

CITY OF **ST. JOSEPH** MINNESOTA

STORMWATER MANAGEMENT DESIGN STANDARDS

Version 1.0



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City of St. Joseph

Stormwater Management Design Standards

1.1 Goals and Purpose

The general purpose of these design standards is to establish regulatory requirements for land development and land disturbing activities aimed at minimizing the threats to public health, safety, public and private property and natural resources within the City of St. Joseph from construction site erosion and post-construction. The goal is to establish requirements that will:

- 1) Assist in meeting the City's NPDES/SDS Municipal Separate Storm Sewer System (MS4) and Construction Stormwater General Permit requirements.
- 2) Assist in meeting Total Maximum Daily Load (TMDL) plan waste load allocations for impaired waters.
- 3) Protect life and property from dangers associated with flooding.
- 4) Protect public and private property and natural resources from damage resulting from stormwater runoff and erosion.
- 5) Ensure site design minimizes the generation of stormwater and maximizes pervious areas for stormwater treatment.
- 6) Provide a single, consistent set of performance goals that apply to all developments.
- 7) Establishing erosion and sediment control and waste control requirements for land disturbance activities within the jurisdiction of the City St. Joseph.
- 8) Establishing post-construction stormwater management requirements to prevent or reduce water pollution after land disturbing activity is complete.
- 9) Promote infiltration and ground water recharge.
- 10) Protect functional values of all types of natural water bodies.

2.0 Compatibility with other Regulations

The requirements set forth with these design standards are not intended to modify or repeal any other ordinance, rule, regulation, or other provision of law. The requirements of these design standards are in addition to the requirements of any other ordinance, rule, regulation, or other provision of law, and where any provision of these requirements imposes restrictions different from those imposed by any other ordinance, rule, regulation, or other provision of law, whichever provision is more restrictive or imposes higher protective standards for human health or the environment shall control.

3.0 Ultimate Responsibility

The standards and requirements set forth herein and promulgated pursuant to these requirements are minimum standards; therefore these requirements do not intend or imply that compliance by any person will ensure that there will be no contamination, pollution, or unauthorized discharge of pollutants.

4.0 Definitions

“Best Management Practices” or “BMP” means practices to prevent or reduce the pollution of the waters of the state, including schedules of activities, prohibitions or practices, and other management practices, and also includes treatment requirements, operating procedures and practices to control site runoff, spillage or leaks, sludge, or waste disposal or drainage from raw material storage.

“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.

“City” means the City of St. Joseph

“Common plan of development or sale” is 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.

“Construction Activity” includes construction activity as defined in 40 CFR 122.26(b)(14)(x) and small construction activity as defined in 40 CFR 122.26(b)(15). This includes a disturbance to the land that results in a change in the topography, existing soil cover (both vegetative and non-vegetative), or the existing soil topography that may result in accelerated stormwater runoff, leading to soil erosion and movement of sediment into surface waters or drainage systems. This may include clearing, grading, filling, and excavating.

“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 water appropriation permit and, if dewatering water is contaminated, discharge of such water may require an individual MPCA NPDES/SDS permit.

“Energy Dissipation” means method employed at pipe outlets to prevent erosion caused by the rapid discharge of water scouring soils.

“Erosion Control” means a measure that prevents soil particles exposure and detachment.

“Green Infrastructure” means a wide array of practices at multiple scales that manages 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, coupled with policies such as infill and redevelopment that reduce overall imperviousness in a watershed. On the local scale, green infrastructure consists of site and neighborhood-specific practices, such as bioretention, trees, green roofs, permeable pavements, cistern, etc.

“Impervious Surface” means a constructed hard surface (gravel, concrete, asphalt, pavers, etc.) that either prevents or retards the entry of water into the soil and causes water to run off the surface in greater quantities and at an increased rate of flow than prior to development.

“Karst” (active) means a geographic area underlain by carbonate bedrock (or other forms of bedrock that can erode or dissolve) with less than 50 feet of sediment cover.

“Land Disturbance” means any project or activity, including removal of vegetation, excavations, clearing, filling, stockpiling, grading, or other earth change that directly or indirectly affects slopes, water bodies, the moving of ground cover or which may result in the movement of sediment.

“Linear Project” means construction or reconstruction of roads, trails, sidewalks, and rail lines that are not part of a common plan of development or sale. Mill, overlay and other resurfacing projects are not considered to be reconstruction.

“Maximum Extent Practicable” means the statutory standard (33 U.S.C. 1342(p)(3)(B)(iii)) that establishes the level of pollutant reductions that an Owner or Operator must achieve.

“Municipal Separate Storm Sewer System” or “MS4” means the conveyance or system of conveyances including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains owned and operated by the City of St. Joseph, which is designed or used for collecting or conveying stormwater.

"NPDES Construction Permit" means the current Minnesota Pollution Control Agency General Permit to Discharge Stormwater Associated with Construction Activity Under the National Pollution Discharge Elimination System State Disposal System Program (NPDES/SDS).

"New Development" means all construction activity that is not defined as redevelopment and areas where new impervious is being created.

"Owner" and/or "Operator" includes the plural as well as the singular, and where appropriate shall include a natural person, partnership, firm, association, public, or quasi-public corporation, Private Corporation, or a combination of any of them, with legal or equitable interest in the parcel of record or as identified on the Grading/Land Disturbance Permit.

"Receiving Water" means any lake, river, stream, or wetland that receives stormwater discharges from the MS4.

"Redevelopment" means any construction activity where, prior to the start of construction, the areas to be disturbed have 15 percent or more of existing impervious surface(s).

"Saturated soil" is 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" means soil particle(s) exposed to movement.

"Sediment Control" means a measure that prevents eroded sediment from leaving the site.

"Steep Slopes" means slopes that are 1:3 (V:H) (33.3 percent) or steeper in grade.

"Stormwater" means rainwater runoff, snow melt runoff, and surface runoff and drainage. (Minn .R. 7090.0080, subp.12.)

"Stormwater Pollution Prevention Plan" or "SWPPP" means a comprehensive plan developed to manage and reduce the discharge of pollutants in stormwater.

"Structural Stormwater BMPs" mean stationary and permanent BMPs designed, constructed and operated to prevent or reduce the discharge of pollutants in stormwater.

"Waters of the State" 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. (Minn. Stat. 155.01, subd. 22.)

5.0 Applicability

These design standards shall apply to all land disturbance and/or construction activity that requires a Land Disturbance Permit per City Ordinance 408 Stormwater Management or as deemed necessary by the City of St. Joseph to safeguard persons, protect property, and prevent degradation to the environment in the City of St. Joseph.

6.0 Better Site Design

Whenever possible, land disturbance and/or development projects shall be designed using the Better Site Design Techniques of the current version of the Minnesota Stormwater Manual. 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 and minimization, and runoff utilization.

At a minimum, the requirements set forth within the City of St. Joseph Ordinance 502.19: Land, Woodland and Wetland Preservation shall be met.

7.0 Stormwater Pollution Prevention Plan (SWPPP)

A SWPPP shall be submitted with the Land Disturbance Permit application. The SWPPP shall be consistent with the requirements outlined in this document, City Ordinances, NPDES Construction Permit, and State and Federal regulations.

7.1 SWPPP Plan Content

The SWPPP shall be completed prior to submitting a Land Disturbance Permit application and prior to conducting any land disturbing activities. SWPPP plan content must include, at a minimum, the items required and identified in the NPDES Construction Permit. Additional information may be necessary to illustrate compliance with the requirements of the Construction Site Stormwater Runoff Control and Post-Construction Stormwater Management sections of these design standards, where applicable.

8.1 Construction Site Stormwater Runoff Control

Design, site plans and project documentation must incorporate, at a minimum, erosion and sediment controls and waste controls as described below and as required and defined in the NPDES Construction Permit (found in Appendix A), including those identified in the NPDES Construction Permit for discharges to special and impaired waters, when applicable.

- 1) Erosion Prevention Practices. Erosion Prevention Practices (BMPs) must be planned for, designed, implemented, and maintained to prevent soil particle exposure and detachment in order to minimize site erosion.
- 2) Sediment Control Practices. Sediment Control Practices (BMPs) must be planned for, designed, implemented, and maintained to prevent eroded sediment from leaving the site and to minimize sediment and other pollutants from entering surface waters, including curb and gutter systems and storm sewer systems.
- 3) Dewatering Activities. Dewatering or basin draining activities to remove surface or ground water to dry and/or solidify a construction site to enable construction activity must incorporate appropriate BMPs to discharge in a manner that does not cause nuisance conditions. Dewatering may require a Minnesota Department of Natural Resources water appropriation permit and, if dewatering water is contaminated, discharge of such water may require an individual MPCA NPDES/SDS permit.
- 4) Pollution Prevention Management Measures. Construction sites must incorporate pollution prevention management measures to reduce the probability of spills, leaks and discharges of pollutants.
- 5) Final Stabilization. Upon the completion of construction activity final stabilization must be completed to include perennial vegetative cover on all exposed soils.
- 6) Temporary Sediment Basins. Temporary sediment basin(s) are required to treat runoff where deemed necessary by the NPDES Construction Permit and where deemed necessary by the City of St. Joseph to safeguard persons, protect property, and prevent degradation to the environment.
- 7) Site Inspection and Maintenance. Construction sites must be inspected on a regular basis to ensure the integrity and effectiveness of all erosion prevention BMPs, sediment control BMPs, and pollution prevention management measures. All non-function BMPs must be repaired, replaced, or supplemented with functional BMPs.

9.0 Post-Construction Stormwater Management

Design, site plans, and project documentation must incorporate post-construction (permanent) stormwater management best management practices/systems to manage stormwater long term once construction activity is complete. Permanent stormwater systems shall be designed consistent with the Minnesota Stormwater Manual and in accordance with the following design standards:

9.1 Green Infrastructure

- 1) Green Infrastructure techniques and practices (including, but not limited to, infiltration, evapotranspiration, reuse/harvesting, conservation design, urban forestry, green roofs, etc.), shall be given preference as design options consistent with zoning, subdivision and PUD requirements. A combination of techniques which utilize infiltration, capture and reuse, evapotranspiration and other types of low impact development techniques are encouraged.

9.2 Stormwater Runoff Rate Control

- 1) Post-development peak flow rates at each discharge point from the project area shall not exceed pre-development peak flow rates for the 2, 10, and 100-year, 24-hour storm events, unless otherwise approved by the City of St. Joseph. The City of St. Joseph may impose stricter requirement(s) where downstream systems are known to have capacity concerns.

9.3 Storm Sewer Conveyance System

- 1) Local storm sewer systems shall be designed for the 10-year storm event, unless otherwise approved by the City of St. Joseph. The City of St. Joseph may impose a stricter requirement(s) where deemed necessary.
- 2) The Rational Method shall be the preferred methodology for design of local storm sewer conveyance systems.
- 3) Culvert crossings or storm systems in County or State right-of-way may have design frequency and requirements which differ from the City's requirements. The Designer shall contact each agency/unit of government to determine the appropriate design requirements and frequency for hydrologically-connected systems.

9.4 Flood Management

- 1) Where applicable, the requirements of the City of St. Joseph Ordinance 502.20: Shoreland Overlay District requirements shall be met.
- 2) The low floor elevation shall be set to the higher of the following listed below. The City of St. Joseph may impose stricter requirement(s) where deemed necessary to safeguard persons, protect property, and prevent degradation to the environment.
 - i. The low floor elevation adjacent to a surface water body shall be established in accordance with the City's Shoreland Overlay District Ordinance.
 - ii. The lowest opening shall be at least two (2) feet above the emergency overflow elevation.
 - iii. The low floor elevation shall be at least two (2) feet above the high water level from the largest required design storm event as determined by a technical evaluation by a qualified engineer or hydrologist.
 - i. Regional treatment facilities must have a three (3) separation between the low floor elevation and the high water level from the largest required design storm event as determined by a technical evaluation by a qualified engineer or hydrologist.
- 3) An emergency overflow or spillway must be incorporated into the site design and constructed to direct excess water safely away from structures to the next downstream water body during runoff events that exceed the capacity of the stormwater management facility. The emergency overflow should be set at the modeled 100-year/24-hour event high water level, and should be sized to keep the backwater below the freeboard elevation. The overflow must be riprapped, and the downstream area protected from erosion.
- 4) Existing, natural or man-made emergency overflows shall be analyzed as part of the design process.
- 5) Where natural overflow does not exist, the designer shall consider/model long duration and extreme events. High water elevations shall be evaluated with analysis based on runoff resulting from a 100-year/10-day snowmelt (7.2 inches and saturated or frozen soil conditions [CN=100]) and the runoff resulting from a 100-year back-to-back rain event.

9.5 Water Quality Treatment and Volume Control Requirements

Post-construction stormwater management must provide water quality treatment and volume control. Compliance with the water quality and volume control requirements can be met by providing defensible and consistent hydrological assessments and modeling showing compliance with either Option 1: Minimal Impact Design Standards (MIDS) or Option 2: Annual Average Standards as described herein.

9.5.1 Option 1: MIDS

Permanent stormwater management must meet the Minimal Impact Design Standards (MIDS) outlined and established by the Minnesota Pollution Control Agency (MPCA). These standards can be found within the Minnesota Stormwater Manual and are summarized below:

- a. New Development Areas (non-linear). Nonlinear development projects, on sites without restrictions, shall capture and retain on site 1.1 inches of runoff from all impervious surfaces on the site.
- b. Redevelopment Areas (non-linear). Nonlinear redevelopment projects, on sites without restrictions, shall capture and retain on site 1.1 inches of runoff from the new and/or fully reconstructed impervious surfaces.
- c. Linear Development. Linear projects, on sites without restrictions, shall capture and retain the larger of the following:
 - i. 0.55 inches of runoff from the new and fully reconstructed impervious surfaces on the site.
 - ii. 1.1 inches of runoff from the net increase impervious area on the site.

Mill and overlay and other resurfacing activities are not considered fully reconstructed.

Flexible Treatment Options for Sites with Restrictions. Every attempt to comply with the performance standards identified above shall be made. If full compliance is not possible due to any of the factors identified below, the reasons must be clearly documented. Options should be considered and documented to examine the merits of relocating project elements to address varying soil conditions and other constraints across the site. If site constraints or restrictions limit the full treatment goal, the flexible treatment options identified below shall be used.

Documentation shall be provided of the flexible treatment options sequence starting with Alternative #1. If Alternative #1 cannot be met, then Alternative #2 shall be analyzed. If Alternative #2 cannot be met then Alternative #3 shall be met. Applicants must document the specific reasons why each Alternative cannot be met based on the factors listed below. When all of the conditions are fulfilled within an alternative, this sequence is completed. The MIDS Design Sequence Flowchart should be utilized when determining the appropriate alternative. The Design Sequence Flowchart can be found in Appendix C and the Minnesota Stormwater Manual.

Volume reduction techniques considered shall include infiltration, reuse & rainwater harvesting, and canopy interception & evapotranspiration and/ or additional techniques included in the Minnesota Storm water Manual.

Higher priority shall be given to BMPs that include volume reduction. Secondary preference is to employ filtration techniques, followed by rate control BMPs.

Factors to be considered for each alternative should include:

- i. Karst geology
- ii. Shallow bed rock
- iii. High ground water
- 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
- vii. Excessive costs
- viii. Poor soils (infiltration rates which are too low or too high, problematic urban soils)

Alternative #1: Comply with the following conditions:

- 1) Achieve at least 0.55 inch volume reduction from all impervious surfaces from new development sites or from the new and fully reconstructed impervious from redevelopment sites.
- 2) Remove 75 percent of the annual total phosphorus load from all impervious surfaces from new development sites or from the new and fully reconstructed impervious from redevelopment sites.
- 3) Options considered and presented shall examine the merits of relocating project elements to address varying soil conditions and other constraints across the site.

Alternative #2: Comply with the following conditions:

- 1) Achieve volume reduction to the maximum extent practicable (as determined by the City), and
- 2) Remove 60 percent of the annual total phosphorus load from all impervious surfaces from new development sites or from the new and fully reconstructed impervious from redevelopment sites, and
- 3) Options considered and presented shall examine the merits of relocating project elements to address varying soil conditions and other constraints across the site.

Alternative #3 Off-site treatment / mitigation at an off-site location may be implemented at the City's discretion. The off-site treatment must meet the performance of 1.1 inches of volume reduction for new development or redevelopment standards identified above. The owner and/or operator must provide appropriate documentation to the City as support and the proposed mitigation must meet the following criteria:

- 1) Mitigation project areas should be selected in the following order of preference. Proposed mitigation locations must be reviewed and approved by the City:
 - a. Locations that yield benefits to the same receiving water that receives runoff from the original construction activity.
 - b. Locations within the same Department of Natural Resource (DNR) catchment area as the original construction activity.
 - c. Locations in the next adjacent DNR catchment area up-stream.
 - d. Locations within the City.
- 2) Mitigation projects must involve the creation of new structural stormwater BMPs, the retrofit of existing structural stormwater BMPs, or the use of a properly designed regional structural stormwater BMP.
- 3) Routine maintenance of structural stormwater BMPs cannot be used to meet mitigation requirements.
- 4) Mitigation projects must be completed within 24 months after the start of the original construction activity.
- 5) If the mitigation project is a private structural BMP and the City is not responsible for long-term maintenance of the project, the City will require written and recorded documentation of maintenance responsibilities.

9.5.2 Option 2: Annual Average Standard

Permanent stormwater management must be met by providing defensible and consistent hydrological assessments and modeling methods showing compliance with the annual average standards outlined below:

- a. New Development Areas. No net increase from pre-development conditions on an annual average basis of:
 - i. Stormwater discharge volume, unless precluded by the stormwater management limitations and exceptions identified below.
 - ii. Stormwater discharge of TSS
 - iii. Stormwater discharge of TP

- b. Redevelopment Areas. A net reduction from pre-development conditions on an annual average basis of:
 - i. Stormwater discharge volume, unless precluded by the stormwater management limitations identified below.
 - ii. Stormwater discharge of TSS
 - iii. Stormwater discharge of TP

- c. Stormwater Management Limitations and Exceptions:
 - iii. Limitations
 1. The use of infiltration techniques are prohibited in the following areas:
 - 1) Where industrial facilities are not authorized to infiltrate industrial stormwater under an NPDES/SDS Industrial Stormwater Permit.
 - 2) Where vehicle fueling and maintenance occur.
 - 3) Where less than three (3) feet of separation from the bottom of the infiltration system to the elevation of the seasonally saturated soils or the top of bedrock exists.
 - 4) Where high levels of contaminants in soil or groundwater will be mobilized by infiltrating stormwater.

 2. The use of infiltration techniques are restricted when the infiltration device will be constructed in areas identified below. A higher level of design and review is required in these restricted areas. The City may request additional information and/or testing to ensure that infiltration basins will perform properly and that groundwater is adequately protected.
 - 1) With predominately Hydrologic Soil Group D (clay) soils.
 - 2) Within 1,000 feet up-gradient, or 100 feet down-gradient of active karst features.
 - 3) Within a Drinking Water Supply Management Area (DWSMA) as defined in Minn. R. 4720.5100, subp. 13.
 - 4) Where soil infiltration rates are more than 8.3 inches per hour.

 3. For linear projects where lack of right-a-way precludes the installation of volume control practices the City may allow exceptions for stormwater volume control as described below. A reasonable attempt must be made, and documented, to obtain right-of-way during the project planning process.

 - iv. Exceptions for Stormwater Volume Control:
 For most sites meeting the volume control requirement will require the use of infiltration BMPs. The City recognizes that there are a number physical site constraints that could limit the effectiveness of an infiltration system or site conditions which would prohibit stormwater infiltration. A lesser volume control standard may be applied, at the discretion of the City, under the circumstances identified below. The full treatment of TSS and TP must still be met.

1. The owner and/or operator of a construction activity is precluded from infiltrating stormwater due to limitations identified above, and
 2. The owner and/or operator of the construction activity implements volume reduction techniques, other than infiltration, on the site that reduce stormwater discharge volume but may not meet the full volume control requirement.
- d. Mitigation Provisions. If the owner and/or operator of construction activity believe that the requirements for TP and/or TSS cannot be met on the site of the original construction activity, the stormwater discharges that do not meet the TP and/or TSS standards may be mitigated at an off-site location at the City's discretion. The owner and/or operator must provide appropriate documentation to the City as support and the proposed mitigation must meet the following criteria:
- 1) Mitigation project areas should be selected in the following order of preference. Proposed mitigation locations must be reviewed and approved by the City:
 - a. Locations that yield benefits to the same receiving water that receives runoff from the original construction activity.
 - b. Locations within the same Department of Natural Resource (DNR) catchment area as the original construction activity.
 - c. Locations in the next adjacent DNR catchment area up-stream.
 - d. Locations within the City.
 - 2) Mitigation projects must involve the creation of new structural stormwater BMPs, the retrofit of existing structural stormwater BMPs, or the use of a properly designed regional structural stormwater BMP.
 - 3) Routine maintenance of structural stormwater BMPs cannot be used to meet mitigation requirements.
 - 4) Mitigation projects must be completed within 24 months after the start of the original construction activity.
 - 5) If the mitigation project is a private structural BMP and the City is not responsible for long-term maintenance of the project, the City will require written and recorded documentation of maintenance responsibilities.

9.6 Additional Design Standards

- 1) Rain fall amounts and distributions for stormwater management and conveyance system analysis shall utilize NOAA Atlas 14 data and distributions with antecedent moisture conditions 2 (AMC-2).
- 2) The City may require designers to run additional modeling scenarios with rainfall depths greater than the 100-year event. For example, modeling a 10-inch event or back-to-back 100-year events will allow the designer to evaluate the sensitivity of the system response to extreme events relative to high water levels and emergency overflow paths. The designer is encouraged to run extreme event scenarios as part of the initial site evaluation and design process.
- 3) Energy dissipation at outlets shall be designed in accordance with MnDOT Design Criteria.
- 4) Permanent stormwater facilities shall provide adequate maintenance access. A 20-foot wide access lane from a nearby street and a 20-foot wide access shelf around the permanent stormwater facility shall be provided. The access lane and access shelf shall have a 20:1 or flatter cross slope.
- 5) Stormwater management facilities (BMPs) shall be designed consistent with the Minnesota Stormwater Manual.

9.7 Infiltration / Filtration BMP Design

Infiltration / Filtration BMPs treat stormwater runoff as it flows through a filtering medium and into underlying soil (infiltration) or into an underdrain system (filtration). Infiltration / filtration BMPs are primarily designed for volume reduction and water quality treatment, however, in some situations can provide rate control. Infiltration / filtration BMPs include, but are not limited to, permeable pavements, rain water gardens, infiltration trenches, and infiltration basins. These BMPs shall be designed consistent with the Minnesota Stormwater Manual and, at a minimum, meet the requirements identified below.

9.7.1 Design Criteria:

- 1) Pre-treatment measures must be designed and installed upstream of the infiltration / filtration BMP(s), such as a plunge pool, sump pit, filter strip, sedimentation basin, grass channel, or a combination of these practices. Pre-treatment should be designed based on the Minnesota Stormwater Design Manual.
- 2) The Infiltration rates, for infiltration BMPs, must be verified by field-testing at the BMP location prior to construction for design purposes and after construction is complete for verification of design values. A safety factor of 2:1 must be applied to the field tested infiltration rates for design. Field test results shall be provided to the City upon request. At the City's discretion, the Minnesota Stormwater Manual design infiltration rates may be used in lieu of field testing for design, verification field-testing will still be required after construction is complete.

9.7.2 Design Standards:

- 1) Separation: There must be a minimum of 3 feet of undisturbed soil beneath the bottom of infiltration BMPs and the elevation of the seasonally high water table (saturated soils) or top of bedrock. Filtration practices must be designed so that runoff drains through a minimum of 3 feet of engineered media prior to entering an underdrain system.

- 2) Depth: Infiltration / filtration BMPs must be designed to draw down to the bottom elevation of the practice within 48 hours. The maximum ponding depth shall be based on the soil infiltration rate.
- 3) Inlets: Inlets should be located at the lowest tier of the BMP to minimize potential erosion. Inlets shall include erosion protection from 2 feet above the top of the pipe extended out from the inlet far enough to prevent erosion due to excessive discharge velocities, occurring when the storm sewer is surcharged. Erosion protection must be carried wide enough to prevent undermining.
- 4) Overland Flow: Where stormwater runoff is directed to the pond via overland flow (sheet flow, ditches, swales, etc.) it must adequately protected from erosion and scour.
- 5) Pond Outlet Structure: Outlets shall be designed to prevent the discharge of floatable debris. Outlet aprons that exceed 15 inches in diameter should be equipped with trash guards.
- 6) Side Slopes: Side slopes must be 6:1 or flatter. At the City's discretion, slopes may be increased to 4:1 for privately owned BMPs.
- 7) Clearances: Infiltration / filtration BMPs must be located to meet the clearances listed below. City of St. Joseph may impose stricter requirements in order to safeguard persons, protect property, and prevent degradation to the environment.
 - a. Must be located so that the edge of the 100-year high water level is at least 70 feet from the nearest structure and at least 20 feet from the nearest property line. At the City's discretion, clearances may be reduced to at least 20 feet from the nearest structure and at least 10 feet from the nearest property line for privately owned BMPs.
 - b. Infiltration BMPs must be located at least 50-feet from a community public water-supply well and 35-feet from all other water-supply wells.
- 8) Vegetation: BMPs must be planted and/or seeded with an approved mix of native grasses and forbs. Different mixes may be used for the top, side slopes, and bottoms. Vegetative growth or other means must provide a clear line of demarcation between the BMP site and adjacent property to show a clear separation between land uses.

9.7.3 Construction Requirements:

- 1) Infiltration / filtration BMPs shall not be excavated to final grade and runoff and sediment should be kept completely away from the areas until the contributing drainage area has been constructed and fully stabilized with dense and healthy vegetation.
- 2) Infiltration / filtration areas must be clearly marked to prevent construction equipment from compacting the area.
- 3) Only low impact track equipment should be used within the infiltration / filtration areas.
- 4) The in-situ soils located below infiltration areas should be scarified to a minimum depth of 12-inches.

9.8 Wet Detention Pond Design

Wet detention ponds are constructed to control the rate of stormwater runoff and provide water quality treatment by settling out sediments. Regional ponds are constructed to hold runoff from a number of smaller subwatersheds. They will often have more than one ponding area or cell, and should have sufficient storage to accommodate the discharge from individual upstream ponds. Wet Detention Ponds shall be designed consistent with the Minnesota Stormwater Manual and, at a minimum, meet the requirements identified below.

9.8.1 Design Criteria:

- 1) Pre-treatment measures, such as a forebay, immediately upstream of the main pond will improve the settlement of particles, reduce maintenance frequency and increase the longevity of the pond.
- 2) Wet detention ponds shall not include infiltration and shall be modeled with a normal water level at the lowest outlet elevation.
- 3) Local ponds must be designed with a 1-foot freeboard between the high water level from the largest required design storm event and the top of the pond. At the City's discretion, the freeboard separation may be reduced for privately owned ponds.
- 4) Regional ponds must be designed with a 2-foot freeboard between the high water level from the largest required design storm event and the top of the pond.
- 5) Ponds shall be designed so that the discharge or outflow rate is controlled to the more restrictor of the following listed below. Since the discharge is concentrated flow, provisions must be made to prevent downstream erosion.
 - a. So that the rate after development is equal to or less than the rate before development for the 10-year and 100-year rain events.
 - b. So that the capacity of the downstream conveyance system is not exceeded.
 - c. In some regional pond situations, where rate control is a concern, the pond will be sized by routing the discharges of upstream ponds through the regional pond.
- 6) Ponds shall be designed so that the 2-year or NPDES water quality event is discharged at no more than 5.66 cubic feet per second (cfs) per acre of surface area of the pond.

9.8.2 Design Standards:

- 1) Permanent Pool: Wet detention ponds are intended to have a permanent pool. A permanent pool is important because it provides storage and treatment of runoff during and between storm events. When located in areas with high infiltration rates and/or when located in areas with prohibited infiltration, an approved pond liner (i.e. compacted cohesive soils, geosynthetic materials, plastic liner, or soil additives) or other approved method shall be utilized to create a permanent pool and prevent contamination of ground water.
- 2) Permanent Pool Volume: The permanent pool volume should be the greater of the following listed below.

- a. The volume of runoff resulting from a 2.5-inch rain event under complete watershed development, with a 25 percent increase to allow for roughly 25 years of sediment accumulation.
 - b. The volume of 1,800 cubic feet for each acre that drains to the basin.
- 3) Minimum Permanent Pool Depth: To promote settling and provide space for sediment accumulation, the mean depth of the permanent pool (volume/surface area) should be greater than or equal to 4 feet a minimum 4-foot ponding depth.
- 4) Maximum Permanent Pool Depth: To prevent development of thermal stratification, loss of oxygen and nutrient recycling from bottom sediments, the maximum depth of the permanent pool should be less than or equal to 10-feet.
- 5) Pond Shape: Whenever possible, the ratio of maximum length to maximum width (Lc/Wc) should be greater than or equal to 3, to promote plug flow behavior and maximize the detention time to promote settling of suspended particles. Where this ratio cannot be met, berms or baffles may be installed to isolate the inflow area from the remainder of the pond. A desirable alternative (for all ponds) is to construct two or more separate ponds in series with a total dead storage volume equal to the requirement above.
- 6) Aquatic Bench: For safety purposes and to provide suitable habitat for rooted aquatic plants, an aquatic bench shall be provided. The bench shall be at least 10 feet wide and should not be steeper than 10:1 (H:V). The bench shall start at the normal water level and extend down.
- 7) Pond Inlets: Pond Inlets should be located at the permanent pool elevation. Pond inlets shall include rip rap with filter fabric from 2 feet above the top of the pipe extended out from the inlet far enough to prevent erosion due to excessive discharge velocities, occurring when the storm sewer is surcharged. Riprap protection must be carried wide enough to prevent undermining. Where inlets must enter the pond higher than the normal water level to maintain pipe capacity, the slope must be protected with riprap and filter fabric.
- 8) Overland Flow: Where stormwater runoff is directed to the pond via overland flow (sheet flow, ditches, swales, etc.) it must be collected by a culvert or catch basin before it reaches the pond slope and conveyed to the inlet pipe.
- 9) Pond Outlet Structure: Outlets shall include a cap-skimmer structure to prevent the discharge of petroleum and floatable debris. Outlets shall be designed to prevent short-circuiting. Outlet aprons that exceed 15 inches in diameter should be equipped with trash guards.
- 10) Pond Bottom: Ponds and/or pond cells shall have a 2 percent slope on the pond bottom directed to a pit area near the outlet that is accessible for maintenance.
- 11) Side Slopes: Side slopes must be 6:1 or flatter above the pond outlet (normal water level) of the pond, and 4:1 or flatter below the pond outlet. At the City's discretion, slopes may be increased to 4:1 above the pond outlet and 3:1 below the pond outlet for privately owned ponds in commercial, institutional, and industrial areas and/or for regional ponds.
- 12) Location: Ponds should be set away from structures where they can blend in with the landscape and avoid the appearance of an unsightly pit. Regional pond sites shall be large enough to allow plantings that can screen the pond from neighboring development.

- 13) Clearances: Ponds must be located to meet the clearances listed below. City of St. Joseph may impose stricter requirements in order to safeguard persons, protect property, and prevent degradation to the environment.
 - a. **Local ponds** - must be located so that the edge of the high water level from the largest required design storm is at least 70 feet from the nearest structure and at least 20 feet from the nearest property line. At the City's discretion, clearances may be reduced to at least 20 feet from the nearest structure and at least 10 feet from the nearest property line for privately owned ponds.
 - b. **Regional ponds** - must be located so that the edge of the largest design storm high water level is at least 100 feet from the nearest structure and at least 20 feet from the nearest property line. Additional clearance is desirable.
- 14) Vegetation: Ponds must be seeded with with an approved mix of native grasses and forbs. Different mixes may be used for the top, side slopes, and pond bottoms. Vegetative growth must provide a clear line of demarcation between ponding site and adjacent property to show a clear separation between land uses. Regional ponds shall include plantings that screen the pond from neighboring development.

10.0 Long-term Operation, Inspection and Maintenance Requirements

The type and interval of operation, inspection and maintenance activities for stormwater management facilities are dependent upon the type, amount, and degree of pollutant loading from the upstream drainage area.

10.1 Maintenance Agreement

The owner and/or operator of any private stormwater facility shall enter into a Maintenance Agreement with the City of St. Joseph as identified in the City Ordinance 408 Stormwater Management. Agreements shall be transferrable to any party that becomes the owner and/or operator of the property. An example maintenance agreement can be found in Appendix B.

10.2 Operation and Maintenance Plan Standards

An operation, inspection and maintenance plan shall be developed, approved, and included as an attachment with the Maintenance Agreement. At a minimum, an operation and maintenance plan must include the following:

- 1) Description of intended function of each stormwater management facility.
- 2) Checklist of required operation activities for each facility.
- 3) Description of required and anticipated inspections for each facility, including:
 - a. Responsible person(s) for completing inspections.
 - b. Frequency inspections are to be completed.
 - c. Checklist of what should be inspected and what to look for.
- 4) Description of the anticipated routine maintenance for each facility, including:
 - a. Responsible person(s) for conducting routine maintenance.
 - b. Frequency routine maintenance is anticipated.
 - c. The type of routine maintenance anticipated.
- 5) Description of the anticipated major maintenance for each facility, including:
 - a. Responsible person(s) for conducting major maintenance.
 - b. Frequency major maintenance is anticipated.
 - c. The type of major maintenance anticipated.

10.3 Acceptance of Publicly Owned Permanent Stormwater Management Facilities

Prior to final acceptance and transfer of ownership of permanent stormwater management facilities to the City of St. Joseph, following must be completed:

- 1) Submittal of as-built drawing.
- 2) Submittal of post-construction infiltration field-test, if applicable.
- 3) Certification by a qualified engineer or hydrologist the facility has been constructed in accordance with design specifications.
- 4) Submittal of an approved and signed Operation and Maintenance Plan.
- 5) Final site inspection by City staff or City representative.

Appendix A

NPDES Construction Permit

Issuance Date: August 1, 2013

GENERAL PERMIT
AUTHORIZATION TO DISCHARGE
STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY
UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM/
STATE DISPOSAL SYSTEM PROGRAM

ISSUANCE DATE: August 1, 2013

EXPIRATION DATE: August 1, 2018

This permit is issued in compliance with the provisions of the Clean Water Act, as amended, {33 U.S.C. 1251 et seq.}, 40 Code of Federal Regulations (CFR) 122, 123, 124, and 450 as amended; Minnesota Statute chapters 115 and 116, as amended, and Minn. R. chs. 7001, 7050, 7060 and 7090.

This permit regulates discharges associated with stormwater affected by construction activity to waters of the state of Minnesota. This permit covers the stormwater discharges identified in Part I.A. of this permit. The limitations on permit coverage are identified in Part I.B. of this permit.

Minn. R. 7090.2040 requires owner(s) of a construction activity to complete a Stormwater Pollution Prevention Plan (SWPPP) prior to submitting an application for this permit and prior to conducting any construction activity. No person shall commence construction activity covered by Part I.A. until permit coverage under this permit is effective or, if applicable, until the Minnesota Pollution Control Agency (MPCA) has issued an individual National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Construction Stormwater (CSW) Permit for the project.

Unless notified by the MPCA to the contrary, applicants who submit a complete and accurate application (including permit fee) in accordance with the requirements of this permit are authorized to discharge stormwater associated with construction activity under the terms and conditions of this permit as described in Part 11.B.

Signature:  Zf{(.

Joel Linc Stine
Commissioner

If you have questions on this permit, including the specific permit requirements, permit reporting or permit compliance status, please contact the appropriate MPCA offices. Note that bolded words throughout the permit are defined in Appendix B.

Minnesota Pollution Control Agency
Municipal Division
Construction Stormwater Program
520 Lafayette Road North
St. Paul, MN 55155-4194
Telephone: 651-296-6300
Toll free in MN: 800-657-3864

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PART I. PERMIT COVERAGE AND LIMITATIONS

I.A. PERMIT COVERAGE

1. This permit is required for **construction activity** that results in land disturbance of equal to or greater than one acre or a **common plan of development or sale** that disturbs greater than one acre, and authorizes, subject to the terms and conditions of this permit, the discharge of **stormwater** associated with **construction activity**.

Construction activity does not include a disturbance to the land of less than five (5) acres for the purpose of routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the facility. Pavement rehabilitation that does not disturb the underlying soils (e.g., mill and overlay **projects**) is not considered construction activity.

2. This permit covers all areas of the State of Minnesota.
3. Coverage under this permit is not required when all stormwater from **construction activity** is routed directly to and treated by a "treatment works", as defined in Minn. Stat. § 115.01, subd. 21, that is operated under an individual **NPDES/SDS** permit with a Total Suspended Solids effluent limit for all treated runoff.
4. Previously Permitted Ongoing **Projects: Permittee(s)** of ongoing **projects** covered initially under the previous MPCA-issued **NPDES/SDS** Construction Stormwater General Permit (issuance date August 1, 2008) are granted coverage under this reissued permit.
 - a. The **Permittee(s)** of those ongoing **projects** shall amend the **SWPPP** for the **project** to meet the requirements of this reissued permit no later than 18 months after the issuance date of this reissued permit if the termination-of-coverage requirements in Part II.C. will not be met within 18 months of the issuance date of this reissued permit and shall thereafter comply with this permit. However, additional permanent treatment required in this reissued permit is not required for previously permitted **projects**.
 - b. If the previously permitted ongoing **project** will meet the termination-of-coverage requirements in Part II.C. within 18 months of the issuance date of this reissued permit, the **Permittee(s)** shall comply with the 2008 construction general permit until the **project** is complete and a **Notice of Termination (NOT)** consistent with Part II.C. of this reissued permit is submitted.
 - c. If a previously permitted ongoing **project** will not be able to meet the terms and conditions of this reissued permit (other than the additional permanent treatment requirement) and will continue longer than 18 months after the issuance date of this permit, the **Permittee(s)** shall apply for an individual permit in accordance with Minn. R. ch. 7001.

I.B. LIMITATIONS OF COVERAGE

This permit does not authorize discharges related to the following activities:

1. Discharges or releases that are not **stormwater** (except those non-**stormwater** discharges

authorized under Part IV.D.).

2. The placement of fill into **waters of the state** requiring local, state or federal authorizations (such as U.S. Army Corps of Engineers Section 404 permits, Minnesota Department of Natural Resources Public Waters Work Permits or Local Governmental Unit Wetland Conservation Act replacement plans or determinations).
3. Discharges associated with industrial activity except for **construction activity**. Discharges associated with industrial activity may need to obtain coverage under a separate NPDES/SDS permit once day-to-day operational activities commence even if construction is ongoing.
4. Discharges from non-point source agricultural and silvicultural activities excluded from **NPDES** permit requirements under 40 CFR pt. 122.3(e).
5. Discharges to the waters identified below unless the requirements of Appendix A are complied with:
 - a. Discharges into outstanding resource value waters as listed in Minn. R. 7050.0180, subp. 3, 4, 5, 6, 6a and 6b.
 - b. Discharges into trout waters as listed in Minn. R. 6264.0050, subp. 2 and 4.
 - c. Discharges into **wetlands** as defined in Minn. R. 7050.0186 subd.1a.B.
 - d. Discharges from **projects** that have not completed applicable Environmental Review requirements under state or federal laws.
 - e. Discharges that adversely impact or contribute to adverse impacts on a state or federally listed endangered or threatened species or adversely modify a designated critical habitat.
 - f. Discharges that adversely affect properties listed or eligible for listing in the National Register of Historic Places or affecting known or discovered archeological sites.
6. Discharges to waters identified as impaired pursuant to section 303(d) of the federal Clean Water Act (33 U.S.C. § 303(d)) where the identified pollutant(s) or stressor(s) are phosphorus (nutrient eutrophication biological indicators), turbidity, dissolved oxygen, or biotic impairment (fish bioassessment, aquatic plant bioassessment and aquatic macroinvertebrate bioassessment), and with or without a U.S. Environmental Protection Agency (USEPA) approved Total Maximum Daily Load (TMDL) for any of these identified pollutant(s) or stressor(s), unless the applicable requirements of Part III.A.8. are met.

PART II. SUBMITTING THE APPLICATION

II.A. PREREQUISITE FOR SUBMITTING A PERMIT APPLICATION

The **owner** must develop an accurate and complete **SWPPP** in accordance with Part III. (Stormwater Discharge Design Requirements) of this permit prior to submitting the application for coverage. The **SWPPP** is not required to be submitted to the MPCA (unless the **project** size is 50 acres or more and will discharge to certain waters as described in Part II.B.1.b.) but is to be retained by the **owner** in

accordance with Part III.E. (Record Retention). The **owner's** failure to prepare an accurate and complete **SWPPP** prior to submitting the application is grounds for MPCA to revoke the permit.

II.B. APPLICATION AND DURATION OF COVERAGE

1. Application Required.

- a. The **owner** and **operator** shall submit a complete and accurate on-line application form with the appropriate fee to the MPCA for each **project** that disturbs one (1) or more acres of land or for a **common plan of development or sale** that will ultimately disturb one (1) or more acres. If the applicant is not able to apply on-line, contact the MPCA for technical assistance or a waiver.
 - b. For certain **projects** or **common plans of development or sale** disturbing 50 acres or more, the application must be submitted at least 30 days before the start of **construction activity**. This requirement pertains to **projects** that have a discharge point on the **project** that is within one mile (**aerial radius measurement**) of, and flows to, a special water listed in Appendix A, Part B. or waters listed as impaired under section 303(d) of the federal Clean Water Act (see the MPCA's website) where the identified pollutant(s) or stressor(s) are phosphorus (nutrient eutrophication biological indicators), turbidity, dissolved oxygen, or biotic impairment (fish bioassessment, aquatic plant bioassessment and aquatic macroinvertebrate bioassessment). Applicants of **projects** listed in this part must submit a complete and accurate application form and **SWPPP** including all calculations for the Permanent **Stormwater** Management System (see Parts III.A.-D.).
2. All persons meeting the definition of **owner** and **operator** are **Permittees** and must be listed on the application. The **owner** is responsible for compliance with all terms and conditions of this permit. The **operator** is responsible for compliance with Parts II.B, II.C, III.B-F, IV, V, and applicable **construction activity** requirements found in Appendix A, Part C. of this permit and is jointly responsible with the **owner** for compliance with those portions of the permit.
 3. Permit Coverage Effective Date: The commencement of any **construction activity** (e.g., land disturbing activities) covered under Part I.A. of this permit is prohibited until permit coverage under this permit is effective.
 - a. For **projects** listed in Part II.B.1.a. permit coverage will become effective seven (7) calendar days after the electronic submittal date or the postmarked date of a complete application form.
 - b. For **projects** listed in Part II.B.1.b. permit coverage will become effective 30 calendar days after the electronic submittal date, the postmarked date or MPCA date stamp (whichever is first) of the complete application. For incomplete applications (e.g., lack of fees or signature) or incomplete **SWPPPs** (e.g., missing calculations, **Best Management Practice (BMP)** specifications, estimated quantities of the **BMPs**, or timing of **BMP** installation narrative), the permit becomes effective 30 calendar days after all required information is submitted.
 4. Coverage Notification: **Permittee(s)** will be notified of coverage in a manner as determined by the **Commissioner** (e.g., e-mail, online notification or letter).

5. Change of Coverage: For construction **projects** where the **owner** or **operator** changes, (e.g., an original developer sells portions of the property to various homebuilders or sells the entire site to a new **owner**) the current **owner** and the new **owner** or **operator** shall submit a complete permit modification on a form provided by the **Commissioner**. The form must be submitted prior to the new **owner** or **operator** commencing **construction activity** on site or in no case later than 30 days after taking ownership of the property. The **owner** shall provide a **SWPPP** to the new **owner** and **operator** that specifically addresses the remaining **construction activity**.

II.C. TERMINATION OF COVERAGE

1. Termination of coverage when construction is complete: All **Permittee(s)** must submit a **Notice of Termination (NOT)** to the MPCA on a form provided by the **Commissioner** within 30 days after all activities required for **Final Stabilization** (see Part IV.G.) are complete. The **Permittee(s)**' coverage under this permit terminates at midnight on the submission date of the **NOT**.
2. Termination of coverage when transfer of ownership occurs: All **Permittee(s)** must submit a **NOT** on a form provided by the **Commissioner** within 30 days after selling or otherwise legally transferring the entire site, including permit responsibility for roads (e.g., street sweeping) and **stormwater** infrastructure final clean out, or transferring portions of a site to another party. The **Permittee(s)**' coverage under this permit terminates at midnight on the submission date of the **NOT**.
3. **Permittee(s)** may terminate permit coverage prior to completion of all **construction activity** if all of the following conditions are met. After the permit is terminated under this Part, if there is any subsequent development on the remaining portions of the site where **construction activity** was not complete, new permit coverage must be obtained if the subsequent development itself or as part of the remaining **common plan of development or sale** will result in land disturbing activities of one (1) or more acres in size.
 - a. **Construction activity** has ceased for at least 90 days.
 - b. At least 90 percent (by area) of all originally proposed **construction activity** has been completed and **permanent cover** established on those areas.
 - c. On areas where **construction activity** is not complete, **permanent cover** has been established.
 - d. The site is in compliance with Part IV.G.2. and Part IV.G.3. and where applicable, Part IV.G.4. or Part IV.G.5.
4. **Permittee(s)** may terminate coverage upon approval by the MPCA if information is submitted to the MPCA documenting that termination is appropriate because the project is cancelled.

PART III. **STORMWATER DISCHARGE DESIGN REQUIREMENTS**

III.A. STORMWATER POLLUTION PREVENTION PLAN CONTENT

The **owner** must develop a **Stormwater Pollution Prevention Plan (SWPPP)**. The **SWPPP** shall be

completed prior to submitting any permit application and prior to conducting any **construction activity** by any required **Permittee(s)**. For **stormwater** discharges from **construction activity** where the **owner** or **operator** changes, the new **owner** or **operator** can implement the original **SWPPP** created for the **project**, modify the original **SWPPP**, or develop and implement their own **SWPPP**. **Permittee(s)** shall ensure either directly or through coordination with other **Permittee(s)** that their **SWPPP** meets all terms and conditions of this permit and that their activities do not render another party's **erosion prevention** and **sediment control BMPs** ineffective. The **SWPPP** must include the following:

1. A description of the **construction activity**: The description must be a combination of narrative, plan sheets, and (if appropriate) standard detail sheets that address the foreseeable conditions, at any stage in the construction or post construction activities. The **SWPPP** must identify the potential for discharge of sediment and/or other potential pollutants from the site. The **SWPPP** must propose **erosion prevention and sediment control BMPs** to control the discharge of sediment and/or other potential pollutants from the site.
2. Knowledgeable person/chain of responsibility: As part of the **SWPPP**, the **owner** must identify a person knowledgeable and experienced in the application of **erosion prevention and sediment control BMPs** who will oversee the implementation of the **SWPPP**, and the installation, inspection and maintenance of the **erosion prevention and sediment control BMPs** (see Part III.F.1.) before and during construction. The **owner** must identify in the **SWPPP** who will have the responsibility for long-term operation and maintenance of the Permanent **Stormwater Management System** (see Part III.D.). The **owner** shall include in the **SWPPP** a chain of responsibility with all **operators** on the site, or if not known, the title or position of the responsible party, to ensure that the **SWPPP** will be implemented and stay in effect until the construction **project** is complete, the entire site has undergone **Final Stabilization**, and an **NOT** has been submitted to the MPCA. Once the identity of the responsible party is known, the **SWPPP** must be amended to include this information.
3. Training documentation: The **Permittee(s)** shall ensure the individuals identified in Part III.F. have been trained in accordance with this Permit's training requirements. The **Permittee(s)** shall ensure the training is recorded in or with the **SWPPP** before the start of construction or as soon as the personnel for the **project** have been determined. Documentation shall include:
 - a. Names of the personnel associated with this **project** that are required to be trained per Part III.F.1. of this permit.
 - b. Dates of training and name of instructor(s) and entity providing training.
 - c. Content of training course or workshop including the number of hours of training.
4. Designs, calculations, and narrative: The **SWPPP** must incorporate the requirements of Part III (**Stormwater Discharge Design Requirements**) including calculations, Part IV (**Construction Activity Requirements**) and Appendix A for the **project**. A narrative describing the timing for installation of all **erosion prevention and sediment control BMPs** and permanent **stormwater management systems** required in Part III, Part IV and Appendix A must also be included in the **SWPPP**.
5. **SWPPP** components: The **SWPPP** requirements must be incorporated into the **project's** final

plans and specifications and/or **project** documentation, as appropriate, and must include:

- a. Location and type of all temporary and permanent **erosion prevention** and **sediment control BMPs** along with procedures to be used to establish additional temporary **BMPs** as necessary for the site conditions during construction. **Standard details** and/or specifications for the **BMPs** used on the **project** must be included in the final plans and specifications for the **project**.
- b. Quantities: Estimated preliminary quantities tabulation anticipated at the start of the **project** for the life of the **project** must be included for all **erosion prevention** and **sediment control BMPs** in the **SWPPP** (e.g., linear feet of silt fence or ft² of erosion control blanket).
- c. Impervious surface: The number of acres of **impervious surface** for both pre- and post-construction must be specified.
- d. Site map: A site map with existing and final grades, including dividing lines and direction of flow for all pre-and post-construction **stormwater** runoff drainage areas located within the **project** limits must be included. The site map must indicate the areas of **steep slopes**. The site map must also include **impervious surfaces**, soil types and locations of potential pollutant-generating activities as identified in Part IV.F.
- e. Locations of areas not to be disturbed: Buffer zones, as required for temporary **BMPs** during construction in Part IV.C.9., or if required as permanent **BMPs** in Appendix A, Part C.3., must be described and identified on plan sheets or **project** maps in the **SWPPP**.
- f. Construction phasing: Location of areas where construction will be phased to minimize duration of exposed soil areas must be described.
- g. Maps of surface waters and wetlands: The **SWPPP** must include a map of all **surface waters**, existing **wetlands**, and **stormwater** ponds or basins which can be identified on maps such as United States Geological Survey 7.5 minute quadrangle maps, the National Wetland Inventory map or equivalent maps within one mile (**aerial radius measurement**) from the **project** boundaries that will receive **stormwater** from the construction site, during or after construction. Where **surface waters** receiving **stormwater** associated with **construction activity** will not fit on the plan sheet, they must be identified with an arrow, indicating both direction and distance to the **surface water**. The **SWPPP** must identify if the **surface water** is a special or impaired water. The site map must also show **construction activity** areas that are adjacent to and drain to **Public Waters** for which the Department of Natural Resources has promulgated "work in water restrictions" during specified fish spawning time frames.
- h. **Final stabilization**: Methods to be used for **Final Stabilization** of all exposed soil areas must be described.
- i. **BMP design factors**: The **SWPPP** must account for the following factors in designing the temporary **erosion prevention** and **sediment control BMPs**:
 - i. The expected amount, frequency, intensity, and duration of precipitation.
 - ii. The nature of **stormwater** runoff and run-on at the site, including factors such as

- expected flow from **impervious surfaces**, slopes, and site drainage features.
- iii. If any **stormwater** flow will be channelized at the site, the **Permittee(s)** must design **BMPs** to control both peak flowrates and total **stormwater** volume to minimize erosion at outlets and to minimize downstream channel and streambank erosion.
 - iv. The range of soil particle sizes expected to be present on the site.
- j. Soil Management: Methods used to minimize soil compaction and preserve topsoil must be described. Minimizing soil compaction is not required where the function of a specific area of the site dictates that it be compacted.
- k. Maintenance plan: For **projects** that include permanent **stormwater** treatment systems, the **SWPPP** must include a maintenance plan identifying who will be performing future maintenance of the system.
- l. Chemical treatments: Any specific chemicals and the chemical treatment systems that may be used for enhancing the sedimentation process on the site, and how compliance will be achieved with the requirements in Part IV.C.10., must be described.
- m. Documentation of **infeasibility**: If the **Permittee(s)** determine(s) that compliance with the requirement for temporary sediment basins (Part III.C.) is **infeasible** on the **project** site; the **Permittee(s)** must document that determination and the substitute **BMPs** in the **SWPPP**. If **Permittee(s)** cannot obtain right-of-way for the permanent stormwater management system; the **Permittee(s)** must document the infeasibility of obtaining right-of-way (Part III.D.)
6. Stormwater pollution mitigation measures identified in environmental review or other required review: The **SWPPP** must include any **stormwater** mitigation measures approved as part of a final environmental review document, endangered species review, archeological or other required local, state or federal review conducted for the **project**. For the purposes of this permit provision, mitigation measures means actions necessary to avoid, minimize, or rectify (e.g., repairing, rehabilitating, restoring), reducing, eliminating or compensating for impacts related to: (1) **stormwater** discharges associated with the **project's construction activity**; and (2) **erosion prevention, sediment control** and the Permanent **Stormwater** Management System for the **project**.
7. Karst areas: The **SWPPP** must identify additional or different measures necessary (e.g. impervious liner in pond bottom) to assure compliance with **surface and groundwater** standards in Minn. R. chs. 7050 and 7060 in karst areas and to ensure protection of drinking water supply management areas (see Minn. R. 4720.5100, subp. 13).
8. Impaired Waters and Total Maximum Daily Loads (TMDLs): The **SWPPP** must address the following:
- a. For **projects** that have a discharge point on the **project** that is within one mile (**aerial radius measurement**) of and which flows to an impaired water, the **Permittee(s)** must identify the impaired water(s) in the **SWPPP**, and whether or not there is a USEPA-approved TMDL for the pollutant(s) or stressor(s) identified in Appendix A, Part B.10. Unless otherwise notified by the MPCA in writing, the **Permittee(s)**' identification of impaired waters must be based

on the most recent USEPA approved section 303(d) Clean Water Act list of impaired waters and USEPA approved TMDLs at the time a complete permit application is submitted. The **Permittee(s)** identification must include those TMDLs, applicable to the **project's stormwater** discharge, that were approved at any time prior to permit application submittal and are still in effect.

- b. If the TMDL identifies specific implementation activities regarding construction **stormwater** that would apply to the site discharges, the **Permittee(s)** must include the **BMPs** identified in the TMDL and any other specific construction **stormwater** related implementation activities identified in the TMDL.

III.B. SWPPP AMENDMENTS

The **Permittee(s)** must amend the **SWPPP** as necessary to include additional requirements, such as additional or modified **BMPs** that are designed to correct problems identified or address situations whenever:

1. 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 waters** or **underground waters**.
2. Inspections or investigations by site **owner** or **operators**, USEPA or MPCA officials indicate the **SWPPP** is not effective in eliminating or significantly minimizing the discharge of pollutants to **surface waters** or **underground waters** or that the discharges are causing water quality standard exceedances (e.g., nuisance conditions as defined in Minn. R. 7050.0210, subp. 2).
3. The **SWPPP** is not achieving the general objectives of minimizing pollutants in **stormwater** discharges associated with **construction activity**, or the **SWPPP** is not consistent with the terms and conditions of this permit.
4. At any time after permit coverage is effective, the MPCA may determine that the **project's stormwater** discharges may cause, have reasonable potential to cause, or contribute to non-attainment of any applicable water quality standard, or that the **SWPPP** does not incorporate the applicable requirements in Part III.A.8., (Impaired Waters and TMDLs). If a water quality standard changes during the term of this permit, the MPCA will make a determination as to whether a modification of the SWPPP is necessary to address the new standard. If the MPCA makes such determination(s) or any of the determinations in Parts III.B.1.-3., the MPCA will notify the **Permittee(s)** in writing. In response, the **Permittee(s)** must amend the **SWPPP** to address the identified concerns and submit information requested by the MPCA, which may include an individual permit application. If the MPCA's written notification requires a response, failure to respond within the specified timeframe constitutes a permit violation.

III.C. TEMPORARY SEDIMENT BASINS

Where ten (10) or more acres of disturbed soil drain to a common location, the **Permittee(s)** must provide a temporary sediment basin to provide treatment to the runoff before it leaves the construction site or enters **surface waters**. A temporary sediment basin may be converted to a permanent basin after construction is complete. The temporary basin is no longer required when

permanent cover has reduced the acreage of disturbed soil to less than ten (10) acres draining to a common location. The **Permittee(s)** is/are encouraged, but not required, to install temporary sediment basins where appropriate in areas with **steep slopes** or highly erodible soils even if less than ten (10) acres drains to one area. The basins must be designed and constructed according to the following requirements:

1. The basins must provide live storage for a calculated volume of runoff from a two (2)-year, 24-hour storm from each acre drained to the basin, except that in no case shall the basin provide less than 1,800 cubic feet of live storage from each acre drained to the basin.
2. Where the calculation in Part III.C.1. has not been performed, a temporary sediment basin providing 3,600 cubic feet of live storage per acre drained to the basin shall be provided for the entire drainage area of the temporary basin.
3. Temporary basin outlets must be designed to prevent short-circuiting and the discharge of floating debris. The basin must be designed with the ability to allow complete basin drawdown for maintenance activities, and must include a **stabilized** emergency overflow to prevent failure of pond integrity. The outlet structure must be designed to withdraw water from the surface in order to minimize the discharge of pollutants, except that the use of a surface withdrawal mechanism for discharge of the basin may be temporarily suspended during frozen conditions. **Energy dissipation** must be provided for the basin outlet (see Part IV.B.5.).
4. Sediment Basins must be situated outside of surface waters and any buffer zone required under Appendix A.C.3, and must be designed to avoid draining water from **wetlands** unless the impact to the **wetland** is in compliance with the requirements of Appendix A, Part D.
5. The temporary basins must be constructed and made operational prior to 10 or more acres of disturbed soil draining to a common location.
6. Where a temporary sediment basin meeting the requirements of this part is **infeasible**, equivalent **sediment controls** such as smaller sediment basins, and/or sediment traps, silt fences, vegetative buffer strips, or any appropriate combination of measures are required for all down-slope boundaries of the construction area and for side-slope boundaries as dictated by individual site conditions. In determining whether installing a sediment basin is **infeasible**, the **Permittee(s)** must consider public safety and may consider factors such as site soils, slope, and available area on site. This determination of **infeasibility** must be documented in the **SWPPP** per Part III.A.5.m.

III.D. PERMANENT STORMWATER MANAGEMENT SYSTEM

The **Permittee(s)** shall design the **project** so that all **stormwater** discharged from the **project** during and after **construction activities** does not cause a violation of state water quality standards, including nuisance conditions, erosion in receiving channels or on downslope properties, or a significant adverse impact to **wetlands** caused by inundation or decrease of flow.

The **Permittee(s)** shall construct a permanent stormwater management system meeting the requirements of this Part, or if the **project** is located in a jurisdiction subject to a **NPDES/SDS** Municipal Separate Storm Sewer System (MS4) permit and that permit has established permanent treatment requirements that include volume reduction, the **Permittee(s)** can comply with the

permanent treatment requirements established under the MS4 permit in lieu of the permanent treatment requirements of this permit.

Where a **project's** ultimate development replaces vegetation and/or other pervious surfaces with one (1) or more acres of cumulative **impervious surface**, the **Permittee(s)** must design the **project** so that the **water quality volume** of one (1) inch of runoff from the new **impervious surfaces** created by the **project** is retained on site (i.e. infiltration or other volume reduction practices) and not discharged to a **surface water**. For purposes of this part, **surface waters** does not include man-made drainage systems that convey **stormwater** to a compliant permanent **stormwater** management system.

For those **projects** where infiltration is prohibited (see Part III.D.1.j.), the **Permittee(s)** shall consider other methods of volume reduction and the **water quality volume** (or remainder of the **water quality volume** if some volume reduction is achieved) must be treated by a wet sedimentation basin, filtration system, regional ponding or equivalent methods prior to the discharge of **stormwater** to **surface waters**.

Where the proximity to bedrock precludes the installation of any of the permanent **stormwater** management practices outlined in Part III.D., other treatment, such as grassed swales, filtration systems, smaller ponds, or grit chambers, is required prior to the discharge of **stormwater** to **surface waters**.

For work on linear **projects** with lack of right-of-way where the **Permittee(s)** cannot obtain an easement or other permission for property needed to install treatment systems capable of treating the entire **water quality volume** on site, the **Permittee(s)** must maximize the **water quality volume** that can be treated prior to discharge to **surface waters**. Treatment can be provided through other methods or combination of methods such as grassed swales, filtration systems, smaller ponds, or grit chambers, prior to discharge to **surface waters**. A reasonable attempt must be made to obtain right-of-way during the **project** planning process. Documentation of these attempts must be in the **SWPPP** per Part III.A.5.m. in the section addressing **infeasibility**.

When constructing any of the permanent **stormwater** management systems in this part, the **Permittee(s)** must incorporate the following design parameters:

1. Infiltration/Filtration
 - a. Infiltration/Filtration options include but are not limited to: infiltration basins, infiltration trenches, rainwater gardens, sand filters, organic filters, bioretention areas, natural or enhanced swales, dry storage ponds with underdrain discharge, off-line retention areas, and natural depressions. Infiltration must be used only as appropriate to the site and land uses. The method selected by the **Permittee(s)** must remove settleable solids, floating materials, and oils and grease from the runoff to the maximum extent practicable before runoff enters the infiltration/filtration system. Filtration systems must be designed to remove at least 80 percent of total suspended solids. When designing the system the **Permittee(s)** must evaluate the impact of constructing an infiltration practice on existing hydrologic features (e.g., existing **wetlands**) and the system must be designed to maintain pre-existing conditions (e.g., do not breach a perched water table that is supporting a **wetland**). For a discussion of potential **stormwater** hotspots, groundwater warnings, design measures, maintenance considerations or other retention, detention, and treatment devices, see the

Minnesota Stormwater Manual found on the MPCA's website.

- b. Infiltration systems must not be excavated to final grade until the contributing drainage area has been constructed and fully **stabilized** unless rigorous erosion prevention and sediment controls are provided (Part III.D.1.c.).
- c. When an infiltration system is excavated to final grade (or within three (3) feet of final grade), the **Permittee(s)** must employ rigorous **erosion prevention** and **sediment controls** (e.g., diversion berms) to keep sediment and runoff completely away from the infiltration area. The area must be staked off and marked so that heavy construction vehicles or equipment will not compact the soil in the proposed infiltration area.
- d. To prevent clogging of the infiltration or filtration system, the **Permittee(s)** must use a pretreatment device such as a vegetated filter strip, small sedimentation basin, or water quality inlet (e.g., grit chamber) to settle particulates before the **stormwater** discharges into the infiltration or filtration system.
- e. The **Permittee(s)** must design infiltration or filtration systems that provide a **water quality volume** (calculated as an instantaneous volume) of one (1) inch of runoff (or one (1) inch minus the volume of **stormwater** treated by another system on the site) from the new impervious surfaces created by the **project**.
- f. The **Permittee(s)** must design the infiltration/filtration system to discharge the **water quality volume** routed to the system through the soil surface or filter media within 48 hours or less. Additional flows that cannot be infiltrated or filtered within 48 hours must be routed to bypass the system through a **stabilized** discharge point. The **Permittee(s)** must design the infiltration system to provide a means to visually verify that the system is discharging through the soil surface or filter media within 48 hours or less.
- g. The **Permittee(s)** shall employ appropriate on-site testing consistent with the recommendations found in the **Minnesota Stormwater Manual** to verify soil type and to ensure a minimum of three (3) feet of separation from the seasonally **saturated soils** (or from bedrock) and the bottom of the proposed infiltration/filtration system.
- h. The **Permittee(s)** must ensure filtration systems with less than three (3) feet of separation from seasonally **saturated soils** or from bedrock are constructed with an impermeable liner.
- i. The **Permittee(s)** must design adequate maintenance access (typically eight (8) feet wide).
- j. Infiltration is prohibited when the infiltration system will be constructed in:
 - i. Areas that receive discharges from vehicle fueling and maintenance.
 - ii. Areas with less than three (3) feet of separation distance from the bottom of the infiltration system to the elevation of the seasonally **saturated soils** or the top of bedrock.

- iii. Areas that receive discharges from industrial facilities which are not authorized to infiltrate industrial **stormwater** under an **NPDES/SDS** Industrial Stormwater Permit issued by the MPCA.
 - iv. Areas where high levels of contaminants in soil or groundwater will be mobilized by the infiltrating **stormwater**.
 - v. Areas of predominately Hydrologic Soil Group D (clay) soils unless allowed by a local unit of government with a current MS4 permit.
 - vi. Areas within 1,000 feet up-gradient, or 100 feet down-gradient of active karst features unless allowed by a local unit of government with a current MS4 permit.
 - vii. Areas within a Drinking Water Supply Management Area (DWSMA) as defined in Minn. R. 4720.5100, subp. 13., unless allowed by a local unit of government with a current MS4 permit.
 - viii. Areas where soil infiltration rates are more than 8.3 inches per hour unless soils are amended to slow the infiltration rate below 8.3 inches per hour or as allowed by a local unit of government with a current MS4 permit.
2. Wet Sedimentation Basin
- a. The **Permitte(s)** must design the basin to have a permanent volume of 1,800 cubic feet of storage below the outlet pipe for each acre that drains to the basin. The basin's permanent volume must reach a minimum depth of at least three (3) feet and must have no depth greater than 10 feet. The basin must be configured such that scour or resuspension of solids is minimized.
 - b. The **Permittee(s)** must design basins to provide live storage for a **water quality volume** (calculated as an instantaneous volume) of one (1) inch of runoff (or one (1) inch minus the volume of **stormwater** treated by another system on the site) from the new impervious surfaces created by the **project**.
 - c. The **Permittee(s)** must design basin outlets such that the **water quality volume** is discharged at no more than 5.66 cubic feet per second (cfs) per acre of surface area of the pond.
 - d. The **Permittee(s)** must design basin outlets to prevent short-circuiting and the discharge of floating debris. Basin outlets must have **energy dissipation**.
 - e. The **Permittee(s)** must design the basin to include a **stabilized** emergency overflow to accommodate storm events in excess of the basin's hydraulic design.
 - f. The **Permittee(s)** must design adequate maintenance access (typically eight (8) feet wide).
 - g. The **Permittee(s)** must design sediment Basins to be situated outside of **surface waters** and any buffer zone required under Appendix A, Part C.3. and they must be designed to avoid draining water from **wetlands** unless the impact to the **wetland** is in compliance with the requirements of Appendix A, Part D.

3. Regional Ponds

When the entire **water quality volume** cannot be retained onsite, the **Permittee(s)** can use or create regional ponds provided that they are constructed ponds, not a natural **wetland** or water body, (**wetlands** used as regional ponds must be mitigated for, see Appendix A, Part D) and designed in accordance with this permit's design requirements (Part III.D.2.) for all water from **impervious surfaces** that reach the pond. **Permittee(s)** shall not construct regional ponds in **wetlands**, regardless of their condition, quality or designation by local plans, unless the mitigative sequence in Appendix A, Part D. of this permit has been completed. There must be no significant degradation of the waterways between the **project** and the regional pond. The **owner** must obtain written authorization from the applicable local governmental unit (LGU) or private entity that owns and maintains the regional pond. The LGU's or private entity's written authorization must identify that the regional pond will discharge the **water quality volume** (one (1) inch of runoff from the impervious watershed area) at no more than 5.66 cfs per acre of surface area of the pond. The **owner** must include the LGU's or private entities' written authorization in the **SWPPP**. The LGU's or private entity's written authorization must be obtained before the **owner** finalizes the **SWPPP** and before any application for this permit is made to the MPCA.

III.E RECORD RETENTION

The **SWPPP** (original or copies) including, all changes to it, and inspections and maintenance records must be kept at the site during construction by the **Permittee(s)** who has/have operational control of that portion of the site. The **SWPPP** can be kept in either the field office or in an on-site vehicle during normal working hours.

All **owner(s)** must keep the following records on file for three (3) years after submittal of the **NOT** as outlined in Part II.C. This does not include any records after submittal of the **NOT**.

1. The final SWPPP
2. Any other **stormwater** related permits required for the **project**
3. Records of all inspection and maintenance conducted during construction (Part IV.E. Inspections and Maintenance)
4. All permanent operation and maintenance agreements that have been implemented, including all right-of-way, contracts, covenants and other binding requirements regarding perpetual maintenance and
5. All required calculations for design of the temporary and permanent **Stormwater** Management Systems.

III.F. TRAINING REQUIREMENTS

The **Permittee(s)** shall ensure the following individuals identified in this part have been trained in accordance with this Permit's training requirements.

1. Who must be trained:
 - a. Individual(s) preparing the **SWPPP** for the **project**
 - b. Individual(s) overseeing implementation of, revising, and amending the **SWPPP** and individual(s) performing inspections as required in Part IV.E. One of these individual(s) must be available for an onsite inspection within 72 hours upon request by the MPCA.
 - c. Individual(s) performing or supervising the installation, maintenance and repair of **BMPs**. At least one individual on a **project** must be trained in these job duties.
2. Training content: The content and extent of training must be commensurate with the individual's job duties and responsibilities with regard to activities covered under this permit for the **project**. At least one individual present on the permitted **project** site (or available to the **project** site in 72 hours) must be trained in the job duties described in Part III.F.1.b. and Part III.F.1.c.
3. The **Permittee(s)** shall ensure that the individuals are trained by local, state, federal agencies, professional organizations, or other entities with expertise in **erosion prevention, sediment control**, permanent **stormwater** management and the Minnesota **NPDES/SDS** Construction Stormwater Permit. An update refresher-training must be attended every three (3) years starting three (3) years from the issuance date of this permit.

PART IV. CONSTRUCTION ACTIVITY REQUIREMENTS

IV.A. STORMWATER POLLUTION PREVENTION PLAN

The **Permittee(s)** must implement the **SWPPP** and the requirements of this part. The **BMPs** identified in the **SWPPP** and in this permit must be selected, installed, and maintained in an appropriate and functional manner that is in accordance with relevant manufacturer specifications and accepted engineering practices.

IV.B. EROSION PREVENTION PRACTICES

1. The **Permittee(s)** must plan for and implement appropriate **BMPs** such as construction phasing, vegetative buffer strips, horizontal slope grading, inspection and maintenance of Part IV.E. and other construction practices that minimize erosion as necessary to comply with this permit and protect **waters of the state**. The location of areas not to be disturbed must be delineated (e.g., with flags, stakes, signs, silt fence etc.) on the **project** site before work begins. The **Permittee(s)** must minimize the need for disturbance of portions of the **project** that have **steep slopes**. For those sloped areas which must be disturbed, the **Permittee(s)** must use techniques such as phasing and **stabilization** practices designed for **steep slopes** (e.g., slope draining and terracing).
2. The **Permittee(s)** must **stabilize** all exposed soil areas (including stockpiles). **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 14 calendar days. **Stabilization** must be completed no later than 14 calendar days after the **construction activity** in that portion of the site has temporarily or permanently ceased. For **Public Waters** that the Minnesota Department of Natural Resources has promulgated "work

in water restrictions” during specified fish spawning time frames, all exposed soil areas that are within 200 feet of the water’s edge, and drain to these waters must complete the **stabilization** activities within 24 hours during the restriction period. Temporary stockpiles without significant silt, clay or organic components (e.g., clean aggregate stockpiles, demolition concrete stockpiles, sand stockpiles) and the constructed base components of roads, parking lots and similar surfaces are exempt from this requirement but must be in compliance with Part IV.C.5.

3. If using **stormwater** conveyance channels ,the **Permittee(s)** must design the channels to route water around unstabilized areas on the site and to reduce erosion, unless **infeasible**. The **Permittee(s)** must use erosion controls and velocity dissipation devices such as check dams, sediment traps, riprap, or grouted riprap at outlets within and along the length of any constructed **stormwater** conveyance channel, and at any outlet, to provide a non-erosive flow velocity, to minimize erosion of channels and their embankments, outlets, adjacent stream banks, slopes, and downstream waters during discharge conditions.
4. The **Permittee(s)** must **stabilize** the **normal wetted perimeter** of any temporary or permanent drainage ditch or swale that drains water from any portion of the construction site, or diverts water around the site, within 200 lineal feet from the property edge, or from the point of discharge into any **surface water**. **Stabilization** of the last 200 lineal feet must be completed within 24 hours after connecting to a **surface water** or property edge.

The **Permittee(s)** shall complete **stabilization** of the remaining portions of any temporary or permanent ditches or swales within 14 calendar days after connecting to a **surface water** or property edge and construction in that portion of the ditch has temporarily or permanently ceased.

Temporary or permanent ditches or swales that are being used as a sediment containment system during construction (with properly designed rock-ditch checks, bio rolls, silt dikes, etc.) do not need to be **stabilized** during the temporary period of its use as a sediment containment system. These areas must be **stabilized** within 24 hours after no longer being used as a sediment containment system.

Applying mulch, hydromulch, tackifier, polyacrylamide or similar **erosion prevention** practices is not acceptable **stabilization** in any part of a temporary or permanent drainage ditch or swale.

5. Pipe outlets must be provided with temporary or permanent **energy dissipation** within 24 hours after connection to a **surface water**.
6. Unless **infeasible** due to lack of pervious or vegetated areas, the **Permittee(s)** must direct discharges from **BMPs** to vegetated areas of the site (including any **natural buffers**) in order to increase sediment removal and maximize **stormwater** infiltration. The **Permittee(s)** must use velocity dissipation devices if necessary to prevent erosion when directing **stormwater** to vegetated areas.

IV.C. SEDIMENT CONTROL PRACTICES

1. The **Permittee(s)** must employ **Sediment control** practices as necessary to minimize sediment from entering **surface waters**, including curb and gutter systems and storm sewer inlets.

- a. Temporary or permanent drainage ditches and sediment basins that are designed as part of a sediment containment system (e.g., ditches with rock-check dams) require **sediment control** practices only as appropriate for site conditions.
 - b. If the down gradient **sediment controls** are overloaded (based on frequent failure or excessive maintenance requirement), the **Permittee(s)** must install additional upgradient **sediment control** practices or redundant **BMPs** to eliminate the overloading, and the **SWPPP** must be amended to identify these additional practices as required in Part III.B 1.-3.
2. **Sediment control** practices must be established on all down gradient perimeters and be located upgradient of any buffer zones. The perimeter **sediment control** practice must be in place before any upgradient land-disturbing activities begin. These practices shall remain in place until **Final Stabilization** has been established in accordance with Part IV.G. A floating silt curtain placed in the water is not a **sediment control BMP** to satisfy perimeter control requirements in this part except when working on a shoreline and below the waterline. In those cases, a floating silt curtain can be used as a perimeter control practice if the floating silt curtain is installed as close to shore as possible. Immediately after the short term construction activity (e.g. installation of rip rap along the shoreline) in that area is complete, an upland perimeter control practice must be installed if exposed soils still drain to the surface water..
 3. The **Permittee(s)** shall re-install all **sediment control** practices that have been adjusted or removed to accommodate short-term activities such as clearing or grubbing, or passage of vehicles, immediately after the short-term activity has been completed. The **Permittee(s)** shall complete any short-term activity that requires removal of **sediment control** practices as quickly as possible. The **Permittee(s)** must re-install **sediment control** practices before the next precipitation event even if the short-term activity is not complete.
 4. All storm drain inlets must be protected by appropriate **BMPs** during construction until all sources with potential for discharging to the inlet have been **stabilized**. Inlet protection may be removed for a particular inlet if a specific safety concern (street flooding/freezing) has been identified by the **Permittee(s)** or the jurisdictional authority (e.g., city/county/township/MnDOT engineer).The **Permittee(s)** must document the need for removal in the **SWPPP**.
 5. Temporary soil stockpiles must have silt fence or other effective **sediment controls**, and cannot be placed in any **natural buffers** or **surface waters**, including **stormwater** conveyances such as curb and gutter systems, or conduits and ditches unless there is a bypass in place for the **stormwater**.
 6. Where vehicle traffic leaves any part of the site (or onto paved roads within the site):
 - a. The **Permittee(s)** must install a vehicle tracking **BMP** to minimize the track out of sediment from the construction site. Examples of vehicle tracking **BMPs** include (but are not limited to) rock pads, mud mats, slash mulch, concrete or steel wash racks, or equivalent systems.
 - b. The **Permittee(s)** must use street sweeping if such vehicle tracking **BMPs** are not adequate to prevent sediment from being tracked onto the street (see Part IV.E.5.d.).
 7. The **Permittee(s)** must install temporary sedimentation basins as required in Part III.C. of this permit.

8. The **Permittee(s)** must minimize soil compaction and, unless **infeasible**, preserve topsoil. Minimizing soil compaction is not required where the function of a specific area of the site dictates that it be compacted.
9. The **Permittee(s)** must preserve a 50 foot **natural buffer** or (if a buffer is **infeasible** on the site) provide redundant **sediment controls** when a **surface water** is located within 50 feet of the **project's** earth disturbances and stormwater flows to the **surface water**. **Natural buffers** are not required adjacent to road ditches, judicial ditches, county ditches, **stormwater** conveyance channels, storm drain inlets, and sediment basins. The **Permittee(s)** is/are not required to enhance the quality of the vegetation that already exists in the buffer or provide vegetation if none exist. However, **Permittee(s)** can improve the natural buffer with vegetation.
10. If the **Permittee(s)** intend to use polymers, flocculants, or other sedimentation treatment chemicals on the **project** site, the **Permittee(s)** must comply with the following minimum requirements:
 - a. The **Permittee(s)** must use conventional erosion and **sediment controls** prior to chemical addition to ensure effective treatment. Chemicals may only be applied where treated **stormwater** is directed to a **sediment control** system which allows for filtration or settlement of the floc prior to discharge.
 - b. Chemicals must be selected that are appropriately suited to the types of soils likely to be exposed during construction, and to the expected turbidity, pH, and flow rate of **stormwater** flowing into the chemical treatment system or area.
 - c. Chemicals must be used in accordance with accepted engineering practices, and with dosing specifications and sediment removal design specifications provided by the manufacturer or provider/supplier of the applicable chemicals.

IV.D. DEWATERING AND BASIN DRAINING

1. The **Permittee(s)** must discharge turbid or sediment-laden waters related to **dewatering** or basin draining (e.g., pumped discharges, trench/ditch cuts for drainage) to a temporary or permanent sedimentation basin on the **project** site unless **infeasible**. The **Permittee(s)** may discharge from the temporary or permanent sedimentation basins to **surface waters** if the basin water has been visually checked to ensure adequate treatment has been obtained in the basin and that nuisance conditions (see Minn. R. 7050.0210, subp. 2) will not result from the discharge. If the water cannot be discharged to a sedimentation basin prior to entering the **surface water**, it must be treated with the appropriate **BMPs**, such that the discharge does not adversely affect the receiving water or downstream properties. If the **Permittee(s)** must discharge water that contains oil or grease, the **Permittee(s)** must use an oil-water separator or suitable filtration device (e.g. cartridge filters, absorbents pads) prior to discharging the water. The **Permittee(s)** must ensure that discharge points are adequately protected from erosion and scour. The discharge must be dispersed over natural rock riprap, sand bags, plastic sheeting, or other accepted **energy dissipation** measures.

2. All water from **dewatering** or basin-draining activities must be discharged in a manner that does not cause nuisance conditions, erosion in receiving channels or on downslope properties, or inundation in **wetlands** causing significant adverse impact to the **wetland**.
3. If the **Permittee(s)** is/are using filters with backwash water, the **Permittee(s)** must haul the backwash water away for disposal, return the backwash water to the beginning of the treatment process, or incorporate the backwash water into the site in a manner that does not cause erosion. The Permittee(s) may discharge backwash water to the sanitary sewer if permission is granted by the sanitary sewer authority. The **Permittee(s)** must replace and clean the filter media used in **dewatering** devices when required to retain adequate function.

IV.E. INSPECTIONS AND MAINTENANCE

1. The **Permittee(s)** must ensure that a trained person (as identified in Part III.A.3.a.) will routinely inspect the entire construction site at least once every seven (7) days during active construction and within 24 hours after a rainfall event greater than 0.5 inches in 24 hours. Following an inspection that occurs within 24 hours after a rainfall event, the next inspection must be conducted within seven (7) days after the rainfall event.
2. All inspections and maintenance conducted during construction must be recorded within 24 hours in writing and these records must be retained with the **SWPPP** in accordance with Part III.E. Records of each inspection and maintenance activity shall include:
 - a. Date and time of inspections
 - b. Name of person(s) conducting inspections
 - c. Findings of inspections, including the specific location where corrective actions are needed
 - d. Corrective actions taken (including dates, times, and party completing maintenance activities)
 - e. Date and amount of all rainfall events greater than 1/2 inch (0.5 inches) in 24 hours. Rainfall amounts must be obtained by a properly maintained rain gauge installed onsite, a weather station that is within 1 mile of your location or a weather reporting system that provides site specific rainfall data from radar summaries.
 - f. If any discharge is observed to be occurring during the inspection, a record of all points of the property from which there is a discharge must be made, and the discharge should be described (i.e., color, odor, floating, settled, or suspended solids, foam, oil sheen, and other obvious indicators of pollutants) and photographed.
 - g. Any amendments to the **SWPPP** proposed as a result of the inspection must be documented as required in Part III.B. within seven (7) calendar days.
3. Inspection frequency adjustment
 - a. Where parts of the **project** site have **permanent cover**, but work remains on other parts of the site, the **Permittee(s)** may reduce inspections of the areas with **permanent cover** to

once per month.

- b. Where construction sites have **permanent cover** on all exposed soil areas and no **construction activity** is occurring anywhere on the site, the site must be inspected during non-frozen ground conditions at least once per month for a period of twelve (12) months. Following the twelfth month of **permanent cover** and no **construction activity**, inspections may be terminated until **construction activity** is once again initiated unless the **Permittee(s)** is/are notified in writing by the MPCA that erosion issues have been detected at the site and inspections need to resume.
 - c. Where work has been suspended due to frozen ground conditions, the inspections may be suspended. The required inspections and maintenance schedule must begin within 24 hours after runoff occurs at the site or 24 hours prior to resuming construction, whichever comes first.
4. The **Permittee(s)** is/are responsible for the inspection and maintenance of temporary and permanent water quality management **BMPs**, as well as all **erosion prevention** and **sediment control BMPs**, until another **Permittee** has obtained coverage under this Permit according to Part II.B.5. or the **project** has undergone **Final Stabilization**, and an **NOT** has been submitted to the MPCA.
 5. The **Permittee(s)** must inspect all **erosion prevention** and **sediment control BMPs** and Pollution Prevention Management Measures to ensure integrity and effectiveness during all routine and post-rainfall event inspections. All nonfunctional **BMPs** must be repaired, replaced, or supplemented with functional **BMPs** by the end of the next business day after discovery, or as soon as field conditions allow access unless another time frame is specified below. The **Permittee(s)** must investigate and comply with the following inspection and maintenance requirements:
 - a. All perimeter control devices must be repaired, replaced, or supplemented when they become nonfunctional or the sediment reaches one-half (1/2) of the height of the device. These repairs must be made by the end of the next business day after discovery, or thereafter as soon as field conditions allow access.
 - b. Temporary and permanent sedimentation basins must be drained and the sediment removed when the depth of sediment collected in the basin reaches one-half (1/2) the storage volume. Drainage and removal must be completed within 72 hours of discovery, or as soon as field conditions allow access (see Part IV.D.).
 - c. **Surface waters**, including drainage ditches and conveyance systems, must be inspected for evidence of erosion and sediment deposition during each inspection. The **Permittee(s)** must remove all deltas and sediment deposited in **surface waters**, including drainage ways, catch basins, and other drainage systems, and restabilize the areas where sediment removal results in exposed soil. The removal and **stabilization** must take place within seven (7) days of discovery unless precluded by legal, regulatory, or physical access constraints. The **Permittee(s)** shall use all reasonable efforts to obtain access. If precluded, removal and **stabilization** must take place within seven (7) calendar days of obtaining access. The **Permittee(s)** is/are responsible for contacting all local, regional, state and federal authorities and receiving any applicable permits, prior to conducting any work in surface waters.

- d. Construction site vehicle exit locations must be inspected for evidence of off-site sediment tracking onto paved surfaces. Tracked sediment must be removed from all paved surfaces both on and off site within 24 hours of discovery, or if applicable, within a shorter time to comply with Part IV.C.6.
 - e. Streets and other areas adjacent to the **project** must be inspected for evidence of off-site accumulations of sediment. If sediment is present, it must be removed in a manner and at a frequency sufficient to minimize off-site impacts (e.g., fugitive sediment in streets could be washed into storm sewers by the next rain and/or pose a safety hazard to users of public streets).
6. All infiltration areas must be inspected to ensure that no sediment from ongoing **construction activity** is reaching the infiltration area. All infiltration areas must be inspected to ensure that equipment is not being driven across the infiltration area.

IV.F. POLLUTION PREVENTION MANAGEMENT MEASURES

The **Permittee(s)** shall implement the following pollution prevention management measures on the site:

1. Storage, Handling, and Disposal of Construction Products, Materials, and Wastes: The **Permittee(s)** shall comply with the following to minimize the exposure to **stormwater** of any of the products, materials, or wastes. Products or wastes which are either not a source of contamination to stormwater or are designed to be exposed to stormwater are not held to this requirement:
 - a. Building products that have the potential to leach pollutants must be under cover (e.g., plastic sheeting or temporary roofs) to prevent the discharge of pollutants or protected by a similarly effective means designed to minimize contact with **stormwater**.
 - b. Pesticides, herbicides, insecticides, fertilizers, treatment chemicals, and landscape materials must be under cover (e.g., plastic sheeting or temporary roofs) to prevent the discharge of pollutants or protected by similarly effective means designed to minimize contact with **stormwater**.
 - c. Hazardous materials, toxic waste, (including oil, diesel fuel, gasoline, hydraulic fluids, paint solvents, petroleum-based products, wood preservatives, additives, curing compounds, and acids) must be properly stored in sealed containers to prevent spills, leaks or other discharge. Restricted access storage areas must be provided to prevent vandalism. Storage and disposal of hazardous waste or hazardous materials must be in compliance with Minn. R. ch. 7045 including secondary containment as applicable.
 - d. Solid waste must be stored, collected and disposed of properly in compliance with Minn. R. ch. 7035.
 - e. Portable toilets must be positioned so that they are secure and will not be tipped or knocked over. Sanitary waste must be disposed of properly in accordance with Minn. R. ch. 7041.

2. Fueling and Maintenance of Equipment or Vehicles; Spill Prevention and Response: The **Permittee(s)** shall take reasonable steps to prevent the discharge of spilled or leaked chemicals, including fuel, from any area where chemicals or fuel will be loaded or unloaded including the use of drip pans or absorbents unless infeasible. The **Permittee(s)** must conduct fueling in a contained area unless infeasible. The **Permittee(s)** must ensure adequate supplies are available at all times to clean up discharged materials and that an appropriate disposal method is available for recovered spilled materials. The **Permittee(s)** must report and clean up spills immediately as required by Minn. Stat. § 115.061, using dry clean up measures where possible.
3. Vehicle and equipment washing: If the **Permittee(s)** wash the exterior of vehicles or equipment on the **project** site, washing must be limited to a defined area of the site. Runoff from the washing area must be contained in a sediment basin or other similarly effective controls and waste from the washing activity must be properly disposed of. The **Permittee(s)** must properly use and store soaps, detergents, or solvents. No engine degreasing is allowed on site.
4. Concrete and other washouts waste: The **Permittee(s)** must provide effective containment for all liquid and solid wastes generated by washout operations (concrete, stucco, paint, form release oils, curing compounds and other construction materials) related to the **construction activity**. The liquid and solid washout wastes must not contact the ground, and the containment must be designed so that it does not result in runoff from the washout operations or areas. Liquid and solid wastes must be disposed of properly and in compliance with MPCA rules. A sign must be installed adjacent to each washout facility that requires site personnel to utilize the proper facilities for disposal of concrete and other washout wastes.

IV.G. FINAL STABILIZATION

The **Permittee(s)** must ensure **Final Stabilization** of the site. **Final Stabilization** is not complete until all requirements of Parts IV.G.1-5. are complete:

1. All soil disturbing activities at the site have been completed and all soils are **stabilized** by a uniform perennial vegetative cover with a density of 70 percent of its expected final growth density over the entire pervious surface area, or other equivalent means necessary to prevent soil failure under erosive conditions.
2. The permanent **stormwater** management system is constructed, meets all requirements in Part III.D. and is operating as designed. Temporary or permanent sedimentation basins that are to be used as permanent water quality management basins have been cleaned of any accumulated sediment. All sediment has been removed from conveyance systems and ditches are **stabilized** with **permanent cover**.
3. All temporary synthetic and structural **erosion prevention** and **sediment control BMPs** (such as silt fence) have been removed on the portions of the site for which the **Permittee(s)** is/are responsible. **BMPs** designed to decompose on site (such as some compost logs) may be left in place.
4. For residential construction only, individual lots are considered finally **stabilized** if the structure(s) are finished and **temporary erosion protection** and downgradient perimeter control has been completed and the residence has been sold to the homeowner. Additionally, the **Permittee** has distributed the MPCA's "**Homeowner Fact Sheet**" to the homeowner to inform

the homeowner of the need for, and benefits of, **permanent cover**.

5. For construction **projects** on agricultural land (e.g., pipelines across crop, field pasture or range land) the disturbed land has been returned to its preconstruction agricultural use.

PART V. GENERAL PROVISIONS

V.A. APPLICABILITY CRITERIA

1. If the **Commissioner** determines that pollution in **stormwater** discharges associated with a **construction activity** are contributing to a violation of a water quality standard or due to specific site considerations rendering a substantial portion of the requirements of this permit impossible to comply with, and the **Commissioner** determines that the **construction activity** would be more appropriately regulated by an individual permit, the **Commissioner** may terminate coverage under this general permit and require the **owner and operator** to continue the **construction activity** subject to an individual **stormwater** discharge permit. Upon issuance of an individual permit, this general permit would no longer apply. Prior to termination of coverage under this general permit, the **Commissioner** will provide notice and an opportunity to request a contested case hearing.
2. If the terms and conditions of this general permit cannot be met, an **owner** may request an individual permit, in accordance with Minn. R. 7001.0210 subp. 6.
3. Any interested person may petition the MPCA to require an individual **NPDES/SDS** permit in accordance with 40 CFR 122.28(b)(3).

V.B. RECORD AVAILABILITY

1. The **Permittee(s)** must make the **SWPPP**, including all certificates, reports, records, or other information required by this permit, available to federal, state, and local officials within 72 hours upon request for the duration of the permit and for three (3) years following the **NOT**. This does not include any records after submittal of the **NOT**.
2. When requested by the MPCA, the **Permittee(s)** must make the responsible person trained as required in Part III.F.1.b. or Part III.F.1.c. available to be onsite during an MPCA inspection within 72 hours of a request.

V.C. PROHIBITIONS

This permit prohibits discharges of any material other than **stormwater** treated in compliance with this permit and discharges from **dewatering** or basin draining activities in accordance with Part IV.D.1.-2. Prohibited discharges include (but are not limited to) wastewater from washout of concrete, stucco, paint, form release oils, curing compounds and other construction materials, fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance, soaps or solvents used in vehicle and equipment washing and maintenance, and other hazardous substances or wastes.

V.D. TRANSFER OF OWNERSHIP OR CONTROL

This permit may not be assigned or transferred by the **Permittee(s)** except when transfer occurs in accordance with the applicable requirements of Part II.B.5.

V.E. CIVIL AND CRIMINAL LIABILITY

Nothing in this permit must be construed to relieve the **Permittee(s)** from civil or criminal penalties for noncompliance with the terms and conditions provided herein. Nothing in this permit must be construed to preclude the initiation of any legal action or relieve the **Permittee(s)** from any responsibilities, liabilities, or penalties to which the **Permittee(s)** is/are or may be subject to under Section 311 of the Clean Water Act and Minn. Stat. § 115 and 116, as amended. The **Permittee(s)** is/are not liable for permit requirements for activities occurring on those portions of a site where the permit has been transferred to another party as required in Part II.B.5. or the **Permittee(s)** **has/have** submitted the **NOT** as required in Part II.C.

V.F. SEVERABILITY

The provisions of this permit are severable. If any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit must not be affected thereby.

V.G. NPDES/SDS RULE STANDARD GENERAL CONDITIONS

The **Permittee(s)** must comply with the provisions of Minn. R. 7001.0150, subp. 3 and Minn. R. 7001.1090, subp. 1(A), 1(B), 1(C), 1(H), 1(I), 1(J), 1(K), and 1(L).

V.H. INSPECTION AND ENTRY

The **Permittee(s)** must allow access as provided in 40 CFR 122.41(i) and Minn. Stat. § 115.04. The **Permittee(s)** shall allow representatives of the MPCA or any member, employee or agent thereof, when authorized by it, upon presentation of credentials, to enter upon any property, public or private, for the purpose of obtaining information or examination of records or conducting surveys or investigations.

APPENDIX A

A. GENERAL REQUIREMENTS

All requirements in this Appendix are in addition to **BMPs** already specified in the permit. Where provisions of Appendix A, conflict with requirements elsewhere in the permit, the provisions in Appendix A take precedence. All **BMPs** used to comply with this Appendix must be documented in the **SWPPP** for the **project**. If the terms and conditions of this Appendix cannot be met, an individual permit will be required in accordance with Minn. R. ch. 7001.

B. REQUIREMENTS FOR DISCHARGES TO SPECIAL WATERS AND IMPAIRED WATERS

Additional **BMPs** and enhanced runoff controls identified in this Part are required for discharges to the following special waters (Part B.1 through B.9 of Appendix A) and impaired waters (Part B.10 of Appendix A). The **BMPs** identified for each special or impaired water are required for those areas of

the **project** draining to a discharge point on the **project** that is within one mile (**aerial radius measurement**) of special or impaired water and flows to that special or impaired water.

1. Wilderness areas: Boundary Waters Canoe Area Wilderness; Voyageurs National Park; Kettle River from the site of the former dam at Sandstone to its confluence with the Saint Croix River; Rum River from Ogechie Lake spillway to the northernmost confluence with Lake Onamia. Discharges to these waters must incorporate the **BMPs** outlined in C.1., C.2., and C.3. of this Appendix.
2. Mississippi River: Those portions from Lake Itasca to the southerly boundary of Morrison County that are included in the Mississippi Headwaters Board comprehensive plan dated February 12, 1981. Discharges to these waters must incorporate the **BMPs** outlined in C.1., C.2. and C.3. of this Appendix.
3. Scenic or recreational river segments: Saint Croix River, entire length; Cannon River from northern city limits of Faribault to its confluence with the Mississippi River; North Fork of the Crow River from Lake Koronis outlet to the Meeker-Wright county line; Kettle River from north Pine County line to the site of the former dam at Sandstone; Minnesota River from Lac qui Parle dam to Redwood County State Aid Highway 11; Mississippi River from County State Aid Highway 7 bridge in Saint Cloud to northwestern city limits of Anoka; and Rum River from State Highway 27 bridge in Onamia to Madison and Rice streets in Anoka. Discharges to these waters must incorporate the **BMPs** outlined in C.1., C.2. and C.3. of this Appendix.
4. Lake Superior: (Prohibited and restricted) Discharges to Lake Superior must incorporate the **BMPs** outlined in C.1., C.2. and C.3. of this Appendix.
5. Lake Trout Lakes: Identified in Minn. R. 7050.0470, including those inside the boundaries of the Boundary Waters Canoe Area Wilderness and Voyageurs National Park. Discharges to these waters must incorporate the **BMPs** outlined in C.1., C.2., and C.3. of this Appendix.
6. Trout Lakes: Identified in Minn. R. 6264.0050, subp. 2. Discharges to these waters must incorporate the **BMPs** outlined in C.1., C.2., and C.3., of this Appendix.
7. Scientific and natural areas: Boot Lake, Anoka County; Kettle River in sections 15, 22, 23, T 41 N, R 20, Pine County; Pennington Bog, Beltrami County; Purvis Lake-Ober Foundation, Saint Louis County; waters within the borders of Itasca Wilderness Sanctuary, Clearwater County; Iron Springs Bog, Clearwater County; Wolsfeld Woods, Hennepin County; Green Water Lake, Becker County; Blackdog Preserve, Dakota County; Prairie Bush Clover, Jackson County; Black Lake Bog, Pine County; Pembina Trail Preserve, Polk County; and Falls Creek, Washington County. Discharges to these waters must incorporate the **BMPs** outlined in C.1., C.2., and C.3. of this Appendix.
8. Trout Streams: Listed in Minn. R. 6264.0050, subp. 4. Discharges to these waters must incorporate the **BMPs** outlined in C.1., C.2., C.3., and C.4. of this Appendix.
9. Calcareous Fens: Listed in Minn. R 7050.0180 subp.6b. Discharges to these Calcareous Fens must incorporate the **BMPs** outlined in C.1. and C.2. of this Appendix.
10. Impaired Waters: Waters identified as impaired under section 303 (d) of the federal Clean Water

Act for phosphorus (nutrient eutrophication biological indicators), turbidity, dissolved oxygen or aquatic biota (fish bioassessment, aquatic plant bioassessment and aquatic macroinvertebrate bioassessment).

- a. Impaired Water Without an Approved TMDL or With an Approved TMDL and No Waste Load Allocation:

If runoff from the site discharges to an impaired water, and a TMDL has not been approved by USEPA or there is a USEPA approved TMDL that does not establish a Waste Load Allocation (WLA) for construction **stormwater**, discharges to these waters must incorporate the **BMPs** outlined in C.1. and C.2. of this Appendix.

- b. Impaired Water With an Approved TMDL and WLA:

If runoff from the site discharges to an impaired water for which there is a USEPA approved TMDL that establishes a WLA for construction **stormwater**, and the TMDL does not identify any specific implementation activities that would apply to the site discharges, discharges to these waters must incorporate the **BMPs** outlined in C.1. and C.2. of this Appendix.

If the TMDL identifies specific implementation activities regarding construction **stormwater** that would apply to the site discharges, the **Permittee(s)** must include the following in the **SWPPP**:

- i. Identify the receiving water, the areas of the site discharging to it, and the pollutant(s) identified in the TMDL and
- ii. **BMPs** identified in the TMDL and any other specific construction **stormwater** related implementation activities identified in the TMDL.

Note on impaired waters listing terminology: The terms in parenthesis in Appendix A, Part B.10. above are the most current terminology used to list waters as impaired at the time of permit issuance. These terms are subject to change. For example, at one time waters were listed as impaired for phosphorus and now those same waters are listed as impaired for nutrient eutrophication biological indicators. If the terminology changes for one of the pollutant(s) or stressor(s) identified in the permit, the MPCA will keep a list of the new terms on its construction **stormwater** website.

C. ADDITIONAL **BMPs** FOR SPECIAL WATERS AND IMPAIRED WATERS

For the **BMPs** described in C.2., and C.4. of this Appendix:

Where the proximity to bedrock precludes the installation of any of the permanent **stormwater** management practices outlined in Appendix A, other treatment (such as grassed swales, smaller ponds, or grit chambers) is required prior to discharge to **surface waters**.

For work on linear **projects** with lack of right-of-way where the **Permittee(s)** cannot obtain an easement or other permission for property needed to install treatment systems capable of treating the entire **water quality volume** on site, the **Permittee(s)** must maximize the **water quality volume** that can be treated prior to discharge to **surface waters**. Treatment can be provided through other

methods or combination of methods such as grassed swales, filtration systems, smaller ponds or grit chambers prior to discharge to **surface waters**. A reasonable attempt must be made to obtain right-of-way during the **project** planning process. Documentation of these attempts must be in the **SWPPP** per Part III.A.5.m. in the section addressing **infeasibility**.

1. During construction:
 - a. **Stabilization** of all exposed soil areas must be **initiated immediately** to limit soil erosion but in no case completed later than seven (7) days after the **construction activity** in that portion of the site has temporarily or permanently ceased.
 - b. Temporary sediment basin requirements described in Part III.C. must be used for common drainage locations that serve an area with five (5) or more acres disturbed at one time.
2. Post construction: The **water quality volume** that must be retained on site by the **project's** permanent **stormwater** management system described in Part III.D. shall be one (1) inch of runoff from the new **impervious surfaces** created by the **project**. See Part III.D.1. for more information on infiltration design, prohibitions and appropriate site conditions.
3. Buffer zone: The **Permittee(s)** shall include an undisturbed buffer zone of not less than 100 linear feet from the special water (not including tributaries) and this buffer zone shall be maintained at all times, both during construction and as a permanent feature post construction, except where a water crossing or other encroachment is necessary to complete the **project**. The **Permittee(s)** must fully document the circumstance and reasons that the buffer encroachment is necessary in the **SWPPP** and include restoration activities. Replacement of existing **impervious surface** within the buffer is allowed under this permit. All potential water quality, scenic and other environmental impacts of these exceptions must be minimized by the use of additional or redundant **BMPs** and documented in the **SWPPP** for the **project**.
4. Temperature Controls: The **Permittee(s)** must design the Permanent **Stormwater** Management System such that the discharge from the **project** will minimize any increase in the temperature of trout stream receiving waters resulting from the one (1)-and two (2)-year 24-hour precipitation events. This includes all tributaries of designated trout streams within the Public Land Survey System (PLSS) Section that the trout stream is located. **Projects** that discharge to trout streams must minimize the impact using one or more of the following measures, in order of preference:
 - a. Minimize new **impervious surfaces**.
 - b. Minimize the discharge from connected **impervious surfaces** by discharging to vegetated areas, or grass swales, and through the use of other non-structural controls.
 - c. Infiltration or other volume reduction practices to reduce runoff in excess of pre-**project** conditions (up to the two (2)-year 24-hour precipitation event).
 - d. If ponding is used, the design must include an appropriate combination of measures such as shading, filtered bottom withdrawal, vegetated swale discharges or constructed wetland treatment cells that will limit temperature increases. The pond should be designed to draw down in 24 hours or less.

- e. Other methods that will minimize any increase in the temperature of the trout stream.

D. REQUIREMENTS FOR DISCHARGING TO WETLANDS

If the **project** has any discharges with the potential for significant adverse impacts to a **wetland**, (e.g., conversion of a natural **wetland** to a **stormwater** pond) the **Permittee(s)** must demonstrate that the **wetland** mitigative sequence has been followed in accordance with D.1 or D.2 of this Appendix.

1. If the potential adverse impacts to a **wetland** on a specific **project** site have been addressed by permits or other approvals from an official statewide program (U.S. Army Corps of Engineers 404 program, Minnesota DNR, or the State of Minnesota Wetland Conservation Act) that are issued specifically for the **project** and **project** site, the **Permittee(s)** may use the permit or other determination issued by these agencies to show that the potential adverse impacts have been addressed. For the purposes of this permit, de minimus actions are determinations by the permitting agency that address the **project** impacts, whereas a non-jurisdictional determination does not address **project** impacts.
2. If there are impacts from the **project** that are not addressed in one of the permits or other determinations discussed in Appendix A, Part D.1. (e.g., permanent inundation or flooding of the **wetland**, significant degradation of water quality, excavation, filling, draining), the **Permittee(s)** must minimize all adverse impacts to **wetlands** by utilizing appropriate measures. Measures used must be based on the nature of the **wetland**, its vegetative community types and the established hydrology. These measures include in order of preference:
 - a. Avoid all significant adverse impacts to **wetlands** from the **project** and post-**project** discharge.
 - b. Minimize any unavoidable impacts from the **project** and post-**project** discharge.
 - c. Provide compensatory mitigation when the **Permittee(s)** determine(s) that there is no reasonable and practicable alternative to having a significant adverse impact on a **wetland**. For compensatory mitigation, **wetland** restoration or creation shall be of the same type, size and whenever reasonable and practicable in the same watershed as the impacted **wetland**.

E. DISCHARGES REQUIRING ENVIRONMENTAL REVIEW

This permit does not replace or satisfy any environmental review requirements, including those under the Minnesota Environmental Policy Act or the National Environmental Policy Act. The **owner** must verify that any environmental review required by law, including any required Environmental Assessment Work sheets or Environmental Impact Statements, Federal environmental review, or other required review is complete before making application for coverage under this permit, and the **owner** must incorporate any **stormwater** mitigation measures required as the result of any environmental review into the **SWPPP** for the **project**. If any part of your **common plan of development or sale** requires environmental review, coverage under this permit cannot be obtained until such environmental review is complete.

F. DISCHARGES AFFECTING ENDANGERED OR THREATENED SPECIES

This permit does not replace or satisfy any review requirements for endangered or threatened species, from new or expanded discharges that adversely impact or contribute to adverse impacts on a listed endangered or threatened species, or adversely modify a designated critical habitat. The **owner** must conduct any required review and coordinate with appropriate agencies for any **project** with the potential of affecting threatened or endangered species, or their critical habitat.

G. DISCHARGES AFFECTING HISTORIC PLACES OR ARCHEOLOGICAL SITES

This permit does not replace or satisfy any review requirements for historic places or archeological sites, from new or expanded discharges that adversely affect properties listed or eligible for listing in the National Register of Historic Places or affecting known or discovered archeological sites. The **owner** must be in compliance with National Historic Preservation Act and conduct all required review and coordination related to historic preservation, including significant anthropological sites and any burial sites, with the Minnesota Historic Preservation Officer.

APPENDIX B. – DEFINITIONS

1. **“Aerial radius measurement”** means the shortest straight line distance measurement between the point of **stormwater** discharge from a **project** construction site to the nearest edge of the water body the **stormwater** will flow to. This measurement does not follow the meander flow path.
2. **“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 of 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.

Individual **BMPs** found in this permit are described in the current versions of Protecting Water Quality in Urban Areas, MPCA and The Minnesota Stormwater Manual, MPCA. **BMPs** must be adapted to the site and can be adopted from other sources. However, they must be similar in purpose and at least as effective and stringent as MPCA’s **BMPs**. (Other sources include manufacturers specifications, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices, U.S. Environmental Protection Agency 1992, and Erosion Control Design Manual, Minnesota Department of Transportation, et al, 1993).

3. **“Commissioner”** means the **Commissioner** of the MPCA or the **Commissioner's** designee.
4. **“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.
5. **“Construction Activity”** includes **construction activity** as defined in 40 C.F.R. pt. 122.26(b)(14)(x) and small construction activity as defined in 40 C.F.R. pt. 122.26(b)(15) and **construction activity** as defined by Minn. R. 7090.0080, subp. 4. This includes a disturbance to the land that results in a change in the topography, existing soil cover (both vegetative and non-vegetative), or the existing soil topography that may result in accelerated **stormwater** runoff, leading to soil erosion and

movement of sediment into **surface waters** or drainage systems. Examples of **construction activity** may include clearing, grading, filling, and excavating. **Construction activity** includes the disturbance of less than one acre of total land area that is a part of a larger **common plan of development or sale** if the larger common plan will ultimately disturb one (1) acre or more. **Construction activity** does not include a disturbance to the land of less than five (5) acres for the purpose of routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the facility.

6. **“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 water appropriation permit and, if dewatering water is contaminated, discharge of such water may require an individual MPCA **NPDES/SDS** permit.
7. **“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.
8. **“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.
9. **“Final Stabilization”** means required actions in Part IV.G. taken after the completion of **construction activities** and prior to submitting the **NOT** that are intended to prevent discharge of pollutants associated with stormwater discharges from the **project**.
10. **“Homeowner Fact Sheet”** means a fact sheet developed by the MPCA and available on the MPCA Construction **Stormwater** website to be given to homeowners at the time of sale by a builder to inform the homeowner of the need for, and benefits of, **Final Stabilization**.
11. **“Infeasible”** means not technologically possible or not economically practicable and achievable in light of the best industry practices.
12. **“Initiated immediately”** means taking an action to commence **stabilization** as soon as practicable, but no later than the end of the work day, following the day when the earth-disturbing activities have temporarily or permanently ceased, if the **Permittee(s)** know that construction work on that portion of the site will be temporarily ceased for 14 or more additional calendar days or 7 calendar days where Appendix A.C.1.a applies. The following activities can be taken to initiate **stabilization**:
 1. prepping the soil for vegetative or non-vegetative **stabilization**
 2. applying mulch or other non-vegetative product to the exposed soil area
 3. seeding or planting the exposed area
 4. starting any of the activities in # 1 – 3 on a portion of the area to be **stabilized**, but not on the entire area and
 5. finalizing arrangements to have **stabilization** product fully installed in compliance with the applicable deadline for completing **stabilization**

13. **“Impervious Surface”** means a constructed hard surface that either prevents or retards the entry of water into the soil and causes water to run off the surface in greater quantities and at an increased rate of flow than prior to development. Examples include rooftops, sidewalks, patios, driveways, parking lots, storage areas, and concrete, asphalt, or gravel roads.
14. **“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 United States Code of Federal Regulations Title 33, Sections 1317, 1328, 1342, and 1345.
15. **“Natural Buffer”** means an area of undisturbed cover surrounding surface waters within which construction activities are restricted. **Natural buffer** includes the vegetation, exposed rock, or barren ground that exists prior to commencement of earth-disturbing activities.
16. **“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.
17. **“Notice of Termination (NOT)”** means notice to terminate coverage under this permit after construction is complete, the site has undergone **Final Stabilization**, and maintenance agreements for all permanent facilities have been established, in accordance with all applicable conditions of this permit.
18. **“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 named on the permit as a **Permittee**.
19. **“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**.
20. **“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 (i.e. evenly distributed, without large bare areas) with a density of 70 percent of the native 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**.
21. **“Permittee(s)”** means the person or persons, firm, or governmental agency or other entity that signs the application submitted to the MPCA and is responsible for compliance with the terms and conditions of this permit.
22. **“Project(s)”** means all **construction activity** that is planned and/or conducted under a particular permit. The **project** will occur on the site or sites described in the permit application, the **SWPPP** and in the associated plans, specifications and contract documents.

23. **“Public Waters”** means all water basins and watercourses that are described in Minn. Stat. § 103G.005 subd. 15.
24. **“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.
25. **“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. A floating silt curtain placed in the water is not a **sediment control BMP** to satisfy perimeter control requirements, except as provided for in Part IV.C.2.
26. **“Stabilize, Stabilized, Stabilization”** means the exposed ground surface has been covered by appropriate materials such as mulch, staked sod, riprap, erosion control blanket, mats or other material that prevents erosion from occurring. Grass, agricultural crop or other seeding alone is not **stabilization**. Mulch materials must achieve approximately 90 percent ground coverage (typically 2 ton/acre).
27. **“Standard details”** means generic drawings showing a common or repeated **construction activity** or practice.
28. **“Stormwater”** is defined under Minn. R. 7077.0105, subp. 41(b), and includes precipitation runoff, **stormwater** runoff, snowmelt runoff, and any other surface runoff and drainage.
29. **“Steep Slopes”** means slopes that are 1:3 (V:H) (33.3 percent) or steeper in grade.
30. **“Storm Water Pollution Prevention Plan (SWPPP)”** means a plan for **stormwater** discharge that includes all required content under Part III of this Permit and which describes the **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.
31. **“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. Treatment basins or ponds that were constructed in **wetlands** and mitigated in accordance with Appendix A.D are also not considered surface waters for purposes of this permit.
32. **“Temporary Erosion Protection”** means methods employed to prevent erosion during construction activities. Examples of **temporary erosion protection** include, but are not limited to: straw, wood fiber blanket, wood chips, vegetation, mulch, and rolled erosion control products.
33. **“Underground Waters”** 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 ground water shall be synonymous with underground water.

34. **“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.
35. **“Water Quality Volume”** means one (1) inch of runoff from the new **impervious surfaces** created by this **project** (calculated as an instantaneous volume) and is the volume of water to be treated in the Permanent **Stormwater** Management System, as required by this permit.
36. **“Wetland” or “Wetlands”** is defined in Minn. R. 7050.0186, subp. 1a.B. and includes those 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. **Wetlands** generally include swamps, marshes, bogs, and similar areas. Constructed wetlands designed for wastewater treatment are not **waters of the state**. **Wetlands** must have the following attributes:
- a. A predominance of hydric soils
 - b. 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 a **saturated soil** condition and
 - c. Under normal circumstances support a prevalence of such vegetation.

Appendix B

Example Maintenance Agreement

EXAMPLE MAINTENANCE AGREEMENT

Private Stormwater BMP Maintenance Agreement

I. THIS AGREEMENT, made this _____ day of _____, 20____, by and between the City of _____, MN (hereinafter referred at as the "City") and, [corporation, individual] (hereinafter referred to as "_____") with reference to the following facts and circumstances:

- A. (*) _____ is the fee owner of certain real property situated in the City of _____, legally described as follows:
(Legal) _____
(*)CAPS _____ (_____)
(hereinafter referred at as the "Subject Property")
- B. As a condition of its approval of the development for the Subject Property, the City has required that the parties hereto enter into an agreement, which makes provision for the maintenance of the Stormwater Management Best Management Practice(s) (BMPs) located within the boundaries of the Subject Property as the same is described and depicted in those certain construction plans drawn by _____, approved by the City and constructed by _____. The Stormwater Management BMPs is(are) located in the platted drainage and utility easement in _____.
- C. The parties hereto desire to set forth their agreement with respect to the maintenance of the Stormwater Management BMPs and the costs of such maintenance.

II. NOW THEREFORE, in consideration of the foregoing facts and circumstances, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereto hereby agree as follows:

- A. For the purpose of this Agreement, maintenance of the Stormwater Management BMPs shall mean the regular inspection, routine maintenance, and major maintenance described within the maintenance plan and as required to maintain the performance standard and function of the Stormwater Management BMPs identified within the project Stormwater Pollution Prevention Plan (SWPPP) and construction documents.
- B. (*) _____ shall be solely responsible for the maintenance of the Stormwater Management BMPs, and shall bear all costs of such maintenance.
- C. (*) _____ shall complete an annual report, certified by a qualified individual. The report shall include written documentation of the inspection schedule, times of inspection, remedial actions taken to repair, modify, or reconstruct the BMPs,

certification that the BMP is functioning in accordance with the approved plans, and notification of any planned change in responsibility for the BMPs. (*) shall retain completed annual reports for a minimum of 15 years and shall provided the City with the written documentation upon request.

- D. (*) shall grant the City or its agents or contractor the right of entry at reasonable times and in a reasonable manner for the purpose of inspecting, operating, installing, constructing, reconstructing, maintaining, or repairing the BMPs.
- E. (*) shall grant to the City the necessary easements and right-of-way and maintain perpetual access from public right-of-ways to the BMPs for the City or its agent or contractor.
- F. If, upon inspection, the City finds that (*) has failed to properly maintain the BMPs, the City may order the work to be performed within days. In the event the work is not performed or a schedule for undertaking the work to be performed has not been provided within the specified time, (*) agrees to allow the City to enter the property and take whatever steps it deems necessary to maintain the BMPs. The cost reasonably incurred by the City for performing such maintenance shall be reimbursed to the City within 30 days by the party responsible for such maintenance and, if the responsible party does not timely reimburse the City, then the City may recover its costs by levying a special assessment.
- G. (*), as present owner of the Subject Property, for itself and respective successors and assigns, hereby waives any statutory right which it may have to contest any such assessment by the City of its maintenance costs on the basis of the benefit to portions of the Subject property.
- H. The City is under no obligation to maintain or repair said BMPs, and in no event shall this Agreement be construed to impose any such obligation on the City.
- I. (*) heirs, administrators, executors, assigns and any other successor interest shall indemnify and hold harmless the City and its officers, agents and employees for any and all damages, accidents, casualties, occurrences, claims or attorney's fees which might arise or be asserted, in whole or in part, against the City from the construction, presence, existence, or maintenance of the BMPs subject to the Agreement. In the event a claim is asserted against the City, its officers, agents or employees, the City shall notify (*) and (*) shall defend at (*) expense any suit based on such claim. If any judgment or claim against the City, its officers, agents or employees, shall be allowed, (*) shall pay all costs and expenses in connection therewith. The City will not indemnify, defend or hold harmless in any fashion (*) from any claims arising from any failure,

regardless of any language in any attachment or other document that the (*) _____
_____ may provide.

- J. (*) _____ shall not transfer, assign or modify its responsibilities with respect to this Agreement without the City's written prior consent. Nothing herein shall be construed to prohibit a transfer by (*) _____.
- K. No waiver of any provision of this agreement shall affect the right of any party thereafter to enforce such provisions or to exercise any right or remedy available.
- L. (*) _____ shall provide as attachment to this agreement the required Maintenance Plan, as-built drawings, and certification that the BMP has been constructed properly as required by the City of Glencoe Construction Site and Post-Construction Stormwater Management Ordinance and The City's Stormwater Management Design Guide.
- M. The terms and conditions of the Agreement shall be binding upon, and shall insure to the benefit of, the parties hereto and their respective successors and assigns.

III. IN WITNESS WHEREOF, the parties hereto have caused this document to be executed as of the day and year first above written.

Title _____
For the City of _____

Date

[corporation, individual]

Date

Appendix C

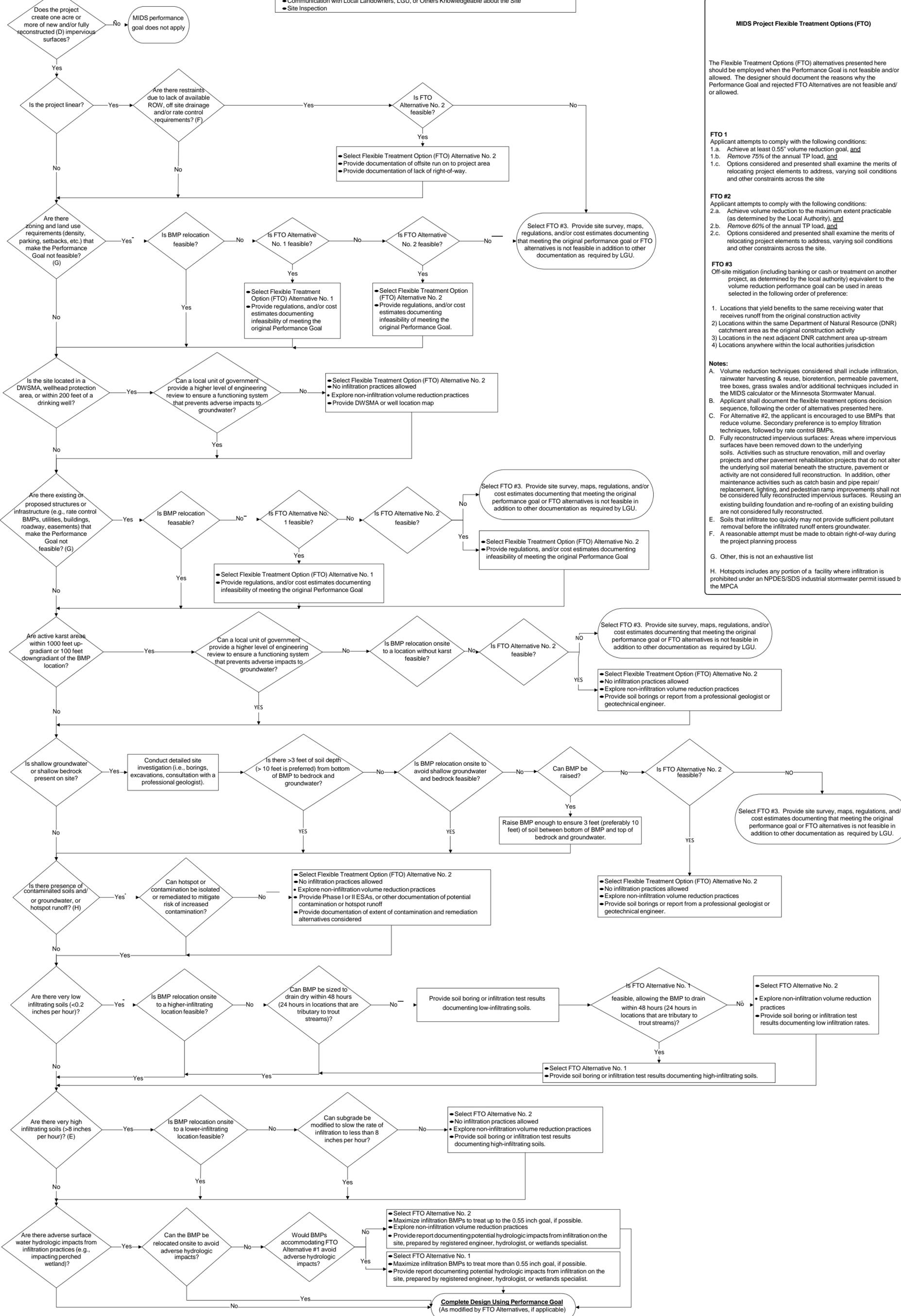
MIDS Design Sequence Flowchart

- Conduct Site Review:**
- Aerial Photos and Topographic Maps
 - County Soil Surveys and other Soil Information as Available
 - County Geologic Atlas
 - Local Groundwater Levels
 - DWSMA and Wellhead Protection Maps
 - FEMA and Local Floodplain Maps
 - Soil Borings and Site Survey
 - MPCA Listing of Potentially Contaminated Sites
 - Phase 1 and 2 Environmental Site Assessments
 - TMDLs and Local Water Quality Standards
 - Wetland Delineations, MNRAM Assessments, and Wetland Classifications
 - Proposed Conditions, Conceptual/Preliminary Site Design
 - Local zoning and land use requirements/ordinances, including stormwater rate control requirements
 - Communication with Local Landowners, LGU, or Others Knowledgeable about the Site
 - Site Inspection

Define Performance Goal

New and redevelopment projects: Retain on site a volume of 1.1" from impervious surfaces

Linear projects: Retain on site the larger of 1.1" from all new, or .55" from all new and fully reconstructed (D) impervious surfaces.



MIDS Project Flexible Treatment Options (FTO)

The Flexible Treatment Options (FTO) alternatives presented here should be employed when the Performance Goal is not feasible and/or allowed. The designer should document the reasons why the Performance Goal and rejected FTO Alternatives are not feasible and/or allowed.

FTO #1
Applicant attempts to comply with the following conditions:
1.a. Achieve at least 0.55" volume reduction goal, and
1.b. Remove 75% of the annual TP load, and
1.c. Options considered and presented shall examine the merits of relocating project elements to address, varying soil conditions and other constraints across the site

FTO #2
Applicant attempts to comply with the following conditions:
2.a. Achieve volume reduction to the maximum extent practicable (as determined by the Local Authority), and
2.b. Remove 60% of the annual TP load, and
2.c. Options considered and presented shall examine the merits of relocating project elements to address, varying soil conditions and other constraints across the site.

FTO #3
Off-site mitigation (including banking or cash or treatment on another project, as determined by the local authority) equivalent to the volume reduction performance goal can be used in areas selected in the following order of preference:
1. Locations that yield benefits to the same receiving water that receives runoff from the original construction activity
2) Locations within the same Department of Natural Resource (DNR) catchment area as the original construction activity
3) Locations in the next adjacent DNR catchment area up-stream
4) Locations anywhere within the local authorities jurisdiction

Notes:
A. Volume reduction techniques considered shall include infiltration, rainwater harvesting & reuse, bioretention, permeable pavement, tree boxes, grass swales and/or additional techniques included in the MIDS calculator or the Minnesota Stormwater Manual.
B. Applicant shall document the flexible treatment options decision sequence, following the order of alternatives presented here.
C. For Alternative #2, the applicant is encouraged to use BMPs that reduce volume. Secondary preference is to employ filtration techniques, followed by rate control BMPs.
D. Fully reconstructed impervious surfaces: Areas where impervious surfaces have been removed down to the underlying soils. Activities such as structure renovation, mill and overlay projects and other pavement rehabilitation projects that do not alter the underlying soil material beneath the structure, pavement or activity are not considered full reconstruction. In addition, other maintenance activities such as catch basin and pipe repair/ replacement, lighting, and pedestrian ramp improvements shall not be considered fully reconstructed impervious surfaces. Reusing an existing building foundation and re-roofing of an existing building are not considered fully reconstructed.
E. Soils that infiltrate too quickly may not provide sufficient pollutant removal before the infiltrated runoff enters groundwater.
F. A reasonable attempt must be made to obtain right-of-way during the project planning process
G. Other, this is not an exhaustive list
H. Hotspots includes any portion of a facility where infiltration is prohibited under an NPDES/SDS industrial stormwater permit issued by the MPCA