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2. Continue to participate in the WHEP program as identified in the Comprehensive Wetland Management Plan.
4. Need to consider the potential use, location and level of protection for various water quality treatment methods to provide additional water quality treatment upstream of important waterbodies and impaired waterbodies.

### **Corrective Actions:**

1. Consider the use of Ferric Chloride and Alum as one of many possible BMPs that the City could consider to provide additional water quality treatment. The use of Ferric Chloride or Alum for water quality treatment would be incorporated as an "off-line" system.
5. Need to investigate use of Barley straw to control algal growth on selected waterbodies.

### **Corrective Actions:**

1. Consider pursuing grants to use barley straw for algal growth control on select waterbodies. Water quality treatment would be incorporated as an "off-line" system.

## **B. Flooding and storm water rate control concerns**

It should be noted that actions identified in this subsection are not meant to diminish the high level of importance the City places on infiltration.

1. The City of Rosemount does not have an overflow for stormwater to exit the City. The City has developed the proposed overflow project to the Mississippi River identified in this Plan, which includes a draft proposed 80-year lease agreement with MCES to construct a temporary treated effluent outfall as part of the proposed MCES interceptor and discharge of water to the east into the Mississippi River. This approach uses the excess capacity within the MCES outfall system to allow for up to a 50 cfs capacity stormwater overflow. To utilize this small discharge rate, the City requires storage of runoff from the 100-year, 24-hour storm event for new development. For events with longer duration, a maximum peak stormwater discharge rate will be limited to 0.05 cfs/acre. It is important to note that these treatment areas do not utilize natural wetland areas to substitute for constructing stormwater ponds. As development occurs, the City anticipates construction of a permanent stormwater trunk conveyance system to the east located adjacent or near the proposed MCES outfall route. This system would be designed to manage the discharge for the critical event limited to .05 cfs per acre from the upstream drainage area (approx. 800 cfs).

This issue has been identified in previous plans, including the 2003 Rosemount SWMP. (Key Issue No. 5 in **Figure III-8**)

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### **Corrective Action:**

1. Construct west portion of stormwater trunk line (Segment D – construct Basin #1864 outlet to #1787).
2. Construct middle portion of stormwater trunk line (construct trunk line from Basin #1787 to #2391 Flint Hills Resources).
3. Construction eastern portion of stormwater trunk line (construct trunk line from #2391 Flint Hills Resources to Mississippi River).

The construction of the overflow will be phased, with portions of the project constructed as part of the development, City's CIP and other segments incorporated into the MCES outfall system. The timing for final completion of the overflow may require implementation of interim projects to provide some overflow capabilities.

2. The City is currently in discussions with Flint Hills Resources relating to construction of a regional ponding treatment area located within the southwestern portion of the Flint Hills Resources property. The purpose of this regional ponding area would be to provide water quality, rate control and volume control before overflow into proposed MCES treated effluent outfall system.

The City will work to secure easements and obtain agreements for the construction of this proposed ponding area located near the trunk system on Flint Hills Resources property, possibly near Basin #1599. The final parameters related to the use and longevity of this system will be further determined as agreements with MCES and Flint Hills Resources are discussed. (Key issue No. 1 in **Figure III-8**)

### **Corrective Action:**

1. Develop agreement and construct regional treatment and infiltration pond located on Flint Hills Resources property.
3. The City of Rosemount does not have an overflow for stormwater to exit the City. The City is pursuing an agreement with MCES regarding specific use and discharge parameters for a temporary treated effluent outfall to the Mississippi River identified in this Plan, which includes a draft proposed 80 year lease agreement with MCES to construct a stormwater outfall system to the Mississippi River. (Key Issue No. 13 in **Figure III-8**)

**Corrective Action:** The City proposes an interim stormwater trunk system as part of the proposed MCES treated effluent outfall. This proposed combined system will be constructed as part of the MCES treated effluent outfall and will incorporate the necessary capacity to provide the City with capacity to implement the City's proposed

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stormwater management plan and overflow system for the City. It is anticipated that the City will be authorized a peak discharge rate of up to 50 cfs. The proposed outlet structure at this facility may require monitoring to evaluate discharge rate and water quality parameters.

4. Several basins located northwest of Keegan Lake do not have an outlet or overflow. The City has determined the need to pursue a possible overflow to discharge water to south into Keegan Lake and ultimately into the City trunk storm sewer system. (Key Issue No. 8 in **Figure III-8**)

**Corrective Action:** Construct storm sewer system for basins northwest of Keegan Lake (Basins #1521, 1465, 1435, 1355, 1405, 1482) and construct overflow to Keegan Lake.

5. There is a small subwatershed located within the southeast corner of the City that is proposed to discharge directly into the Vermillion River. Key issue No. 15 in **Figure III-8**)

**Corrective Action:** The City will consider completion of feasibility study to determine if it is possible for this small 153 ac. area to be redirected into the City overflow trunk system.

6. Shannon Pond is a landlocked stormwater basin in southwest Rosemount just northwest of the intersection of Shannon Parkway and 160<sup>th</sup> Street West. The pond currently receives direct drainage from existing neighborhoods north of the pond within Rosemount totaling approximately 143 acres. The City has identified the need for lift station overflow from Shannon Pond to maintain stormwater storage and continue to explore various overflow routes for connecting the Shannon Pond overflow to the main stormwater trunk system.

The Shannon Pond overflow /stormwater trunk system is then proposed to discharge to the east into either basin 2302 or basin 2274 and ultimately to the northeast into the MCES / City overflow system. The City is exploring options to provide stormwater management and overflow framework/policies for basins located on the western portion of UMore property located between Shannon Pond overflow and basin 1864 (start of western portion of trunk overflow system). Options could also include construction of an overflow from basin 2274 to Business Park Pond (basin 1990) with an ultimate lift station overflow to the northeast into Basin No. 1864 on the Meadows of Bloomfield Development. (Key Issue No. 6 in **Figure III-8**)

**Corrective Action:**

1. Complete the ongoing feasibility study for design options related to construction of a lift station on Shannon Pond and determination of downstream overflow stormwater trunk system options.

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2. Construct overflow improvements/lift station and storm system located downstream of Shannon Pond and downstream to Basin #2274. This will ultimately flow to either north or west depending on options selected.
3. Construct selected option to provide remainder of overflows and storm system either through construction of lift station outlet for Business Park Pond drainage system (basin 1990) or along the west side of Umore property. Determine method and construct overflow from Business Park Pond to Basin No. 1864 (Meadows of Bloomfield Development) and into proposed stormwater trunk system.
7. Wachter Pond is a landlocked basin and as such, has experienced high water elevations due to development of the upstream conveyance system. The City's hydrologic model that indicates low building opening elevations within the subwatershed are lower than the 100-year peak elevation for a 100-year, 10-day runoff event. The City has recently established an operational plan once water level exceeds elevation 910 which includes frequent monitoring and temporary pumping. (Key Issue No. 9 in **Figure III-8**)

### **Corrective Action:**

1. Until a downstream overflow system to the Mississippi River is constructed, water level on Wachter Pond can be managed consistent with operation plan by directing discharge to designated infiltration area south of the Business Park. Water could also be directed to an infiltration system (Basin #2274) to the east. This will require easements and/or a cooperative agreement to accommodate this discharge. Infiltration will be the primary mechanism to address the Wachter Pond issues until the downstream overflow system is constructed.
8. The existing Business Park Pond (#1990) is landlocked. Development of the upstream watershed is anticipated to increase the volume of water being directed to the Business Park Pond and increase the need for an overflow from the basin. (Key Issue No. 10 in **Figure III-8**)

### **Corrective Action:**

1. Construct selected option to provide overflow and storm system either through construction of lift station outlet for Business Park Pond (#1990) and /or downstream trunk along 150th Street to the east or along west side of Umore area and ultimately into proposed stormwater trunk system.
9. Continue discussion related stormwater management and overflow framework/policies for basins located in the Central and eastern portion of the UMore property. The City anticipates that future development or redevelopment within this area will be implemented in a manner

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consistent with the standards and policies in the SWMP. (Key Issue No. 12 in **Figure III-8**)

**Corrective Action:** Continue to discuss and explore stormwater management and overflow /pumping options for landlocked basins located on central /eastern portion of UMore property with representatives from Umore.

10. The City currently contains approximately 100-150 landlocked depressions (as identified in **Figure III-4**) the majority of which do not have natural overflows and do not discharge to downstream waterbodies. These depressions are anticipated to experience increased inundation as development occurs or during wet periods.

**Corrective Action:**

1. The City will investigate these basins and provide overflows or manage water elevations as outlined in the City's Stormwater Model. Many of these basins will ultimately be provided overflows upon completion of new developments in the area. Any overflows from these basins will comply with the City's for rate control, runoff volume control and low floor requirements including storing runoff from the 100-year, 24-hour storm event for new development and restricting discharge for events with longer duration to a maximum peak stormwater discharge rate of 0.05 cfs/acre. The above mentioned City standards assure that proposed overflows will comply with VRWJPO standards, including but not limited to the drainage alternation standards identified in Policy 3 and Criteria 1 of the VRWJPO rules.
  2. Purchase mobile pumping system and provide temporary pumping of landlocked basins as needed.
11. Areas in Lebanon Hills Regional Park (LHRP) in Eagan are experiencing increased inundation. Under existing conditions, the City of Rosemount directs stormwater from less than 700 acres into the Lebanon Hills Regional Park. Staff from the VRWJPO, Dakota County and Cities of Apple Valley, Rosemount and Eagan have worked towards solutions for the ongoing issues that have occurred within the Lebanon Hills Regional Park and the City of Eagan. As part of Rosemount's responsibilities associated with this proposed agreement, the City will implement lateral drainage improvements along 120<sup>th</sup> Street within the Lebanon Hills Watershed consistent with this agreement and the City's Comprehensive Plan. In addition, the City will require infiltration systems to be constructed consistent with its storm water policies as part of any redevelopment in the area to reduce the volume of runoff generated from the watershed in the future. (Key Issue No. 2 in **Figure III-8**)

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### **Corrective Action:**

1. The City of Rosemount, VRWJPO, Dakota County and Cities of Apple Valley and Eagan have reached a tentative agreement to finance construction of an overflow project to relieve high water issues in LHRP. Once executed by all parties, this agreement will be included in **Appendix A** and as identified in this appendix is incorporated into this Plan by reference.
  2. Implement above mentioned lateral drainage improvements along 120<sup>th</sup> Street for Basins 1012 and 1009 per the agreement between the City and Dakota County/VRWJPO. The pending agreement defined in **Appendix A**, between City and Dakota County/VRWJPO regarding partnership and collaboration on Lebanon Hills Drainage Projects is incorporated into this Plan by reference.
12. Schwartz Pond currently overflows to the east into basin 1770 through a lift station outlet with a peak discharge rate of 6.8 cfs. The City has established an operational plan once water level exceeds elevation 924.5 which includes frequent monitoring and temporary pumping. However, given current pump capacity, the 10 day critical event may become a concern related to freeboard protection of the nearby Rosemount High School. (Key Issue No. 11 in **Figure III-8**)

### **Corrective Action:**

1. Complete feasibility study to determine design parameter and costs related to construction of additional lift station at Schwartz Pond.
  2. Construct additional Schwartz Pond lift station outlet.
13. The City currently does not have an inter-community agreement to manage inter-community flows from the City of Coates into the City. (Key Issue No. 16 in **Figure III-8**).

**Corrective Action:** The City will consider pursuing working with the City of Coates to develop an intergovernmental agreement to account for the discharge into the City from the City of Coates.

14. The Area located north of CSAH 42 in the Central Portion of the City was studied as part of the CSAH 42/Akron AUAR. As this area develops, applicants may be required to construct a stormwater trunk overflow systems to be installed as part of the developers agreements. It is anticipated that this overflow will be designed to discharge the necessary capacity consistent with City rate control requirements and the City's SWMP. (Key Issue No. 3 in **Figure III-8**)

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### **Corrective Action:**

1. Construct overflow from CSAH 42/AUAR area to the East.
15. Aesthetics and unwanted vegetation in and around stormwater management features is common concern for City residents. The City has identified the need to develop additional policies that more clearly identify requirements and responsibilities for maintenance, landscaping easements and ponding sideslope areas around stormwater ponds /depressions. These additional policies will assist the City in developing aesthetically pleasing storm water management areas, keep invasive plants to a minimum, and promote areas for wildlife and greenway corridors.

**Corrective Action:** To address this concern, the City will pursue the following actions:

1. City will review and make recommendations for updating/clarifying policy for landscaping, allowable vegetation and expectations for vegetation management and maintenance around stormwater facilities.
  2. Implement stormwater system maintenance plan consistent with City SWPPP.
16. Erickson Pond is a landlocked basin. The estimated high water elevation for the pond has been identified at an elevation at or near the adjacent existing low building elevation. (Key Issue No. 14 in **Figure III-8**)

### **Corrective Action:**

1. Complete feasibility study to investigate design options and cost related to installation of a lift station at Erickson Pond.
  2. Construct Erickson Pond Lift Station Outlet and downstream storm system to Basin #2474.
17. Basin 1213 (near CR 38) is landlocked, has experienced high water in the past and is identified to overflow during extreme events to the north into the LHRP. The City has identified a series of interconnected gravity overflows from basin 1213 which would redirect discharge to the south and into Marcotte Pond. (Key Issue No. 7 in **Figure III-8**)

**Corrective Action:** Investigate the need to and construct as needed an overflow lift station system from Basin 1213 to Marcotte Pond.

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### C. Impacts of water quantity or quality management practices on recreational opportunities.

1. The City has not identified any impacts of water quantity or quality management practices on recreational opportunities in the Mississippi River Corridor

**Corrective Action:** No corrective actions required.

### D. Impacts of storm water quality on fish and wildlife resources

1. The City is not aware of degraded water quality of stormwater impacting wildlife resources.

**Corrective Action:** The City will pursue methods to address this issue if needed pursuant to the TMDL studies and NPDES non-degradation requirements when these requirements become formally identified within these reports. The City currently complies with NPDES MS 4 program.

### E. Impacts of erosion and sedimentation on water resources

1. During significant rainfall events, soil erosion (particularly from construction sites), has carried sediment to water bodies within the City. Sediment deposits reduce the depth of water and degrade the quality of water within a basin.

**Corrective Action:**

1. Continue to monitor and repair erosion control measures as required pursuant to the SWPPP within the City. (See **Appendix L** for a summary of the City's SWPPP)
2. Implement City SWPPP including but not limited to the public education program consistent with the City SWPPP. (See **Appendix L** for a summary of the City's SWPPP)

### F. Impact of land use practices and development on water resource issues

1. City needs to continue to educate residents on water resource issues as a result of urbanization.

**Corrective Action:** The public education program will educate the residents, developers, City Staff, and City Officials on the impact of land use practices on stormwater management pursuant to the City's SWPPP education program.

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### **G. Adequacy of existing regulations to address adverse impacts on water resources**

1. The City of Rosemount is in the process of exploring the benefits, drawbacks, costs effectiveness and feasibility of various stormwater management treatment methods. Several alternative stormwater management /low impact development (LID) techniques have been explored to determine how these practices fit with the City's existing approach to stormwater management. The City will pursue development of policies on implementation of alternative stormwater management/LID practices, source control and infiltration policies within the Surface Water Management Plan. Particularly for those existing developed areas constructed before the onset of existing requirements, the City will pursue the use of on-site alternative BMPs, such as rain gardens and vegetative swales, to meet the City's infiltration and rate control requirements. For many existing developed areas use of raingardens and related practices is a cost-effective and practical alternative to improving water quality and reducing discharge volumes over existing conditions.

#### **Corrective Action:**

1. Develop LID education program. Hold a series of workshops for residents.
  2. Establish a cost share program to create voluntary demonstration sites incorporating "alternative" BMPs.
2. The City is a designated MS4 community for the NPDES permit. The City has incorporated appropriate educational components, all required BMPs and measurable goals associated with each. The City will implement the 34 required BMPs as required by this program.

#### **Corrective Action:**

1. Develop and implement NPDES Phase II (as defined in Appendix L).
2. Develop and implement non-degradation requirements.

### **H. Identification of potential problems which are anticipated to occur in the next 20 years based on growth projections and planned urbanization**

1. The City will pursue development of policies on implementation of alternative stormwater management/LID practices, source control and infiltration policies within the Surface Water Management Plan.

**Corrective Action:** Complete hands-on resident education program and workshops to educate on LID techniques.

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### I. Availability and adequacy of existing technical information to manage water resources

1. The City acknowledges that additional technical and background information is required to efficiently and effectively anticipate infiltration rates in the City.

**Corrective Action:** Continue implementation of ongoing infiltration monitoring program.

2. DNR Division of Waters Permit # 2003-3221 requires regular monitoring of the water levels as a condition of the permit for construction of the Keegan Lake outlet. (Key Issue No. 4 in **Figure III-8**)

**Corrective Action:** Establish lake level monitoring program for Keegan Lake.

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### V. ESTABLISHMENT OF GOALS AND POLICIES

The City has developed a number of goals, strategies, and policies for the management of storm water 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. Identify and plan for means to effectively 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 the other benefits associated with the proper management of surface and ground water.

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

#### Strategies

**Cooperation with other agencies** This strategy recognizes that the City is not alone in managing storm water within its boundaries. There are a number of other local, state, and federal agencies that also have rules and regulations related to storm water 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.

**Education:** This strategy includes educating various groups within the City about proper storm water management. Education of residents, City Staff, City Council, business owners, and developers is included in this strategy to assist in meeting the City's goals.

**Regulation:** Much of storm water management comes in the form of regulations put on new or redevelopment within the City. These regulations will also assist the City in achieving their stormwater management goals. Policies related to the management of storm water are included in the regulation strategy.

**Internal operations:** The final strategy relates to the internal operations of the City. By outlining policies related to how the City's operations will treat and manage storm water, the City can work to achieve its storm water management goals.

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The City has identified target audiences for the policies outlined in each strategy. The target audiences and strategies are as follows:

### AUDIENCE

Public – Residents and Business Owners  
City Staff and City Council  
Developers  
Review Agencies

### STRATEGY

Education, Regulation  
Cooperation, Education, Operation  
Education, Regulation  
Cooperation

Based on the target audience and the strategy, the City has developed a number of policies. These policies are outlined below.

#### A. COOPERATION WITH OTHER AGENCIES

There are a number of other local, state, and federal agencies that have rules and regulations related to storm water management. Through this strategy, the City recognizes these other agencies' role 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. The other agency rules and policies include rules, policies, and guidelines associated with the following organizations:

- Minnesota Department of Health [www.health.state.mn.us](http://www.health.state.mn.us)
- Minnesota Pollution Control Agency [www.pca.state.mn.us](http://www.pca.state.mn.us)
- Board of Water and Soil Resources [www.bwsr.state.mn.us](http://www.bwsr.state.mn.us) and the Wetland Conservation Act [www.bwsr.state.mn.us/wetlands/wca/index.html](http://www.bwsr.state.mn.us/wetlands/wca/index.html)
- Minnesota Department of Natural Resources [www.dnr.state.mn.us](http://www.dnr.state.mn.us)
- US Army Corps of Engineers [www.mvp.usace.army.mil](http://www.mvp.usace.army.mil)
- Minnesota Department of Agriculture [www.mda.state.mn.us](http://www.mda.state.mn.us)
- Vermillion River Watershed Joint Powers Organization (VRWJPO) [www.co.dakota.mn.us](http://www.co.dakota.mn.us)
- Dakota County SWCD [www.dakotacountyswcd.org](http://www.dakotacountyswcd.org)

The City and VRWJPO are moving forward to develop an agreement for financial participation in the Lebanon Hills Regional Park Stormwater overflow project and to address issues related to distribution of revenues generated within the City of Rosemount. Information related to Lebanon Hills Stormwater Management Plan (LHSMP) and Joint Powers Agreement (JPA) will be added to appendix of Plan upon approval of agreement by all parties.

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The City will be maintaining full LGU and stormwater permitting authority for all water resources and wetland related programs and does not anticipate the need to submit proposed land development plans to the VRWJPO for review and permitting unless an application for the use and development of land requires an amendment to or variance from the City's adopted Surface Water Management Plan or implement program.

Agency rules, policies, and guidelines are not restated in this Plan, but are applicable to projects, programs, and planning within the City. The Minnesota Stormwater Manual, which is a document intended to be frequently updated, is incorporated by referenced into this Plan and can be found at [www.pca.state.mn.us/water/stormwater/stormwater-manual.html](http://www.pca.state.mn.us/water/stormwater/stormwater-manual.html).

### B. EDUCATION

The purpose of the education strategy in meeting the City's goals is to foster responsible water quality management practices by educating residents, business owners, City Staff, City Council, and developers about proper storm water management. If these targeted audiences recognize their role in responsible storm water 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.

<b>STRATEGY: EDUCATION</b>		
<b>Policy No.</b>	<b>Policy</b>	<b>Target Audience</b>
1	The City will implement public education as part of the NPDES Phase II program.	Residents, Business Owners, Developers, City Staff and Council
2	The City will implement educational activities and coordinate with the Dakota SWCD, and VRWJPO to distribute educational materials and promote outreach programs.	Residents, Business Owners, Developers, City Staff and Council
3	The City will develop and update its website for water resource management information as defined in City SWPPP.	Residents, Business Owners, Developers
4	Development and redevelopment will be encouraged to reduce the amount of impervious surface and use Low Impact Development (LID) techniques to the greatest extent reasonable taking into consideration land use, zoning, topography, previous site uses, and site constraints.	Residents, Business Owners, Developers, City Staff and Council

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<b>STRATEGY: EDUCATION</b>		
<b>Policy No.</b>	<b>Policy</b>	<b>Target Audience</b>
5	<p>The City will develop and distribute an annual newsletter as defined in City SWPPP aimed at fostering responsible water quality management practices. Topics may include, but not be limited to:</p> <ul style="list-style-type: none"> <li>● Wetland buffers</li> <li>● Groundwater quality and protection</li> <li>● Controlling invasive species</li> <li>● Water conservation and the water cycle</li> <li>● Proper hazardous waste disposal</li> <li>● Yard waste management</li> <li>● Agricultural BMPs</li> <li>● Pet waste disposal</li> </ul>	Residents, Business Owners, Developers
6	<p>The Dakota County Soil and Water Conservation District (SWCD), the Vermillion River Watch program and others, offer a number of education opportunities, including the following:</p> <ul style="list-style-type: none"> <li>● Citizen Monitoring</li> <li>● River Clean-Up</li> <li>● Riverwatch</li> <li>● Storm Drain Stenciling</li> <li>● Blue Thumb Workshops and Training (SWCD)</li> <li>● Educational Field Day (SWCD)</li> <li>● General conservation practice information (SWCD)</li> </ul> <p>These organizations provide many other educational opportunities.</p>	Residents, Business Owners, Developers, City Staff and Council
7	<p>To promote and encourage all properties adjacent to lakes, wetlands and basins to establish a vegetative buffer strip consisting of native non-mowed vegetation, the City will coordinate a series of “hands-on” education training sessions focusing on LID practices that landowners can do to protect water resources. Policies related to vegetative buffer strips are outlined in the Comprehensive Wetland Management Plan in <b>Appendix F</b>.</p>	Residents, City Staff
8	<p>The City will develop and implement a public education program to inform residents about water resource related issues in conformance with the NPDES Phase II Storm Water Pollution Prevention Program.</p>	Residents, Business Owners, Developers, City Staff and Council

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<b>STRATEGY: EDUCATION</b>		
<b>Policy No.</b>	<b>Policy</b>	<b>Target Audience</b>
9	City will work with the residents and developers to educate on possible voluntary alternative / low impact development BMP design policies. It is anticipated that the City and other state and local partners may participate to establish demonstration projects to research potential low impact development techniques, stormwater reuse systems, alternative infiltration techniques, and land use management techniques.	Residents, UMore representatives, Business Owners, Developers, City Staff and Council

### C. REGULATION

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

<b>STRATEGY: REGULATION</b>		
<b>No.</b>	<b>Policy</b>	<b>Target Audience</b>
<b>Rate Control</b>		
1	The City plans to direct surface water to the east to the Mississippi River. The City does not anticipate directing overflows of surface water to the Vermillion River.	Residents, Developers, City Staff and Council
2	For newly developing areas, no discharge or infiltration can be assumed for purposes of establishing the 100-year, 24-hour storm event high water elevation. For events with longer duration, a maximum peak stormwater discharge rate will be limited to 0.05 cfs/acre.	Residents, Developers, City Staff and Council
3	In the event that the City will not be providing a regional system, storage of the runoff from the 100 year 24 hour storm event is required on site.	Developers

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<b>STRATEGY: REGULATION</b>		
<b>No.</b>	<b>Policy</b>	<b>Target Audience</b>
4	Landlocked depressions that presently do not have a defined outlet and do not typically overflow may be allowed a positive overflow to prevent damage to adjacent properties. Any overflows from landlocked depressions will comply with the City's rate control, runoff volume control and low floor requirements including storing runoff from the 100-year, 24-hour storm event for new development and restricting discharge to .05 cfs per acre for longer duration storm events. These above mentioned City standards assure that proposed overflows will comply with VRWJPO standards, including but not limited to the drainage alternation standards identified in Policy 3 and Criteria 1 of the VRWJPO rules.	Residents, Business Owners, Developers, City Staff and Council
5	Storm events or runoff events shall be defined as outlined below:  a. The 2-year storm event is defined as 2.8" of rainfall in 24-hours. b. The 10-year storm event is defined 4.2" of rainfall over 24-hours. c. The 100-year storm event is defined as 6.0" of rainfall over 24-hours. d. The 10-day snowmelt is defined as 7.1" of runoff.	Residents, Business Owners, Developers, City Staff and Council
6	New storm sewer systems shall be designed to accommodate discharge rates from a 10-year storm event.	Developers
7	The City will work with neighboring municipalities to require rate control prior to the discharge of stormwater across municipal boundaries.	City Staff and Council
8	Redeveloping areas will be required to meet the standards in <b>Section V</b> to the maximum reasonable extent practical. As part of the evaluation of the redevelopment plans, the site will be evaluated based on the opportunity to meet these standards by the City Engineer and City Council. This evaluation will take into consideration that a downstream system may have been constructed to accommodate newly or redeveloping areas and therefore eliminate the need for expanded on-site improvements.	City Staff and Council

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<b>STRATEGY: REGULATION</b>		
<b>No.</b>	<b>Policy</b>	<b>Target Audience</b>
<b>Flood Control</b>		
1	The City prohibits activities within the 100-year floodplain unless compensatory floodplain mitigation is provided at a 1:1 ratio by volume and it is demonstrated that the 100-year floodplain will not be impacted. In addition, no filling within the 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. Additional detail is provided in the City's floodplain ordinance on the City's web-site at <a href="http://www.ci.rosemount.mn.us">www.ci.rosemount.mn.us</a>	Residents, Developers, City Staff and Council
2	The City shall restrict or prohibit uses within the floodplain that are dangerous to health, safety, or property in times of flood or which cause increase in flood elevations or velocities.	Residents, Business Owners, Developers, City Staff and Council
3	The City requires that for any new or redevelopment, at least 3 feet of freeboard between the anticipated critical 100-year high water elevation and the minimum building opening be maintained. Any deviation from the 3 feet freeboard requirement is subject to the following conditions and could be approved by the City Engineer if the following can be demonstrated: <ul style="list-style-type: none"> <li>• That within the 2-foot freeboard area, stormwater storage is available which is equal to or exceeds 50% of the stormwater storage currently available in the basin below the 100-year high water elevation.</li> <li>• That a 25% obstruction of the basin outlet over a 24-hour period would not result in more than 1 foot of additional bounce in the basin.</li> <li>• An adequate overflow route from the basin is available that will provide assurance that 1 foot of freeboard will be maintained for the proposed low building opening.</li> </ul>	Residents, Developers, City Staff and Council

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<b>STRATEGY: REGULATION</b>		
<b>No.</b>	<b>Policy</b>	<b>Target Audience</b>
4	<p>The City requires that minimum basement floor elevations be set to an elevation that meets the following criteria:</p> <p>A. The basement floor elevation will be 4 feet above the currently observed groundwater elevations in the area (FHA policy).</p> <p>B. The basement floor elevation will be 2 feet above the elevation of any known historic high groundwater elevations for the area. Information on historic high groundwater elevations can be derived from any reasonable sources including piezometer data, soil boring data, percolation testing, etc.</p> <p>C. The basement floor elevation will be 1 foot above the critical 100-year high water elevation for the area unless it can be demonstrated that this standard creates a hardship. If a hardship is demonstrated, this requirement could be waived if a registered geotechnical engineer documents that the basement floor will be one foot above the highest anticipated groundwater elevation that could result from high surface water elevations raising the groundwater in the area during a 100-year critical duration rainfall event. The impact of high surface water elevations on groundwater elevations in the vicinity of the structure can take into consideration the site's distance from the floodplain area, the soils, the normal water elevation of surface depressions in the areas, the static groundwater table and historic water elevations in the area.</p>	Residents, Developers, City Staff and Council
<b>Water Quality Treatment</b>		
1	<p>Treatment of storm water to NURP guidelines prior to discharge to wetlands and waterbodies classified as Preserve and Manage 1 as outlined in the City's Comprehensive Wetland Management Plan and infiltration basins. The NURP guidelines for the design of storm water treatment basins are as follows:</p> <p>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.</p> <p>B. A permanent pool average depth (basin volume/basin area) which shall be <math>\geq</math> 4 feet, with a maximum depth of <math>\leq</math> 10 feet.</p>	Developers

## SECTION V

<b>STRATEGY: REGULATION</b>		
<b>No.</b>	<b>Policy</b>	<b>Target Audience</b>
	<p>C. Basin side slopes above the normal water level should be no steeper than 3:1, and preferably flatter. A basin shelf with a minimum width of 10 feet and 1 foot deep below the normal water level is recommended to enhance wildlife habitat, reduce potential safety hazards, and improve access for long-term maintenance.</p> <p>D. The pond should be wedge shaped with the inlet at the narrowest end and the outlet at the widest end. A length to width ratio of 3:1 or greater shall be used whenever possible. Distance between outfalls and outlets should be maximized.</p>	
2	Sediment and nutrient pretreatment shall be provided to the extent necessary as outlined in the City's Comprehensive Wetland Management Plan in <b>Appendix F</b> .	Residents, Business Owners, Developers, City Staff and Council
3	The City will require skimmers in the construction of new pond outlets, and add skimmers to the existing system whenever feasible and practical. Skimmer design shall provide for skimmers that extend a minimum of 6 inches below the water surface and minimize the velocities of water passing under the skimmer to less than 0.5 feet per second for 1-year rainfall events. A skimmer detail is shown on <b>Appendix H</b> .	Developers
4	The City prefers the use of multi-purpose regional treatment pond areas that provide an opportunity to enhance habitat and aesthetic features of the pond. These ponds will be designed to treat stormwater levels consistent with the use classifications of the downstream receiving water while also providing upland buffers and habitat improvements around the ponds.	Developers, City Staff and Council
5	The City will develop and adhere to a Loading Assessment and Nondegradation Report consistent with MS4 General Permit.	City Staff and Council
6	The City will work with the MPCA to incorporate future Total Maximum Daily Load (TMDL) plans into City policies and standards as needed.	City, MPCA, agencies, VRWJPO
7	The City will work with relevant government agencies to prepare and comply with the public participation process per the City's SWPPP.	MPCA, Developers, City Staff and Council

## SECTION V

<b>STRATEGY: REGULATION</b>		
<b>No.</b>	<b>Policy</b>	<b>Target Audience</b>
8	The City intends to use both designated and non-designated areas to store storm water runoff. Non-designated areas include general depressions, low points, and streets where structures and/or property are not damaged and any inundation that occurs is only be temporary in nature. Designated storm water ponding and infiltration treatment areas shall be covered by City easements.	Residents, Business Owners, Developers, City Staff and Council
9	A 3-foot sump catch basin or manhole is required within the street just prior to discharge to a wetland, lake, or stream.	Developers, City Staff and Council
10	The City shall manage shore areas in accordance with the shoreland management ordinance. This ordinance is included in <b>Appendix G</b> of this plan.	City Staff and Council
11	City may explore a process to establish waterbody Eutrophication standards as defined in <b>Appendix S</b> if required by the MPCA for critical waterbodies in City.	Staff and Elected Officials
<b>Infiltration/Volume Control</b>		
1	Development will be required to provide 1/12 of an acre-foot/acre/day of infiltration for the entire site's acreage. Pretreatment of stormwater is required prior to discharge to an infiltration basin. Options available for infiltration design are included in <b>Appendix D</b> .	Developers
2	Infiltration rates of soils for design purposes are as follows:  Hydrologic soil group A : 0.30 in/hour Hydrologic soil group B : 0.15 in/hour Hydrologic soil group C : 0.07 in/hour Hydrologic soil group D : 0.03 in/hour  Different infiltration rates will be considered (up to a maximum of 3.0 in/hour) by the City Engineer on a site-by-site basis based on percolation tests or other pertinent information conducted by a professional soil scientist or Professional Engineer.	Developers, City Staff and Council
3	The City may choose to develop a voluntary alternative /low impact BMP program.	Developers, City Staff and Council

## SECTION V

<b>STRATEGY: REGULATION</b>		
<b>No.</b>	<b>Policy</b>	<b>Target Audience</b>
4	The City will consider the implementation of regional treatment areas within critical subwatershed located upstream of impaired or preserve/category 1 waterbodies.	Residents, Developers, City Staff and Council
<b>Wetlands and Water Quality Corridors</b>		
1	Prior to issuance of any city grading or building permits, all development and redevelopment activities must comply with the Wetland Conservation Act and Comprehensive Wetland Management Plan. A copy of the Wetland Conservation Act Rules can be found at <a href="http://www.bwsr.state.mn.us/wetlands/wca/index.html">www.bwsr.state.mn.us/wetlands/wca/index.html</a> and the Comprehensive Wetland Management Plan is included in <b>Appendix F</b> .	Developers, Residents
2	The City will continue to participate in the <u>Wetland Health Evaluation Program (WHEP)</u> to for residents to monitor plants and invertebrates within the City's wetlands.	Residents, City Staff
3	The Sensitive and Natural Areas as identified in Figure 1-12 of the VRWJPO Plan has been incorporated into <b>Figure III-15</b> of the Plan which includes the locations of the High Value Natural Areas, the Minnesota National River and Recreation Area, and the Dakota County Regional Park within the City. The City will consider policies related to the conservation of these sensitive and natural areas including the identified High Value Natural Areas during development of the City's Comprehensive Land Use Plan consistent with Metropolitan Council requirements.	Developers, City Staff
4	City will incorporate VRWJPO Buffer standards for the water quality corridor located in the far eastern portion of the City as identified in Map 1 of the VRWJPO standards titled Stream Classification and Buffer Standards - Vermillion River Watershed and incorporated into <b>Figure III-15</b> of this Plan.	Developers, City Staff
<b>Groundwater</b>		
1	The City will evaluate all proposed infiltration projects within or adjacent to the vulnerable drinking water supply management areas (DWSMA) consistent with Minnesota Department of Health's guidance manuals.	City Staff and Council
2	Cooperate with state and regional agencies on groundwater monitoring programs as required within the Vermillion River Watershed.	Residents, Business Owners, Developers, Staff
3	The City requires that the design, installation and inspection of individual sewage treatment systems shall be in conformance with State standards and enforced by the City's Building Department.	Residents, Developers
4	A Wellhead Protection Plan has been developed for the City. The City will protect these areas in conformance with the Wellhead Protection Plan.	Residents, City Staff and Council

## SECTION V

<b>STRATEGY: REGULATION</b>		
<b>No.</b>	<b>Policy</b>	<b>Target Audience</b>
5	The City will cooperate with the Minnesota Department of Health to insure that all 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.	Residents, City Staff and Council
<b>Erosion and Sediment Control</b>		
1	The City shall require conformance with General Permit Authorization to Discharge Storm Water Associated With Construction Activity Under the National Pollutant Discharge Elimination System/State Disposal System Permit Program Permit MN R 100001 (NPDES General Construction Permit) issued by the Minnesota Pollutant Control Agency (MPCA), August 1, 2003, as amended for projects disturbing more than 1 acre. (See <b>Appendix L</b> for a summary of the City's SWPPP)	Developers
2	The City will require erosion and sediment control on all construction sites to be in conformance with City ordinance in <b>Appendix J</b> and the policies within this Plan.	Residents, Developers,
3	A storm water pollution control plan is required for any project that requires a building permit, subdivision approval, or grading permit per the City's Surface Water Management ordinance <a href="http://www.ci.rosemount.mn.us">www.ci.rosemount.mn.us</a>	Developers, Residents
4	The City has adopted the Minnesota Pollution Control Agency's Best Management Practices as guidelines for erosion and sedimentation control.	Residents, Business Owners, Developers, City Staff and Council

## SECTION V

### D. INTERNAL OPERATIONS

The City's internal operations can have a significant impact on storm water management. This strategy is targeted primarily at the City with some areas 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.

<b>STRATEGY: INTERNAL OPERATIONS</b>		
<b>No.</b>	<b>Policy</b>	<b>Target Audience</b>
1	The City will update City policy related to pond maintenance to clearly identify responsibilities of landowners, HOA's, developers and City staff.	Residents, Business Owners, Developers, City Staff and Council
2	The City will sweep the streets as outlined in the Storm Water System Maintenance Plan and NPDES Permit ( <b>Appendix L</b> ).	City Staff
3	The City will follow the Storm Water System Maintenance Plan outlined in <b>Appendix I</b> , which includes maintenance of storm manholes, trap manholes, catch basins, storm sewer pipe, pond inlets and pond outlets.	City Staff
4	The City requires as-builts of all ponding areas and designated emergency overflows.	City Staff, Developers
5	The City will inspect lift stations and establish a monitoring program.	City Staff
6	The City will update the storm sewer system map of all identified City-owned storm sewer pipes and conveyances as defined by NPDES requirements.	City Staff
7	The City will continue to update the local stormwater financing mechanisms including the City's stormwater trunk fee and stormwater utility fee programs to equitably finance stormwater maintenance and improvements based on benefit of property.	Residents, Business Owners, Developers, City Staff and Council

## SECTION VI

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### VI. IMPLEMENTATION PRIORITIES/IMPLEMENTATION PROGRAM

Based on the information developed in **Sections III through V**, the City has developed this Surface Water Management Plan that reflects the needs and concerns of the City Council, City Staff, citizens, and the funding capabilities of the City. A prioritized listing of the studies, programs and capital improvements that have been identified as necessary to respond to the water resource needs within the City is outlined on the following tables. The City anticipates implementing at least to some extent the regulatory programs, studies, or improvements identified within this plan within the next 10 years. Following VRWJPO approval of this Plan, the City must amend its official controls within 180 days of plan approval (Minnesota Statutes 103B.235 Subd. 4).

**Table VI-1** contains Storm Water Capital Improvement Projects (CIP), **Table VI-2** contains Storm Water Management Programs (SMP), and **Table VI-3** contains Storm Water Management Studies (SMS). **Figure III-8** identifies the locations of site specific projects and programs contained in **Table VI-1 and VI-2**. **Table VI-4** summarizes the information from all of these tables. The costs associated with these items reflect year 2007 costs and do not take into account inflation. These tables are for planning and budgeting purposes and are considered rough estimates. It is anticipated that these cost estimates will be reviewed annually and updated as needed.

SECTION VI

TABLE VI-1

STORMWATER MANAGEMENT CAPITAL IMPROVEMENT PLAN

Capital Improvements														
No.	Draft Priority		Cost Estimate*	Funding Sources	2007	2008	2009	2010	2011	2012	2013	2014	2015	Comments
CIP-1	High	Construct west portion of stormwater trunk line (Segment D - Construct Basin #1864 outlet to #1787).	\$7,500,000	Core Fund, Developer's Agreement			\$1,875,000	\$1,875,000	\$1,875,000	\$1,875,000				Further Discussion of this proposed project in CSAH 42 /Akron AUAR. A portion of the cost will include developers cost.
CIP-2	High	Construct middle portion of stormwater trunk line (construct trunk line from basin #1787 to #2391 Flint Hills Resources).	Dependent on MCES agreement	Core Fund, Developer's Agreement					\$1,100,000	\$1,100,000				Design Variable. A portion of the cost will include developers cost.
CIP-3	High	Construct eastern portion of stormwater trunk line (Construct trunk line from #2391 Flint Hills Resources to Mississippi River).	Dependent on MCES agreement	Core Fund, Developer's Agreement						\$ X	\$ X			Design Variable. A portion of the cost will include developers cost.
CIP-4	High	Construct overflow improvements or lift station and storm system for Shannon Pond and construct trunk stormwater /overflow system downstream to Basin #2274 or Basin #2302 . This truck overflow /stormwater system will ultimately flow to either north (to basin #1990) or west (into western portion of Umore property) depending on options selected.	\$880,000	Core Fund, Developer's Agreement		\$440,000	\$440,000							Feasibility study ongoing -cost will be further defined
CIP-5	High	Construct selected option to provide overflow and storm system either through construction of lift station outlet for Business Park Pond (#1990) and /or downstream trunk along 150th Street to the east or along west side of Umore area and ultimately into proposed stormwater trunk system.	\$3,200,000	Core Fund, Developer's Agreement				\$1,000,000	\$1,000,000	\$1,200,000				Feasibility study ongoing -cost will be further defined
CIP-6	High	Construct Wachter Pond (#2443) overflow / lift station and related improvements to allow management of water levels consistent with basins operation plan.	\$450,000	Core Fund		\$225,000	\$225,000							requires easements /cooperative agreements for discharge to downstream infiltration basins.
CIP-7	High	Manage water elevations in 100-150 landlocked basins as needed	\$350,000	Core Fund, Developer's Agreement			\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	
CIP-8	High	Construct storm sewer system for basins northwest of Keegan Lake (#1521, 1465, 1435, 1355, 1405, 1482) and construct overflow to Keegan Lake.	\$750,000	Core Fund		\$375,000	\$375,000							Feasibility study ongoing -cost will be further defined
CIP-9	High	Construct outlet lift station system from basin #1213 to Marcotte Pond	\$550,000	Core Fund, Developer's Agreement							\$550,000			
CIP-10	High	Construct Erickson Pond Lift Station Overflow and downstream storm system to Basin # 2474	\$600,000	Core Fund				\$300,000	\$300,000					

SECTION VI

Capital Improvements														
No.	Draft Priority		Cost Estimate*	Funding Sources	2007	2008	2009	2010	2011	2012	2013	2014	2015	Comments
CIP-11	High	Cost share Lebanon Hills Regional Park Flood Control project implemented through proposed inter-agency agreement between City, Apple Valley, Eagan, Dakota County and VRWJPO	\$639,046	Core Fund		\$639,046								Expenses identified are for discussion purposes only - actual payments and expenditures will be identified in final agreements. This amount is only an estimate; See appendix A
CIP-12	High	Construct lateral improvements and outlets for areas within LHRP subwatershed within the City.	Variable	Core Fund										Costs will need to be further defined upon final approval of agreement
CIP-13	High	Construct regional treatment and infiltration pond located on or near the Flint Hills Resources Property	\$7,500,000	Core Fund, Grants, Dev. Agreements						\$1,875,000	\$1,875,000	\$1,875,000	\$1,875,000	Highly dependant on proposed agreement with Flint Hills Resources.
CIP-14	High	Construct overflow drainage systems from basins on east /central portion of Umore property	\$850,000	Core Fund, Developer's Agreement				\$250,000	\$200,000	\$200,000	\$200,000			Cost are highly variable
CIP-15	High	Payment to MCES for use of interim stormwater trunk system as part of proposed MCES treated effluent outfall	Variable	Core Fund										Dependent on pending agreement with MCES.
CIP-16	High	Construct additional Schwartz Pond lift station outlet (near Rosemount High School).	\$450,000	Core Fund				\$450,000						Costs are highly variable.
CIP-17	High	Construct overflow from CSAH 42 AUAR area to East	Variable	Developers Agreement										
		<b>TOTAL</b>	\$23,719,046		\$0	\$1,679,046	\$2,965,000	\$3,925,000	\$4,525,000	\$6,300,000	\$2,675,000	\$1,925,000	\$1,925,000	

\* Cost estimates are preliminary and subject to review and revision as projects are thoroughly reviewed and engineer's reports are completed.

SECTION VI

TABLE VI-2

STORMWATER MANAGEMENT PROGRAMS														
Water Resources Programs					Proposed Expenses for Year									
No.	Draft Priority	Project Description	Cost Estimate*	Funding Sources	2007	2008	2009	2010	2011	2012	2013	2014	2015	Comments
SMP-1	High	Implement stormwater system maintenance plan consistent with City SWPPP.	\$510,000	Stormwater Utility	\$50,000	\$50,000	\$50,000	\$50,000	\$60,000	\$60,000	\$60,000	\$60,000	\$70,000	
SMP-2	High	Continue implementation of ongoing infiltration monitoring program.	\$96,000	Stormwater Utility		\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	
SMP-3	High	Purchase mobile pumping system and provide temporary pumping of landlocked basins as needed	\$340,000	Stormwater Utility	\$30,000	\$30,000	\$30,000	\$250,000						Cost assumes rental until 2010
SMP-4	High	Implement public education program consistent with the City SWPPP.	\$72,000	Stormwater Utility	\$8,000	\$8,000	\$8,000	\$8,000	\$8,000	\$8,000	\$8,000	\$8,000	\$8,000	
SMP-5	High	If necessary to comply with state or federal requirements, implement a water quality monitoring program.	\$80,000	Stormwater Utility		\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	
SMP-6	High	Develop hands-on resident education program and hold workshops with developers to educate water quality BMP's and LID techniques.	\$22,500	Stormwater Utility		\$15,000	\$7,500							
SMP-7	High	Continue LGU responsibilities under WCA and Comprehensive Wetland Management Plan.	\$90,000	Stormwater Utility	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	Costs to be verified by City
SMP-8	High	Monitor and repair erosion issues within the City (general)	\$270,000	Stormwater Utility	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	
SMP-9	High	Establish lake level monitoring program for Keegan Lake.	\$16,000	Stormwater Utility		\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	
SMP-10	High	Cost share WHEP program as identified in the Wetland Management Plan.	\$5,000	Stormwater Utility		\$1,000	\$1,000	\$1,000	\$1,000	\$1,000				
SMP-11	High	Consider development of water quality BMP's to comply with state or federal requirement including but not limited to chemical treatment program upstream of critical waterbodies	\$50,000	Stormwater Utility			\$25,000		\$25,000					
SMP-12	High	Review and make recommendations for updating/clarifying policy for landscaping, planting and maintenance around stormwater facilities	\$5,000	Stormwater Utility		\$5,000								

**SECTION VI**

Water Resources Programs					Proposed Expenses for Year									
No.	Draft Priority	Project Description	Cost Estimate*	Funding Sources	2007	2008	2009	2010	2011	2012	2013	2014	2015	Comments
SMP-13	High	Cost share program to create voluntary demonstration sites incorporating "alternative " BMP's/ LID and develop LID guidance documents.	\$60,000	Stormwater Utility		\$5,000	\$5,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000		
SMP-14	High	Consider establishment of cost share program for volunteer monitoring program on critical waterbodies.	\$8,000	Stormwater Utility		\$2,000	\$2,000	\$2,000	\$2,000					grant dependant
		<b>TOTAL</b>	\$1,624,500		\$128,000	\$180,000	\$192,500	\$385,000	\$170,000	\$143,000	\$142,000	\$142,000	\$142,000	

\* Cost estimates are preliminary and subject to review and revision as projects are thoroughly reviewed and engineer's reports are completed.

SECTION VI

TABLE VI-3														
STORMWATER MANAGEMENT STUDIES														
Water Resources Studies					Proposed Expenses for Year									
No.	Priority	Project Description	Cost Estimate*	Funding Sources	2007	2008	2009	2010	2011	2012	2013	2014	2015	Comments
SMS-1	High	If necessary to comply with state requirements, complete necessary studies and reports related to anticipated implementation of Total Maximum Daily Load (TMDL) studies and reports when and if they are required by the MPCA.	\$40,000	Stormwater Utility					\$20,000		\$20,000			
SMS-2	High	Complete feasibility study to investigate design options and cost related to installation of a lift station at Erickson Pond	\$20,000	Stormwater Utility			\$20,000							
SMS-3	High	Complete feasibility study for design options related to construction of a lift station on Shannon Pond and investigate downstream system including Business Park Pond and /or west side of Umore property	ongoing	Stormwater Utility										
SMS-4	High	Investigate need for cooperative agreement with the City of Coates	\$5,000	Stormwater Utility					\$5,000					
SMS-5	High	Complete feasibility study to determine design parameter and costs related to construction of additional lift station at Schwartz Pond.	\$20,000	Stormwater Utility			\$20,000							
SMS-6	High	Investigate use of Barley straw to control algal growth on selected waterbodies.	\$10,000	Stormwater Utility					\$10,000					grant dependant
SMS -7	High	Complete feasibility study to determine if it is possible for 153 acre area in the southeast corner of City to be redirected into the proposed City overflow trunk system.	\$20,000	Core Fund						\$20,000				
		<b>TOTAL</b>	\$115,000		\$0	\$0	\$40,000	\$0	\$35,000	\$20,000	\$20,000	\$0	\$0	

\* Cost estimates are preliminary and subject to review and revision as projects are thoroughly reviewed and engineer's reports are completed.

SECTION VI

TABLE VI-4										
SUMMARY										
Capital Improvements, Management Programs, Management Studies	Totals	Proposed Expenses for Year								
		2007	2008	2009	2010	2011	2012	2013	2014	2015
<b>Totals for Capital Improvements:</b>	<b>\$23,719,046</b>	\$0	\$1,679,046	\$2,965,000	\$3,925,000	\$4,525,000	\$6,300,000	\$2,675,000	\$1,925,000	\$1,925,000
<b>Totals for Management Programs:</b>	<b>\$1,624,500</b>	\$128,000	\$180,000	\$192,500	\$385,000	\$170,000	\$143,000	\$142,000	\$142,000	\$142,000
<b>Totals for Management Studies:</b>	<b>\$115,000</b>	\$0	\$0	\$40,000	\$0	\$35,000	\$20,000	\$20,000	\$0	\$0
<b>Grand Totals:</b>	<b>\$25,458,546</b>	<b>\$128,000</b>	<b>\$1,859,046</b>	<b>\$3,197,500</b>	<b>\$4,310,000</b>	<b>\$4,730,000</b>	<b>\$6,463,000</b>	<b>\$2,837,000</b>	<b>\$2,067,000</b>	<b>\$2,067,000</b>

\* Cost estimates are preliminary and subject to review and revision as projects are thoroughly reviewed and engineer's reports are completed.

## SECTION VII

### VII. FINANCIAL CONSIDERATIONS

Implementation of the proposed regulatory controls, programs and improvements that are identified in this plan will have a financial impact on the City. To establish how significant this impact will be, a review of the means and ability of the City to fund these controls, programs and improvements is necessary. Toward this end, please find outlined below a listing of various sources of revenue that the City will endeavor to implement the water resource management efforts outlined in this plan.

For the next ten years, the capital improvement projects are estimated to cost approximately \$23,719,046. The storm water management program costs are estimated at about \$1,624,500. The storm water studies are estimated to cost about \$115,000. Over this 10-year period, these projects, programs, and studies are estimated to cost about \$25,458,546. Any projects, studies, and programs and the associated funding are subject to City Council approval.

<u>DESCRIPTION OF FUNDING SOURCE</u>	<u>REVENUE GENERATED</u>
1. Projected revenue generated by storm water trunk and ponding fees	Variable
2. Project paybacks	Variable
3. Special assessments for local improvements made under the authority granted by Minnesota Statutes Chapter 429	Variable depending on activities undertaken
4. Revenue generated by Watershed Management Special Tax Districts provided for under Minnesota Statutes Chapter 473.882	Variable depending on activities undertaken
5. For projects being completed by or in cooperation with a Watershed District or Watershed Management Organization, project funds could be obtained from watershed district levies associated with their administrative funds, construction funds, preliminary funds, repair and maintenance funds or survey and data acquisition funds, as provided for in Minnesota Statutes Chapter 103D.905	Variable depending on activities undertaken
6. Grant monies that may be secured from various local, regional, County, State, or Federal agencies. This would include the County, Mn/DOT, MPCA, the DNR and others	Variable depending on activities undertaken
7. Other Sources: These may be other sources of funding for storm water activities such as tax increment financing, state aid, etc. The City will continue to explore additional revenue sources as they become available.	Variable depending on activities undertaken
8 Tax abatement	Variable

## SECTION VIII

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### VIII. AMENDMENT PROCEDURES

It is the intention of the City to have the Surface Water Management Plan reviewed and approved by the Vermillion River Watershed Joint Powers Board. Once approved, no significant changes to this plan can be facilitated without the approval of the proposed revisions by the Watershed Management Organizations within the City that are affected by the change. Significant changes to the local plan shall be made known to the following parties:

1. City Administrator and City Engineer
2. Affected Watershed Management Organizations and Watershed Districts within the City
3. Metropolitan Council
4. Public within the City through a public hearing process

Following notification of the above parties, they shall have 60 days to comment on the proposed revisions. The Metropolitan Council shall have 45 days to comment on the revisions. Failure to respond within 60 days constitutes approval. Upon receipt of approvals from the affected Watershed Management Organizations and Watershed Districts within the City, any proposed amendments will be considered approved.

Minor changes to the Plan shall be defined as changes that do not modify the goals, policies, or commitments expressly defined in this plan by the City. Adjustment to subwatershed boundaries will be considered minor changes provided that the change will have no significant impact on the rate or quality in which storm water runoff is discharged from the City boundaries. Minor changes to this plan can be made by the staff at the City without outside review. It is the intention of the City that this Plan be updated ten years after the adoption of this Plan unless significant changes to the plan are deemed necessary prior to that date.