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5.0 ESTABLISHMENT OF GOALS AND POLICIES

The City of Savage has developed several goals, strategies, and policies for the management of stormwater within the City. These goals and policies have been developed to complement any county, regional, or state goals and policies. The goals of the City are as follows:

Goals

1. Minimize public capital expenditures needed to correct flooding and water quality problems.
2. Protect and improve surface and groundwater quality.
3. Prevent erosion of soil into surface water systems.
4. Promote groundwater recharge.
5. Protect and enhance fish and wildlife habitat and water recreational facilities.
6. Secure benefits associated with the proper management of surface and groundwater.

To achieve the City's goals for managing stormwater, four strategies were developed. These strategies will assist the City in targeting its main audiences for the purposes of water resource management as follows:

1. **Cooperation with other agencies:** This strategy recognizes that the City is not alone in managing water resources within its boundaries. There are other local, state, regional, and federal agencies that also have rules and regulations related to stormwater management. Through this strategy, the City has recognized these other agencies' role in this endeavor and will cooperate and coordinate with these agencies, as necessary.
2. **Education:** This strategy includes educating various groups within the City about proper water resource management BMPs. Education of residents, contractors, landowners, City Staff, City Council, business owners, and developers is included in this strategy to assist in meeting the City's goals. This will be coordinated through the implementation of the City of Savage's MS4 program.
3. **Regulation:** Many BMPs for water resource management take the form of regulations placed on new development or redevelopment within the City. These regulations assist the City in achieving its water management goals. Policies related to the management of water resources are included in the regulation strategy.
4. **Internal operations:** This strategy focuses on policies related to the internal operations of the City. These policies provide direction on BMPs that will guide City operations in the management of water resources to achieve its water resource management goals.

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Based on these strategies, the City has developed policies and are outlined in the tables below.

5.1 COOPERATION WITH OTHER AGENCIES

There are several other local, state, and federal agencies that have rules and regulations related to water resource management. The City recognizes these other agencies' roles in this endeavor and will cooperate and coordinate with these agencies, as necessary.

This Plan is in conformance with but does not restate all other agency rules that are applicable to water quality and natural resource protection. Rules, policies, permits, and guidelines associated with the following organizations also provide guidance in managing water resources:

- Prior Lake – Spring Lake Watershed District www.plslwd.org
- Lower Minnesota River Watershed District <http://lowermnrivewd.org/>
- Scott Watershed Management Organization www.co.scott.mn.us
- Metropolitan Council www.metrocouncil.org
- Minnesota Department of Health www.health.state.mn.us
- Minnesota Pollution Control Agency www.pca.state.mn.us
- Board of Water and Soil Resources www.bwsr.state.mn.us and the Wetland Conservation Act www.bwsr.state.mn.us/wetlands/wca/index.html
- Minnesota Department of Natural Resources www.dnr.state.mn.us
- US Army Corps of Engineers <https://www.usace.army.mil/>
- Minnesota Department of Agriculture www.mda.state.mn.us
- Scott County Soil and Water Conservation District www.scottswcd.org
- US Fish and Wildlife Service www.fws.gov
- Federal Emergency Management Agency (FEMA) <https://www.fema.gov>

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While these other agency rules, policies, and guidelines are not restated in this Plan, they are applicable to projects, programs, and planning within the City. Specifically, but not exclusively, the City will coordinate with the Lower Minnesota River Watershed District (LMRWD), Prior – Lake Spring Lake Watershed District, and Scott Watershed Management Organization (WMO) in managing the City's water resources.

In adopting the City's new regulations, the City reviews all applicable agency rules and adopts updated regulations, as necessary. The watershed agencies permit as follows.

5.1.1 Lower Minnesota River Watershed District

The Lower Minnesota River Watershed District (LMRWD) defers permitting authority to the LGUs and requires local municipalities to adopt standards equivalent to the LMRWD rules. The LMRWD completed the process of updating their Comprehensive Water Resources Management Plan in 2018.

The LMRWD standards became adopted rules on February 19, 2020. The City is required to obtain a Municipal (LGU) Permit. LGUs will be required to have standards that conform to the District's rules before May 1, 2020.

5.1.2 Prior – Lake Spring Lake Watershed District

The Prior Lake – Spring Lake Watershed District (PLSLWD) defers permitting authority for most projects to the LGUs and requires local municipalities to adopt standards equivalent to the PLSLWD standards. The PLSLWD has developed draft rules and has sent them out for public comment. Once the rules are officially adopted the City will revise its official controls within 180 days to meet the new requirements.

The District's Water Resources Management Plan was adopted in 2010 and revised in 2013. The PLSLWD updated their plan in 2020. This proposed plan will detail the goals and policies of the District and provides the foundation for its activities and projects. It identifies problems and short-term strategies and goals.

5.1.3 Scott Watershed Management Organization

The Scott Watershed Management Organization (WMO) defers permitting authority to the LGUs and requires local municipalities to adopt standards equivalent to the Scott WMO standards. The City's current official controls meet the standards of the Scott WMO.

The Scott WMO has completed the process of updating their Comprehensive Water Resources Management Plan and began plan implementation in 2019.

5.2 EDUCATION

The purpose of the education strategy is to foster responsible water quality management practices by educating residents, contractors, landowners, business owners, City Staff, City Council, and developers about proper water resource management. If these targeted audiences recognize their role in responsible water resource management in their homes, businesses, and practices, it is another means for the City to meet its goals. This education strategy has also been designed to be in conformance with the NPDES requirements.

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STRATEGY: EDUCATION		
Policy No.	Policy	Target Audience
5.2.1	The City has implemented a public education program as part of the NPDES Phase II requirements.	Residents, Business Owners, Contractors, Landowners, Developers, City Staff and Council
5.2.2	The City partners with the various Watershed Districts, Watershed Management Organizations, and Scott County in water resource public education in the City. This partnering may include participation in Scott County's Scott Clean Water Education Program (SCWEP).	Residents, Business Owners, Developers, Watershed Districts/ Management Organizations, SWCD
5.2.3	The City maintains and updates their website for water resource management information and SWPPP information.	Residents, Business Owners, Contractors, Landowners, Developers
5.2.4	The City will create a Developer's Guide.	Developers and Contractors
5.2.5	The City will solicit volunteers for water quality monitoring.	Residents
5.2.6	The City will provide information newsletters, utility bill flyers, and mailings aimed at fostering responsible water quality management practices. Topics will include: ● Wetland and stormwater pond buffers ● Water quality monitoring ● Groundwater quality and protection ● Controlling invasive species ● Water conservation and the water cycle ● Proper hazardous waste disposal ● Winter snow and ice removal ● Yard waste management ● Agricultural BMP's ● Pet waste disposal ● Illicit discharges to stormwater	Residents, Business Owners, Developers
5.2.7	The City will continue to implement education regarding proper disposal of household hazardous waste. This will include posters in key locations and flyers in utility bills.	Residents, Business Owners, Developers
5.2.8	The City will provide training opportunities for erosion and sediment control, BMP's, good housekeeping, and pollution prevention.	City Staff, developers, builders, landowners

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5.2.9	The City will hold an annual public meeting to discuss the City's SWPPP and water resource management practices in conformance with the NPDES permit.	Residents, Business Owners, Developers
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5.3 REGULATION

The policies developed in this strategy outline specific stormwater management elements that are required to be implemented through the development and/or permitting process. The regulation strategy is targeted at the public, developers, contractors, City staff, and City Council.

As future transportation infrastructure is proposed and designed, opportunities for water quality and flooding retrofits will be incorporated.

Applicability of stormwater management requirements, based on project size, is specified in §152.537(A)

STRATEGY: REGULATION		
Policy No.	Policy	Target Audience
Stormwater Management Plan Report		
5.3.1	All proposed land disturbances of 1 acre or more must prepare a Stormwater Management Plan Report addressing all the requirements in the City of Savage water resources management plan.	Developers
Hydrologic Modeling		
5.3.2	To compute hydrology for a site location, use Atlas 14 precipitation frequency estimates to develop a project Intensity Duration-Frequency (IDF) curve, or use the Atlas 14 regionalized IDF values developed by MnDOT with the Rational Method to calculate flow (MnDOT Tech Memo 15-10-B-02, 12/8/2015). Use the rainfall distribution derived from Atlas 14 data or use the NRCS MSE 3 rainfall distribution with the NRCS rainfall/runoff hydrology method. Do not use the NRCS Type II rainfall distribution. Use the Atlas 14 depth for the project location or the Minnesota NRCS Atlas 14 county average depth when the 24-hour precipitation depth is used. Use the standard NRCS dimensionless unit hydrograph with the peak rate factor of 484.	Developers
5.3.3	In modeling stormwater drainage areas, at least 90% of all site drainage from new impervious must be treated on a site, before discharge. In addition, at least 85% of the total disturbed site (impervious + pervious) must be treated before leaving the development.	

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STRATEGY: REGULATION		
Policy No.	Policy	Target Audience
Rate Control		
5.3.4	Future discharge rates from new development and redevelopment will, at a minimum, not exceed the existing discharge rates from the 2-year, 10-year, and 100-year 24-hour Atlas 14 rainfall events.	Developers
5.3.5	For discharges to the Credit River and Eagle Creek the design must be done using the channel protect volume as defined by the unified sizing criteria in the Minnesota Stormwater Manual. The channel protection volume design can be achieved through a principal spillway design that may include a perforated vertical riser, small orifice retention outlet, or compound weir.	
5.3.5	New storm sewer systems shall be designed to accommodate discharge rates with a 10-year, 24-hour storm event. Atlas 14 rainfall must be used.	Developers
5.3.6	All new storm pipe must be a minimum of 15 inches in diameter. Driveway culverts may be 12-inch with City approval.	
5.3.7	No orifice smaller than 4" is allowed in the construction of ponds or outlets within the City. A trashguard shall be installed on orifices less than 6". Skimming of floatables shall occur upstream of all pond outlet devices.	Developers

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STRATEGY: REGULATION		
Policy No.	Policy	Target Audience
Flood Control		
5.3.8	Building elevations within the City of Savage shall conform to the following separation requirements: • Low Floor ○ 2' above 100-year, 24-hour event or 100-year, 10-day snowmelt, whichever is greater. ○ 2' above the regional flood or highest known, whichever is greater. • Groundwater ○ Low floor shall be 4 feet above highest known groundwater elevations in the area. Seasonally high groundwater elevations should be observed. • Emergency Overflows ○ 2' above the 100-year, 24-hour rainfall event or 100-year, 10-day snowmelt, whichever is greater. • Low Openings ○ 3' above the 100-year, 24-hour rainfall event or 100-year, 10-day snowmelt, whichever is greater. If this 3-foot freeboard requirement is considered a hardship, the standard could be lowered to 2 feet if the following can be demonstrated: ▪ Provide flood storage volume within the freeboard area that is at least 50% of the flood storage volume below the 100-yr HWL, ▪ 25% outlet obstruction does not increase the 100-yr, 24-hour HWL by more than 1 foot, and ▪ Adequate emergency overflow from basin to provide assurance that 2-foot freeboard will be maintained for proposed low opening. Note: Standards use Atlas 14 rainfall events with a NRCS MSES rainfall distribution.	Developers, Builders
5.3.9	The City prohibits activities within the 100-year floodplain unless compensatory floodplain mitigation is provided at a 1:1 ratio by volume or it is demonstrated that the 100-year floodplain will not be impacted. Compensatory storage will be required prior to the placement of fill in the floodplain. In addition, no filling within the	Developers, Builders, Residents

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STRATEGY: REGULATION		
Policy No.	Policy	Target Audience
	designated floodway of a drainage channel shall be allowed. Suitable calculations must be submitted and approved demonstrating that filling in the flood fringe will not impact the 100-year flood profile.	
5.3.10	Landlocked depressions that presently do not have a defined outlet and do not typically overflow may be allowed a positive outlet to protect adjacent properties. This outlet must be in conformance with current wetland regulations and demonstrate that downstream properties are not adversely affected by the flows. These outlets will be provided above the existing conditions 100-year, 24-hour back-to-back storm event HWL, unless a lower outlet elevation is required to provide protection to existing adjacent structures.	City Staff, Developer
5.3.11	If an outlet is not available or provided for a landlocked basin, the area shall be modeled to accommodate a back-to-back 100-year, 24-hour return frequency event or 100-year, 10-day snowmelt runoff event (10.2 inches) on saturated or frozen soil conditions (CN=100). The required flood storage shall be established by the highest water surface elevation of the two events.	City Staff, Developer
5.3.12	The City requires as-builts of all stormwater management areas and designated emergency overflows.	City Staff, Developers
5.3.13	The City requires drainage and utility easements over stormwater management features such as stormwater storage areas, floodplains, and conveyance systems, as well as wetlands and pond and wetland buffers.	City Staff, Developers

STRATEGY: REGULATION		
Policy No.	Policy	Target Audience
Water Quality Treatment		
5.3.14	Treatment of stormwater is required prior to discharge to a lake, stream, wetland and prior to discharge from the site as part of development/redevelopment. For sites that are one acre or more of new impervious there shall be no net increase from existing conditions of Total Phosphorus (TP) and Total Suspended Solids (TSS) to receiving waterbodies.	Developers

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STRATEGY: REGULATION		
Policy No.	Policy	Target Audience
5.3.15	Stormwater treatment basins/ponds shall be designed using the following NURP design criteria: a. A permanent pool ("dead storage") volume below the principal spillway (normal outlet) which shall be greater than or equal to the runoff from a 2.5-inch storm over the entire contributing drainage area assuming full development. b. A permanent pool average depth (basin volume/basin area) which shall be ≥ 4 feet, with a maximum depth of 10 feet. c. An emergency spillway (emergency outlet) adequate to control the 1% frequency critical duration event. d. Basin side slopes above the normal water level should be no steeper than 3:1, and preferably flatter. e. A safety bench (vegetation bench) with a minimum width of 10 feet and 1 foot (10:1) deep below the normal water level is required to improve performance, enhance wildlife habitat, reduce potential safety hazards, and improve access for long-term maintenance. f. If a bench is included for infiltration or filtration of stormwater, the normal water level is the water elevation after infiltration or filtration is complete. g. Basin shall contain a maintenance bench with a minimum width of 10-feet at a 10:1 slope beginning at the NWL and extending to 1-foot above the NWL. h. Ponds shall have a 16.5-foot vegetated buffer around the pond starting at the normal pool elevation. City-approved monuments shall be placed at the outside perimeter of the buffer. Minimum space between monuments shall be 300 feet or at every other lot line, whichever is most frequent. i. To prevent short-circuiting, the distance between the major inlets and normal outlet should be maximized. j. A flood pool ("live storage") volume above the principal spillway shall be adequate so that the peak discharge rates from the 50%, 10%, and 1% critical duration storms are no greater than pre-development conditions. Two feet of freeboard is required above a pond EOF. k. Water quality treatment pond must be shown to reduce total suspended solids (TSS) by 90%, nitrate nitrogen by 70% and total phosphorus by 55%	Developers
5.3.16	In areas of redevelopment where ponding is not feasible or available, in-line stormwater treatment systems will be required to treat storm water runoff.	Developers

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STRATEGY: REGULATION		
Policy No.	Policy	Target Audience
5.3.17	The City requires that all new and existing ponds be modified where feasible and practical to incorporate submerged outlet structures that will skim floatable materials. The outlets shall be submerged a minimum of 6 inches below the NWL and have velocities of less than 0.5 feet per second in the 99% return frequency storm event. A typical pond outlet detail is available in Appendix F .	Developers
5.3.18	All new ponds shall have at least 18" of C or D soil or 24" of A or B soil separating pond bottoms from bedrock.	Developers

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STRATEGY: REGULATION		
Policy No.	Policy	Target Audience
<i>Infiltration/Volume Control</i>		
5.3.19	Infiltration of stormwater is required for a volume that is equal to 1.0 inches of runoff from all new impervious surfaces and fully reconstructed impervious surfaces of one or more acres. For linear projects, the water quality volume must be calculated as the larger of one 1.0 inches times the new impervious surface or 0.5 inches times the sum of the new and the fully reconstructed impervious surface. Infiltration facility design criteria: • Facility must drawdown within 48 hours • Design must use site-specific soil infiltration rates or hydraulic conductivity in in-situ infiltration evaluations. • Include pretreatment to remove particulates, oil/grease and other components that may plug the system. NURP ponds constructed upstream are the preferred method for pretreatment. • Have at least 36 inches of soil separation from the bottom of the facility to the seasonally saturated soils or bedrock. • Newly constructed infiltration areas must be inspected by the City, Watershed Management Organization or Watershed District after constructed to ensure that water is infiltrating. • Infiltration capacity of a proposed infiltration feature will be evaluated as defined in "<u>Determining soil infiltration rates</u>" in the most recent version of the Minnesota Stormwater Manual. Infiltration facility must not be constructed in the following: • For runoff from fueling and vehicle maintenance areas. • On areas with less than 3 feet of vertical separation from the bottom of the infiltration system to the seasonal high groundwater or top of bedrock. • For areas with runoff from industrial or commercial parking lots and roads where there is less than 5 feet of vertical separation from the bottom of the infiltration system to the seasonal high groundwater or top of bedrock. • Infiltration is required unless a minimum of 2 soil borings within the proposed infiltration feature identify a layer of Type D soil within 5 feet below the basin. This restricting layer must be greater than 12" thick or	Developers

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STRATEGY: REGULATION		
Policy No.	Policy	Target Audience
	greater than 2' below the base of the proposed feature. Otherwise, the restricting layer must be removed, and infiltration installed. • Within 10 feet of a property line. • Within 10 feet of a building foundation (with slopes directed away from building). • Within 50 feet of a private or public water supply well. • Within 35 feet of a septic system tank/leach field. • Within 50 feet of a steep slope.	
5.3.20	An impervious area can only be "disconnected" if discharging to a pervious area that is shown to be adequate to infiltrate the 1-inch rain event discharge from the area or structure proposed for disconnection. This disconnection must be shown to be permanent.	

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STRATEGY: REGULATION		
Policy No.	Policy	Target Audience
High Value Resources Areas		
5.3.21	Areas within the Lower Minnesota River Watershed District (LMRWD) and shown on their High Value Resource Area (HVRA) map will need to meet the following additional requirements. Water Quality For areas with the HVRA that create greater than 10,000 square feet of new impervious the water quality requirements are as follows: - All projects shall have a net decrease in Total Phosphorus (TP) and Total Suspended Solids (TSS) to receiving waters from existing conditions. For new development projects, the decrease in TP and TSS shall be 60 percent and 80 percent, respectively from existing conditions. Volume Control For areas within the HVRA that create greater than 10,000 square feet of new impervious the volume requirements are as follows: - New developments that create 10,000 square feet or more of new impervious surface on sites without restrictions, the post-construction stormwater runoff volume retained on-site shall be equivalent to 1.0 inch of runoff from impervious surfaces. - Redevelopment projects on sites without restrictions that create 10,000 square feet or more of new and/or fully reconstructed impervious surfaces shall capture and retain on-site 1.1 inches of runoff from the new and/or fully reconstructed impervious surfaces. - Linear projects on sites without restrictions that create 10,000 square feet or greater of new and/or fully reconstructed impervious surfaces shall capture and retain the larger of the following: 0.55 inch of runoff from the new and fully reconstructed impervious surfaces. 1.1 inches of runoff from the net increase in impervious area. Buffer Zones - An undisturbed buffer zone of 100 linear feet from trout waters shall be always maintained, both during construction and as a permanent feature after construction, except where a water crossing, or other encroachment is necessary to complete the project. Temperature Controls - Permanent stormwater management facilities shall be designed to minimize any increase in the temperature of trout waters resulting from the 1-year and 2-year 24-hour precipitation events. This includes all tributaries of designated trout streams within the Public Land Survey System (PLSS) section where a trout water is located. Projects that discharge to trout waters must minimize the impact using one or more of the following	

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STRATEGY: REGULATION		
Policy No.	Policy	Target Audience
	measures, in the following order of preference: 1. Minimize new impervious surfaces 2. Minimize the discharge from connected impervious surfaces by discharging to vegetated areas or grass swales and using other nonstructural controls 3. Use infiltration or other volume reduction practices to reduce stormwater runoff in excess of pre-project conditions (up to the 2-year, 24-hour precipitation event) 4. Design an appropriate combination of measures, such as shading, filtered bottom withdrawal, vegetated swale discharges, or constructed wetland treatment cells, that will limit temperature increases when incorporating ponding. Also, design the pond to be drawn down in 24 hours or less. 5. Use other methods that will minimize any increase in trout water temperature	
Wetlands		
5.3.22	The City is the Local Government Unit (LGU) for the Wetland Conservation Act (WCA) and therefore requires any projects that impact wetlands to conform to the WCA, the City's Wetland Management Plan, and the City's Wetland Ordinance. The City's Wetland Management Ordinance was updated in 2013.	
Groundwater		
5.3.23	The City will implement the City's approved Wellhead Protection Plan, including the following policies: • Develop a spill prevention, control and counter measure plan that is consistent with state and/or federal regulations and train staff regarding proper procedures. • Identify and promote proper management and sealing of wells. • Continue to identify potential contaminant sources. • Educate the public with the Annual Water Quality Report and other information through the City website. • Collect data and promote data sharing among agencies. • The City will educate owners of storage tanks within the DWSMAs and their roles and responsibilities for wellhead protection. • The City will inform any hazardous waste generators of their location within the DWSMA and provide the owner information on their role in	City Staff and Council

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STRATEGY: REGULATION		
Policy No.	Policy	Target Audience
	source water protection. - The City will work with the one mine operator within south Savage of their location within the DWSMA and provide the owner information on their role in source water protection. - The City will follow the guidance in the Minnesota Stormwater Manual, Minn. R. 472.5100, Subp.13, and MS4 general permit regarding the siting of infiltration systems.	
5.3.24	The City requires the design, installation, and inspection of individual sewage treatment systems to be in conformance with State standards and as enforced by Scott County.	Residents, Developers
Erosion Minimization and Sediment Control		
5.3.25	Development and redevelopment are required to conform to the City's erosion minimization control ordinance available on the City's website at www.cityofsavage.com In addition to complying with the City's ordinance, development and redevelopment are required to conform to the Minnesota Pollution Control Agency's NPDES construction permit rules, which can be found at http://www.pca.state.mn.us/water/stormwater. Evidence of NPDES permit coverage shall be provided to the City prior to construction.	Developers
Steep Slopes		
5.3.26	For areas withing the Lower Minnesota River Watershed District (LMRWD) the City will follow the steep slope rule adopted by the LMRWD on February 19, 2020. As per their standards a steep slope is defined as having a slope of 18% or greater measured over a horizontal distance of 25 feet or more. The steep slope areas within the LMRWD are shown on Figure 5.1. The City's ordinance requires the following: - Placement of structures and removal of vegetation is prohibited on bluff land that is in excess of 33-1/3% vertical slope. - A 30-foot structure setback is required along the Credit River and bluff areas adjacent to other	Developers, Residents

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STRATEGY: REGULATION		
Policy No.	Policy	Target Audience
	wetlands from the point at which the gradient reaches 33 1/3% slope. A 50-foot setback for ponds, infiltrations areas, and ISTS is required from any bluff where the gradient reaches 33 1/3% slope. The most recent version of the City's Bluffland ordinance is available on the City's web site at www.cityofsavage.com.	

5.4 INTERNAL OPERATIONS

The City's internal operations can have a significant impact on water resource management. This strategy is targeted primarily at the City with some items targeted at the public and/or another agency. These policies are aimed at operation and maintenance activities associated with water resource management within the City.

STRATEGY: INTERNAL OPERATIONS		
Policy No.	Policy	Target Audience
5.4.1	The City will sweep main and collector streets a minimum of four times per year. Other streets will be swept at least two times per year. Sweeping frequency can be increased for public events or evidence of increased need.	City Staff
5.4.2	The City will inspect, at a minimum, 20% of the MS4 storm sewer outfalls and stormwater treatment basins each year on a rotating basis and keep records of the inspections, finding, and maintenance activities completed.	City Staff
5.4.3	The City and/or property owner shall annually inspect structural stormwater BMPs and clean/repair as needed. (water quality manholes, raingardens, etc.).	City Staff, Property Owner, Developer
5.4.4	The City will inspect all exposed stockpile, storage, and material handling areas on an annual basis.	City Staff
5.4.5	The City prefers to use regional detention and treatment areas rather than site specific detention areas where feasible.	City Staff
5.4.6	The City will continue to support other agencies in their implementation of water quality monitoring programs that include monitoring of Savage Fen and Eagle Creek.	City Staff, WMO, WD, State Agencies

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STRATEGY: INTERNAL OPERATIONS		
Policy No.	Policy	Target Audience
5.4.7	The City shall implement the BMP's and report annually to the MPCA in accordance with the City's SWPPP. The City incorporates the SWPPP and its BMP's into this Plan by reference. The SWPPP is available on the City's website at www.cityofsavage.com .	City Staff, Developer
5.4.8	The City of Savage shall manage wetlands in accordance with the Wetland Conservation Act and the City's Wetland Management Plan. The City incorporates the Wetland Management Plan in this Plan for reference. The City's WMP is available at www.cityofsavage.com .	City Staff, Developer
5.4.9	The City will continue to consider its Comprehensive Plan when planning water resource activities within the City. The City incorporates its Comprehensive Plan into this plan by reference. The Comprehensive Plan is available at www.cityofsavage.com .	City Staff, Developer
5.4.10	The City of Savage has a variety of options for snow and ice control in the winter. Anti-icing, salt application, and salt/sand mixture application are commonly used. Many times, anti-icing can be used in advance of a snow or ice event; a brine solution (salt/water) is sprayed on the surface as a pre-treatment. This application reduces the bonding of snow or ice to surface and the result is that less overall salt is needed to treat icy roads. Straight salt is used throughout most of the winter season; a brine solution is sprayed directly on the salt just before it is dispensed to the road surface. This process is done to provide density to the salt and activates the break down process of the salt. This also prevents the salt from bouncing into the curb line, thus reducing the amount wasted. In 2019, the City purchased a new piece of equipment that will result in a 30% reduction in salt usage for each lane mile treated. It is a precision applicator with a 70:30 ratio of dry to liquid. The incorporation of more liquid into the deicing process also accelerates the melting process making it effective as soon as it is applied.	
5.4.11	The City of Savage recognizes that Pike Lake is on the Minnesota Pollution Control Agency CWA 303(d) list of impaired waters. A small portion of the City of Savage drains to Lower Prior Lake, which in turn drains to Pike Lake. The City of Savage will be an active partner in any future TMDL activities regarding Pike Lake, including water modeling updates and reviewing draft reports.	

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Figure 5.1 LMRWD Steep Slopes