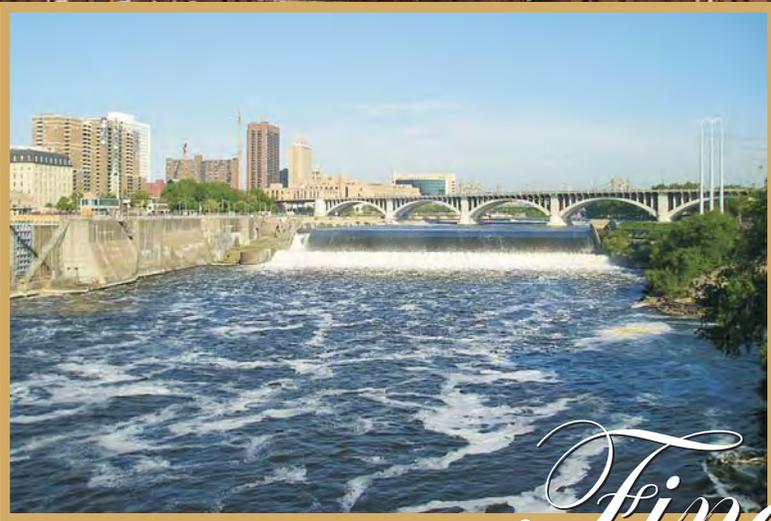


# Minneapolis Local Surface Water Management Plan



*Final*

M I N N E A P O L I S , M I N N E S O T A



OCTOBER  
2006

# City of Minneapolis, Minnesota

## Local Surface Water Management Plan

October 1, 2006

### *Acknowledgements*

In order to arrive at a LSWMP that adequately addresses surface water related issues, the emphasis has been to work with stakeholders to identify important issues through review and meetings. City staff has participated in collecting data, providing feedback, and contributing knowledge of local systems to aid in developing a strategy that encompasses water quality and quantity issues. The Department of Public Works is the organizer and author of this document, with assistance from:

- Department of Regulatory Services
- Community Planning and Economic Development
- Minneapolis Park and Recreation Board
- Camp Dresser & McKee, Inc.

Information was contributed from the following organizations:

- Bassett Creek Watershed Management Commission
- Metropolitan Council
- Minneapolis Park and Recreation Board
- Minnehaha Creek Watershed District
- Mississippi Watershed Management Organization
- Shingle Creek Watershed Management Commission
- Bonestroo, Rosene Anderlik and Associates, Inc.

# *Final Report*

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# Executive Summary

Since its founding in 1846, Minneapolis has been defined by its surface waters. The City became the gateway to the upper Great Plains through the navigation provided by the Mississippi River and power supplied by St. Anthony Falls. Its many lakes formed a grand vision of integrated parks, boulevards and residential space. This vision continues to support the City's ongoing vitality, life style, and economic growth.

In the past, Minneapolis has managed its sanitary sewers, storm drains and surface waters as separate systems. Through watershed management and compliance with stormwater mandates, Minneapolis has merged the management of the storm drainage and surface water systems. Many of the decisions and actions by the policy makers, administrators, and field staff are based in the knowledge of how stormwater runoff affects the surface water quality of a lake or creek. Yet decisions and actions related to management of the sanitary sewer system are made independent of potential impact on the storm drainage system. Minneapolis is operating under two mandates to continue its efforts to remove clear water sources from the sanitary sewers, one from the USEPA/MPCA and one from the Metropolitan Council. Often the only solution is to redirect clear water connections (such as a sump drain) from the sanitary sewer to a nearby storm drain. With this Local Surface Water Management Plan, Minneapolis proposes to fully integrate all decisions and activities that affect water resources by including consideration of the impact that sanitary sewer activities have on the storm drainage and surface water systems of the City.

Today, Minneapolis seeks to renew its commitment to an urban lifestyle framed by its surface waters. This Local Surface Water Management Plan (LSWMP) establishes integrated approaches seeking to maintain the quality of life of the City's residents, support the City's continued economic prosperity, and address emerging and existing regulatory challenges. Its integrated water resources management approach

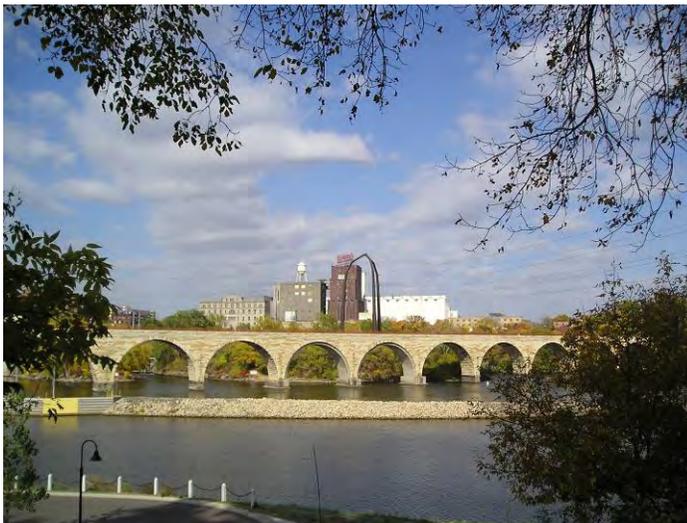


*Minneapolis is defined by its water resources. The LSWMP helps the City manage water resources and maintain them for the future.*

recognizes that the health and vitality of the City's lakes and urban streams are linked to how each resident manages their property as well as how the City manages its system of storm drains and sanitary sewers. It defines a future free from the dangers of flooding and water quality degradation that is achieved through integrated efforts on a watershed scale, both within the City and among its neighboring communities.

## Purpose

The Minneapolis Local Surface Water Management Plan (LSWMP) has been prepared to guide the City in conserving, protecting, and managing its surface water resources. The purpose of the LSWMP is to bring together all water resources issues and activities, and to identify improvements, gaps or overlaps which will help to better manage the city's water resources and attain overall goals. The content of the LSWMP is in large part determined by Minnesota Statute 103B and Rules 8410. Specifically, statute 103B.235 states:



*The LSWMP will arm the City with the knowledge needed to prioritize projects that improve the quality of Minneapolis' surface water while meeting other City goals.*

***After the watershed plan is approved and adopted, or amended, pursuant to section 103B.231, the local government units having land use planning and regulatory responsibility for territory within the watershed shall prepare or cause to be prepared a local water management plan, capital improvement program, and official controls as necessary to bring local water management into conformance with the watershed plan...***

The intent of this plan is twofold: to meet the requirements of Minnesota Statute 103B and to provide a resource for city staff. As a reference document, this plan has been structured to provide the reader with basic information and to provide sources where additional information can be found. To include all possible Minneapolis water resources information would be prohibitive; replicating information maintained by other organizations does not allow the user to have the most current information available. Web links have been provided for the electronic user to access the wealth of local water resources information available on the Internet.

## Contributors

To comprehensively address Minneapolis surface water related issues, development of this LSWMP involved input from stakeholders who could identify important issues. City staff have participated in collecting data, providing feedback, and contributing knowledge of local systems to aid in developing a strategy for water

**Stakeholders provided critical information to the LSWMP, through data gathering and identification of critical project issues.**

quality and quantity issues. The Department of Public Works is the organizer and author of this document, with assistance from numerous organizations, including the Department of Regulatory Services, Community Planning and Economic Development, the Minneapolis Park and Recreation Board, and Camp Dresser & McKee Inc.

The following organizations also contributed information: Bassett Creek Watershed Management Commission, Metropolitan Council Environmental Services, Minnehaha

Creek Watershed District, Mississippi Watershed Management Organization, Shingle Creek Watershed Management Commission, and Bonestroo Rosene Anderlik and Associates, Inc.

## Contents

This report is organized into five sections, which include 18 figures, and 16 appendices. The figures and appendices are organized in a way to allow easy changes in the future as programs are implemented and as improvements progress.

## Introduction – Section 1

The introduction has four distinct sections: history, system overview, regulatory influences and cooperative agreements. The history of Minneapolis has a focus of how the City grew and how water resources management evolved. The overview describes the purpose of this Local Surface Water Management Plan and its administration. The regulatory section focuses on the strong water resources regulatory structure that exists in Minnesota. It also contains a list of active agreements between Minneapolis and partners that lay out responsibilities for water resources management.

## Goals and Policies – Section 2

The goals set forth in The Minneapolis Plan are tied to the City’s water resources objectives and sustainability indicators. Section 2 develops a set of guiding principles that provides direction to accomplish these goals.

### City of Minneapolis’ Water Resources Guiding Principles

- ✓ Protect people, property, and the environment
- ✓ Maintain and enhance infrastructure
- ✓ Provide cost-effective services in a sustainable manner
- ✓ Meet or surpass regulatory requirements
- ✓ Educate and engage the public and stakeholders
- ✓ Enhance livability and safety

Section 2 also details how Minneapolis intends to accomplish City goals while carefully considering limitations, changes to regulations, and the needs of aging infrastructure.

### **Land and Water Resources Assessment – Section 3**

The physical environment of Minneapolis is described in Section 3, with a focus on the wealth of water resources that defines the City. Climate is relatively similar throughout the City, but soils are highly altered and unique to each parcel of land. Each lake, stream, or river has defining characteristics. The condition of the water bodies in Minneapolis is described, an overview of the organizations that oversee their well-being is provided, and current ongoing monitoring efforts are discussed.



*Routine inspection and maintenance of sewer systems helps ensure the systems' adequacy in handling stormwater and sewer flows.*

### **System Inventory and Related Activities – Section 4**

The management of the stormwater drainage and sanitary sewers has evolved with the City. The City began as a one-sewer city and now is supported by more than 830 miles of sanitary sewers and 550 miles of storm drains. The City routinely inspects and maintains the sanitary sewer and storm drainage systems to maintain service and has implemented Best Management Practices that serve to improve the quality of runoff. But other City features – such as roadways and vegetation – also impact surface

water quality by the amount and quality of water they permit to divert to the storm drain system. Section 4 describes the City's infrastructure, and discusses associated capital improvement activities. It also includes descriptions of other activities that are integral to water resources management, including infrastructure maintenance, regulatory activities, and public education/engagement.

### **Planning and Implementation – Section 5**

Minneapolis has successfully implemented stormwater Best Management Practices and has seen improvement in the quality of surface waters. For example, the quality of the Mississippi River has improved as a direct result of the CSO program. And Chain of Lakes Clean Water Partnership activities saw Lake Calhoun improve from eutrophic conditions in the early 1990s to nearly pre-settlement quality today. While Minneapolis has made progress in improving the quality of stormwater and reducing the occurrence of CSOs, additional activities are identified that will continue this trend of water quality improvement. This section discusses these activities and presents a framework for assessing, planning and implementing new activities relevant to water resources management.