4.0 Establishment of Goals and Policies

The City developed goals and policies that address the purposes identified in Minnesota Statutes 103B.201 as well as additional issues prioritized by the City. These goals and policies are organized by topic:

- **Water Quantity and Flooding**
  Mitigate flood risk in a proactive and cost-effective way to foster a sustainable and resilient community by managing runoff volume and rate and effectively communicating risk

- **Water Quality**
  Maintain or improve water quality to meet or exceed state standards in lakes, streams, and rivers within or immediately downstream of the City

- **Erosion and Sedimentation**
  Prevent erosion and sedimentation and correct existing erosion and sedimentation problems

- **Groundwater**
  Protect the quality and quantity of groundwater resources

- **Wetlands**
  Maintain the quantity of wetlands and preserve or improve their quality

- **Recreation, Habitat, and Natural Areas**
  Protect and enhance fish and wildlife habitat and maintain access to recreational areas

- **Enhance Public Participation, Information, and Education**
  Increase public understanding and awareness of pertinent water resource management issues and increase public participation in water management activities

Requirements of the City's Stormwater Pollution Prevention Program (SWPPP) also apply to development and redevelopment. Under the requirements of the National Pollutant Discharge Elimination System (NPDES) permit (MNR040000), the SWPPP outlines specific best management practices (BMPs) aimed at construction sites and post-construction stormwater management to reduce impacts of stormwater runoff. These BMPs are:

- Public education.
- Public outreach.
- Illicit discharge detection and elimination (IDDE).
- Construction site runoff management.
- Post-construction runoff management.
- Municipal operations/good housekeeping.

The City's SWPPP is incorporated in this Local Surface Water Management Plan (LSWMP) by reference.

The goals and policies presented in this section were developed to complement watershed management organization (WMO), county, regional, and state goals and policies. These goals and policies do not replace applicable policies, requirements, and/or performance standards of other entities that have jurisdiction within the City (e.g., NPDES construction stormwater general permit). The City recognizes the jurisdiction and regulatory authority of the Nine Mile Creek Watershed District (NMCWD), Riley-Purgatory-Bluff Creek Watershed District (RPBCWD), Richfield-Bloomington Watershed Management Organization (RBWMO), and the Lower Minnesota River Watershed District (LMRWD). The city defers permitting authority and action to the NMCWD and RPBCWD for floodplain management and drainage alterations, wetland management, stormwater management, erosion and sediment control, waterbody crossing and structures, shoreline and streambank improvements, and sediment removal. The City of Bloomington works with the NMCWD and RPBCWD on implementation of water resource protection rules and requirements. The city seeks to remain the permitting authority for the areas in the city subject to the jurisdictions of RBWMO and the LMRWD: in these areas the city will continue to review and permit projects for consistency with applicable WMO rules in addition to city requirements (including but not limited to: Shoreline and Streambank Alteration Standard,

stream and Lake Crossing Standard, Floodplain and Drainage Alteration Standard, Water Appropriations Standard, and the Bluff Standard).

The City of Bloomington continues to be the LGU authority for WCA across the entire city. This includes requiring and verifying that all projects impacting wetlands meet the requirements of the Minnesota WCA. BWSR serves as both a state administrator of the programs associated with WCA, as well as providing technical assistance to LGUs administering WCA.

The City will continue to require that projects within the City comply with applicable WMO rules and communicate applicable permit requirements to developers.

The city is committed to share water resources data and to coordinate and contribute to data collection with WMO's and other agencies. The city will collect water quality data from various locations around the City. The city regularly provides technical assistance to residents, landowners, and businesses throughout the city or refers these parties to appropriate technical partners and experts. The types of data the city regularly shares include the results of hydrologic and hydraulic models (XP-SWMM) for up-to-date 1-percent-annual-chance flood water surface elevations and water quality models (P8) results to evaluate BMP effectiveness. The city also uses its own data to evaluate and inform its own decision making and prioritize resources, such as the use of bathymetric surveys of stormwater ponds to determine which stormwater ponds to dredge. The city will continue to participate on the Minnesota Stormwater Research Council and is currently participating as a Technical Advisory Panel member for MnDOT's research projects. The active role in the research community provides the city with ability to help shape the research efforts and participate in the development of implementation tools to be used by other agencies in design and construction of infiltration facilities or other stormwater BMPs.

4.1 Water Quantity and Flooding

4.1.1 Goal

Mitigate flood risk in a proactive and cost-effective way to foster a sustainable and resilient community by managing runoff volume and effectively communicating risk.

4.1.2 Policies

Use of Best-Available Information for Flood-Protection Elevations

The City will define critical 1-percent annual-chance-event flood elevations using the best-available information. At the time of writing, the best-available information, by area, includes:

- **Minnesota River Floodplain:** The Federal Emergency Management Agency's (FEMA's) effective Flood Insurance Rate Map (FIRM) and Flood Insurance Study (FIS); 100-year elevation information is provided in City Code Chapter 19 (Section 19.87.03) for FEMA-regulated areas.

- **Nine Mile Creek Floodplain:** Hydrologic and hydraulic model(s) (XP-SWMM) developed by the NMCWD and/or subsequent model updates; this model uses the Atlas 14 precipitation information shown in Table 4-1. Floodplain information is referenced in the Nine Mile Creek Watershed Management Plan at: https://www.ninemilecreek.org/wp-content/uploads/Nine-Mile-Creek-Fifth-Generation-Watershed-Management-Plan.pdf

- **All other areas of the City:** Hydrologic and hydraulic models (XP-SWMM) developed by the City in 2017 and/or subsequent model updates. These models use the Atlas 14 precipitation information shown in Table 4-1.

These 1-percent annual-chance-event flood elevations may be subject to change by periodic model updates that incorporate additional or more accurate information. At the time this Plan was written, some (a few) areas of the City had not been modeled. Models for these areas will most likely be developed during the lifespan of this LSWMP.

Table 4-1 Recurrence Interval Rainfall Depths, Minneapolis-St. Paul International Airport (24-hour Atlas 14 rainfall event)

Frequency	Annual-Exceedance Probability		
	50 percent	10 percent	1 percent
Rainfall	2.83 inches	4.24 inches	7.50 inches

To prevent flooding of principal structures, the City will implement the following standards in addition to the Floodplain Overlay Districts ordinance (City Code Chapter 21.208.01):

Surface-Water Discharge Rates

1. Surface-water discharge rates from new developments that disturb land area greater than 50 cubic yards or 5,000 square feet must, at a minimum, not exceed pre-project discharge rates for the 50-percent, 10-percent, and 1-percent annual-chance events using the Minneapolis-St. Paul International Airport 24-hour Atlas 14 rainfall event values shown in Table 4-1 and a nested distribution.

2. Surface-water discharge rates from redevelopments that disturb land area greater than 50 cubic yards or 5,000 square feet must, at a minimum, achieve a net reduction of pre-project discharge rates for the 50-percent, 10-percent, and 1-percent annual-chance event using the 24-hour Atlas 14 rainfall event values shown in Table 4-1 and a nested distribution.

3. New storm sewer systems must be designed to accommodate discharge rates for the 10-percent annual-chance event using Atlas 14 precipitation data shown in Table 4-1and a nested distribution.

4. Surface-water discharge rates from new development and redevelopment sites that disturb land area less than 50 cubic yards or 5,000 square feet must be reviewed by the City engineer if development will result in (a) rate increases for the 50-percent, 10-percent, and 1-percent annual-chance events (using the Atlas 14 precipitation data shown in Table 4-1) or (b) changes in surface-water runoff locations.

Principal Structure

The building in which the principal primary use of the lot is conducted.

Accessory Structure

A use or structure on the same lot with, and of a nature customarily incidental and subordinate to, the principal use or structure.

Land Disturbance

Any alteration of the ground surface that could result, through the action of wind and/or water, in soil erosion, substantial compaction, or the movement of sediment into waters, wetlands, storm sewers, or adjacent property. Land-disturbing activity includes but is not limited to demolition of a structure or surface, soil stripping, clearing, grubbing, grading, excavating, filling and the storage of soil or earth materials

Surface-Water Discharge Volume

1. Surface-water discharge volumes from new developments that disturb land area greater than 50 cubic yards or 5,000 square feet shall achieve no net increases in

stormwater discharge volume from pre-project conditions on an average annual basis.

2. Surface-water discharge volumes from redevelopment sites that disturb land area less than 50 cubic yards or 5,000 square feet must be reviewed by the City engineer if the development will result in (a) volume increases for the 50-percent, 10-percent, and 1-percent annual-chance event (using the Atlas 14 precipitation data shown in Table 4-1 or (b) changes in surface-water runoff locations.

Volume Retention

1. Sites that disturb land area more than 50 cubic yards or 5,000 square feet of new and/or fully reconstructed impervious surface shall capture and retain on-site a volume equivalent to 1.1 inches of runoff from the new and/or fully reconstructed impervious area.

    - Where infiltration or filtration facilities, practices or systems are proposed, pretreatment of runoff must be provided.

    - Drawdown of water levels in infiltration facilities must be achieved within 48 hours.

    - The City recommends that infiltration practices be designed in accordance with the Minnesota Pollution Control Agency's (MPCA's) Minnesota Stormwater Manual http://stormwater.pca.state.mn.us/index.php/Main_Page

Fully Reconstructed Impervious Surfaces

Areas where impervious surfaces have been removed down to the underlying soils. Activities such as structure renovation, mill and overlay projects and other pavement rehabilitation projects that do not alter the underlying soil material beneath the structure, pavement or activity are not considered full reconstruction. In addition, other maintenance activities such as catch basin and pipe repair/replacement, lighting, and pedestrian ramp improvements shall not be considered fully reconstructed impervious surfaces. Reusing an existing building foundation and re-roofing of an existing building are not considered fully reconstructed.

2. Infiltration techniques are prohibited when the infiltration BMP will receive discharges from, or be constructed in the following locations:

    i. Industrial facilities not authorized to infiltrate

ii. Vehicle fueling and maintenance areas

iii. Areas with less than three (3) feet of separation distance from the bottom of the infiltration system to the elevation of the seasonally saturated soils or the top of bedrock

iv. Areas where high levels of contaminants in soil or groundwater will be mobilized by the infiltrating stormwater

v. Areas within an Emergency Response Zone (areas with a 1-year time of travel to a water supply well) as defined in the Wellhead Protection Plan

3. The use of infiltration techniques may be restricted when the infiltration device will be constructed in the following:

    i. Type D soils

    ii. Active karst features

    iii. Drinking Water Supply Management Areas

    iv. Areas where soil-infiltration rates exceed 8.3 inches/hour

    In these restricted areas, the City engineer may request additional information and/or testing to ensure that infiltration basins will perform properly and that groundwater is adequately protected.

Linear Projects

1. City stormwater standards are not required for a linear project if the project entails construction or reconstruction (including mill and overlay, pipe maintenance and related soil correction and pavement repairs, or other maintenance) that creates less than one acre of new and/or fully reconstructed impervious surface. For linear projects creating more than one acre of new and/or fully reconstructed impervious surface, the rules described in preceding sections (surface water discharge rates, surface water discharge volume, and volume retention) will apply only to the net new or additional impervious surface.

2. Trails and sidewalks that do not exceed 10 feet in width and are bordered down gradient by a pervious buffer of at least half the trail width are considered to meet

Bloomington water quantity and quality requirements. Other agency permitting requirements may apply.

Restricted Sites

Where the City engineer concurs that an applicant has demonstrated that volume retention as described above cannot practicably be met through a combination of on-site best management practices and relocation of project elements to address varying soil conditions and other site constraints, or that infiltration is likely to cause or exacerbate migration of underground contaminants, or that other conditions inherent to the site preclude retention to the volume retention standard, the applicant must provide surface-water discharge rate control and volume as described above, and volume retention and water quality protection in accordance with the following priority sequence:

1. Retention of at least 0.55 inches of runoff from the new and/or fully reconstructed impervious surface.

2. Retention of runoff onsite to the maximum extent practicable.

3. Other options at the discretion of the City engineer.

Flood Protection

1. Where on-site detention is used for runoff control, the detention facility must be designed to contain and/or pass the runoff from the 1-percent annual-chance event (using Atlas 14 precipitation data shown in Table 4-1) without damage to the detention facility.

2. New on-site stormwater detention shall be designed to accommodate the 1-percent annual-chance event, using Atlas 14 precipitation data shown in Table 4-1.

3. All stormwater facilities must provide adequate access for maintenance purposes.

4. The City will identify and seek opportunities to address existing problems associated with structural inundation and overland conveyance caused by the 1-percent annual-chance event (using Atlas 14 precipitation data shown in Table 4-1). The City will work with property owners to identify and implement cost-effective solutions to minimize impacts to structures in flood-prone areas.

5. The City adopted, by ordinance, a Flood Hazard Overlay District approved by the Minnesota Department of Natural Resources (MDNR). The Flood Hazard Overlay District regulates development in FEMA floodplain areas to reduce the potential for property damage from flooding. In some areas, the City's best-available information may be more restrictive than the information in the Flood Hazard Overlay District.

6. The City requires a minimum of two feet of freeboard elevation between the **low-floor** elevation and the water-surface elevation resulting from the 1-percent annual-chance event (using Atlas 14 precipitation data shown in Table 4-1) for all new and redeveloped principal structures outside of the FEMA floodplain. However, redevelopment areas in locations used for **temporary flood storage** may have special site-specific and regional considerations, described in item 9, below. Also, new and redeveloped structures (including parking garages) outside of the FEMA floodplain, but within or adjacent to a **temporary flood storage area**, emergency overflow or stormwater conveyance routes may have a minimum of two feet of freeboard elevation between the **low-entry** elevation and the water-surface elevation resulting from the 1-percent annual-chance event, but only if it can be demonstrated to the satisfaction of the City Engineer the structure is not at significant risk due to seepage.

   For areas outside of the FEMA floodplain, no structure may be constructed or reconstructed such that its lowest floor elevation is less than two feet above the 100-year-event flood elevation and no stormwater management system may be constructed or reconstructed in a manner that brings the low-floor elevation of an adjacent structure into noncompliance with this standard.

7. Within the established FEMA floodplain, the City requires a minimum of two feet of freeboard elevation between the low-floor elevation and the water-surface elevation resulting from the 1-percent annual-chance event for all new and redeveloped principal structures.

Freeboard

A factor of safety used in flood management, usually expressed as a distance (in feet) between a flood elevation and the lowest floor elevation of a structure

Low Floor

The lowest floor of the lowest enclosed area

Low Entry

The lowest opening of a structure, such as a window, window well sill, walkout or parking garage entry

Temporary flood storage areas

Areas used for short-term flood storage, either by design or naturally, such as low parking lots and roads, backyard depression areas, or other areas

8. The City requires a minimum of two feet of freeboard between service-utility (electrical, heating, ventilation, air conditioning, etc.) elevations for accessory structures and the water-surface elevation resulting from the 1-percent annual-chance event (using the higher of the Atlas 14 precipitation data shown in Table 4-1 or the 1-percent-annual-chance FEMA floodplain)) for all new and redeveloped accessory structures.

9. Redevelopment in locations used for temporary flood storage, such as low parking lots and roads, will require coordination between the City and the developer. The City will provide the developer with the best-available information for the redeveloping areas so that the developer can ensure that flood storage is maintained and downstream areas are not harmed, while providing a level of protection for the development that is as high as reasonable.

10. The City will utilize natural ponding areas (e.g., wetlands and lakes), naturally occurring low areas, and constructed low areas (e.g., streets and parking lots) for the purposes of flood mitigation and rate control, as appropriate.

11. The City will continue to participate in FEMA's National Flood Insurance Program.

12. The City will communicate local and regional flood risk to stakeholders.

13. The City recognizes that addressing flood issues throughout Bloomington will require multiple strategies and partnerships that will be implemented over decades. The City also recognizes that there may not be feasible alternatives to relieve flooding in all instances.

4.1.2.1 Additional Flood Protection Policies for Land-Locked Basins

1. Any new or reconstructed structure located wholly or partially in a land-locked basin must be constructed such that its lowest floor elevation is the highest of:

    a. One foot above the surface overflow of the basin.

    b. Two feet above the elevation resulting from two concurrent 100-year single rainfall events in a 24-hour period.

2. The starting elevation of the basin prior to the runoff event will be established by using the highest of one of the following:

a. Existing ordinary high water level established by the Minnesota Department of Natural Resources (MnDNR).

b. Mottled soil.

4.1.2.2 Other Considerations

1. Drainage calculations for the 50-percent, 10-percent, and 1-percent annual-chance event (using Atlas 14 precipitation data shown in Table 4-1) must be submitted and approved as part of any development application prior to the City issuing any building or grading permit.

2. The City recognizes the NMCWD as the management authority for County Ditch No. 1 (part of Nine Mile Creek, located downstream of West 84th Street to Marsh Lake Dam). The City will cooperate with the NMCWD, as requested, to manage County Ditch No. 1.

3. The City prohibits sump-pump discharges from directly connecting to sanitary sewer systems and recommends that sump discharges flow over at least 10 feet of permeable area prior to entering the public right-of-way, unless the City permits otherwise. Direct sump pump connections into the storm sewer system may be allowed with proper permitting.

4. Stormwater management and maintenance plans must be submitted for all developments and redevelopments. Stormwater management plans must utilize stormwater BMPs, with a preference given to green infrastructure development techniques and practices. Stormwater management and maintenance plans will be filed with Hennepin County and remain in effect with property-title transfers.

5. The City will continue to perform local government unit (LGU) roles, as defined by the applicable WMOs, and work with those WMOs to ensure that all projects conform to regulatory agency requirements, as applicable.

6. The City will continue to operate and maintain its stormwater management infrastructure consistent with the practices described in its municipal separate storm sewer system (MS4) SWPPP.

7. The City will consider the impacts of future precipitation and climate trends when developing and implementing water resource management projects and programs.

8. The city encourages disconnection of downspouts, encourages the construction of rainwater gardens by private parties, and constructs rainwater gardens as part of the annual street reconstruction project. The city will refer interested parties to the respective WMO, such as the LMRWD, for applicable cost share and other educational, technical, and financial assistance to implement projects, including BMP's, that have a water quality, water quantity, or other benefit.

4.2 Water Quality

4.2.1 Goal

Maintain or improve water quality to meet or exceed state standards in lakes, streams, and rivers within or immediately downstream of the City.

4.2.2 Policies

1. The City will continue to maintain existing regional stormwater treatment facilities (such as the iron-enhanced sand filter at 98th Street and Nesbitt Avenue). Locations of regional facilities can be found at the Water Resources Library and are shown in Figure 3-11 of Chapter 3 (Land and Water Resource Inventory).

2. The City will promote green infrastructure techniques and practices, including infiltration, stormwater reuse, grey-water reuse, and other innovative BMPs. These practices shall be considered and encouraged where economically appropriate and allowed by law.

3. The MS4 permit requires that new development with land disturbance of one acre or larger shall achieve a no-net increase from pre-project conditions for total suspended solids (TSS) and total phosphorus (TP). Redevelopment projects must achieve a net reduction in TP and TSS from pre-project conditions as described in policy 4.

4. For projects that disturb land area greater than 50 cubic yards or 5,000 square feet or subdivide a parcel into three or more residential lots, all stormwater runoff from disturbed areas shall be treated to at least 60-percent annual-removal efficiency for TP and at least 90-percent annual-removal efficiency for TSS. On-site runoff retention may be included when demonstrating compliance with TSS- and TP-removal requirements. Single-family homes are exceptions, unless the project (a) disturbs more than 50 cubic yards or 5,000 square feet and (b) adds more than 5,000 square feet of new impervious surface.

5. Linear Projects: City stormwater permits are not required for a linear project if the project entails construction or reconstruction (including mill and overlay, pipe maintenance and related soil correction and pavement repairs, or other maintenance) that creates less than one acre of new and/or fully reconstructed impervious surface. For linear projects creating more than one acre of new and/or fully reconstructed impervious surface, all stormwater runoff from the net new or additional impervious surface shall be treated to at least 60-percent annual-removal efficiency for TP and at least 90-percent annual-removal efficiency for TSS. On-site runoff retention may be included when demonstrating compliance with TSS- and TP-removal requirements.

6. Trails and sidewalks that do not exceed 10 feet in width and are bordered down gradient by a pervious buffer of at least half the trail width are exempt from meeting water quality requirements.

7. Stormwater treatment BMPs shall be designed in a manner consistent with MPCA guidance provided in these sources:

    - Minnesota Stormwater Manual (https://stormwater.pca.state.mn.us/index.php?title=Main_Page)

    - Minimal Impact Design Standards (MIDS) section of the Minnesota Stormwater Manual (although meeting MIDs guidelines is not explicitly required)

8. The City will continue to implement water quality protection measures documented in its MS4 SWPPP.

9. The City has adopted Shore Area Management Regulations, listed in Article IX, § 19.87.

10. The City will continue to promote participation in cost-share programs offered by WMOs.

11. The City will continue to implement a stormwater monitoring program to assess the quality of the stormwater entering City ponds, the storm sewer system, and the Minnesota River. The City will share the data with interested cooperators (e.g., WMOs).

12. The City restricts the use and sale of fertilizers containing phosphorus through its zero-phosphorus fertilizer ordinance. This ordinance conforms to the Minnesota State Phosphorus Fertilizer Law.

13. The City will continue to implement chloride reduction strategies to meet the requirements of the Nine Mile Creek Chloride total maximum daily load (TMDL) and will implement recommendations included in the Twin Cities Metropolitan Area Chloride Management Plan.

14. The City will continue to implement and enforce a program to detect and eliminate illicit discharges to the storm sewer system (including leaves raked onto roadways.

15. The City will continue to incorporate results and recommendations from applicable WMO studies and resource management plans into its water resource management activities. Wetlands and other water bodies not addressed by WMO studies and resource management plans will be managed as outlined in the City's Wetland Protection and Management Plan.

16. The City will work cooperatively with the LMRWD when developing water quality improvement projects in the Minnesota River Valley.

17. The City will cooperate with WMOs to identify and implement projects and programs to improve the water quality of impaired waterbodies, including projects and programs identified in TMDL studies and Watershed Restoration and Protection Strategies (WRAPS).

4.3 Erosion and Sedimentation

4.3.1 Goal

Prevent erosion and sedimentation and correct existing erosion and sedimentation problems.

4.3.2 Policies

1. The City will continue to implement an erosion- and sedimentation-control permitting program consistent with the requirements of its MS4 SWPPP and the NPDES Construction Stormwater General Permit. The City's MS4 SWPPP includes components and BMPs that reduce stormwater runoff pollutants from construction and post-construction development and redevelopment activities.

2. The City will continue to implement municipal-operation pollution-prevention practices, including inspection and training components, to reduce and prevent erosion and sedimentation, as described in the City's MS4 SWPPP.

3. The City requires the submission and approval of an erosion and sediment control plan and a grading plan prior to issuing any grading or building permits. These plans shall conform to the general criteria set forth by the MPCA, City ordinances, and the City's MS4 SWPPP.

4. Grading permits are required for activities that disturb land area greater than 5,000 square feet or disturb more than 50 cubic yards of material.

5. The City will manage the placement of and enforce erosion controls rules on temporary stockpiles as listed in city code § 15.202

6. The City will manage bluff development and uses through its Bluff Protection Overlay District as stated in city code § 19.38.11 and 19.38.12

7. The City will preserve trees through regulations stated in city code § 19.53

8. The City will sweep all streets twice annually, with early spring sweeping (and, in some areas, even greater frequency) in priority areas,

9. The City's steep-slope ordinance (Article IX, § 19.57.01) protects sloped areas (with grades 12 percent or greater) from erosion due to surface runoff from development sites.

10. The City established an erosion-control hotline number to receive related calls. The Engineering Division is responsible for this task; the hotline number is 952. 563.4533.

11. The City requires erosion- and sedimentation-control training for staff responsible for inspecting erosion control on City and private construction projects.

12. The City conducts erosion-control inspections on all building and grading projects to ensure compliance with City ordinances and the City's MS4 SWPPP.

13. The City will continue to enforce its sedimentation- and erosion-control standards through grading permits, preservation and repair of eroded bluffs, and compliance with the requirements of the South Metro Mississippi Turbidity TMDL.

4.4 Groundwater Management

4.4.1 Goal

Protect the quality and quantity of groundwater resources.

4.4.2 Policies

1. The City will collaborate with state and regional agencies on groundwater monitoring, inventorying, or permitting programs.

2. The City requires that all spill prevention, control, and mitigation plans be consistent with state and/or federal regulations (e.g., Minnesota Statutes 115E, the Federal Oil Pollution Act 33 USC Sec. 2701-2761, etc.). The City's contact for spill prevention and control is the division manager of the Environmental Health Division, who can be reached at 952.948.8970.

3. The City will cooperate with the Minnesota Department of Health (MDH) and the City's Environmental Health Division to ensure that all unused, unsealed, or improperly abandoned wells within the City are properly sealed. Technical requirements for the abandonment of these wells will be in conformance with local and state regulations.

4. The City's Utilities Division will implement and update, as needed, its wellhead protection plan.

5. To protect groundwater quality, the City requires infiltration practices to be implemented in accordance with these infiltration feasibility requirements:

    - NPDES MS4 Permit (2013, as amended)

    - NPDES General Construction Permit (2013, as amended)

    - MDH's Evaluating Proposed Stormwater Infiltration Projects in Vulnerable Wellhead Protection Areas (MDH, 2007)

6. The City recommends infiltration practices be designed in accordance with these guidelines:

    - MPCA's Minnesota Stormwater Manual (http://stormwater.pca.state.mn.us/index.php/Main_Page)

- Infiltration techniques are prohibited when the infiltration BMP will receive discharges from or be constructed in several specific types of locations, as described in Section 4.2. In these restricted areas, the City engineer may request additional information and/or testing to ensure that infiltration basins will perform properly and that groundwater is adequately protected.

7. The City will consider the implementation of water-reuse projects (such as rainwater, stormwater, or grey-water reuse) to conserve groundwater, both alone and in partnership with other entities, where feasible.

4.5 Wetlands

4.5.1 Goals

Maintain the quantity of wetlands and preserve or improve their quality.

4.5.2 Policies

1. The City will continue to act as the LGU responsible for administering the Wetland Conservation Act (WCA).

2. Prior to issuance of any City grading or building permits, all development and redevelopment activities must demonstrate compliance with the WCA. A copy of WCA Rules can be found in the Water Resources Library.

3. The City prohibits any burning, filling, or draining of existing wetlands without the City's expressed, written approval, per the City's Wetland Ordinance, the Wetland Protection and Management Plan, and the WCA.

4. The City encourages all property owners adjacent to lakes, streams, ponds, and wetlands to establish a vegetative buffer strip consisting of native, non-mowed vegetation. Note that projects requiring WMO approval and/or permits may be required to include vegetated buffers. The City will manage buffers around all City-owned parcels that abut wetlands and other waterbodies.

5. The City requires that developed or redeveloped structures must be located outside the recommended buffer zone outlined in the City's Shore Area Regulations (§ 19.87), or at least 10 feet back from wetland edges, as delineated by a qualified delineator and/or verified by City staff.

6. The City participates in the Hennepin County Wetland Health Evaluation Program (WHEP).

7. Habitat corridors or wetlands that are identified as habitat shall be maintained and protected from encroachment as provided for in the City's Comprehensive Plan.

8. The City will work cooperatively with all entities that manage or have regulatory authority over wetlands within City limits to develop a long-term systematic wetland monitoring program. As part of this program the City will consider including macrophyte surveys that may indicate the presence of aquatic invasive species.

9. The City will continue to require buffer zones around ponds, wetlands, and other waterbodies consistent with WMO standards. The City will work with the WMOs to educate the public regarding wetland protection and the importance of creating and maintaining vegetative buffers. Land use and property ownership may limit the ability to provide buffer zones.

4.6 Recreation, Habitat, and Natural Areas

4.6.1 Goal

Protect and enhance fish and wildlife habitat and maintain access to recreational areas.

4.6.2 Policies

1. The City will cooperate with the MnDNR, the U.S. Army Corps of Engineers (USACE), the EPA, the U.S. Fish and Wildlife Service (USFWS), and other appropriate agencies to promote public enjoyment of water resources and natural areas.

    - In cooperation with WMOs and other potential partners, the City will seek opportunities for fish and wildlife habitat restoration as part of City projects.

    - The City will work with Hennepin County, the MnDNR, WMOs, and the Minnesota Aquatic Invasive Species Research Center to develop and implement strategies to limit negative impacts of aquatic invasive species.

2. The City has a Wetland Vegetation Treatment Policy that provides the basis for treatment of wetlands for algae and aquatic vegetation. The City will reevaluate the need for this policy and any recommendations for changes will be presented to Council for their consideration.

3. The City will work cooperatively with the USFWS, LMRWD, and state agencies to develop resource management and implementation plans affecting the Minnesota River Valley.

    - The City will consider impacts to the Minnesota River Valley when developing and implementing City ordinances, management plans, and projects.

    - The City will coordinate its water resource management activities with other natural resource management organizations to promote the protection of the Minnesota River and associated bluff and wetland areas.

4.7 Enhance Public Participation, Information, and Education

4.7.1 Goal

Increase public understanding and awareness of pertinent water resource management issues and increase public participation in water management activities.

4.7.2 Policies

1. The City will post modeled 100-year peak elevations for ponded areas on its website; in some locations, these elevations may be higher than those predicted by FEMA.

2. The City will continue to implement the stormwater education program and education activity implementation plan (EAIP) outlined in its MS4 SWPPP. The education program and EAIP identify target audiences and educational goals for each of the six minimum control measures of the MS4 General Permit. The EAIP is incorporated in this plan by reference. Activities could include publishing educational brochures for public distribution, publishing water resources articles and information on the City's website and in the local paper, promoting BMPs to homeowners (e.g., installing rain barrels and rainwater gardens, leaf management, etc.), and providing training opportunities for municipal operations.

3. The City will continue to hold an annual Public Works open house (with notice) to , in part, discuss its MS4 SWPPP, solicit feedback, and inform the public about the impacts of stormwater on the City's waterbodies and infrastructure.

4. The City will seek opportunities to cooperate and coordinate with WMOs to develop and implement educational programming.

5. The City will seek opportunities to implement demonstration projects to further promote the use of innovative BMPs throughout the City and to educate the public about stormwater management techniques.

6. The City will continue to support the Metro WaterShed Partners (Hamline University). This program produces educations resources and outreach about stormwater runoff, including mass media campaigns, community –based social marketing, and exhibits.