

Surface Water Management Plan Appendix M1 - Erosion and Sediment Control Plans Guidelines

Outlined below are the city's guidelines for erosion and sediment control plans.

Regulated activities: All projects disturbing 5,000 square feet or excavating, filling or stockpiling 50 cubic yards of material within the city.

Projects meeting minimum threshold must be compliant with the guidelines outlined in this document, the National Pollutant Discharge Elimination System (NPDES) Construction Stormwater General (CSW) and Municipal Separate Storm Sewer System permits (MS4), Minnehaha Creek Watershed District (MCWD), Bassett Creek Watershed Management Organization (BCWMC) or any other regulatory agency having jurisdiction within the city. All plans will be required to adhere to the most stringent requirements applicable.

Exceptions: Emergency activity necessary to protect life or prevent physical harm to a person or property, provided erosion control measures, including necessary remedial action, are implemented as soon as possible.

Erosion and sediment control site plan requirements: Site plan design must be adequate to prevent erosion and the transport of sediment and other pollutants from permitted site to the satisfaction of the city engineer. At a minimum, the site plan must include the following items before the packet is considered complete and review can begin.

1. Plans and specification shall conform to the provision of the city and all other applicable regulatory entities.
2. Provide schedule for overall project construction, phasing and erosion and sediment control plan implementation, maintenance and final stabilization.
3. Show site location including surrounding roads, steep slopes, other significant geographic features, buildings and other significant structures.
4. Show existing and final grades/contours and the direction of flow for all pre- and post-construction runoff from the site. Include areas of grubbing, clearing, tree removal, grading, excavation, fill and other disturbance; areas of soil or earth material storage; quantities of soil or earth material to be removed, placed, stored or otherwise moved on site; and delineated limits of disturbance.
5. Show site property lines.
6. Identity, locate and graphically represent all existing and planned underground utilities concentrated within the project area, where safe, practical and feasible.
7. Identify and show all receiving waterbodies and/or stormwater conveyance systems to which the site discharges. Specify impaired or special management waters status of each receiving waterbody or conveyance system and any existing or proposed wetland buffers on site.

8. Locate all trees and vegetation intended for removal or to be retained. Incorporate installation of protective fencing to exclude all fill and equipment from the drip line or critical root zone, whichever is greater, of all vegetation to be retained.
9. Show all onsite buildings and structures, existing and proposed stormwater management facilities, including, but not limited to: infiltration basins, biofiltration basins, stormwater ponds, porous pavers, underground storage and swales
10. Locate all proposed runoff control, erosion prevention, sediment control and temporary and permanent soil stabilization BMPs, including but not limited to: inlet protection, perimeter control, temporary and permanent soil stabilization, concrete wash areas, slope breaks, energy dissipation, rock construction entrance and silt curtains.
11. When silt fence is used, it must conform to Standard Specifications for Construction, Minnesota Department of Transportation, 2018 or as amended.
12. Show areas where compaction is to be prevented and/or mitigated. These areas shall be protected from construction vehicle traffic where practical and feasible. These areas include but are not limited to: filtration and infiltration stormwater facilities and areas that are proposed to be permanently landscaped as green space.
13. Location of all onsite, existing and proposed stormwater management facilities, including, but not limited to: infiltration basins, biofiltration basins, stormwater ponds, porous pavers, underground storage and swales.
14. Location of any wetland buffers on site (existing or to be established).
15. Provide site inspection plan to include the following:
 - a. Maintain inspection and maintenance records on site with the erosion control plan and made available at the city's request within 24 hours.
 - i. City performs inspections twice a week and within 24 hours after a 2.5-inch rainfall event.
 - b. Date and time of inspection.
 - c. Name of person conducting inspections.
 - d. Findings of inspection, including recommendations for corrective actions and corrective actions taken, including dates, times and party completing maintenance activities.
 - e. Date and amount of rainfall events greater than 0.5 inches within 24 hours.
16. Provide the credentials and contact information of a qualified/ adequately trained erosion control supervisor who will be responsible for implementing the erosion and sediment control plan and/or SWPPP.
17. Identify Best Management Practices (BMPs) to minimize erosion.
18. All exposed soils shall be stabilized within seven days of inactivity.
19. Slopes along surface waters require soil stabilization within 72 hours.
20. Slopes greater than 3:1 require a category three erosion control blanket.
21. Identify BMPs to minimize sedimentary and other pollutant discharges.

22. All down gradient slopes will have adequate sediment and pollutant controls that will not allow sediment or other pollutants to overtop or to undermine the BMPs.
23. Dewatering activities are regulated by the city, the Minnesota Department of Natural Resources and the Metropolitan Council Environmental Services (see the city's dewatering webpage for permitting information).

<https://www.stlouispark.org/government/departments-divisions/engineering/engineering-permits/dewatering-permit>
24. All dewatering activities require an individual site plan to be submitted to the city engineer and must include, at a minimum, sampling protocol for selected pollutants, identification and protection plan for downstream receiving waters, adequate treatment process to reduce pollutants and to protect downstream receiving waters.
25. Plans shall provide that stockpiles of soil or other materials subject to erosion by wind or water shall be covered, vegetated and install effective sediment controls at the base of stockpiles on the downgradient perimeter in accordance with the amount of time the material will be on site and the manner of its proposed use.
26. Provide BMP maintenance timelines and practices per NPDES CSW and MS4 permit guidelines:
 - a. Guidelines for maintenance of sediment control BMPs (24 hours).
 - b. Implementation of erosion control BMPs (no greater than seven days).
 - c. Stabilize ditches and outfalls with adequate BMPs (24 hours).
27. Define the management practices of solid and hazardous wastes per NPDES CSW and MS4 permit guidelines
 - a. 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:
 - i. 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 be protected by a similarly effective means designed to minimize contact with stormwater.
 - ii. 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 be protected by similarly effective means designed to minimize contact with stormwater.
 - iii. Hazardous materials and 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 materials must be in compliance with Minn. R. ch. 7045 including secondary containment as applicable.

- iv. 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.
 - b. Fueling and maintenance of equipment or vehicles; spill prevention and response: The permittee(s) will 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.
 - c. Vehicle and equipment washing: No vehicle washing or engine degreasing is allowed on site.
 - d. 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 Minnesota Pollution Control Agency (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.
- 28. Provide design calculations for the use of temporary sediment basins for sites greater than five acres.
- 29. Plan must implement construction phasing, maintain vegetative buffer strips, horizontal slope grading and minimize the need for disturbance.
- 30. Projects adjacent to special or impaired waters must preserve a 50-foot natural buffer or, if a buffer is infeasible on the site, provide redundant (double) perimeter sediment controls when a surface water is located within 50 feet of the project's earth disturbances and stormwater flows to the surface water. Install perimeter sediment controls at least five feet apart, unless limited by lack of available space. Natural buffers are not required adjacent to road ditches, judicial ditches, county ditches, stormwater conveyance channels, storm drain inlets and sediment basins. If preserving the buffer is infeasible, the reasons why must be documented in the SWPPP. Sheet piling is a redundant perimeter control if installed in a manner that retains all stormwater.
- 31. Additional site plan design may be required to meet Total Maximum Daily Load (TMDL) requirements.
 - 32. Review of erosion and sediment control plan cannot begin until all of these aforementioned criteria have been met.
- 33. Provide soils engineering and geology report. The city engineer may request of the following information:
 - a. Data and information obtained from the requested site investigation.

- b. Description of the types, composition, permeability, stability, erodibility and distribution of existing soils on site.
 - c. Description of site geology.
 - d. Conclusions and revisions, if any, to the proposed land-disturbing activity at the site or erosion control plan, including revisions of plans and specifications.
34. Plans shall provide that all fabric fences used for erosion and sedimentation control and all other temporary controls will not be removed until the city has determined that the site has been permanently re-stabilized and will be removed within 30 days thereafter.

Construction activity requirements: During the construction process, the owner and contractor must maintain site-wide compliance as defined within their SWPPP, NPDES CSW and MS4 permits and local watershed standards.

1. All plans will be required to adhere to the most stringent requirements of the aforementioned organizations.
2. All erosion and sedimentation controls proposed for compliance with this rule shall be in place before any land-disturbing activity commences.

Final stabilization plan: The plan to establish permanent perennial vegetative cover to prevent erosion of the soil must include the following:

1. Final soil stabilization and or landscaping plan.
2. Specific vegetation species and locations within the project.
3. Performance standard and schedule for desired vegetative cover.
4. Permanent stabilization of all areas subject to land disturbance, retention of native topsoil on site wherever practical and feasible and specify at least six inches of topsoil or organic matter be spread and incorporated into the underlying soil during final site treatment wherever topsoil has been removed.
5. Soil amendments and usage of fertilizers.
6. Plans must state that all fabric fences used for erosion and sedimentation control and all other temporary controls will not be removed until the city has determined that the site has been permanently re-stabilized and will be removed within 30 days thereafter.
7. Long-term vegetation maintenance practices.

Project closeout: The following outlines the city's project certification and permit closeout procedures to ensure the project has been completed in conformance with the plans and specifications developed for projects.

1. Permittee shall provide the city engineer with an as-built grading plan as defined in the city's erosion and sediment control plan requirements and design guidelines (section 02050 standard specifications).
2. The city will withhold all securities until the certified as-built grading plan has been approved by the city engineer.

Material testing and quantity verification requirements: Permittees and contractors are required to work closely with city to ensure that the installation, application, location and quantity of the selected erosion and sediment control BMP are in conformance with the approved plans and specifications for the project. The city reserves the right to refuse any work that is not in conformance with the approved plans and specifications for the project or is deemed to be inadequate due to existing conditions.

Surface Water Management Plan Appendix M2 – Stormwater Management Requirements

Outlined below are the City of St. Louis Park's guidelines for stormwater management.

Stormwater management requirements: The stormwater management plan must detail how runoff and associated water quality impacts resulting from the project will be managed. This plan must indicate whether stormwater will be managed on-site or off-site and the general location and type of practices. Stormwater management plans must be compliant with National Pollutant Discharge Elimination System (NPDES) Construction Stormwater General (CSW) and Municipal Separate Storm Sewer System permits (MS4), Minnehaha Creek Watershed District, Bassett Creek Watershed Management Organization or any other regulatory agency having jurisdiction within the city, and the erosion and sediment control guidelines.

All plans will be required to adhere to the most stringent requirements applicable. Permittees are encouraged to use the Minnesota Stormwater Manual (MPCA, 31 May 2018) for additional guidance.

Regulated activities: A stormwater management plan is required for all new development and redevelopment projects which result in site disturbance that is one acre or greater or any project that proposes 10,000 square feet of new impervious surface.

Exemption: Construction of single-family homes is exempt from this requirement but is encouraged to comply with it.

Stormwater management plan requirements: A plan must be submitted to the city which describes how runoff and associated water quality impacts resulting from the development will be controlled or managed. This plan must indicate whether stormwater will be managed on-site or off-site and, if on-site, the general location and type of practices. This final plan must be signed by a licensed professional engineer (PE), who will verify that the design of all stormwater management practices meets the submittal requirements of the city's Environment and Public Health code.

1. Phosphorus control

- a. New development projects subject to this rule must result in no net increase in phosphorus loading from existing conditions, on an annual average basis.
- b. Redevelopment projects subject to this rule must result in a net new reduction in phosphorus loading from existing conditions, on an annual average basis.

2. Total suspended solids

- a. New development projects subject to this rule must result in no net increase in total suspended solids loading from existing conditions, on an annual average basis.
- b. Redevelopment projects subject to this rule must result in a net reduction in total suspended solids loading from existing conditions, on an annual average basis.

3. The water quality volume shall discharge through the soil surface or filter media in 48 hours or less. Additional flows that cannot be infiltrated or filtered in 48 hours should be routed to bypass the system through a stabilized discharge point.
4. Rate control: For all projects subjected to this rule, the site design will provide on-site facilities for post-construction conditions to ensure that discharge rates from the 6-inch 24-hour rainfall event is no greater than the existing discharge rates from a 4.2-inch 24-hour rainfall event.
5. Volume control: For all projects subjected to this rule, the stormwater management plan must provide for the abstraction of the first one inch of rainfall from the site's impervious surface.
 - a. New development projects subject to this rule will result in no net increase of stormwater discharge volume, on an annual average basis, unless prohibited by BCWMC requires the stormwater management limitations.
 - b. Redevelopment projects subject to this rule will result in a net reduction of stormwater discharge volume, on an annual average basis, unless prohibited by the stormwater management limitations.
6. Complete at least one soil boring, test pit or infiltrometer test in the location of the infiltration practice for determining infiltration rates. Field measured infiltration rates must be divided by two as a safety factor or soil boring results with the infiltration rate chart in the Minnesota Stormwater Manual (MPCA, 31 May 2018) at the start of the project to determine design infiltration rates. When soil borings indicate type A soils, field measurements should be performed to verify the rate is not above 8.3 inches per hour. Infiltration is prohibited if the field measured infiltration rate is above 8.3 inches per hour.
7. Complete MPCA's contamination screening checklist or self-conducted assessment to determine the suitability for infiltration. Permittees must retain the checklist or assessment with the SWPPP. For more information and to access the MPCA's contamination screening checklist, see the Minnesota Stormwater Manual (MPCA, 31 May 2018) at the start of design of the project.
 - a. Existing drainage, including pre-developed drainage areas, land use and the direction of flow for each area and travel path used to determine the time of concentration.
 - b. Final drainage, including post-developed drainage areas, land use and the direction of flow for each area and travel path used to determine the time of concentration.
 - c. Off-site catchment areas draining to the site. Provide two-foot contours. Show land use and the direction of flow for each area and travel path used to determine the time of concentration.
 - d. Existing public and private utilities.
 - e. All receiving waters, including wetlands
 - f. Property limits, labeled streets, lot and block information if platted, and street address if unplatted.
 - g. Building pads, type of house to be built, garage floor elevation, lowest floor elevation and lowest opening elevation are shown.
 - h. Driveway slope, from garage to the gutter.

- i. Lowest opening elevation: minimum 2 feet above 100-year high water level (HWL) and minimum one foot above emergency overflow elevation.
 - j. Pipe size, length, grade and material.
 - k. Top of castings and all inverts of catch basins and manholes
 - l. Labeled storm drain structures
8. Overflow design to be considered for events greater than storm sewer system design event.
9. Infiltration/filtration
- a. Refer to the Minnesota Stormwater Manual (MPCA, 31 May 2018) at the start of design of the project for specific infiltration/filtration practices.
 - b. Infiltration systems will meet volume control standards set by the city.
 - c. Filtration systems will achieve approximately 80 percent removal of total suspended solids.
 - d. Infiltration or filtration systems should not be excavated to final grade until the contributing drainage area has been constructed and fully stabilized.
 - e. During construction of infiltration or filtration systems, rigorous erosion prevention and sediment controls (e.g. diversion berms) should be used to keep sediment and runoff completely away from the infiltration or filtration area.
 - i. The area must be staked off and marked so that heavy construction equipment will not compact the soil in the proposed infiltration or filtration area.
 - ii. Contributing drainage areas must be stabilized prior to completion of basins.
 - iii. Pretreatment practices are required for filtration and infiltration basins.
10. Calculations or computer model results that demonstrate the design adequacy of the infiltration or filtration system.

Stormwater management design requirements: The following must be included in the stormwater management plan and design:

1. Provide proposed drainage plan and hydraulic calculations dated and signed by a licensed professional.
2. Locate and describe existing vegetation, areas not to be disturbed, on-site soil characteristics and groundwater elevations
3. Drainage Area Maps
 - a. Clearly draw and label two-foot contours
 - i. Existing contours are dashed and proposed are solid.
 - ii. Where applicable, extend existing 2-foot contour lines a minimum 100 feet beyond the site boundary or more to accurately depict the drainage patterns.
 - b. Existing drainage, including pre-developed drainage areas, land use and the direction of flow for each area and travel path used to determine the time of concentration must be mapped.
 - c. Final drainage, including post-developed drainage areas, land use and the direction of flow for each area and travel path used to determine the time of concentration must be mapped

- d. Show existing public and private utilities.
 - e. Show all receiving waters, including wetlands
 - f. Show Property limits, labeled streets, lot and block information if platted, and street address if un-platted
 - g. Show building pads, type of house to be built, garage floor elevation, lowest floor elevation and lowest opening elevation are shown. Show lowest opening elevation: minimum 2 feet above 100-year high water level (HWL) and minimum one foot above emergency overflow elevation.
 - h. Show driveway slope, runoff from garage to the gutter.
 - i. Show pipe size, length, grade and material.
 - j. Detail top of castings and all inverts of catch basins and manholes
 - k. Label existing and proposed storm drain structures
 - l. Delineate infiltration or filtration areas.
 - m. Provide adequate maintenance access (typically 12 feet wide)
4. Scaled drawing of infiltration or filtration BMP, with typical detail and typical cross section. Outline area which runoff is directed to the BMP. As part of the drawing set submittal, provide (in table form) the following information.
 - a. A long-term inspection and maintenance plan for all permanent stormwater treatment practices
 - b. Existing and proposed drainage easements shown and labeled.
 - c. All existing and proposed lot corner elevations shown to the nearest tenth of a foot.
 - d. Control/spot elevations for drainage ways provided.
 5. A way to visually verify that the system is as designed must be provided.
 6. Appropriate on-site testing is required and must be development and redevelopment projects consistent with the recommendations in the Minnesota Stormwater Manual (MPCA, 31 May 2018) at the start of design of the project. Testing shall be conducted to verify soil types, infiltration capacity characteristics, and to ensure a minimum of three feet of separation from the seasonally saturated soils (or from bedrock) and the bottom of the proposed infiltration system.

Stormwater management limitations

1. Permittee will fully attempt to comply with the appropriate performance goals described above. Options considered and presented will examine the merits of relocating project elements to address varying soil conditions and other constraints across the site. If full compliance is not possible due to any of the factors listed below, the permittee must document the reasons why in the SWPPP.
2. Volume reduction techniques considered will include infiltration, reuse and rainwater harvesting, and canopy interception and evapotranspiration and or other commonly accepted techniques included in the Minnesota Stormwater Manual (MPCA, 31 May 2018) at the start of design of the project. Higher priority will 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 will include following restricted and prohibited site conditions.

Restricted infiltration areas

1. Hydraulic Soil Group D (clay) Soil
2. Within 1,000 feet up-gradient, or 100 feet down-gradient of active karst features.
3. Constructing infiltration systems within a drinking water supply management area (DWSMA) is prohibited if the system will be located:
 - a. In an Emergency Response Area (ERA) within a DWSMA classified as having high or very high vulnerability as defined by the Minnesota Department of Health.
 - b. In an ERA within a DWSMA classified as moderate vulnerability unless a regulated MS4 permittee performed or approved a higher level of engineering review sufficient to provide a functioning treatment system and to prevent adverse impacts to groundwater.
 - c. Outside of an ERA within a DWSMA classified as having high or very high vulnerability, unless a regulated MS4 permittee performed or approved a higher level of engineering review sufficient to provide a functioning treatment system and to prevent adverse impacts to groundwater.
4. Poor soils (infiltration rates that are too low or too high, above 8.3 inches per hour, or problematic urban soils).
5. Zoning, setbacks, prohibited areas or other land use requirements.

Prohibited infiltration areas

1. Where industrial facilities are not authorized to infiltrate industrial stormwater under an NPDES/SDS, CSW, MS4 and industrial stormwater permits issued by the MPCA.
2. Where vehicle fueling, and maintenance occur.
3. With less than three feet of separation distance from the bottom of the infiltration system to the elevation of the seasonally saturated soils or the top of bedrock.
4. Where high levels of contaminants in soil or groundwater will be mobilized by the infiltrating stormwater. Zoning, setbacks, prohibited areas or other land use requirements.

Mitigation provisions: In the case that infiltration practices cannot be implemented on site, steps must be taken to mitigate stormwater runoff volume, rate and pollutant reduction. This may include off-site or regional treatment for additional volume retention, additional pollutant or reduction. The city engineer and all permitting agencies must approve all mitigation projects and document who is responsible for the long-term maintenance of the facility.

1. Mitigation projects must involve the creation of new structural stormwater BMPs, the retrofit of an existing structural stormwater BMPs, or the use of a properly designed regional structural stormwater BMP.
2. Routine maintenance of structural stormwater BMPs already required by this permit cannot be used to meet mitigation requirements of this part.
3. Mitigation projects shall be completed within two years after the start of the original construction activity.
4. The city's engineering department will determine and document who will be responsible for long-term maintenance on all mitigation projects of this part.

5. If a regional project has been identified, the City of St. Louis Park may consider a cash payment from the owner and/or operator of a construction activity for mitigation purposes in lieu of the owner or operator of that construction activity meeting the conditions for post-construction stormwater management. Upon receipt of a cash payment in lieu of onsite treatment, a project must be implemented with the designated funds. Mitigation projects must be completed within two years upon the start of construction of the project.
6. Mitigation projects are selected in the following order of preference:
 - a. Locations that yield benefits to the same receiving water that receives runoff from the project.
 - b. Locations within the same watershed area as the original project.
 - c. Locations in the next adjacent upstream watershed.
 - d. An alternate location within the City of St. Louis Park.

Maintenance: All stormwater management structures and facilities must be designed for maintenance access and properly maintained in perpetuity to ensure they continue to function as designed. Permit permittees must provide a maintenance plan that identifies and protects the design, capacity and functionality of on-site and off-site stormwater management facilities; specifies the methods, schedule and responsible parties for maintenance; provides for the maintenance in perpetuity of the facility; and contains at a minimum the requirements in the City of St. Louis Park's standard maintenance declaration. The plan will be recorded on the deed in a form acceptable to the district. A public entity assuming the maintenance obligation may do so by filing with the district a document signed by an official with authority.

Alternative volume reduction and treatment practices: Green infrastructure techniques and practices (including, but not limited to, infiltration, evapotranspiration, reuse/harvesting, conservation design, urban forestry, green roofs), will be given preference as design options consistent with zoning, subdivision and planned unit development requirements. Alternative practices must follow requirements and recommendations in the Minnesota Stormwater Manual (MPCA, 31 May 2018) at the start of project design.

Shoreland Protection: All new and redevelopment projects with the BCWMC area are required to comply with the MnDNR's model shoreland management requirements.

