenance plan that assures that the structure(s) will be operated and maintained as designed.
7. **EASEMENTS.** The member city shall obtain from the applicant, in form acceptable to the Commission, recordable temporary and perpetual easements for ponding, flowage and drainage purposes over hydrologic features such as waterbodies and stormwater basins. The easements shall include the right of reasonable access for inspection, monitoring, maintenance, and enforcement purposes.
8. **COVENANTS.** The Commission may require as a condition of project review approval that the member city shall require that the land be subjected to restrictive covenants or a conservation easement, in form acceptable to the Commission, to prevent the future expansion of impervious surface and the loss of infiltration capacity.

RULE E - EROSION AND SEDIMENT CONTROL

1. **POLICY.** It is the policy of the Commission to control runoff and erosion and to retain or control sediment on land during land disturbing activities by requiring the preparation and implementation of erosion and sediment control plans.
2. **REGULATION.** No person or political subdivision shall commence a land disturbing activity or the development or redevelopment of land for which a project review is required under Rule D without first submitting to and obtaining approval of a project review from the Commission that incorporates an erosion and sediment control plan for the activity, development or redevelopment.
3. **CRITERIA.** Erosion and sediment control plans shall comply with the following criteria:
 - (a) Erosion and sediment control measures shall be consistent with best management practices as demonstrated in the most current version of the MPCA manual "Protecting Water Quality in Urban Areas," and shall be sufficient to retain sediment on-site.
 - (b) Erosion and sediment controls shall meet the standards for the General Permit Authorization to Discharge Storm Water Associated with Construction Activity Under the current National Pollutant Discharge Elimination System/State Disposal System

Permit Program Permit (NPDES General Construction Permit) issued by the Minnesota Pollution Control Agency, except where more specific requirements are required.

- (c) All erosion and sediment controls shall be installed before commencing the land disturbing activity and shall not be removed until completion.
 - (d) The activity shall be phased when possible to minimize disturbed areas subject to erosion at any one time.
- 4. EXHIBITS.** The following exhibits shall accompany the project review application in electronic.pdf format:
- (a) An existing and proposed topographic map showing contours on and adjacent to the land, property lines, all hydrologic features, the proposed land disturbing activities, and the locations of all runoff, erosion and sediment controls and soil stabilization measures.
 - (b) Plans and specifications for all proposed runoff, erosion and sediment controls, and temporary and permanent soil stabilization measures.
 - (c) Detailed schedules for implementation of the land disturbing activity, the erosion and sediment controls, and soil stabilization measures.
 - (d) Detailed description of the methods to be employed for monitoring, maintaining, and removing the erosion and sediment controls, and soil stabilization measures.
 - (e) Soil borings if requested by the Commission.
- 5. MAINTENANCE.** The project review applicant shall be responsible for proper operation and maintenance of all erosion and sediment controls and soil stabilization measures, in conformance with best management practices and the NPDES permit. The project review applicant shall, at a minimum, inspect and maintain all erosion and sediment controls and soil stabilization measures daily during construction, weekly thereafter, and as required from the Minnesota Construction Permit.

RULE F - FLOODPLAIN ALTERATION

- 1. POLICY.** It is the policy of the Commission to prevent and control flooding damage by:
- (a) Preserving existing water storage capacity below the 100-year critical flood elevation on all waterbodies in the watershed to minimize the frequency and severity of high water.
 - (b) Minimizing development in the floodplain that will unduly restrict flood flows or aggravate known high water problems.
 - (c) Requiring compensatory storage for floodplain fill.

2. **REGULATION.** No person or political subdivision shall alter or fill land below the 100-year critical flood elevation of any public waters, public waters wetland or other wetland without first obtaining an approved project review from the Commission.
3. **CRITERIA.**
 - (a) Floodplain alteration or filling shall not cause a net decrease in flood storage capacity below the projected 100-year critical flood elevation unless it is shown that the proposed alteration or filling, together with the alteration or filling of all other land on the affected reach of the waterbody to the same degree of encroachment as proposed by the applicant, will not cause high water or aggravate flooding on other land and will not unduly restrict flood flows.
 - (b) All new structures shall be constructed with the low floor at the elevation required in the municipality's ordinance.
4. **EXHIBITS.** The following exhibits shall accompany the project review` application in electronic.pdf format:
 - (a) Site plan showing boundary lines, delineation and existing elevation contours of the work area, ordinary high water level, and 100-year critical flood elevation. All elevations shall be referenced to NAVD (1988 datum).
 - (b) Grading plan showing any proposed elevation changes.
 - (c) Preliminary plat of any proposed subdivision.
 - (d) Determination by a registered professional engineer of the 100-year critical flood elevation before and after the proposed activity.
 - (e) Computation of the change in flood storage capacity as a result of the proposed alteration or fill.
 - (f) Erosion control and sediment plan which complies with these Rules.
 - (g) Soil boring logs and report if available.
5. **EXCEPTIONS.** If a municipality or county has adopted a floodplain ordinance that prescribes an allowable degree of floodplain encroachment, the applicable ordinance shall govern the allowable degree of encroachment and no project review will be required under this Floodplain Alteration Rule.

RULE G - WETLAND ALTERATION

1. **POLICY.** It is the policy of the Commission to preserve and protect wetlands for their water quality, stormwater storage, habitat, aesthetic, and other attributes by:

- (a) Achieving no net loss in the quantity, quality and biological diversity of wetlands in the watershed.
 - (b) Increasing the quantity, quality and biological diversity of wetlands in the watershed by restoring or enhancing diminished or drained wetlands.
 - (c) Avoiding direct or indirect impacts from activities that destroy or diminish the quantity, quality and biological diversity of watershed wetlands.
 - (d) Replacing affected wetlands where avoidance is not feasible and prudent.
- 2. REGULATION.** No person or political subdivision shall drain, fill, excavate or otherwise alter a wetland without first obtaining the approval of a wetland replacement plan from the local government unit with jurisdiction over the activity. Mitigation of wetland impacts will be considered in the following sequence: 1) mitigated by enhancing the impacted wetland; 2) mitigated within the subcatchment of the impacted wetland; 3) mitigated in the drainage area of the impacted wetland; 4) mitigated in the watershed of the impacted wetland; 5) mitigated through purchase of wetland bank credits.
- 3. CRITERIA.**
- (a) Any drainage, filling, excavation or other alteration of a wetland shall be conducted in compliance with Minnesota Statutes, section 103G.245, the Wetland Conservation Act, and regulations adopted thereunder.
 - (b) A wetland may be used for stormwater storage and treatment only if the use will not adversely affect the function and public value of the wetland as determined by the local government unit.
 - (c) Other activities which would change the character of a wetland shall not diminish the quantity, quality or biological diversity of the wetland.
- 4. LOCAL GOVERNMENT UNIT.** The Commission intends to serve as the local government unit for administration of the Wetland Conservation Act for those cities that have designated the Commission to serve in that capacity, as noted in the Commission's annual report.

RULE H - BRIDGE AND CULVERT CROSSINGS

- 1. POLICY.** It is the policy of the Commission to maintain channel profile stability and conveyance capacity by regulating crossings of watercourses for driveways, roads and utilities.
- 2. REGULATION.** No person or political subdivision shall construct or improve a road or utility crossing across Shingle Creek or any watercourse with a tributary area in excess of 100 acres without first submitting to the Commission and receiving approval of a project review.

3. CRITERIA. Crossings shall:

- (a) Retain adequate hydraulic capacity, which for any crossing over Shingle Creek shall be based on the hydraulic model for the creek.
- (b) Not adversely affect water quality.
- (c) Represent the "minimal impact" solution to a specific need with respect to all reasonable alternatives.
- (d) Allow for future erosion, scour, and sedimentation maintenance considerations.

4. EXHIBITS. The following exhibits shall accompany the project review application in electronic .pdf format:

- (a) Construction plans and specifications.
- (b) Analysis prepared by a registered professional engineer showing the effect of the project on hydraulic capacity and water quality.
- (c) An erosion and sediment control plan that complies with these Rules.

5. MAINTENANCE.

- (a) The maintenance, reconstruction and stabilization of any public crossing shall be the responsibility of the political subdivision with jurisdiction over the crossing.
- (b) The maintenance, reconstruction and stabilization of any private crossing shall be the responsibility of the owner of the crossing.
- (c) If a crossing over the Shingle Creek is determined by the Commission to be causing significant erosion, the Commission may notify the member city where said crossing is located and the member city may order the owner of the crossing to make necessary repairs or modifications to the crossing and outlet channel.

RULE I - BUFFER STRIPS

- 1. POLICY.** It is the policy of the Commission to maintain the water quality and ecological functions provided by watercourses and wetlands by requiring the development of vegetated buffers around watercourses and wetlands where development and redevelopment occurs, and to encourage the installation of vegetated buffers around all watercourses and wetlands. Vegetative buffers reduce the impact of surrounding development and land use on watercourse and wetland functions by stabilizing soil to prevent erosion, filtering sediment from runoff, and moderating water level fluctuations during storms. Buffers provide essential habitat for wildlife. Requiring buffers recognizes that watercourse and wetland quality and function are related to the surrounding upland.

2. REGULATION. No person or political subdivision shall commence a land disturbing activity or the development or redevelopment of land for: any single family detached housing project 15 acres or larger in size; projects in any other land use such as commercial/ industrial/institutional 5 acres or larger in size; or any land disturbing activity requested by a member city to be reviewed regardless of project size; on land that contains or is adjacent to a watercourse, lake or wetland without first submitting to and obtaining approval of a project review from the Commission that incorporates a vegetated buffer strip between the development or redevelopment and the watercourse or wetland.

3. GENERAL PROVISIONS.

(a) This Rule shall apply to all lands containing or abutting watercourses or wetlands and lands within the buffer strips required by this Rule that are subject to a project review under these Rules. Watercourses and wetlands shall be subject to the requirements established herein, and other applicable federal, state and local ordinances and regulations. If a municipality has a buffer strip requirement that has been reviewed and approved by the Commission, the municipal regulation shall have precedence over the Commission's Rules.

(b) An applicant shall determine whether any watercourse or wetland exists on land or within the applicable buffer strip on adjacent land, and shall delineate the boundary for any wetland on the land. An applicant shall not be required to delineate wetlands on adjacent property, but must review available information to estimate the wetland boundary.

(c) Documentation identifying the presence of any watercourse or wetland on the applicant's land, including wetland delineation and buffer strip vegetation evaluation, must be provided to the Commission with a project review application.

(d) Wetland and buffer strip identifications and delineations shall be prepared in accordance with state and federal regulations.

4. CRITERIA. The following standards apply to all lands that contain or abut a watercourse or wetland:

(a) BMPs shall be followed to avoid erosion and sedimentation during land disturbing activities.

(b) When a buffer strip is required the applicant shall, as a condition to issuance of an approved project review:

(1) Submit to the member city, in a form acceptable to the Commission, a recordable conservation easement for protection of approved buffer strips. The easement shall describe the boundaries of the watercourse or wetland and buffer strips, identify the monuments and monument locations, and prohibit any of the alterations set

forth in Paragraph 6(e) below and the removal of the buffer strip monuments within the buffer strip or the watercourse or wetland.

(2) Install the wetland monumentation required by Paragraph 8 below.

(c) All open areas within the buffer strip shall be seeded or planted in accordance with Paragraph 8 below. All seeding or planting shall be completed prior to removal of any erosion and sediment control measures. If construction is completed after the end of the growing season, erosion and sediment control measures shall be left in place and all disturbed areas shall be mulched for protection over the winter season.

5. BUFFER STRIPS.

(a) For any project review submitted after January 1, 2003, a buffer strip shall be maintained around the perimeter of all watercourses or wetlands. The buffer strip provisions of this Rule shall not apply to any parcel of record as of the date of this Rule until such parcel is developed or redeveloped. The Commission does, however, strongly encourage the installation of buffer strips on all parcels in the watershed.

(b) Buffer strips shall be a minimum of 20 feet wide with an average width of 30 feet, measured from the ordinary high water level of the watercourse or wetland.

(c) Buffer strips shall apply whether or not the watercourse or wetland is on the same parcel as a proposed development.

(d) Buffer strip vegetation shall be established and maintained in accordance with Paragraph 9 below. Buffer strips shall be identified within each parcel by permanent monumentation in accordance with Paragraph 8 below.

(e) Subject to Paragraph 5(f) below, alterations including building, storage, paving, mowing, plowing, introduction of noxious vegetation, cutting, dredging, filling, mining, dumping, grazing livestock, agricultural production, yard waste disposal or fertilizer application, are prohibited within any buffer strip. Noxious vegetation may be removed as long as the buffer strip is maintained to the standards required by the Commission. Alterations would not include plantings that enhance the natural vegetation or selective clearing or pruning of trees or vegetation that are dead, diseased or pose similar hazards.

(f) The following activities shall be permitted within any buffer strip, and shall not constitute prohibited alterations under Paragraph 5(e) above:

(1) Use and maintenance of an unimproved access strip through the buffer, not more than 20 feet in width, for recreational access to the watercourse or wetland and the exercise of riparian rights.

(2) Placement, maintenance, repair or replacement of utility and drainage systems that exist on creation of the buffer strip or are required to comply with any subdivision approval or building permit obtained from the municipality or county, so long as any

adverse impacts of utility or drainage systems on the function of the buffer strip have been avoided or minimized to the extent possible.

- (3) Construction, maintenance, repair, reconstruction, or replacement of existing and future public roads crossing the buffer strip, so long as any adverse impacts of the road on the function of the buffer strip have been avoided or minimized to the extent possible.

6. ALTERNATE BUFFER STRIPS.

- (a) Because of unique physical characteristics of a specific parcel, narrower buffer strips may be necessary to allow a reasonable use of the parcel, based on an assessment of:

- (1) The size of the parcel.
- (2) Existing roads and utilities on the parcel.
- (3) The percentage of the parcel covered by watercourses or wetlands.
- (4) The configuration of the watercourses or wetlands on the parcel.
- (5) The quality of the affected watercourses and wetlands.
- (6) Any undue hardship that would arise from not allowing the alternative buffer strip.

- (b) The use of alternative buffer strips will be evaluated as part of the review of a stormwater management plan under these Rules. Where alternative buffer strip standards are approved, the width of the buffer strips shall be established by the Commission based on a minimum width of 10 feet. Alternative buffer strips must be in keeping with the spirit and intent of this Rule.

- 7. MONUMENTATION.** A monument shall be required at each parcel line where it crosses a buffer strip and shall have a maximum spacing of 200 feet along the edge of the buffer strip. Additional monuments shall be placed as necessary to accurately define the edge of the buffer strip. A monument shall consist of a post and a buffer strip sign. The signs shall include warnings about disturbing or developing the buffer strip.

8. VEGETATION.

- (a) Where acceptable natural vegetation exists in buffer strip areas, the retention of such vegetation in an undisturbed state is required unless an applicant receives approval to replace such vegetation. A buffer strip has acceptable natural vegetation if it:

- (1) Has a continuous, dense layer of perennial grasses that has been uncultivated or unbroken for at least 5 consecutive years; or
- (2) Has an overstory of trees and/or shrubs that has been uncultivated or unbroken for at least 5 consecutive years; or

- (3) Contains a mixture of the plant communities described in Subparagraphs 8(a)(1) and (2) above that has been uncultivated or unbroken for at least 5 years.
- (b) Notwithstanding the performance standards set forth in Paragraph 8(a), the Commission may determine existing buffer strip vegetation to be unacceptable if:
- (1) It is composed of undesirable plant species including but not limited to common buckthorn, reed canary grass, or species on the Minnesota State Noxious Weeds List; or
 - (2) It has topography that tends to channelize the flow of runoff; or
 - (3) For some other reason it is unlikely to retain nutrients and sediment.
 - (4) Where buffer strips are not vegetated or have been cultivated or otherwise disturbed within 5 years of the project review application, such areas shall be replanted and maintained with native vegetation. The buffer strip plantings must be identified on the project review application. Acceptable buffer strip design and planting methods are detailed in the reference documents “Restoring and Managing Native Wetland and Upland Vegetation” (Jacobson 2006, prepared for BWSR and MnDOT).
- (c) Buffer strip vegetation shall be established and maintained in accordance with the requirements found in this Paragraph. During the first two full growing seasons, the owner must replant any buffer strip vegetation that does not survive. The owner shall be responsible for reseeding and/or replanting if the buffer strip changes at any time through human intervention or activities. At a minimum the buffer strip must be maintained as a “no mow” area.

9. ENCROACHMENT.

- (a) Buffer strips must be kept free of all materials, equipment, and structures, including fences and play equipment. Buffer strips must not be grazed, cropped, logged, or mown except as approved by the Commission. The topography of the buffer strips shall not be altered by any means, including paving, plowing, cutting, dredging, filling, mining, or dumping.
- (b) Variances.
- (1) Only variances meeting the standards and criteria set forth in Rule K shall be granted.
 - (2) Variances shall not be granted that would circumvent the intent and purposes of this Rule.

RULE J - FEES

- 1. POLICY.** The Commission finds that it is in the public interest to require applicants to pay the cost of administering and reviewing project review applications and inspecting approved activities to assure compliance with these Rules, rather than using the Commission's annual administrative levy for such purposes. The Commission shall by resolution establish a schedule of fees that may be amended from time to time to reflect the cost of providing each service.
- 2. APPLICATION.** Each application for the issuance, transfer or renewal of a project review recommendation under these Rules shall be accompanied by an application fee to defray the cost of processing the application.
- 3. REVIEW.** A project review applicant under these Rules shall pay a fee for the cost of the review and analysis of the proposed activity, including services of engineering, legal, and other consultants. The review fee shall be payable upon the submission of the project review application.
- 4. VARIANCE.** A project review applicant requesting a variance from these rules shall pay a deposit for the cost of analyzing the request, including services of engineering, legal, and other consultants. The variance deposit shall be payable upon the submission of the project review application. Should the cost of said variance review exceed the amount on deposit, the application shall deposit such additional sums as are needed to pay such costs. Failure to pay such costs is grounds to deny the application or suspend review. Funds not used shall be returned to the applicant.
- 5. WETLAND MITIGATION PLAN.** A project review applicant under these rules shall pay a deposit for the cost of the review and analysis of a proposed activity involving a wetland mitigation plan in a municipality where the Commission is the LGU. The deposit is to cover the costs of engineering, legal, and other consultants. The wetland mitigation deposit shall be payable upon the submission of the project review application. Should the cost of said wetland mitigation plan review exceed the amount on deposit, the application shall deposit such additional sums as are needed to pay such costs. Failure to pay such costs is grounds to deny the application or suspend review. Funds not used shall be returned to the applicant.
- 6. WETLAND MITIGATION PLAN MONITORING.** A project review applicant under these rules in a municipality where the Commission is the LGU shall deposit an escrow to cover the cost of Commission monitoring and annual monitoring plan review for the five-year period. The applicant may apply to the Commission to provide the field monitoring services and to supply to the Commission the annual monitoring report. In the event the applicant does not do the field monitoring the Commission will undertake the data collection. If the escrow amount is insufficient to cover the costs the Commission may require additional funds from the applicant.

7. **WETLAND MITIGATION SECURITY DEPOSIT.** A project review applicant under these rules in a municipality where the Commission is the LGU shall provide a security to assure that the replacement plan is followed. The amount of the security shall be calculated on a case-by-case basis based on the estimated cost of construction, follow up and contingency. The security may also include an amount determined by the Commission to be sufficient to protect the public in the event the replacement plan does not succeed.
8. **DEPOSITS.** The Commission will maintain an accounting for all deposits made under this Rule. No interest will be paid to applicants for funds held in deposit.

RULE K - VARIANCES

1. **WHEN AUTHORIZED.** The Commission may grant variances from the literal provisions of these Rules. A variance shall only be granted when in harmony with the general purpose and intent of the Rules in cases where strict enforcement of the Rules will cause practical difficulties or particular hardship, and when the terms of the variance are consistent with the Commission's water resources management plan and Minnesota Statutes, chapter 103D.
2. **HARDSHIP.** "Hardship" as used in connection with the granting of a variance means the land in question cannot be put to a reasonable use if used under the conditions allowed by these Rules; the plight of the applicant is due to circumstances unique to the land and not created by the applicant; and the variance, if granted, will not adversely affect the essential character of the locality and other adjacent land. Economic considerations alone shall not constitute a hardship if a reasonable use for the land exists under the terms of these Rules. Conditions may be imposed in the granting of a variance to insure compliance and to protect adjacent land and the public health and general welfare of the Commission.
3. **PROCEDURE.** An application for a variance shall describe the practical difficulty or particular hardship claimed as the basis for the variance. The application shall be accompanied with such surveys, plans, data and other information as may be required by the Commission to consider the application.
4. **VIOLATION.** A violation of any condition imposed in the granting of a variance shall be a violation of these Rules and shall automatically terminate the variance.

RULE L - ENFORCEMENT

1. **ADMINISTRATION.** These Rules shall be administered by the Commission. The Commission shall consider applications required under these Rules and determine whether such applications should be approved, approved with conditions, or denied. Such determination shall be communicated to the member city in which the project lies and to the applicant.
2. **IMPLEMENTATION BY MEMBER CITIES.** It shall be the duty of each city to enforce and implement such determinations by the Commission under the various permitting processes and regulations of the city. Each city shall make such amendments to its official controls, regulations, and permitting processes as are necessary to provide it with the authority to enforce and implement the determinations of the Commission.
3. **FAILURE BY CITY TO IMPLEMENT.** Upon a determination by the Commission that a city has not enforced or implemented a decision of the Commission in the administration of these Rules, the Commission shall notify the city of such determination and direct that appropriate action be taken by the city. If the city does not take such action, the Commission may take such legal steps as are available to it to affect such enforcement or implementation.

RULE M – AMENDMENT OF THESE RULES

1. **AMENDMENT.** These rules may be amended from time to time by the Commission. Proposed amendments shall be reviewed by the member cities prior to adoption unless the Commission determines that said amendment is of a minor or technical nature. Minor or technical amendments include recodifying or streamlining the rules, clarifying policies, or other actions that do not adversely affect a member city or impact the Commission's or member cities' ability to meet their water management plan goals.
2. **PROCEDURE.** Proposed major amendments to these rules shall be first considered by the Commission and then forwarded to the member cities for a 45-day comment period. Following that comment period, the Commission shall consider the proposed amendment and the comments received for approval. All amendments shall be made by resolution.

**Shingle Creek/West Mississippi Watershed Management Commissions
Management Rules and Standards***

	Standard	Purpose	Applicability
Project Reviews Required	A Stormwater Management Plan consistent with all applicable management rules and standards* must be reviewed and approved prior to commencement of land disturbing activities. Generally, the Commission reviews single family projects larger than 15 acres and all other land uses larger than 5 acres; linear projects; and projects with wetland impacts where the Commission is LGU for WCA. Cities generally review all other projects.	To control excessive rates and volumes of runoff; manage subwatershed discharge rates and flood storage volumes; improve water quality; protect water resources; and promote natural infiltration of runoff.	All development or redevelopment projects of the following types: <ul style="list-style-type: none"> • Single family detached housing development projects greater than 15 acres in size • Single family detached housing development projects with greater than 15 acres of disturbance. • Projects in any other land use 5 acres or larger in size • Projects within the 100-year floodplain • Projects adjacent to or within a lake, wetland, or watercourse • Any land disturbing activity requested by a member city to be reviewed regardless of project size • Linear projects creating or fully reconstructing more than one acre of new impervious surface
Rate Control	Peak runoff rates may not exceed existing rates for the 2-year, 10-year, and 100-year, 24-hour, and 100-year, 10-day critical storm events at the down; or the capacity of downstream conveyance facilities; or contribute to flooding	To control excessive rates and volumes of runoff; manage subwatershed discharge rates and flood storage volumes	All projects on more than one acre requiring a project review. Redevelopment projects disturbing less than 50 percent of the site must meet the requirement only for the disturbed area.
Volume Management	1.1 inches times the amount of new and reconstructed impervious surface must be abstracted on site within 48 hours	To control excessive rates and volumes of runoff; manage subwatershed discharge rates and flood storage volumes; and promote natural infiltration of runoff.	All projects on more than one acre requiring a project review. Redevelopment projects disturbing less than 50 percent of the site must meet the requirement only for the disturbed area.
Erosion and Sediment Control	Erosion control plan using Best Management Practices (BMPs) designed to the standards set forth in the Minnesota Stormwater Manual and consistent with the NPDES General Construction Permit.	To control erosion and sediment to protect conveyance systems and water quality	All projects requiring a project review
Floodplain Alteration	Compensating storage is required to mitigate floodplain fill.	To prevent and control flooding damage	All development or redevelopment projects within the 100-year floodplain regardless of project size
Water Quality	Water quality requirement is met, if the project meets the Volume Management requirement for the Project. There shall be no net increase in Total Phosphorus (TP) or Total Suspended Solids (TSS) from pre-development land cover to post-development land cover..	To protect water quality	All projects on more than one acre requiring a project review. Redevelopment projects disturbing less than 50 percent of the site must meet the requirement only for the disturbed area.
Buffer Strips	Vegetated buffer strips of a minimum 20 foot, average 30 foot width are	To protect water quality; reduce erosion and sedimentation; reduce	All projects requiring a project review that contain or abut a wetland or watercourse

	required adjacent to wetlands and watercourses	pollutants from runoff and debris; and provide habitat	
Wetland	Wetlands may not be drained, filled, excavated, or otherwise altered without an approved wetland replacement plan from the local government unit (LGU) with jurisdiction	To preserve and protect wetlands for their water quality, stormwater storage, habitat, aesthetic, and other attributes	All land disturbing activity impacting a wetland as defined by the Wetland Conservation Act (WCA)

*Important Note: Approved TMDL Implementation Plans may have additional site-specific requirements.

The Shingle Creek and West Mississippi Commissions approved two regional treatment systems that are incorporated into these Rules and Standards.

SC2010-04 Gravel Mining Area (GMA) Arbor Lakes Infiltration Credit: Maple Grove

The Gravel Mining Area (GMA) at Arbor Lakes in Maple Grove is developing in accordance with a Stormwater Master Plan reviewed and approved by the Shingle Creek Commission. This Master Plan was developed in accordance with the Commission's runoff rate and water quality rules and standards, but before an infiltration requirement was added. There is a large area of the GMA yet to be developed where regional ponds have already been built according to the pre-infiltration requirement. In 2010 the Commission reviewed and approved a plan by the City of Maple Grove to obtain infiltration credits for this new development by constructing biofiltration basins adjacent to four existing regional stormwater ponds. Stormwater from areas that developed prior to the infiltration rule is directed to these new basins. The Commission agreed that these new infiltration basins are adequate to provide regional infiltration for the 553 acres of undeveloped area shown on the attached infiltration credit map. New development in that area will not be required to meet the infiltration standard on site.

WM2007-02 Brooklyn Center Regional Treatment

In 2007 the City of Brooklyn Center constructed a regional treatment system for a large part of the area that is drained by the 65th Avenue trunk storm sewer that outlets to the Mississippi River. This drainage area has little or no treatment. The area is expected to redevelop in the future, and the regional underground treatment system was proposed to provide regional TSS treatment. The treatment device was sized to provide treatment for the equivalent of the runoff from 360 acres. The West Mississippi Commission agreed that future development within that area would not need to provide on-site TSS treatment, and that the TP requirement could be met by infiltrating 0.75 inches of runoff from impervious area. Within the ten year time-of-travel area infiltration is not required, but filtration of the equivalent volume is required if allowed by the Wellhead Protection Plan. Projects will still need to meet rate control, erosion control, and other Commission requirements.

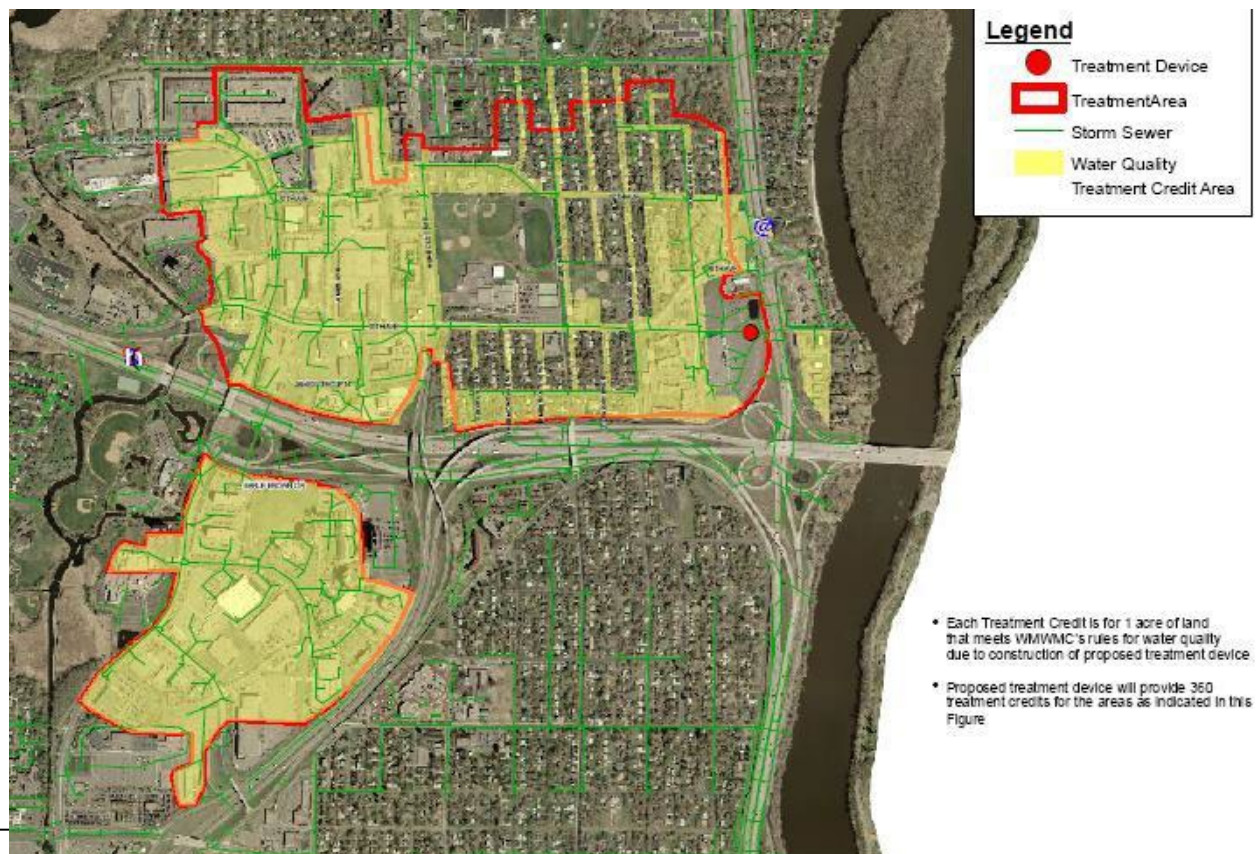
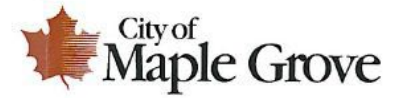
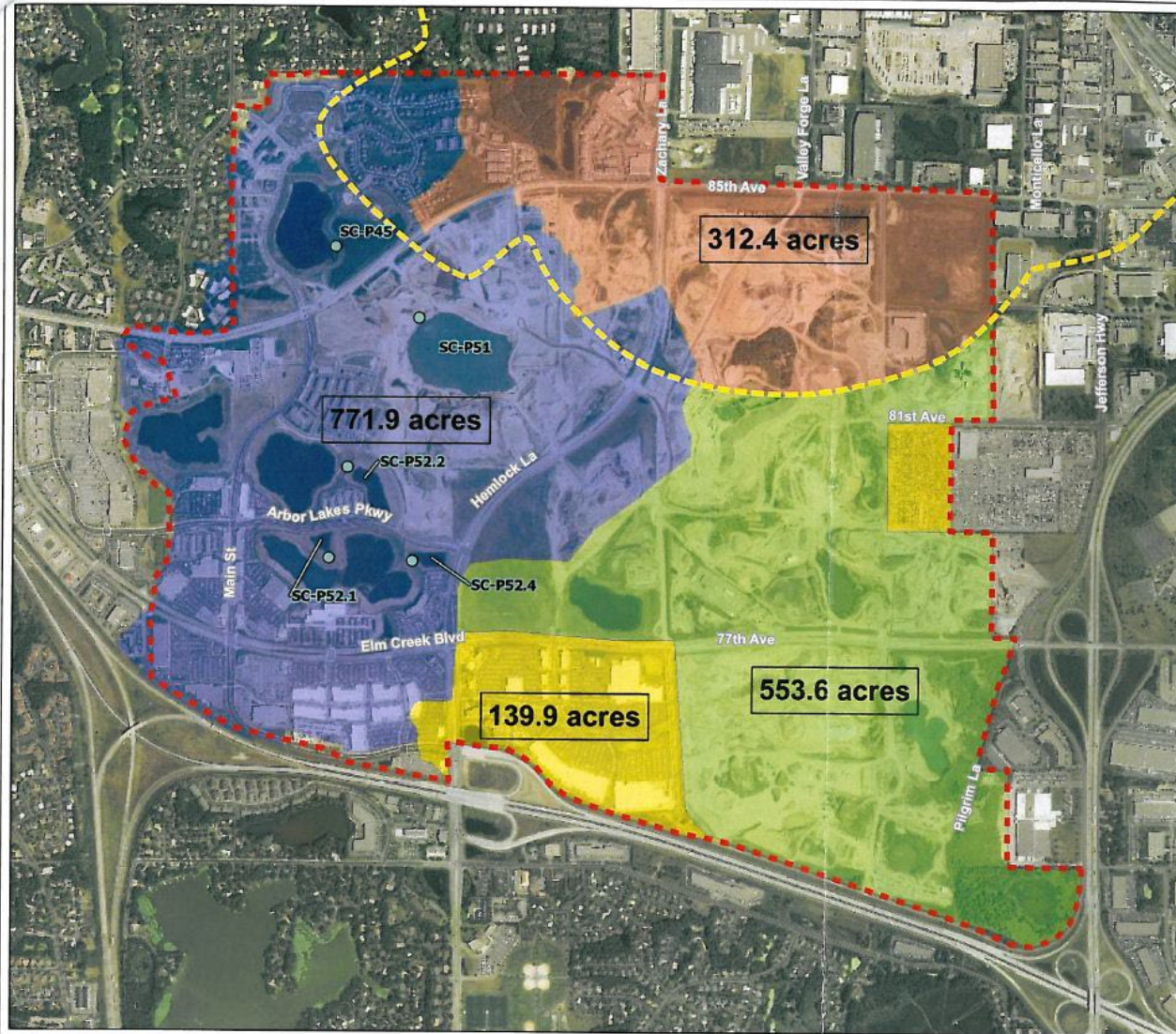


Figure 2. Brooklyn Center Regional Treatment area.



Infiltration Credit Map

March 2010



- 5-Year Time-of-Travel Wellhead Protection Area
- Proposed Storm Water Diversion and Treatment System (Infiltration Outlet)
- Study Area Boundary
- 5-yr TOT Wellhead Protection Area
- Developed Area Outside Infiltration Credit Area
- Infiltration Credit Area
- Undeveloped GMA



