



Developer's Guide for Stormwater Management

Adopted June 28, 2022

This Page Intentionally Left Blank

Forward

These guidelines, as well as the City's Standard Construction Specifications and Ordinances, the City's Stormwater Management Plan, the City's Municipal Separate Storm Sewer System (MS4) permit, the Minnesota Pollution Control Agencies Construction Storm Water Permit and related local, state and federal rules and regulations are intended to manage stormwater pollution and provide water quality and flood control improvements within the City of Faribault.

This guide is intended as a reference source of information and standards. Developers, builders, contractors and their Engineers in charge of construction activity within the City are expected to prepare complete and competent plans and specifications for their work. Compliance with these documents will help provide quality projects and assure uniform performance standards for construction activities in Faribault. In the event of any conflict or inconsistency between the terms and conditions in this Developer's Guide and any terms or conditions set forth in any codified City Ordinances or Codes, the terms and conditions set forth in in any codified City Ordinances or Codes shall prevail.

City staff is available to answer your questions or concerns as the project progresses through the plan review process. For general questions relating to this document, you may contact:

Mark DuChene, PE
Director of Engineering
507-333-0360
mduchene@ci.faribault.mn.us

Table of Contents

Definitions and Terms.....	6
1. GENERAL PROVISIONS	9
2. WHO NEEDS A PERMIT?	9
3. PLAN REVIEW PROCEDURES.....	10
4. SUBMITTAL REQUIREMENTS	10
5. DESIGN STANDARDS	10
5.1 Stormwater Pollution Prevention Plan (SWPPP).....	11
5.2 Permanent Stormwater Management Practices.....	12
5.3 Grading, Erosion, and Sediment Control.....	13
5.3.1 <i>Grading Plans</i>	13
5.3.2 <i>Erosion, Sediment, and Waste Controls.....</i>	15
5.4 Permanent Stormwater Management	16
5.4.1 <i>Acceptable Practices</i>	16
5.4.2 <i>Basic Sizing Criteria.....</i>	17
5.4.3 <i>Long-Term Operation and Maintenance.....</i>	20
5.5 Stormwater Design Criteria	20
5.5.1 <i>Storm Sewer</i>	20
5.5.2 <i>Outlet and Inlet Pipes</i>	21
5.5.3 <i>Channels and Overland Drainage</i>	21
5.5.4 <i>Ponds and Detention Basins</i>	21
5.5.5 <i>Infiltration/Filtration Practices</i>	22
5.5.6 <i>Emergency Overflows.....</i>	23
6. WETLAND AND WETLAND BUFFER STRIPS	23
6.1 Minimum Protections for Wetlands During Construction.....	23
6.2 Assessment of Wetlands and Wetland Buffer Strips	24
6.3 Required Submittals.....	24
6.4 Determination of Required Wetland Buffer Strips and Structure Setbacks	24
6.5 Property Exempt from Wetland Buffer Strip and Setback Requirements.....	25
6.6 Septic and Soil Absorption System Setback Requirements	25
6.7 Wetland Buffer Strip Markers.....	25
6.8 Wetland Buffer Strip Vegetation Requirements.....	26
6.9 Encroachment Into Wetland Buffer Strips and Wetlands.....	26
6.10 Water Quality and Rate Control Upstream of Wetlands	26
7. SHORELAND MANAGEMENT DISTRICT.....	27
8. APPENDICES.....	27

Appendices

- Appendix A SWPPP Submittal Checklist
- Appendix B Permanent Stormwater Management Submittal Checklist
- Appendix C Maintenance Agreement

Definitions and Terms

For this Developer's Guide, the following definitions describe the meanings of the terms used in this document:

Applicant means any person, entity or group that applies to the city for a building permit, subdivision approval, or a grading permit. Applicant also means that person or entity's agents, employees, contractors, subcontractors, and others acting under the person, entity, or group's direction.

Best management practices or *BMPs* means erosion and sediment control and water quality management practices that are the most effective and practicable means of controlling, preventing, and minimizing the degradation of surface water, including construction phasing, minimizing the length of time soil areas are exposed, prohibition of practices, and other management practices published by state or designated area-wide planning agencies.

Common plan of development or sale means a contiguous area where multiple separate and distinct land disturbance activities may be taking place at different times, or on different schedules, but under one proposed plan of development.

Developer's Guide means the standards adopted and amended from time to time by resolution of the Council which provide information and establish standards, specifications, and details for the construction of public and private improvements, as on file with the City Engineer.

Discharge means the release, conveyance, channeling, runoff, or drainage of stormwater including snow melt, from a construction site.

Energy dissipation means methods employed at pipe outlets to prevent erosion. Examples include, but are not limited to, aprons, riprap, splash pads and gabions that are designed to prevent erosion.

Erosion means any process that wears away the surface of the land by the action of water, wind, ice, or gravity. Erosion can be accelerated by the activities of people or nature.

Erosion control means the methods employed to prevent erosion. Examples include soil stabilization practices, horizontal slope grading, temporary or permanent cover, and construction phasing.

FEMA means the Federal Emergency Management Agency.

Final stabilization means that all land disturbance activities on the site have been completed, and that a uniform (evenly distributed, without any large bare areas) perennial vegetative cover with a density of seventy-five (75) percent of the total of all unpaved areas and areas not covered by permanent structures has been established, or equivalent permanent stabilization measures have been employed. The sowing of grass seed is not considered to be final stabilization. Where agricultural land is involved, final stabilization shall require that the site be returned to its preconstruction agricultural use.

Grading permit means a written warrant or license granted by the city to allow land disturbance activities.

Impaired water means all bodies of water that are listed on the Minnesota Pollution Control Agency's List of Impaired Waters.

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 existed prior to any development of the property. Examples include, but are not limited to, rooftops, sidewalks, patios, driveways, parking lots, storage areas, and concrete, asphalt, or gravel roads.

Land disturbance activity/activities means any activity or activities on a site that may result in soil erosion from water or wind. It shall also mean any movement of sediments upon lands or into or upon waters within the city's jurisdiction, including construction, clearing and grubbing, grading, excavating, transporting and filling of land. Within the context of this article, land disturbance activities shall not include:

- (1) Activities such as home gardens or residential landscaping, or other repairs or maintenance work that creates less than five thousand (5,000) square feet of exposed soil or impervious surface;
- (2) Additions or modifications to an existing single family structure that results in creating less than five thousand (5,000) square feet of exposed soil or impervious surface;
- (3) The construction, installation, and maintenance of fences, signs, posts, poles, and electric, telephone, cable television, utility lines or individual service connections to these utilities, which result in creating less than five thousand (5,000) square feet of exposed soil or impervious surface;
- (4) The tilling, planting, or harvesting of agricultural, horticultural, or silvicultural crops; and
- (5) Emergency work performed in order to protect life, limb, or property. If SWPPP would have been required for the emergency work pursuant to this article, then the disturbed land area shall be shaped and stabilized in accordance with the requirements set forth in this article as soon as possible after the emergency situation is under control.

MnDOT means the Minnesota Department of Transportation.

MPCA means the Minnesota Pollution Control Agency.

Native vegetation means plant species indigenous to or naturalized to Minnesota and classified as native to Minnesota by the Minnesota Department of Natural Resources.

New Development means any site with less than 15% of existing impervious prior to the commencement of construction activity.

NPDES General Stormwater Permit for Construction Activity means the most current version of the National Pollutant Discharge Elimination System General Stormwater Permit for Construction Activity as required by the Minnesota Pollution Control Agency.

Ordinary high water level means the boundary of water basins, watercourses, public waters, and public waters wetlands, and:

- (1) The ordinary high water level is an elevation delineating the highest water level that has been maintained for a sufficient period of time to leave evidence upon the landscape, commonly the point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial;
- (2) For watercourses, the ordinary high water level is the elevation of the top of the bank of the channel; and
- (3) For reservoirs and flowages, the ordinary high water level is the operating elevation of the normal summer pool.

Premises means any building, lot, parcel of land, or portion of land whether improved or unimproved, including adjacent sidewalks.

Redevelopment means any site with more than 15% of existing impervious surfaces prior to the commencement of construction activity.

Sediment means the product of an erosion process which consists of solid material that may be mineral or organic that is in suspension, is being transported, or has been moved by water, wind, or ice, and has come to rest on the earth's surface either above or below the water level.

Sedimentation means the process or action of depositing sediment.

Sediment control means the methods employed to prevent sediment from leaving the site. Examples of sediment control practices are silt fences, sediment traps, earth dikes, drainage swales, check dams, subsurface drains, pipe slope drains, storm drain inlet protection, and temporary or permanent sedimentation basins.

Soil means the unconsolidated mineral or organic material on the immediate surface of the earth. For the purposes of this article, temporary stockpiles of clean sand, gravel, aggregate, concrete, or bituminous materials are not considered soil.

Stabilized or *stabilization* means the exposed ground surface, after it has been covered by sod, an erosion control blanket, riprap, pavement, or other material that prevents erosion. Simply sowing grass seed is not considered stabilization.

Steep slope means any slope steeper than fifteen (15) percent of rise for every one hundred (100) feet of horizontal run.

Stormwater shall mean any precipitation runoff, stormwater runoff, snow melt off, and any other surface runoff and drainage.

Stormwater pollution prevention plan or *SWPPP* means a plan for stormwater drainage that includes erosion prevention measures and sediment controls that, when implemented, will minimize soil erosion on a site and minimize off-site non-point pollution to the maximum extent possible.

Structure means any improvement that is manufactured, constructed or erected which is normally attached to or positioned on a site, including, but not limited to, portable structures, earthen structures, roads, parking lots and paved storage areas.

Subdivision shall mean land that is divided for the purpose of sale, rent, or lease, including a planned unit development.

Very steep slope means any slope steeper than one foot of rise for each three (3) feet of horizontal run (a slope of thirty-three (33) percent).

Waters of the state shall mean 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.

Wet detention facilities shall mean permanent man-made structures that contain permanent pools of water that are used for the temporary storage of stormwater runoff.

Wetlands shall mean 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:

- (1) A predominance of hydric soils;
- (2) 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
- (3) Under normal circumstances support a prevalence of such vegetation.

Wetland buffer strip means a protective vegetated zone located adjacent to a water of the state or a wetland, that is subject to direct or indirect human alteration. A wetland buffer strip is an integral part of protecting an aquatic ecosystem of a body of water by trapping sheet erosion, filtering pollutants, reducing channel erosion and providing adjacent habitat.

1. GENERAL PROVISIONS

As set forth in various sections of City Code, certain site improvements of property within the City of Faribault are required to submit plans and specifications for review and approval prior to initiating land disturbing activities. These plans include, but are not limited to, grading plans, drainage plans, surveys, utility plans, and specifications. Competent professionals are required to prepare these plans and specifications.

These guidelines serve as a general reference for engineering requirements in the design, plan, and specification preparation to facilitate consistent plan preparation and construction of stormwater management practices and to improve the quality of plan submittal and subsequent review and approval time.

The Developer's Guide is a living document that will be updated and revised as necessary to facilitate the development of projects within the City of Faribault.

2. WHO NEEDS A PERMIT?

The following describes what requirements and permits are required based on the proposed disturbed land area. These are general thresholds and not absolute as there are many factors to consider during land alterations other than simply the area disturbed such as how deep is the proposed excavation, what are the proposed impacts on site/upstream/downstream, what special environmental concerns are there, etc. The City reserves the right to require supplemental information up to and including engineering drawings and storm water calculations based on proposed land disturbance activities as determined by the City Engineer. Not requiring a grading permit or engineered drawings and/or calculations does not relieve the property owner of following all federal, state and local laws regarding drainage, erosion control and water treatment requirements.

- **Disturbed Area Less than 5,000 sf** – No grading permit required unless project is covered under a parent NPDES CSW permit (such as a new home build in a new subdivision). Cannot block or alter drainage such as to negatively impact upstream or downstream properties. Recommend discussion of grading concept with City Engineer.
- **Disturbed Area 5,000 sf to Less than 21,780 sf (Half Acre)** – Grading permit required. Grading permit shall include a sketch showing plan. Sketch generally need not be prepared by Engineer/Surveyor unless determined to be needed by City Engineer or required by other codes (such as new building construction requirement for a certificate of survey). Cannot block or alter drainage such as to negatively impact upstream or downstream properties.
- **Disturbed Area 21,780 sf (Half Acre) to Less than One Acre** – City Grading permit required as well as stormwater management plan. Improvements must not increase the rate of water runoff on the site after improvements to more than existed on the site prior to the improvements. Grading plan and stormwater management calculations must be performed by a licensed engineer and rate must be controlled for the 2-, 10- and 100-year 24 hour Atlas 14 rainfall events unless approved otherwise by the City Engineer.
- **Disturbed Area Equal to/or Greater than One Acre** – City Grading permit required as well as stormwater management plan/stormwater pollution prevention plan (SWPPP). Improvements must not increase the rate of water runoff on the site after improvements to more than existed on the site prior to the improvements and also must meet the water quality treatment requirements of the MPCA NPDES CSW Permit and the City's MS4 Permit. Grading plan and stormwater management calculations must be performed by a licensed engineer and rate must be controlled for the 2-, 10- and 100-year 24 hour Atlas 14 rainfall events unless approved otherwise by the City Engineer.

3. PLAN REVIEW PROCEDURES

The general review process, from the submittal of the concept and final plans to the issuance of the SWPPP approval, is summarized in the following six steps:

1. Determine what stormwater management provisions apply (e.g., stormwater management, erosion control, buffers, floodplain management).
2. What permits, or approvals, are required for the project site, and what waivers and/or exemptions are applicable (e.g., COE, DNR, MPCA, WCA, etc.)
3. Are the selected practices appropriate for this site?
4. Are the practices designed to meet the minimum performance criteria?
5. Does the SWPPP meet other resource protection requirements as specified in City Code?
6. Are provisions for long-term maintenance adequate, including access and methods for maintenance defined?

4. SUBMITTAL REQUIREMENTS

No site plans or permit applications will be approved until all requirements are met.

- **Disturbed Area Less than 5,000 sf** – No grading permit required unless project is covered under a parent NPDES CSW permit (such as a new home build in a new subdivision). Recommend submitting a sketch and/or discuss grading concept with City Engineer. Property owner must install appropriate erosion control measures prior to work commencing.
- **Disturbed Area 5,000 sf to Less than 21,780 sf (Half Acre)** – Grading permit shall include a sketch plan or certificate of survey as required showing erosion control measures. Property owner must install appropriate erosion control measures prior to work commencing.
- **Disturbed Area 21,780 sf (Half Acre) to Less than One Acre** – City Grading permit shall include a grading plan, stormwater management plan and erosion control plans. Refer to the Design Standards section for requirements.
- **Disturbed Area Equal to/or Greater than One Acre** – City Grading permit shall include a grading plan, stormwater management plan and a stormwater pollution prevention plan (SWPPP). Refer to the Design Standards section for requirements.

5. DESIGN STANDARDS

The City of Faribault's Surface Water Management Plan identifies the goals and policies that define the City's stormwater management program, which are implemented via the City's SWPPP and Wetland Protection Ordinance (Chapter 28, Article VII.) and these Developer Guidelines. Faribault's stormwater requirements were written to meet the City's goals to preserve, protect, and manage its water resources, as well as to meet federal, state, and watershed stormwater regulations that comprise the following objectives:

1. Minimize increases in stormwater runoff rates from any development to reduce flooding, siltation, and erosion and to maintain the integrity of stream channels.
2. Minimize increases in nonpoint source pollution caused by stormwater runoff from development which would otherwise degrade local water quality.
3. Minimize the total annual volume of surface water runoff that flows from any specific site during and following development so as not to exceed the predevelopment hydrologic regime to the maximum extent practicable.
4. Ensure that these management controls are properly maintained and pose no threat to public safety.
5. Implement stormwater management controls to help meet current and future total maximum daily load (TMDL) goals, to address the need to improve water quality, and to meet objectives in the Surface Water Management Plan.

The Applicant is solely responsible for providing a quality design that meets all applicable laws and design requirements. The City has adopted the following design standards for erosion and sediment control and permanent stormwater management. These standards are meant to enhance not replace sound engineering judgement and industry standards.

No grading permits requiring a stormwater management plan or stormwater pollution prevention plan (SWPPP) will be approved unless it includes a detail of how runoff and associated water quality impacts resulting from the development will be controlled or managed. These plans must be designed with accepted engineering practices and indicate temporary and permanent best management practices, and whether stormwater will be managed on-site or off-site and, if on-site, the general location and type of practices.

5.1 Stormwater Pollution Prevention Plan (SWPPP)

Any project that disturbs one or more acres of land, or is part of a common plan of development, must acquire a National Pollutant Discharge Elimination System (NPDES) Construction Stormwater (CSW) Permit. The SWPPP and proof of coverage under the NPDES CSW Permit must be submitted to the City Engineer prior to initiating land disturbing activities. All projects shall develop a SWPPP that contains erosion, sediment, and waste control BMPs that at a minimum observe the standards established by the most current version of the MPCA's General Permit to Discharge Stormwater Associated with Construction Activity, the City of Faribault's Local Surface Water Management Plan, City Code, or as modified herein. The SWPPP must be prepared by a trained individual. All SWPPPs must meet the submittal requirements outlined in the SWPPP Submittal Checklist found in **Appendix A**. At a minimum, the SWPPP must contain:

1. The name and address of the applicant;
2. A legal description of the site;
3. A map of all adjacent areas to the site that identifies all waters of the state, subdivisions, roads, utilities and other areas which might be affected by the land disturbance activity. If SWPPP involves directing some or the entire site's runoff to adjacent properties, the applicant shall obtain from adjacent property owners any necessary easements to permit the runoff to flow onto their properties;
4. A map of the existing site conditions that includes the existing topography of the site, the location of any steep and very steep slopes, the location of existing drainage systems and patterns, the types of soils, the location of any waters of the state, the location of any vegetative cover, the location of any one hundred (100) year floodplain boundaries and the locations of any existing and proposed wetland buffer strips;
5. A description of the project, including the nature and purpose of the land disturbance activity and a description of the grading work, utility work, and building construction involved;
6. A schedule of the start and completion dates of each land disturbance activity on the site, including the estimated dates of installation of the required erosion prevention measures for each phase and the construction schedule;
7. A site construction plan that includes the location of the proposed land disturbance activities and any stockpile locations;
8. A designation of the site's areas that have the potential for serious erosion problems;
9. A description of the proposed erosion and sediment control measures to be undertaken, including the methods that will be used to control erosion and sedimentation on the site, both during and after construction;
10. A description of the proposed permanent stabilization measures to be taken, including stabilization specifications, time frames and schedules;
11. The location of all existing and proposed permanent and temporary sedimentation basins;

12. A description of the method to be used to dispose of temporary erosion and sediment control measures;
13. A description of the method to be used to maintain the temporary and permanent erosion and sediment controls;
14. A description of the method to be used to collect and dispose of sediment and floating debris; and,
15. A street sweeping schedule for the site.

5.2 Permanent Stormwater Management Practices

Permanent stormwater management practices must be designed by a licensed professional engineer in the State of Minnesota, who will verify that all practices meet the submittal requirements outlined in the Permanent Stormwater Management Submittal Checklist found in **Appendix B**.

A stormwater management concept plan is an option offered by the City. An applicant should include within a concept plan measures for controlling existing stormwater runoff discharges and water quality from the site in accordance with the standards of this guide. After review of the concept plan and modifications are made to that plan as deemed necessary by the City, a final Stormwater Management Plan may be submitted for approval.

A stormwater management concept plan submittal is optional, but highly encouraged. A concept plan identifies basic site information, locations of proposed development features, and preliminary locations and sizing of permanent stormwater management practices. The concept submittal has a greater chance of identifying major obstacles and can facilitate alternative stormwater management arrangements in a timely fashion and at the onset of project planning. If a concept plan is submitted for review, it should include sufficient information (e.g., maps, basic hydrologic and water quality calculations etc.) to evaluate the environmental characteristics of the project site. This information should show the potential impacts of all proposed development of the site, both present and future, on the water resources, and show the effectiveness and acceptability of the measures proposed for managing stormwater generated at the project site. The intent of this conceptual planning process is to determine the type of stormwater management of stormwater runoff from future development, and to identify major issues prior to completing final plans. The concept plan is less time consuming and more efficient to evaluate proposed development plans with this step of the review process. The final plan provides more detailed design information for the proposed stormwater treatment practices and includes much more detail in terms of hydrologic conditions and site features.

The following permanent stormwater management practices must be considered in developing the stormwater management portion of the SWPPP:

1. Protect and preserve as much natural or vegetated area on the site as possible;
2. Minimize impervious surfaces;
3. Direct runoff to vegetated areas rather than to adjoining streets, storm sewers and ditches;
4. Flow attenuation of treated stormwater by the use of open vegetated swales and natural depressions;
5. Utilize stormwater wet detention facilities (including percolation facilities); and,
6. Reduce the need for permanent stormwater management facilities by incorporating the use of natural topography and land cover such as natural swales and depressions as they existed prior to the land disturbance activities to the degree that they can accommodate the additional flow of treated water without compromising the integrity or quality of the body of water.

No building permit or subdivision approval shall be issued until a satisfactory final Stormwater Management Plan, or a waiver thereof, shall have undergone a review and been approved by the City after determining that the plan waiver is consistent with the requirements of this guide.

Record drawings are required for all projects that disturb a half-acre or more of land, impact wetlands and/or the floodplain, require water quality ponding, have significant grade changes, and/or have other unusual circumstances. Record drawings must be certified by a professional land surveyor or civil engineer. Record drawings should not include temporary erosion control measures.

5.3 Grading, Erosion, and Sediment Control

5.3.1 Grading Plans

Any applicant proposing a land disturbance activity that is 5,000 sf or greater shall apply to the City for a grading permit and submit a grading plan with the application. The grading plan must include all the items that are specified below unless waived by the City Engineer.

Plan Details

- North arrow, street names, and lot and block numbers for property or subdivision
- Location of benchmark, based on the City/County benchmark system
- Key with all line types, symbols, shading, and cross-hatching denoted
- Illustration key showing symbols for all information pertaining to lot and building design, including grades, easements, lot and block, setbacks, etc...
- Plan scale (shown graphically on a bar scale) of: 1 inch = 20 feet, 1 inch = 30 feet, 1 inch = 40 feet, or 1 inch = 50 feet. Plans in other scales will not be reviewed.
- Total area of subject property, with subtotals of disturbed and undisturbed areas (tabulation permitted)
- Subject property's boundary lines, lot lines and right of way lines
- All existing and proposed drainage and utility easements
- All man-made features, including existing and proposed buildings, structures, and paved areas
- All existing storm sewer facilities within 150 feet of the subject parcel
- All proposed storm sewer facilities (include grades and size of structures)
- All existing and proposed natural features including, but not limited to, significant trees and tree lines, wetlands, ponds, lakes, streams, drainage channels, floodplain, etc...
- Show setbacks and buffers for wetlands, ponds, lakes, streams, and floodplains
- All adjacent plats, parcels, rights-of-way, section lines, extended a minimum of 100 feet (50 feet for single family home construction) beyond the subject parcel in all directions

Existing and proposed contour lines

- Existing contours shall be shown at vertical intervals of two feet. Elevations shall be referenced to the national geodetic vertical datum (NGVD 1929).
- Contour lines shall be different line weights for existing contour lines versus proposed contour lines.
- Contours shall be shown to a minimum of 150 feet into adjacent property or to the centerline of the adjacent street.

Lot and block layout

- Lot dimensions to the nearest foot;
- Typical lot detail indicating where lot and house elevations are shown;
- Building setback lines
- Proposed top of curb elevations at lot corners and driveway or entrances
- Finished spot elevations at all high and low points
- Proposed elevations at garage and lowest floor for proposed buildings

- Proposed finished ground elevations around building for final grading
- Front and rear lot corner elevations;
- House pads layout, showing hold down elevations and finished garage elevations;
- Spot elevations as appropriate to define drainage patterns on the lot; and
- Legend with type of house styles and grade difference for garage floor to walkouts or lookouts.
- Lot grading and drainage. Lots shall be graded so water drains away from building locations and flows along lot lines within the proposed drainage and utility easements. Any drainage flow from one lot onto an abutting lot must be within a drainage easement.

Street/Site layout

- Typical street section;
- Preliminary street grades and drainage;
- Centerline street elevations at 100-foot stations with high and low points; and
- Cul-de-sac frontage along curb lines with spot elevations.
- Street grade.
- Storm sewer alignment. Storm sewer alignment shall be shown with top and invert elevations. Also, flared ends shall be shown with invert elevations.
- Easements. Existing and proposed easements

Grading plan

- The grading plan for all single-family residential subdivisions shall provide for an area with a slope not greater than 10% extending not less than a depth of 20 feet from the rear line of the building pad the entire width of the building pad, except as approved by the City Engineer.
- House pad setback from flood elevations: House pads shall be set back 30 feet from 100-year flood elevation for storm sewer ponds and lakes if the lake lot has municipal sewer; and 75 feet from the 100-year flood elevation for lakes if the lake lot is unsewered.
- Lowest opening elevation: two feet above the 100-year flood elevation of adjacent storm sewer ponds and one foot above the nearest emergency overflow elevation. Flooding elevations shall be a minimum one foot above the ordinary high-water level of any standing water if determined. If sufficient data on known high water levels is not available, the elevation of the line of permanent aquatic vegetation shall be used as the estimated high water standing water elevation.
- The low floor elevation for all new structures will be a minimum of 3 feet above historic high groundwater levels and 1 foot above the NWL of adjacent waterbodies.
- Garage floors. Minimum elevation: 1½ feet above the top-of-curb elevation, as measured from the top-of-curb at the high side of the driveway to the garage floor.
- Driveway slopes. Maximum slope: 10% from the top-of-curb to the garage floor, as measured at the centerline of the driveway unless approved otherwise by City Engineer.
- Open areas, including yards and swales.
Minimum slopes, 1%; and (Preferred design is 1.5% or greater.)
Maximum slopes, 3:1, except existing slopes being protected, which are subject to review.

Emergency overflows

- Emergency overflows shall be labeled and shown with spot elevations and drainage arrows. Emergency overflows must be established for catch basins in the street and in rear lots. Areas along rear lot lines which are below the emergency overflow elevation shall be designated as drainage easement on the final plat.
- Minimum elevation is 1.0 foot below the lowest opening house elevation.
- Storm sewer ponds' slopes, 6:1 maximum grade.

Elevations and boundaries of lakes, wetlands and ponds

- Ordinary high water level contours of all lakes, streams, wetlands, watercourses, marshes,

and surface water features required in M.S. § 505.02 (1), as it may be amended from time to time, obtained from United States Geological Survey quadrangle topographic maps or more accurate sources;

- Location of 100-year floodplain areas, 100-year flood elevations, and limits of floodway and flood fringe;
- Delineated wetland boundaries, completed by a qualified professional according to the most current U.S. Corps of Engineers methodology, and approved by the city's designated official;
- Wooded areas;
- Rock outcrops;
- Power transmission poles and lines; and
- Other significant features required to be shown.
- Watercourses.

Temporary Erosion Control Best Management Practices (BMPs)

Show location of all structural erosion control measures (with standard detail plates and maintenance information for each), including, but not limited to:

- Temporary rock entrance/exit for all vehicle access points (show on plan and provide detail)
- Perimeter silt fence; silt fence and/or bale checks should also be placed along swales or slopes greater than 50 feet in length (flare ends of silt fence up slope)
- Storm sewer inlet filters (indicate type and show graphically on plan at each location)
- Temporary sediment basins
- Erosion control mats, fiber blankets, netting, temporary seed, or temporary mulch. All exposed soil areas must be stabilized as soon as possible to limit soil erosion but in no case later than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased and no later than seven (7) days after construction activity in that portion of the site has temporarily or permanently ceased when discharge points on the project is within one mile of a special or impaired water and flows to that special or impaired water.
- Soil stockpile areas (indicate temporary stabilization measures)
- Street Sweeping Required

Plans must include a note indicating that all adjacent streets will be swept daily, or as directed by the City, to remove all accumulated materials. Failure to perform any street sweeping within six hours of notice by the City will result in the work being performed by the City and all associated costs billed. The City also requires removal of accumulated materials on streets during winter.

Final Stabilization

New resident construction requires vegetated stabilization from the front curb line to the back of the structure for the entire width of the lot. Show seeding and/or turf establishment locations and specifications, including:

- Type of seeding (permanent, temporary, dormant)
- Seed type and application rate
- Fertilizer type and application rate
- Mulch type, application rate, and method of anchoring
- Specifications for installation and maintenance of erosion control mats, blankets, or netting
- Note requiring seeding/restoration to be completed within 48 hours of final grading
- Location of all areas to be vegetated

5.3.2 Erosion, Sediment, and Waste Controls

At a minimum, all erosion, sediment, and waste control practices set forth in the SWPPP and all work on the site must conform to the requirements as stated in the most current version of the NPDES General Stormwater Permit for Construction Activity, including, but not limited to:

- A. Erosion prevention practices;
- B. Sediment control practices;
- C. Dewatering and basin draining;
- D. Inspection and maintenance;
- E. Pollution prevention management measures;
- F. Temporary sediment basins; and,
- G. Termination conditions.

Site plans must be updated during construction to reflect current site activities.

5.4 Permanent Stormwater Management

Designers are expected to follow the requirements of this section to meet the water quality requirements of the City of Faribault. Designs should meet the stormwater design standards of these Developer Guidelines and the *Minnesota Stormwater Manual*. Deviations from recommended guidance in the *Minnesota Stormwater Manual* will require detailed written explanation. Approval of any deviation from the *Minnesota Stormwater Manual* guidance will be at the discretion of the City.

5.4.1 Acceptable Practices

In the development of the permanent stormwater management practices appropriate for the development or redevelopment, infiltration (e.g., water quality volume) is foremost in importance to apply in the design. Filtration is warranted when site conditions do not allow for an effective infiltration practice. For flooding or rate control, detention systems are typically the preferred practice. Low Impact Design (LID) practices are encouraged when they can be functionally incorporated into the design. Alternative practices may be approved at the discretion of the City Engineer. When infiltration is not feasible, the permanent stormwater management practice proposed shall meet the performance identified in the *Minnesota Stormwater Manual*.

Below is a summary of permanent stormwater management practices that are accepted by the City of Faribault:

Table 1. List of Acceptable Practices

Volume Control	Filtration	Detention	Wetlands	Open Channel Systems
Infiltration Trench	Surface Sand Filter	Wet Pond	Shallow Wetland	Dry Swale
Infiltration Basin	Underground or Perimeter Sand Filter	Stormwater Reuse	Pond/Wetland Systems	Wet Swale
Raingarden	Tree Trench	Multiple Pond System		Grass Swale
Underground Storage	Organic Filter	Extended Detention Basin		Natural Channel/Stream
Reuse	Bioretention System	Micro-Pool Extended Detention Basin		
Green Roofs	Raingarden with Underdrain	Dry Detention Pond		
Trees/Tree Planters	Pervious Pavement with Underdrain	Underground Storage		

	Underground Storage with Underdrain	Other, as approved		
--	-------------------------------------	--------------------	--	--

The design process for each of the acceptable practices is detailed in the Minnesota Stormwater Manual, http://stormwater.pca.state.mn.us/index.php/Main_Page.

5.4.2 Basic Sizing Criteria

Proposed Stormwater Management Plans must incorporate Volume Control, Water Quality, and Rate Control as the basis for stormwater management in the proposed development plan.

5.4.2.1 Volume Control

Volume control measures are required on projects to meet the requirements of the City of Faribault's MS4 Permit obligations. Volume control shall be required for any project where the sum of the new impervious surface and the fully reconstructed impervious surface equals one or more acres, unless granted by waiver from the City.

Non-Linear Projects

A proposed development shall capture and retain on site 1.0 inches of runoff times the sum of the new and fully reconstructed impervious surfaces. If an applicant can demonstrate that the volume control standard has been met, then the water quality sizing criteria shall be considered satisfied.

Volume reduction practices must be considered first. If site constraints prohibit infiltration, other volume reduction practices, such as a wet sedimentation basin, or filtration basin may be considered. In all circumstances, a reasonable attempt must be made to obtain right-of-way during the project planning and all attempts of infeasibility must be recorded. When restrictions exist and the entire water quality volume cannot be treated due to lack of right-of-way, easements, or other permissions from property owners to install treatments systems that can treat the total water quality volume on site, the remaining water quality volume must be addressed through off-site treatment and, at a minimum, satisfy the following conditions:

- A. Select an off-site treatment location 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 DNR catchment area as the original construction activity;
 - 3) Locations in the next adjacent DNR catchment area upstream; or,
 - 4) Locations anywhere within the City of Faribault's jurisdiction.
- B. Must involve the creation of new permanent stormwater management BMPs or the retrofit of existing BMPs, or the use of a properly designed regional permanent stormwater management practice¹; and,
- C. Must be completed within 24 months after the start of the original construction activity.

Linear Projects

For linear projects, the water quality volume shall be calculated as the larger of:

- a. One-inch times the new impervious surface; or,
- b. One-half (0.5) inch times the sum of the new and fully reconstructed impervious surface.

¹ Previously required routine maintenance of permanent stormwater management practices cannot be considered mitigation.

If the total water quality volume cannot be treated within the existing right-of-way (ROW), a reasonable attempt to obtain additional ROW, easement, or other permission to treat the stormwater must be initiated. However, volume reduction practices will not be required if the practices are cost prohibitive. All attempts of infeasibility must be recorded, and treatment of the water quality volume must be maximized prior to discharge to the City's storm sewer system and surface waters.

Projects Less than One Acre

For projects less than one acre, the City encourages applicants to incorporate volume control and water quality provisions to the maximum extent feasible.

Stormwater Design Criteria for ponds and detention basins, and infiltration and filtration practices can be found in Section IV.C.4 and Section IV.C.5.

5.4.2.2. Infiltration Restrictions

The use of infiltration techniques shall be prohibited where the infiltration practice will be constructed in any of the following areas:

- a. That receive discharges from vehicle fueling and maintenance areas;
- b. Where high levels of contaminants in soil or groundwater may be mobilized by infiltration;
- c. 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;
- d. With less than three feet of separation from the bottom of the infiltration system to the elevation of the seasonally saturated soils or the top of bedrock;
- e. Of predominately Hydrologic Soil Group D (clay) soils;
- f. In an Emergency Response Area (ERA) within a Drinking Water Supply Management Area (DWSMA) as defined in Minn. R. 4720.5100, Subp. 13, classified as high or very high vulnerability as defined by the Minnesota Department of Health;
- g. In an ERA within a DWSMA as defined in Minn. R. 4720.5100, Subp. 13, classified as moderate vulnerability unless the applicant performs a higher level of engineering review² sufficient to provide a functioning treatment system and to prevent adverse impacts to groundwater;
- h. Outside of an ERA within a DWSMA classified as high or very high vulnerability unless the applicant performs a higher level of engineering review³ sufficient to provide a functioning treatment system and to prevent adverse impacts to groundwater;
- i. Within 1,000 feet upgradient or 100 feet downgradient of active karst features; or,
- j. That receive stormwater runoff from these types of entities regulated under NPDES for industrial stormwater: automobile scrap yards, scrap recycling and waste recycling facilities, hazardous waste treatment, storage, or disposal facilities, or air transportation facilities that conduct deicing activities.

Where the site factors listed above limit the construction of infiltration systems, the applicant shall provide appropriate documentation to the City regarding the limitations. If the City determines that infiltration is prohibited onsite, the applicant shall consider alternative volume reduction BMPs and the water quality volume must be treated by a wet sedimentation basin, filtration system, regional ponding, or similar method prior to the release of stormwater to the City's storm sewer system and other surface waters.

5.4.2.3. Water Quality

The water quality control standard shall be considered satisfied if the volume control standard has been satisfied. If it is infeasible to meet the volume control standard due to

² See "higher level of engineering review" in the Minnesota Stormwater Manual for more information.

³ See "higher level of engineering review" in the Minnesota Stormwater Manual for more information.

site constraints, the applicant shall consider alternative volume reduction BMPs and the water quality volume must be treated by a wet sedimentation basin, filtration system, regional ponding, or similar method prior to the release of stormwater to the City's storm sewer system and other surface waters. In the case of alternative volume reduction BMPs, at least 60% TP and 90% TSS removal will be required on an average annual basis. A wet sedimentation basin with a permanent pool (dead storage) volume greater than or equal to the runoff from a 2.5-inch 24-hour storm event over the entire contributing drainage area is considered to meet these requirements.

PondNET, P-8, MIDS and/or scientifically valid field studies are acceptable methods for verifying water quality performance.

Additional Stormwater Design Criteria information can be found in **Section IV.C**.

5.4.2.4. Rate Control

- A. At a minimum, post-construction stormwater management practices shall maintain existing flow rates for the 2-, 10-, and 100-year 24 hour rainfalls in accordance with Atlas 14 data as shown in **Table 2**.

Table 2. Atlas 14 Data for City of Faribault

Event	Rainfall/Snowmelt Depth (inches)
2-year, 24 hour	2.84
10-year, 24 hour	4.25
100-year, 24 hour	7.29
100-year, 10 day snowmelt	10.1

- B. Overland conveyance, ponds, and BMPs – including design of the flood storage, outlets, and emergency overflows – shall be designed for the 100-year critical flood event. The 100-year critical flood event is either the 100-year, 24-hour storm event or the 100-year 10-day snowmelt event, whichever produces the highest high water level (HWL).
- C. All drainage system analyses and designs shall be based on proposed full development land use patterns.
- D. A MSE3 24-hour rainfall distribution with average antecedent moisture conditions should be utilized for runoff calculations.
- E. The recommended minimum outlet diameter is 6 inches due to plugging susceptibility and may supersede the rate control requirement for the 2-year event.
- F. Outlet structures should be designed in three phases with primary outlet structure and secondary overflow structure routed to the storm sewer and a defined emergency overflow as the tertiary outlet structure.

5.4.2.5. Freeboard

- A. The low opening elevation for all new structures will be a minimum of 2 feet above the HWL for the 100-year critical event and at least 1 foot above the as-built emergency overflow (EOF) elevation from any area where surface water is impounded during a rain event.
- B. For landlocked basins, where structures are proposed below the EOF, the low opening elevation will be a minimum of 2 feet above the HWL as determined by the 100-year critical back-to-back event.
- C. Adjacent to channels, creeks, and ravines the low opening elevation will be at least 2 feet above the HWL for the 100-year critical event.

- D. The low floor elevation for all new structures will be a minimum of 3 feet above historic high groundwater levels and 1 foot above the NWL of adjacent waterbodies.
- E. Drainage easements and outlots for ponds, lakes, wetlands, streams, etc., shall encompass the area to the 100-year HWL plus 2 feet.

5.4.3 Long-Term Operation and Maintenance

No private permanent stormwater management practices may be approved unless an operation and maintenance agreement are provided that defines how access will be provided, who will conduct maintenance, the type of maintenance, and the maintenance intervals. An example maintenance agreement is provided in **Appendix C**.

The City of Faribault reserves the right to ensure maintenance responsibility for private permanent stormwater management practices when those responsibilities are legally transferred to another party. The applicant shall obtain all necessary easement or other property interests to allow access to the permanent stormwater management practices for inspection or maintenance for both the responsible party and the City of Faribault. At a minimum, all private stormwater facilities shall be inspected annually and maintained in proper condition consistent with the performance goals for which they were originally designed and as executed in the operations and maintenance agreement. If the private permanent stormwater management practice changes, causing decreased effectiveness, a new, repaired, or improved structural stormwater practice must be implemented to provide equivalent treatment to the original practice.

All settled materials including settled solids, shall be removed from ponds, sumps, grit chambers, and other devices, and disposed of properly.

5.5 Stormwater Design Criteria

5.5.1 Storm Sewer

- A. Manhole spacing shall not exceed 400 feet.
- B. Where more than one pipe enters a structure, a catch basin/manhole shall be used.
- C. Storm sewer pipe should match top of pipe on top of pipe unless grade constraints prevent this. In that case, hydraulic calculations will be necessary to verify that excessive surcharging will not occur.
- D. Storm sewer systems shall be designed for the 10-year 24-hour storm event using the Rational Method. The outlets from ponds or BMPs shall be designed for the 100-year critical flood event as previously described.
- E. The minimum full flow velocity within the storm sewer should be 3 feet per second (fps). The maximum velocity shall be 10 fps, except when entering a pond, where the maximum velocity shall be limited to 6fps.
- F. For storms greater than the 10-year event, and in the case of plugged inlets, transient street ponding will occur. For safety reasons, the maximum depth in streets should not exceed 1.5 feet at the deepest point.
- G. To promote efficient hydraulics within manholes, manhole benching shall be provided to 1/2 diameter of the largest pipe entering or leaving the manhole.
- H. Vaned grate (3067V or 3067 VB in low point) catch basin castings shall be used on all streets.
- I. The maximum design flow at a catch basin for the 10-year storm event shall be three (3) cubic feet per second (cfs), unless high capacity grates are provided. Catch basins at low points will be evaluated for higher flow with the approval of the City Engineer.
- J. All structures located in the street are to be a minimum of four feet deep (rim to invert) and a minimum of three feet deep elsewhere. Two-by-three catch basins are to be four (4) feet deep.

5.5.2 *Outlet and Inlet Pipes*

- A. Inlet pipes of stormwater ponds shall be extended to the pond NWL whenever possible.
- B. Outfalls with velocities greater than 4 fps into channels, where the angle of the outfall to the channel flow direction is greater than 30 degrees, requires energy dissipation or stilling basins.
- C. Outfalls with velocities of less than 4 fps, that project flows downstream into a channel in a direction 30 degrees or less from the channel flow direction, generally do not require energy dissipaters or stilling basins, but will require riprap protection.
- D. In the case of discharge to channels, riprap shall be provided on all outlets to an adequate depth below the channel grade and to a height above the outfall or channel bottom. Riprap shall be placed over a suitably graded filter material and filter fabric to ensure that soil particles do not migrate through the riprap and reduce its stability. Riprap shall be placed to a thickness at least 2.5 times the mean rock diameter to ensure that it will not be undermined or rendered ineffective by displacement. If riprap is used as protection for overland drainage routes, grouting may be recommended.
- E. Discharge velocity into a pond at the outlet elevation shall be 6 fps or less. Riprap protection is required at all inlet pipes into ponds from the NWL to the pond bottom.
- F. Where outlet velocities to ponds exceed 6 fps, the design should be based on the unique site conditions present. Submergence of the outlet or installation of a stilling basin approved by the City is required when excessive outlet velocities are experienced.

5.5.3 *Channels and Overland Drainage*

- A. Overland drainage routes where velocities exceed 4 fps should be reviewed by the City Engineer and approved only when suitable stabilization measures are proposed.
- B. Open channels and swales are recommended where flows and small grade differences prohibit the economical construction of an underground conduit. Open channels and swales can provide infiltration and filtration benefits not provided by pipe.
- C. The minimum grade in all unpaved areas shall be two (2) percent.
- D. Maximum length for drainage swales shall be 400 feet.
- E. Channel side slopes should be a maximum of 4:1 (horizontal to vertical) with gentler slopes being desirable.
- F. Riprap shall be provided at all points of juncture, particularly between two open channels and where storm sewer pipes discharge into a channel.
- G. Open channels should be designed to handle the expected velocity from a 10-year design storm without erosion. Riprap may need to be provided.
- H. Periodic cleaning of an open channel is required to ensure that the design capacity is maintained. Therefore, all channels shall be designed to allow easy access for equipment.

5.5.4 *Ponds and Detention Basins*

- A. Where on site water quality detention basins are required, copies of the calculations determining the design of the basin(s) will be provided. The size and design considerations will be dependent on the receiving water body's water quality category, the imperviousness of the development and the degree to which on site infiltration of runoff is achieved. Design of on-site detention basins, as described in the site's runoff water management plan, shall incorporate recommendations from the nationwide urban runoff program (NURP) and "Protecting Water Quality in Urban Areas", published by the Minnesota pollution control agency, as adopted by the city, or the applicable publications, as adopted by the city. The following design considerations are required for on-site water quality detention basins based on the receiving water's water quality category. These designs include permanent detention for water quality treatment; extended detention

designs may be substituted if they provide treatment equivalent to the requirements below:

- a. A permanent pool (dead storage) volume below the normal outlet shall be greater than or equal to the runoff from a two and one-half inch (2.5") 24-hour storm over the entire contributing drainage area assuming full development.
- b. A permanent pool average depth (basin volume/basin area) which shall be greater than four feet (4'), with a maximum depth of less than ten feet (10').
- c. An emergency spillway (emergency outlet) adequate to control the 100-year frequency critical duration rainfall event.
- d. Basin side slopes above the NWL should be no steeper than three to one (3:1) when possible, and preferably flatter. A basin shelf with a minimum width of ten feet (10') and a maximum slope of ten to one (10:1) below the NWL is required to enhance wildlife habitat, reduce potential safety hazards, and improve access for long term maintenance.
- e. A flood pool (temporary storage) volume above the principal outlet spillway shall be adequate so that the peak discharge rate from the 1-, 10- and 100-year frequency critical duration storm is not greater than the peak discharge for a similar storm and predevelopment watershed conditions.
- f. Extended detention of runoff from the more frequent (1-year to 5-year) storms shall be achieved through a principal spillway design which shall include a perforated vertical riser, a small orifice outlet or a compound weir. The spillway must be constructed of a limited maintenance material. The use of treated or naturally decay resistant timber shall not be allowed.
- g. Effective energy dissipation devices which reduce outlet velocities to four feet (4') per second or less shall consist of riprap, stilling pools or other such measures to prevent erosion at all stormwater outfalls into the basin and at the detention basin outlet.
- h. For purposes of erosion control, vegetation protection and wildlife habitat enhancement, the 10-year flood level of the basin shall be no more than two feet (2') above the normal level of the basin.
- i. All constructed ponds shall be provided a maintenance access from an adjacent roadway. The maintenance access shall be provided in the form of an easement no narrower than 20 feet. The maintenance access shall have a longitudinal slope no steeper than 6:1 and minimal cross slope. Maintenance access routes, due to their extra width, also serve well as emergency overflow (EOF) routes.

5.5.5 *Infiltration/Filtration Practices*

- A. Sizing of filtration/infiltration practices shall be in conformance with the volume control requirements of this manual and the Minnesota Stormwater Manual.
- B. When designing an infiltration practice for volume control and water quality management, on-site testing and detailed analysis are strongly encouraged to determine the infiltration rates of the proposed infiltration facility. Documented site-specific infiltration or hydraulic conductivity measurements (double ring infiltrometer) completed by a licensed soil scientist or engineer is required. In the absence of a detailed analysis, the saturated infiltration rates listed in the Infiltration Rates for Infiltration Practices table found on the Minnesota Stormwater Manual shall be used. A piezometer shall be installed to ascertain the level of the local groundwater table and demonstrate at least three feet of separation between the bottom of the proposed facility and the groundwater. The soil boring is required to go to a depth of at least five feet below the proposed bottom of the infiltration practice. The soils shall be classified using the Unified Soil Classification system. The least permeable soil horizon will dictate the infiltration rate. Infiltration practices shall be designed to infiltrate the required runoff volume within 48 hours.
- C. Pretreatment, in the form of ponds, forebays, filter strips, or other approved methods, shall be provided for all infiltration areas. Pretreatment upstream of volume management practices is a key element in the long-term viability of infiltration areas. The level of

pretreatment varies largely depending on the infiltration practice and drainage area. Minnesota Stormwater Manual recommendations shall be utilized for determining the appropriate level of pretreatment on a case-by-case basis.

- D. The infiltration practice shall not be used within fifty feet of a municipal, community or private well, unless specifically allowed by an approved wellhead protection plan.
- E. The infiltration practice shall not be used for runoff from fueling and vehicle maintenance areas and industrial areas with exposed materials posing contamination risk unless the infiltration practice is designed to allow for spill containment.
- F. The infiltration practice shall not be used in Hydrologic Soil Group (HSG) D soils without soil corrections.
- G. A plan for management for vegetation shall be included in the Stormwater Pollution Prevention Plan.
- H. If soils are unsuitable for infiltration, then filtration may be used with drain tile.
- I. Subgrade soils for infiltration/filtration practices shall assume a 40% void ratio for clean washed rock and 20% for construction sand for the purposes of volume calculations.
- J. Rock storage beds shall be constructed using crushed angular granite that has been thoroughly washed to remove all fine particles that could result in clogging of the system.
- K. For infiltration benches adjacent to ponds, benches shall have slopes no steeper than 5:1 over the proposed infiltration zone. A slope of 10:1 is preferred. The Minnesota Stormwater Manual cites concerns with locating infiltration features immediately adjacent to ponds. To address this, benches shall be located to maintain hydraulic separation from the saturated zone of the pond to minimize the loss of infiltration potential over time.

5.5.6 *Emergency Overflows*

- A. EOFs shall be labeled and shown with spot elevations and drainage arrows. EOFs must be established for catch basins in the street and in rear lots. Areas along rear lot lines which are below the EOF elevation shall be designated as drainage easement on the final plat.
- B. Maximum elevation is 1 foot below the lowest opening of adjacent structures.

6. **WETLAND AND WETLAND BUFFER STRIPS**

The Rice County Soil and Water Conservation District is the Wetland Conservation Act (WCA) Local Government Unit (LGU) for Rice County and requires any projects that impacts wetlands to conform to the WCA and the City's wetland ordinance. The City requires wetlands to be assessed with the most recent version of Minnesota Routine Assessment Method (MnRAM) or equal assessment recommended by BWSR to be completed for any subdivision or project that impacts wetlands.

The provisions for wetlands and wetland buffer strips outlined below pertain to all wetlands within the city, including any that are regulated by other entities.

6.1 **Minimum Protections for Wetlands During Construction**

1. Any runoff from the site must not be discharged directly into any wetland without appropriate quality and quantity stormwater runoff control, depending on the individual wetland's sensitivity classification as determined by the Board of Soil and Water Resources (BSWR).
2. All work by the applicant in and around wetlands must be conducted using the following standards and in accordance with MN Rules Chapter 8420: avoid activities that may directly or indirectly destroy or diminish the wetland; limit the degree or magnitude of the wetland-related activity; repair, rehabilitate, or restore the affected wetland environment with one wetland of at least equal value; perform preservation and maintenance operations on the wetland throughout any activity on the site.

3. The Minnesota Pollution Control Agency's Stormwater Best Management Practices shall be adhered to at all times during the construction process in order to avoid any erosion and sedimentation to the wetland.

6.2 Assessment of Wetlands and Wetland Buffer Strips

1. It is the responsibility of the applicant to determine whether a wetland exists on a site or a structure setback from a wetland on an adjacent property is required. The applicant must delineate and document the boundaries of any wetlands on the site in a report in accordance with the WCA requirements and US Army Corps of Engineers Wetland Delineation Manual (1987). For applications involving property containing a wetland or adjacent property containing a down-gradient wetland submitted after the date this article is effective and unless otherwise exempted, a permanent wetland buffer strip must be maintained around each wetland located on or adjacent to the site along with structure setbacks required by this article.
2. The type of wetland buffer strip that is required shall be determined by the functional value of the wetland through the results of a Minnesota Routine Assessment Method ("MNRAM") assessment or equal assessment recommended by BWSR that shall be conducted by the applicant. Wetlands are classified as high, medium, or low quality based on the MNRAM assessment.

6.3 Required Submittals

When a wetland buffer strip is required by the City, the following must be delivered to the City before the City will issue any building permits for the site:

1. Reports of the applicant's MNRAM assessment and wetland delineation for the site;
2. An executed conservation easement in favor of the city for protection of the wetlands and wetland buffer strips on the site. The easement must legally and geographically describe the boundaries of the wetlands and wetland buffer strips, wetland buffer strip markers and their locations and prohibit any structures, paving, mowing, introduction of non-native vegetation, cutting, filling, dumping, yard waste disposal, fertilizer application or removal of the wetland buffer strip markers within the wetland buffer strip or the wetland;
3. Evidence that the easement document was recorded in the Rice County recorder's office along with a duplicate original of the easement document; and
4. Proof that the wetland buffer strip markers have been installed.

6.4 Determination of Required Wetland Buffer Strips and Structure Setbacks

The wetland buffer strips required for each wetland shall be measured from the wetland boundary or ordinary high water level in cases involving wetlands and the top of the bank of the channel in cases involving rivers and streams. The structure setbacks shall be measured from the outer edge of the wetland buffer strip to the structure. The required dimensions for all wetland buffer strips and structure setbacks are listed below. The wetland buffer strip's width may be adjusted along the wetland's boundaries so long as the width does not fall below the minimum width required by this

article. Publicly owned trails for educational and recreational purposes may be included as part of the wetland buffer strip's width calculations.

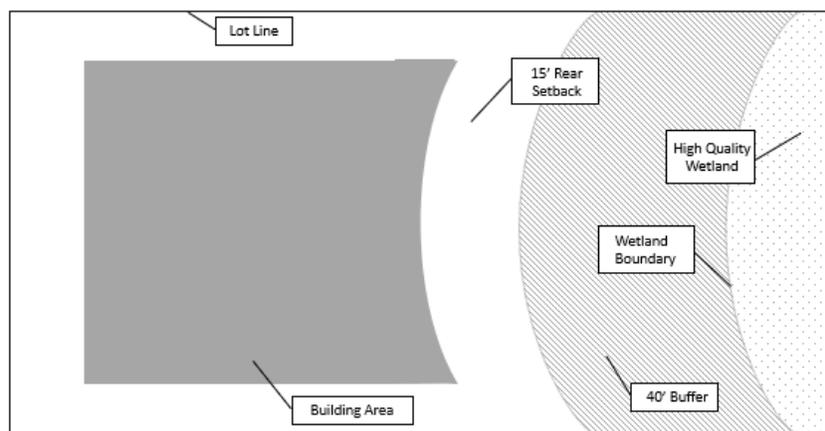
Table 3. Wetland Buffer Strips and Structure Setbacks

MNRAM Wetland Classification or equivalent assessment	High Quality	Medium Quality	Low Quality
Wetland buffer strip minimum width:	40 feet	25 feet	15 feet
Minimum structure setback: (from the outer edge of the wetland buffer strip)	15 feet	15 feet	15 feet

Example of wetland buffer strip and minimum structure setback requirements as applied to a high quality wetland:

6.5 Property Exempt from Wetland Buffer Strip and Setback Requirements

Wetland buffer strips and setbacks are not required for wetlands on or adjacent to sites where the WCA would exempt the draining or filling of the wetland from the replacement plan requirements. Wetland buffer strips and setbacks shall also not be required for roadways that must be aligned either adjacent to or across a wetland and are subject to WCA replacement requirements where additional wetland filling would be required to create a wetland buffer strip. Public trails shall also be exempted from the wetland buffer strip and setback requirements. The required wetland buffer strip structure setback for all other roadways, private trails, parking lots and related retaining walls and fences shall be five (5) feet from the wetland buffer strip.



6.6 Septic and Soil Absorption System Setback Requirements

All septic and soil absorption systems on the site must be set back a minimum of fifty (50) feet from any boundary of the wetland. For purposes of determining this setback, the boundary of the wetland shall be determined by the MNRAM assessment.

6.7 Wetland Buffer Strip Markers

All wetland buffer strips shall be equipped with permanent markers in order to identify the boundary of the wetland buffer strip on each lot. One marker shall be placed per lot at the upslope edge of

the required wetland buffer strip and placed every two hundred (200) feet and on all common lot lines. The marker may be purchased from the city at cost and must be installed before building permits are issued.

6.8 Wetland Buffer Strip Vegetation Requirements

Where acceptable predevelopment natural vegetation exists in a wetland buffer strip, the retention of that vegetation in an undisturbed state shall be required. An existing wetland buffer strip is deemed acceptable if it has acceptable natural vegetation and if it has a continuous, dense layer of perennial grasses, trees, and/or shrubs that have been uncultivated or unbroken for at least ten (10) consecutive years.

6.9 Encroachment Into Wetland Buffer Strips and Wetlands

All wetland buffer strips and wetlands must be kept free of all structures, including, but not limited to, fences and play equipment and shall stay in an undisturbed state. Patios and decks may encroach up to a maximum of six (6) feet into wetland buffer strip setback areas. Porches shall not encroach into wetland buffer strip setback areas. All structures on a site that are intended to provide access across a wetland (such as boardwalks) are prohibited on a wetland buffer strip or wetland unless a wetland permit is obtained from the Rice County Soil and Water Conservation District. Wet detention facilities may encroach into wetland buffer strips, provided that the amount of the wetland buffer strip encroached upon does not exceed fifty (50) percent of the total area required for such ponding, and provided that the amount of wetland buffer strip encroached upon does not exceed fifty (50) percent of the total area required for the wetland buffer strip with the exception of instances where two (2) cell water quality ponding that is approved by the city is utilized.

6.10 Water Quality and Rate Control Upstream of Wetlands

This section describes minimum control measures for water quality and rate control upstream of wetlands. The criteria depend upon the susceptibility of the wetland to negative impacts from urban stormwater. **Table X** lists differing wetland types and their susceptibility to impacts from stormwater.

Table X Wetland Susceptibility to Stormwater Impacts

Highly Susceptible	Moderately Susceptible	Slightly Susceptible	Least Susceptible
Sedge Meadows	Shrub-carrs	Shall Open Water Communities	Cultivated Hydric Soils
Bogs	Alder Thickets	Floodplain Forests	Dredge/Fill Disposal Sites
Coniferous Bogs	Fresh Meadows	Deep Marshes	Gravel Pits
Open Bogs	Shall Marshes	Seasonally Flooded Basins	Reed Canary Grass Monotypes
Calcareous Fens			
Low, Wet, and Fresh Prairies			
Lowland Hardwood Swamps			
Coniferous Swamps			

Source: Guidance for Evaluating Urban Storm Water and Snowmelt Impacts To Wetlands by the State of Minnesota Storm Water Advisory Group

The following criteria should be used to determine what type of rate control and water quality treatment should occur upstream of a wetland.

- Case 1: least susceptible wetland
 - Water quality volume (runoff from the 2.5-inch event) can be provided within wetland
 - All flood storage can occur within the wetland
- Case 2: slightly or moderately susceptible wetland
 - Water quality volume (runoff from the 2.5-inch event) must be provided upstream of the wetland
 - Flood storage must be provided upstream of wetland such existing discharge rates for the 10-year event rate are maintained to the wetland
- Case 3: highly susceptible wetland
 - Water quality volume (runoff from the 2.5-inch event) must be provided upstream of the wetland
 - Infiltration or filtration must be provided beyond the water quality volume
 - Flood storage must be provided upstream of wetland such existing discharge rates for the 10-year event rate are maintained to the wetland

7. SHORELAND MANAGEMENT DISTRICT

The purpose of the shoreland management district is to guide development along protected lakes, rivers, and creeks in the City of Faribault to preserve water quality, protect natural resources, and provide wise utilization of water and related land resources. The public waters of the City of Faribault have been classified below consistent with the criteria found in in Minnesota Regulations, Part 120.3300, and the Protected Waters Inventory Map for Rice County, Minnesota:

Table 4. City of Faribault Public Waters Inventory

<i>Protected Waters Classification</i>	<i>Protected Waters ID Number</i>	<i>Legal Description From/To</i>
Natural Environment Lakes		
Unnamed Lake	66-19	S23, 26 T110-R21
General Development Lakes		
Wells Lake	66-10	S36 T110-R21 to City Boundary
Faribault Lake (Mill Pond)	66-7	S25, T110-R21 - S30, T110-R20
Wild and Scenic River		
Cannon River		S19, T110-R20 to City Boundary
Agricultural River		
Straight River		City Boundary to S30, T110-R20
Urban River		
Cannon River		S36, T110-R21 to S19, T110-R20
Tributary River		
Crocker's Creek		City Boundary to S25, T110-R21
Falls Creek		S33, T110-R20
Unnamed Creek to CR		S26, T110-R21

Special considerations for setbacks, lot sizes, and related land use and zoning standards may apply. Additional information can be found in City Code Appendix B, Chapter 13, Article 6. Shoreland Management District.

8. APPENDICES

APPENDIX A

Appendix A SWPPP Submittal Checklist

Construction Stormwater Program

Stormwater Pollution Prevention Plan (SWPPP)

Doc Type: Stormwater Pollution Prevention Plan (SWPPP)

C000					
------	--	--	--	--	--

Background: This checklist is used by Minnesota Pollution Control Agency (MPCA) staff for Stormwater Pollution Prevention Plan (SWPPP) reviews. It is provided as an additional resource intended for SWPPP designers for construction projects to assure all required elements of a SWPPP are included. Use of this checklist will help you to determine if your SWPPP is complete, though not all checklist items are applicable to all projects. This checklist can be used for all size projects; however, the guidance document "Stormwater Compliance Assistance Toolkit for Small Construction Operators," contains a SWPPP template designed specifically for small site projects. This guidance is available on the MPCA Construction Stormwater webpage at: <https://www.pca.state.mn.us/water/construction-stormwater>.

Note - This checklist is for your information and use is voluntary. The checklist does not need to be returned to the MPCA.

Review information

Applicant: _____ Project name: _____

Application date: _____ Reviewer name: _____

Reason for review:

- | Yes | N/A | |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | Mandatory (over 50 acres and discharging to a special or impaired water) |
| <input type="checkbox"/> | <input type="checkbox"/> | Random audit |
| <input type="checkbox"/> | <input type="checkbox"/> | Enforcement case |
- Case lead: _____

Notes

SWPPP contains a combination of:

- | Yes | N/A | |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | Narrative |
| <input type="checkbox"/> | <input type="checkbox"/> | Plan sheets |
| <input type="checkbox"/> | <input type="checkbox"/> | Standard detail sheets (where appropriate) |

Notes

SWPPP information

- | Yes | N/A | SWPPP narrative should contain the following: |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | A description of the nature of the construction activity |
| <input type="checkbox"/> | <input type="checkbox"/> | The person knowledgeable and experienced in the application of erosion prevention and sediment control best management practices (BMPs) who will oversee the implementation of the SWPPP |
| <input type="checkbox"/> | <input type="checkbox"/> | The person, organization, or entity (name or title) responsible for long-term operation and maintenance of the permanent stormwater treatment system |
| <input type="checkbox"/> | <input type="checkbox"/> | Documentation for all trained individuals |
| <input type="checkbox"/> | <input type="checkbox"/> | A description of installation timing for all erosion prevention and sediment control BMPs |
| <input type="checkbox"/> | <input type="checkbox"/> | A description of the permanent cover methods for all exposed soil areas (may be in narrative or on plan sheets) |
| <input type="checkbox"/> | <input type="checkbox"/> | Any stormwater mitigation measures proposed as part of environmental, endangered species, archaeological or other required local, state or federal reviews conducted for the project |
| <input type="checkbox"/> | <input type="checkbox"/> | Identify discharges to any U.S. Environmental Protection Agency (EPA)-approved Total Maximum Daily Load (TMDL) for the pollutants/stressors described in item 23.7 |

Notes

- Yes N/A SWPPP narrative should contain the following (continued):**
- A description of the permanent stormwater treatment system
 - A description of procedures to amend the SWPPP
 - A description of methods used to minimize soil compaction and preserve topsoil
 - In designing the stormwater controls, the SWPPP must account for:
 - Yes N/A**
 - The expected amount, frequency, intensity and duration of precipitation
 - 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
 - The range of soil particles expected to be present
 - The stormwater volume, velocity, and peak flowrates to minimize discharge of pollutants in stormwater and to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points
 - A description of any specific chemicals and chemical treatment systems used for enhancing the sedimentation and how compliance with item 9.18 will be achieved
 - Acres of impervious surfaces (pre- and post-construction)
 - If permittees determine compliance with the following requirements is infeasible, document the determination:
 - Yes N/A**
 - Temporary sediment basins (must describe alternative BMPs used)
 - If the permanent treatment system for linear projects cannot be constructed within the right-of-way (reasonable attempt to obtain the right-of-way must be made)
 - Buffer zones
 - The full volume reduction requirement
 - Any required site assessments for groundwater or soil contamination
 - Tabulated quantities of all erosion prevention and sediment control BMPs anticipated for the life of the project

Notes

- Yes N/A The plan sheets should contain the following:**
- A site map or maps including:
 - Yes N/A**
 - Existing and final grades
 - Drainage area boundaries
 - Direction of stormwater flow
 - All discharge points where stormwater is leaving the site or entering a surface water
 - Soil types
 - Impervious surfaces
 - Locations of potential pollutant generating activities (as identified in Section 12)
 - Areas of steep slope (3:1 or greater)
 - All surface waters, existing wetlands, and stormwater ponds/basins within one aerial mile that receive stormwater from the construction site, during or after construction

Note: If they do not fit on the plan sheets, use an arrow to note the direction and distance

Notes

Yes N/A The plan sheets should contain the following (continued):

Yes N/A

Construction activity areas that are adjacent to and drain to Public Waters for which the Minnesota Department of Natural Resources (DNR) has promulgated "work in water restrictions" during specified fish spawning time frames

50 foot buffer zones

100 foot permanent buffer zones

Locations and types of all temporary and permanent erosion prevention and sediment control BMPs

Locations of areas where construction will be phased to minimize duration of exposed soil areas

Yes N/A Standard plates or specifications:

Are standard plates or specifications included where appropriate?

Notes

Construction activity requirements

Yes N/A Erosion prevention measures:

Exposed soils (including stockpiles) have erosion protection/cover initiated immediately and completed within 14 days (or 7 days per Section 23)

For DNR Public Waters with "work in waters restrictions" during specified fish spawning time frames, stabilization must be completed for all exposed soil areas within 200 feet of the water's edge, and draining to the water, within 24 hours during the restriction period

The wetted perimeter of the last 200 linear feet of ditches must be stabilized within 24 hours of connecting to a surface water or property line

Temporary or permanent ditches or swales that are being used as a sediment containment system during construction must be stabilized within 24 hours after no longer being used as a sediment containment system

Pipe outlets must have energy dissipation within 24 hours of connecting to a surface water or permanent stormwater treatment system

Mulch, hydromulch, tackifier, polyacrylamide, or similar erosion prevention practices cannot be used within the normal wetted perimeter of drainage ditches or swale sections with a continuous slope greater than 2%

Yes N/A Sediment control measures:

Sediment control practices are established on downgradient perimeters and upgradient of any buffer zones

Sediment control practices are established at the base of stockpiles on the downgradient perimeter

Stockpiles are located outside of natural buffers or surface waters, including stormwater conveyances (e.g., curb and gutter systems) unless there is a bypass

Inlet protection BMPs included

Vehicle tracking BMPs established where vehicles are exiting the site to minimize street tracking

Notes

Notes

Yes N/A Sediment control measures (continued):

- Plans to preserve topsoil (unless infeasible)
- Plans to minimize soil compaction
- Direct discharges from BMPs to vegetated areas, unless infeasible
- 50-foot natural buffers are preserved **or** (if maintaining buffer is infeasible) redundant sediment controls are provided when a surface water is located within 50 feet of the project's earth disturbances and drains to the surface water

Notes

Yes N/A Dewatering and basin draining:

- If dewatering is required on the site, there must be a plan in place to prevent nuisance conditions, erosion, and inundation of wetlands
- If using filters with backwash water, backwash water must be hauled away for disposal, returned to the beginning of the treatment process, or incorporated into the site in a manner that does not erode into runoff

Notes

Yes N/A Inspection requirements:

- The SWPPP must identify the trained person (as identified in item 21.2.b) who will conduct inspections
- Inspections must be performed once every 7 days
- Inspections must be performed within 24 hours of a rain event greater than 0.5 inches in 24 hours
- Inspection and Maintenance records should include:

Yes N/A

- Date and time of inspection
- Name of person(s) conducting inspections
- Findings of inspections, including the specific location where corrective actions are needed
- Corrective actions taken (including dates, times, and party completing maintenance activities)
- Date and amount of rainfall events greater than 0.5 inch in 24 hours
- Rainfall amounts must be obtained by a properly maintained rain gauge installed onsite, or by a weather station that is within one mile or by a weather reporting system
- Requirements to observe any discharge that may be occurring during the inspection. Discharge should also be described and photographed

Notes

Yes N/A Maintenance requirements:

- 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.
- Perimeter control devices must be repaired, replaced, or supplemented when nonfunctional or sediment reaches one-half the height of the device.
- Temporary and permanent sediment basins must be drained and sediment removed when the depth of sediment collected reaches one-half storage volume

Notes

Yes N/A Maintenance requirements (continued):

- All sediment deposits and deltas must be removed from surface waters (including drainage ways, catch basins, and other drainage systems) and the removal areas restabilized within seven days
- Sediment on paved surfaces (e.g., sediment tracked from vehicles) must be removed within one calendar day of discovery
- Permanent stormwater treatment BMPs must be inspected and maintained

Notes

Yes N/A Pollution prevention management measures:

- Proper storage, handling, and disposal of construction products, materials, and wastes is required
- SWPPP should address fueling and maintenance of equipment or vehicles and spill prevention and response
- Limit exterior vehicle and equipment washing to a defined area of the site
- The SWPPP should include a description of the containment for concrete and other washout waste
- Portable toilets must be positioned so that they are secure

Notes

Yes N/A Permit termination conditions:

- Permanent uniform perennial vegetative cover must be established at 70% density of its expected final growth
- The permanent stormwater treatment system is constructed, meets all requirements, and is operating as designed
- All temporary synthetic erosion prevention and sediment control BMPs must be removed
- Clean out sediment from conveyance systems and permanent stormwater treatment systems (return to design capacity)
- For residential sites, install temporary erosion protection and downgradient perimeter control and distribute the MPCA's Homeowner Fact Sheet
- Submit a Notice of Termination (NOT) to the MPCA

Notes

Design requirements

Yes N/A Temporary sediment basins:

- If yes:
 - Yes** **N/A** Basins must provide live storage for runoff from a 2-year, 24-hour storm (minimum 1,800 ft³/acre) or, with no calculative minimum, provide 3,600 ft³/acre
 - Outlets must be designed to remove floating debris
 - Outlets must be designed to allow complete drawdown
 - Outlets must be designed to withdraw water from the surface
 - Outlets must have energy dissipation within 24 hours of connecting to a surface water

Notes

Yes N/A Temporary sediment basins (continued):

If yes:

Yes N/A

- Basins must be designed to prevent short circuiting
- Basins must have a stabilized emergency overflow
- Basins must be situated outside of surface waters and any required buffer zones

Notes

Yes N/A Permanent stormwater treatment system:

- Include calculations for the permanent stormwater treatment system (water quality volume of one inch times the net increase of impervious surfaces created by the project to be retained on site)
- Volume reduction practices must be considered first
- Is infiltration prohibited due to the practice being constructed in or receiving discharges from one of the following?

Yes N/A

- Areas where vehicle fueling and maintenance occur
- Areas with less than three (3) feet of separation distance from the bottom of the infiltration system to the seasonally saturated soils or the top of bedrock
- Areas where industrial facilities are not authorized to infiltrate industrial stormwater under a National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Industrial Stormwater Permit issued by the MPCA:
 - Automobile salvage yards
 - Scrap recycling and waste recycling facilities
 - Hazardous waste treatment, storage or disposal facilities
 - Air transportation facilities that conduct deicing activities
- Areas where high levels of contaminants in soil or groundwater may be mobilized by the infiltrating stormwater
- Areas of predominantly Hydrological Soil Group D (clay) soils
- Areas within 1,000 feet upgradient, or 100 feet downgradient of active karst features
- Areas within a Drinking Water Supply Management Area (DWSMA) as defined in Minn. R. 4720.5100, subp. 13, if the system will be located in:
 - An Emergency Response Area (ERA) within a DWSMA classified as having high or very high vulnerability
 - An ERA within a DWSMA classified as having moderate vulnerability unless a regulated MS4 Permittee has performed or approved a higher level of engineering review

Notes

Yes N/A Permanent stormwater treatment system (continued):

- Outside of an ERA within a DWSMA classified as having high or very high vulnerability unless a regulated MS4 Permittee has performed or approved a higher level of engineering review
- Areas where soil infiltration rates are field measured at more than 8.3 inches per hour unless soils are amended to slow the infiltration rate below 8.3 inches per hour
- If infiltration is prohibited:
 - Yes N/A**
 - Other methods of volume reduction are considered
 - The water quality volume is treated by a wet sedimentation basin, filtration system, regional ponding or equivalent methods prior to the discharge of stormwater to surface waters.
- If proximity to bedrock precludes the installation of any of the permanent stormwater management practices, some treatment has been provided:
 - Yes N/A**
 - Grassed swales
 - Smaller ponds
 - Grit chambers

Notes

Yes N/A Permanent treatment method selected:

- Infiltration (e.g., infiltration basins, infiltration trenches, rain gardens, swales with check dams, natural depressions)
 - Yes N/A**
 - Include at least one soil boring, test pit or infiltrometer test in the location of the infiltration practice
 - If the infiltration rate has been field-measured, the rate has been divided by two for design purposes
 - Appropriate testing has been conducted to ensure a minimum of three feet of separation from the bottom of the infiltration practice to the seasonally saturated soils and/or bedrock
 - The system has been designed to maintain pre-existing hydrologic conditions of wetlands in the vicinity (e.g., do not breach a perched water table that is supporting a wetland)
 - The SWPPP includes requirements to avoid excavating the infiltration system within three feet of final grade before the drainage area is stabilized
 - If the infiltration system is excavated within three feet of final grade, rigorous erosion prevention and sediment control BMPs are used to keep all runoff and sediment out of the infiltration system

Notes

Yes N/A Permanent treatment method selected (continued):

Infiltration (continued)

Yes N/A

- A pretreatment device is planned
- All stormwater routed to the practice can be discharged in 48 hours
Note: Any additional flows must bypass the system through a stabilized discharge point
- There is a way to visually verify the system is operating as designed
- Adequate maintenance access is provided

Notes

Filtration (e.g., sand filters, biofiltration areas, swales using underdrains and check dams, and underground sand filters)

Yes N/A

- The filtration system is designed to remove at least 80% of total suspended solids (TSS)
- The SWPPP includes requirements to not install the filter media until the drainage area is fully stabilized
- If the filter media is installed before the drainage area is fully stabilized, rigorous erosion prevention and sediment control BMPs are used to keep all runoff and sediment out of the filtration practice
- A pretreatment device is planned
- All stormwater routed to the practice can be discharged in 48 hours or less
- There is a way to visually verify the system is operating as designed
- Appropriate testing has been conducted to ensure a minimum of three feet of separation from the bottom of the filtration practice to the seasonally saturated soils and/or bedrock
- If there is less than three feet of separation, the filter has been designed with an impermeable liner
- Adequate maintenance access is provided

Notes

Wet sedimentation basin

Yes N/A

- The basin must provide live storage of one inch (or the remainder of volume not reduced) of runoff from new impervious surfaces
- The basin must provide a permanent volume of 1,800 feet³ below the outlet pipe for each acre draining to the basin
- The permanent pool depth is between 3 feet and 10 feet

Notes

- Wet sedimentation basin (continued)
 - The basin is configured to minimize scour or resuspension of solids
 - Outlets must be designed to discharge at less than 5.66 cubic feet per second (cfs) per acre of pond
 - Outlets must be designed to prevent short circuiting
 - Outlets must be designed to prevent the discharge of floatables
 - A stabilized emergency overflow is provided
 - Adequate maintenance access is provided
 - The basin is located outside of surface waters and any buffer zones required in item 23.11
 - If the basin is in active karst terrain, the basin must be designed with an impermeable liner

Notes

- Regional wet sedimentation basin
 - Yes N/A**
 - Provide written authorization from the owner of the regional basin
 - Ensure that there will be no significant degradation of waterways between the project and the regional basin
 - The regional basin design conforms to the permit requirements for a wet sedimentation basin

Notes

- Yes N/A Record retention requirements:**
- The SWPPP (including all changes to it) must be kept at the site during construction by the permittee who has operational control of that portion of the site

Notes

Yes N/A **Additional requirements for discharges to Special (Prohibited, Restricted, Other) and Impaired Waters:**

Does this site drain to a discharge point on the project that is within one aerial mile of a Special or Impaired Water?

Which type of special or impaired water?	BMP category	Notes
Prohibited waters		
<input type="checkbox"/> Wilderness areas	23.9, 23.10, 23.11, 23.13, 23.14	
<input type="checkbox"/> Part of Lake Superior	23.9, 23.10, 23.11, 23.13, 23.14	
<input type="checkbox"/> Scientific and natural areas	23.9, 23.10, 23.11, 23.13, 23.14	
Restricted waters		
<input type="checkbox"/> Lake Superior (apart from Prohibited)	23.9, 23.10, 23.11	
<input type="checkbox"/> Scenic and recreational river segments	23.9, 23.10, 23.11	
<input type="checkbox"/> Lake Trout lakes	23.9, 23.10, 23.11	
<input type="checkbox"/> Calcareous fens	23.9, 23.10, 23.11	
Other special waters		
<input type="checkbox"/> Trout lakes	23.9, 23.10, 23.11	
<input type="checkbox"/> Trout streams	23.9, 23.10, 23.11, 23.12	
Impaired water		
<input type="checkbox"/> Impaired for phosphorus, turbidity, TSS, dissolved oxygen or aquatic biota	23.9, 23.10	

BMP category	Requirement	Notes
<input type="checkbox"/> 23.9	Stabilization initiated immediately and completed within seven days	
<input type="checkbox"/> 23.10	Temporary sediment basin provided for areas of five acres or more that drain to a common location	
<input type="checkbox"/> 23.11	Include and maintain at all times an undisturbed buffer zone of not less than 100 linear feet from a special water	
<input type="checkbox"/> 23.12	Temperature controls	
<input type="checkbox"/> 23.13	Conduct routine site inspections once every three days when draining to Prohibited Waters	
<input type="checkbox"/> 23.14	If discharges to prohibited waters cannot provide volume reduction equal to one inch times the net increase of impervious surfaces, permittees must develop a permanent stormwater treatment system design that will result in no net increase of TSS or phosphorus to the prohibited water	

Yes N/A Requirements for discharges to wetlands:

- Does this site have a discharge with the potential for adverse impacts to wetlands?

If yes:

Yes N/A

- Has the wetland mitigation sequence (avoid, minimize, mitigate) been followed/satisfied? Permittee must demonstrate this through one of the following:
 - The potential adverse impacts are addressed by permits/approvals from an official statewide program (e.g., U.S. Army Corps of Engineers, Minnesota DNR, Wetland Conservation Act)
 - If there are impacts not addressed by the permits or other determinations, compliance with 7050.0186 must be documented to the MPCA and approved

Notes

APPENDIX B

Appendix B Permanent Stormwater Management Submittal Checklist

City of Faribault Stormwater Management

Project Name: _____

Project Address/PID: _____

Site Size (acres): _____

Disturbed area (sf): _____

Existing Impervious (sf): _____

Proposed Impervious (sf): _____

Fully Reconstructed Impervious (sf): _____

Water Quality Volume Required (cf): _____

Volume Control and Water Quality	
Trigger: Sum of new and fully reconstructed impervious is one or more acres.	
A.	<p>Is infiltration restricted on the site? Restrictions include:</p> <ul style="list-style-type: none"> • Less than three feet from bottom of infiltration to seasonally saturated soils, groundwater, or top of bedrock • Infiltration rates higher than 8.3 inches/hour • HSG D soils • In an Emergency Response Area (ERA) within a Drinking Water Supply Management Area (DWSMA) that's high or very high vulnerability • In an ERA within a DWSMA classified as moderate vulnerability, unless a higher level engineering review has been performed • Within a DWSMA with high or very high vulnerability, unless a higher level engineering review has been performed • Within 1,000 feet upgradient or 100 feet downgradient of active karst features • Areas that receive discharge from vehicle fueling and maintenance areas • Areas with high levels of contaminants in soil or groundwater <p>If no, proceed to B. If yes, proceed to C.</p>
B.	<p>Required volume is provided and water quality requirements are considered satisfied.</p> <ul style="list-style-type: none"> • Development and redevelopment (non-linear) projects: <ul style="list-style-type: none"> ○ 1.0 inch times the sum of new and fully reconstructed impervious • Linear projects, larger of: <ul style="list-style-type: none"> ○ 1.0 inch times the net new impervious ○ 0.5 inch times the sum of the new and fully reconstructed impervious
C.	<p>Sequencing if infiltration is restricted:</p> <ol style="list-style-type: none"> 1. Alternative volume reduction of water quality volume (water reuse) 2. Filtration of water quality volume 3. Wet sedimentation basin with a permanent pool volume of at least 2.5 inches of runoff from the contributing drainage area
D.	<p>60% TP and 90% TSS removal are provided on an average annual basis.</p> <ul style="list-style-type: none"> • This requirement is considered satisfied if B (volume control via infiltration) or C.3 (wet sedimentation basin) are used. • Removals are documented via PondNET, P-8, MIDS, and/or scientifically valid field studies.

Rate Control

Trigger: Disturbed area is one half acre (21,780 sf) or more.

- Maintain existing peak flow rates for the 2-, 10-, and 100-year 24-hour rainfall events
 - Minimum recommended outlet diameter is 6 inches. This may supersede rate control for the 2-year event.

Freeboard

Trigger: Any proposed structures or waterbody alterations.

Low opening:

- 2 feet above HWL for 100-year critical event
- 1 foot above EOF

Low opening for structures below the EOF of landlocked basins:

- 2 feet above the HWL for 100-year critical back-to-back events

Low floor for new structures:

- 3 feet above historic high groundwater levels
- 1 foot above NWL of adjacent waterbodies

Drainage easements and/or outlots over the 100-year HWL plus 2 feet for ponds, lakes, wetlands, etc.

APPENDIX C

Appendix C Maintenance Agreement

STORMWATER MAINTENANCE AGREEMENT

THIS AGREEMENT (the “Agreement”) is made and entered into as of the ____ day of _____, 20 __, by and between the City of Faribault, a Minnesota municipal corporation (the “City”) and [REDACTED], under the laws of the state of Minnesota (the “Owner”).

WITNESSETH:

WHEREAS, the Owner is the fee owner of certain real property located in Rice County, Minnesota, which parcels are legally described on Exhibit A attached hereto (collectively, the “Property”); and

WHEREAS, the Owner has agreed to construct and maintain certain stormwater facilities (the “Stormwater Improvements”) for the benefit of the Property; and

WHEREAS, the Stormwater Improvements which are the subject of this Agreement include, but are not limited to a stormwater basin, stormwater drainage structures, vegetated swales, and accompanying structures. The location of the Stormwater Improvements are shown on final approved plans dated [REDACTED] as on file with the City of Faribault and last revision date [REDACTED] and as shown on Exhibit B attached hereto; and

WHEREAS, the City requires permanent provisions for handling of stormwater runoff, including terms and conditions for operation and maintenance of all Stormwater Improvements, and requires such provisions to be set forth in an agreement to be recorded against the Property; and

WHEREAS, the City and the Owner intend to comply with certain conditions, including entering into this Agreement regarding the operation and ongoing maintenance of the Stormwater Improvements.

NOW, THEREFORE, in consideration of the mutual covenants of the parties set forth herein and other valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. Maintenance of the Stormwater Improvements. The Owner, for itself and its

successor or assigns, agrees to maintain the Stormwater Improvements to retain the design performance capacity and observe all drainage laws governing the operation and maintenance of the Stormwater Improvements. The Owner shall make periodic inspection and perform maintenance of the Stormwater Improvements as described in Exhibit C attached hereto. The Owner shall make all such scheduled inspections and maintenance, keep record of all inspections and maintenance activities, and submit such records annually to the City. The cost of all inspections and maintenance, including debris removal and vegetation restoration of the Stormwater Improvements, shall be the obligation of the Owner and its successors or assigns as the fee owner of the Property.

2. City's Maintenance Rights. The City may, but shall not be obligated to, maintain the Stormwater Improvements, as provided in this paragraph, if the City reasonably believes that the Owner or its successors or assigns has failed to maintain the Stormwater Improvements such that the Stormwater Improvements are not operating as designed in accordance with applicable drainage laws and other requirements and such failure continues for 30 days after the City gives the Owner written notice of such failure or, if such tasks cannot be completed within 30 days, after such time period as may be reasonably required to complete the required tasks provided that Owner is making a good faith effort to complete said task. The City's notice shall specifically state which maintenance tasks are to be performed. If Owner does not complete the maintenance tasks within the required time period after such notice is given by the City, the City shall have the right to enter upon such portions of the Property as may reasonably be necessary to gain access to perform such maintenance tasks. In such case, the City shall send an invoice of its reasonable maintenance costs to the Owner or its successors or assigns, which shall include all reasonable staff time, engineering and legal and other reasonable costs and expenses incurred by the City. If the Owner or its successors or assigns fails to reimburse the City for its costs and expenses in maintaining the Stormwater Improvements within 30 days of receipt of an invoice for such costs, the City shall have the right to assess the full cost thereof against the Property. The Owner, on behalf of itself and its successors and assigns, acknowledges that the maintenance work performed by the City regarding the Stormwater Improvements benefits the Property in an amount which exceeds the assessment and hereby waives any right to hearing or notice and the right to appeal the assessments otherwise provided by Minnesota Statutes, Chapter 429. The Owner hereby consents to the levy of such special assessments without notice or hearing and waives its rights to appeal such assessments pursuant to Minnesota Statutes, Section 429.081, provided the amount levied, does not exceed the expenses actually incurred by the City. Further, the City may, at its option, as an additional remedy, recover expenses actually incurred by the City as service charges, in the manner provided by Minnesota Statutes, Section 415.01, 366.011 and 366.012, and the Owner hereby consents to the levy of such assessments without notice or hearing and waives its rights to appeal such assessments pursuant to such Minnesota Statutes, provided the amount levied, does not exceed the expenses actually incurred by the City pursuant to this Agreement. Notwithstanding the foregoing, in the event of an emergency, as determined by the city engineer, the 30-day notice requirement to the Owner for failure to perform maintenance tasks shall be and hereby is waived in its entirety by the Owner, and the Owner shall reimburse the City and be subject to assessment for any expense so incurred by the City in the same manner as if written notice as described above has been given.

3. Hold Harmless. The Owner hereby agrees to indemnify and hold harmless the City and its agents and employees against any and all claims, demands, losses, damages, and expenses (including reasonable attorneys' fees) arising out of or resulting from the Owner's, or the Owner's

agents' or employees' negligent or intentional acts, or any violation of any safety law, regulation or code in the performance of this Agreement, without regard to any inspection or review made or not made by the City, its agents or employees or failure by the City, its agents or employees to take any other prudent precautions. In the event the City, upon the failure of the Owner to comply with any conditions of this Agreement, performs said conditions pursuant to its authority in this Agreement, the Owner shall indemnify and hold harmless the City, its employees, agents and representatives for its own negligent acts in the performance of the Owner's required work under this Agreement, but this indemnification shall not extend to intentional or grossly negligent acts of the City, its employees, agents and representatives.

4. Costs of Enforcement. The Owner agrees to reimburse the City for all costs prudently incurred by the City in the enforcement of this Agreement, or any portion thereof, including court costs and reasonable attorneys' fees.

5. Rights Not Exclusive. No right of the City under this Agreement shall be deemed to be exclusive and the City shall retain all rights and powers it may have under Minnesota Statutes, sections 444.16 to 444.21 to acquire, construct, reconstruct, extend, maintain and otherwise improve the Stormwater Improvements.

6. Notice. All notices required under this Agreement shall either be personally delivered or be sent by United States certified or registered mail, postage prepaid, and addressed as follows:

a) as to Owner:

b) as to City: City of Faribault
208 NW First Avenue
Faribault, MN 55021-5105
Attn: City Administrator

with a copy to: Scott J. Riggs
Kennedy & Graven
470 U.S. Bank Plaza
200 South Sixth Street
Minneapolis, MN 55402

or at such other address as either party may from time to time notify the other in writing in accordance with this paragraph.

7. Successors and Assigns. All duties and obligations of Owner under this Agreement shall also be duties and obligations of Owner's successors and assigns. The terms and conditions of this Agreement shall run with the Property.

8. Effective Date. This Agreement shall be binding and effective as of the date first written above.

By: _____
Kevin F. Voracek, Mayor

By: _____
Timothy C. Murray, City Administrator

STATE OF MINNESOTA)
) ss.
COUNTY OF RICE)

The foregoing instrument was acknowledged before me this ___ day of _____, 20__, by Kevin F. Voracek and Timothy C. Murray, the mayor and the city administrator, respectively, of the City of Faribault, a Minnesota municipal corporation, by and on behalf of the municipal corporation.

Notary Public

This instrument drafted by:

City of Faribault Engineering Department
1200 Belview Trail
Faribault, MN 55021

(Remainder of page left intentionally blank)

DRAFT COPY

**EXHIBIT A TO
STORMWATER MAINTENANCE AGREEMENT**

Legal Description of the Property

PID

Legal Description

DRAFT COPY

**EXHIBIT B TO
STORMWATER MAINTENANCE AGREEMENT
Depiction of Location of Stormwater Improvements**

DRAFT COPY

**EXHIBIT C TO
STORMWATER MAINTENANCE AGREEMENT**

Inspection and Maintenance Schedule

Inspection and maintenance shall be made consistent with the inspection schedule and checklist below, or with the most recent version of the Minnesota Stormwater Manual or other subsequent manual(s) as dictated by the City.