

## SECTION V

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### V. ASSESSMENT OF PROBLEMS AND CORRECTIVE ACTIONS

Outlined below is an assessment of existing and potential water resource related issues that are known at this time. These issues have been identified based on an analysis of the land and water resource data collected as part of this local plan preparation and through public input.

#### A. Lake and stream water quality

1. Several storm water ponds and wetlands within the City are adversely impacted by urbanization.

##### **Corrective Action**

- a. Complete loading assessment and nondegradation report as a part of the City's SWPPP. Additionally recommended BMPs to be recommended to address impacts due to new or expanded stormwater discharges.

2. Regular maintenance of sediment ponds has been noted as a concern.

##### **Corrective Action**

- a. Continue to implement the Wetland Protection and Management Plan and Storm Water System Maintenance Plan (**Appendix F**) to assure these ponds and wetlands are capable of meeting their intended uses.

3. Poor water quality within Hyland Lake has been identified as a concern.

##### **Corrective Action**

- a. The City will work with Hennepin County, Three Rivers Park District, Watershed Districts, US Army Corp of Engineers, and the DNR to maintain or improve the water quality of Hyland Lake.

4. Water quality within Lower Penn Lake has been identified as a concern.

##### **Corrective Action**

- a. The City will work with Hennepin County, Watershed Districts, US Army Corp of Engineers, and the DNR to maintain or improve the water quality of Penn Lake.

5. Streambank and bluff erosion within the Minnesota River Valley has been identified as a concern.

##### **Corrective Action**

- a. The City will work with the US Fish and Wildlife Service, the Lower Minnesota River Watershed District, and the US Corps of Engineers to address storm water and erosion concerns within the Minnesota River Valley.

## SECTION V

---

6. Algal blooms and problem aquatic vegetation has been identified as a concern.

### **Corrective Action**

- a. Continue to implement and review the results of the wetland vegetation treatment policy. Information about this program is included in **Appendix G**.
- b. Continue to implement the City's fertilizer ordinance to limit the application of phosphorus as indicated in **Appendix G**.
- c. Implement entire SWPPP – includes numerous BMPs intended to reduce pollutant loading.

7. Nine Mile Creek has been listed on the State's List of Impaired Waters 303(d)

### **Corrective Action**

- a. Coordinate with the Nine Mile Creek Watershed District to improve the water quality within the Nile Mile Creek watershed to meet the goals outlined by the District and in the Nine Mile Creek Use Attainability Analysis.

8. It has been noted that occasional maintenance (i.e., bog control) of Nine Mile Creek/County Ditch No. 1 downstream of Normandale Lake has been necessary, as noted by the Watershed District.

### **Corrective Action**

- a. Coordinate monitoring and maintenance efforts with the Nine Mile Creek Watershed District, as needed.

## **B. Localized Flooding and storm water rate/volume control concerns within the City**

Temporary flooding occurs occasionally at right-of-way locations throughout the City. The Public Works Department has attempted to identify those sites and define appropriate corrective actions:

1. West 80½ Street and Fremont Avenue
  - A study has been completed and potential alternatives identified. Coordination with Mn/DOT in conjunction with improvements to 35W/1494 may be desirable.
  - Improvements to this will be dependent on feasibility and funding sources.
2. American Boulevard and Dupont Avenue
  - A study has been completed and potential alternatives identified. Coordination with Mn/DOT in conjunction with improvements to 35W/1494 may be desirable.
  - Improvements to this will be dependent on feasibility and funding sources.

## SECTION V

---

3. American Boulevard and Knox Avenue
  - A study has been completed and potential alternatives identified. Coordination with Mn/DOT in conjunction with improvements to 35W/1494 may be desirable.
  - Improvements to this will be dependent on feasibility and funding sources.
4. Bryant Park
  - High water levels have been identified as a concern at Upper and Lower Bryant Ponds. Temporary occasional inundation of park property, including a ball field, has occurred.
  - The pumped outlet from Lower Bryant Pond has been improved and a number of area homes were flood-proofed for protection from overland flow.
  - No further improvements are planned at this time.
5. Poplar Bridge Road
  - The low point on Poplar Bridge Road west of the Nine Mile Creek crossing occasionally floods when creek stage is high.
  - There is minimal elevation difference between the low point elevation and bank full flow elevation of Nine Mile Creek. The District recently replaced the deteriorating corrugated metal culvert under Poplar Bridge Road with a new concrete box structure which should minimize previous unplanned flow restrictions or blockages.
  - No further improvements are planned at this time.
6. Hyland Creek Road
  - Flooding and overland flow identified.
  - Model sub-watershed to determine cause and potential feasible alternatives.
7. Border Basin
  - High water levels have been noted as a concern.
  - Flood storage/outlet improvements were implemented in 2000.
  - No additional flood storage improvements are planned at this time.
8. American Boulevard and 80<sup>th</sup> Street Circle
  - Replacement of deteriorated storm sewer infrastructure along American Boulevard was completed in 2006.
  - This system drains to the I-494 storm sewer system.
  - No additional improvements are planned at this time.
9. Barthel's Pond
  - High water levels at Barthel's Pond have been noted as a concern.
  - Barthel's Pond outlets to Nine Mile Creek/Marsh Lake and ultimately controlled by the Marsh Lake Dam.
  - No action is required.

## SECTION V

---

10. Rich Road and Old Shakopee Road
  - Review sub-watershed hydrologic/hydraulic model to determine cause and potential feasible alternatives.
11. Nicollet Avenue and 92<sup>nd</sup> Street
  - Review sub-watershed hydrologic/hydraulic model to determine cause and potential feasible alternatives.
12. American Boulevard and 2<sup>nd</sup> Avenue
  - Review sub-watershed hydrologic/hydraulic model to determine cause and potential feasible alternatives.
13. Lyndale Avenue and 88<sup>th</sup> Street
  - A study has been completed. Further review is needed to determine feasible alternatives.
  - Review sub-watershed hydrologic/hydraulic model to determine cause and potential feasible alternatives.
14. East Bush Lake Road and I-494
  - Mn/DOT recently completed improvements to I-494 and the storm sewer infrastructure in this area. It is expected that the improvements will result in this area no longer being a flood prone area.
15. Landau Circle and Wyoming Circle
  - Model adjacent sub-watershed to determine cause and potential feasible alternatives.

### **C. Flooding or storm water rate control concerns between the City and adjoining entities**

1. Adjacent communities/entities which are affected by storm water rate control within Bloomington are Richfield, Edina, Eden Prairie and the Minnesota Valley National Wildlife Refuge. The storm sewer system is designed to minimize impacts to the extent reasonable and possible at the time the existing improvements were installed. The City has working relationships with the affected cities and the US Fish and Wildlife Service. The City will continue to work to make improvements to the existing storm water system and make technological improvements as warranted. Agreements with these entities are in place.

#### **No corrective action required**

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

1. Floatables and exotic aquatic vegetation may interfere with the provision of recreational opportunities.

## SECTION V

---

### **Corrective Action**

- a. Implement the capital improvements program and studies outlined within this Comprehensive Surface Water Management Plan and the Wetland Protection and Management Plan to address specific problems in the water bodies.
- b. Increased populations of geese and gulls in City water bodies can be a nuisance and likely have caused closures of Bush Lake Beach in the City.

### **Corrective Action**

- a. The City has developed a goose and waterfowl management plan that includes:
  - Public education information (signage) discouraging water fowl feeding and outlining ill-effects.
  - Public education information on water quality and water fowl feeding on the City's website, City newsletter, and local paper.
  - Promotion of shore area management/native buffer establishment techniques.
- b. The City has implemented additional Best Management Practices and maintenance procedures specific to Bush Lake Beach to address beach closures due to water fowl. 2006 resulted in zero closures. The program will continue and conditions monitored in an effort to eliminate future closures due to water fowl.

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

1. Impacts to fish and wildlife resources were identified as part of the Wetland Protection and Management Plan. These impacts were assessed using a slightly modified version of the Minnesota Routine Assessment Methodology for evaluating wetland functions (MNRAM). Assessment areas included floral diversity, wildlife habitat, fish habitat, and shoreline protection. These areas were rated as functioning at a low, medium or high level.

### **Corrective Action**

- a. Implement programs, studies, and capital improvements outlined in **Section VI** and the City's Wetland Protection and Management Plan.
  - b. Complete an updated function and value assessment of the wetlands in the City.
2. It is anticipated that the DNR will discontinue fish stocking and aeration at Lower Penn Lake.

## SECTION V

---

### **Corrective Action**

- a. The City will meet with residents and the agencies to develop a management plan for the Lake with direction from the City Council.

### **F. Impacts of soil erosion on water quality and water quantity**

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**

- a. Continue implementing BMP No. 39 of the City's SWPPP performing erosion and sediment control inspections.
2. Erosion areas of concern are shorelines of Nine Mile Creek, Minnesota River bluff areas, storm sewer outfalls in the Minnesota River Valley, and active construction sites.

### **Corrective Action**

- a. Continue to enforce the City's existing erosion control ordinance.
- b. Continue to monitor and repair as needed erosion control measures. Work with other agencies and property owners as appropriate for each of these areas.
- c. Continue the Storm Water System Maintenance Plan (**Appendix F**) for removal of sediment deltas at storm sewer inlets and outlets.
- d. Continue implementation of the City's SWPPP.

### **G. General impact of land use practices, particularly land development and land alteration on water quality and water quantity**

1. The City has experienced increased storm water runoff rates and volumes as a result of urbanization. Land development and land use practices outside of the City limits have negatively impacted both water quality and quantity.

### **Corrective Action**

- a. Implement the policies, programs and corrective actions of the Surface Water Management Plan and Wetland Protection and Management Plan, with an emphasis on public education.
- b. Complete a loading assessment as outlined in Part X. Appendix D of the MS 4 permit.

## SECTION V

---

### **H. The adequacy of existing regulatory controls to manage or mitigate adverse impacts on public waters and wetlands.**

1. Numerous regulatory controls exist within the City, as well as at the Watershed District and state level. Coordination of these programs is critical to achieving water quality goals

#### **Corrective Action**

- a. The City is a member of the Minnesota Cities Storm Water Coalition (MCSC). Participation in this group will work toward gaining consistency between other cities when appropriate and achieving coordination with the State on storm water regulatory issues.
- b. The City actively works with the Watershed Districts to cooperate on rule and plan revisions and implementation.

### **I. The adequacy of programs to limit soil erosion and corresponding water quality degradation**

1. The City has a very active erosion control inspection program for new development, redevelopment. Review of this program along with the State construction site permit to determine effectiveness is on-going.

#### **Corrective Action**

- a. The City is a member of the Minnesota Cities Storm Water Coalition (MCSC). Participation in this group will work toward gaining consistency between other cities when appropriate and achieving coordination with the State on storm water regulatory issues.
- b. Public Works staff actively participates on the 2006-2007 NPDES Construction Site Erosion Control Compliance Work Group. The Work Group is charged with identifying methods to achieve significantly better construction site permit compliance and administrative efficiency.

### **J. The adequacy of programs to maintain the tangible and intrinsic values of natural storage and retention systems**

1. It is the position of the City that the goals and classifications outlined in the Surface Water Management Plan and Wetland Protection and Management Plan are sufficient.

**No corrective action required.**

## SECTION V

---

### **K. The adequacy of programs to maintain water level control structures**

1. Water level control structures are presently being inspected and reviewed on a regular basis to assure they are operating correctly and repaired as needed.

**No corrective action required.**

### **L. The adequacy of capital improvement programs to correct problems relating to water quantity, water quality management, fish and wildlife habitat, public waters and wetland management, and recreational opportunities**

1. The capital improvement projects outlined within this plan and the general operating procedures of the City are sufficient to address water resource related concerns. However, the Storm Water Utility Fund may not be an adequate funding source to allow for the aggressive implementation of the capital improvement projects.

#### **Corrective action**

- a. The City will actively seek additional funding sources and assistance to implement these programs.

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

1. The City anticipates that there will be increased pressure to improve the quality of water within the City and the appearance of storm water retention areas. Additional funding sources will need to be sought to address this demand.

#### **Corrective Action**

- a. The implementation of this Surface Water Management Plan will address water quantity, quality, and maintenance issues associated with storm water retention areas. Maintenance of these storm water retention areas will be further defined in the Storm Water System Maintenance Plan outlined in **Appendix F**.
- b. The City will actively seek additional funding sources and assistance, when available and practical, to improve the quality and appearance of storm water retention areas.
- c. The City will be completing a loading assessment that will address changes in pollutant loading to 2020 and as outlined in Part X, Appendix D of the MS 4 permit.

### **N. The adequacy of existing technical and background information on systems in the City that are used to manage water resources**

1. The City acknowledges that additional technical and background information is required to efficiently and effectively manage water resources.



## SECTION V

---

### **Corrective Action**

- a. Continue to implement a long range water quantity and quality monitoring plan for the City.
- b. Continue to keep up to date with technological advances and pursue innovative technologies to manage water resources.
- c. Continue hydrologic/hydraulic modeling and water quality modeling of subwatersheds within the City.
- d. Improve the transfer of surface water resource information to the public through the education program.

### **O. Implementation of NPDES Phase II**

1. The City is required to implement the NPDES Phase II requirements as administered by the MPCA.

### **Corrective Action**

- a. The City will utilize the Surface Water Management Plan, Wetland Protection and Management Plan and Stormwater Pollution Prevention Program to implement and meet the NPDES Phase II requirements