Minnehaha Creek Watershed District *REQUEST FOR BOARD ACTION*

MEETING DATE: May 9, 2019

TITLE: Approval of Mound Local Water Management Plan

RES. NUMBER: 19-057

PREPARED BY: Becky Christopher

E-MAIL: bchristopher@minnehahacreek.org **TELEPHONE:** (952) 641-4512

REVIEWED BY: ☐Administrator ☐ Counsel ☐ Program Mgr.
☐ Board Committee ☐ Engineer ☐ Other

WORKSHOP ACTION:

☐ Advance to Board mtg. Consent Agenda. ☐ Advance to Board meeting for discussion prior to action.

☐ Refer to a future workshop (date):_____ ☐ Refer to taskforce or committee (date):_____

☐ Return to staff for additional work. ☐ No further action requested.

☒ Other: Requesting final action on May 9, 2019

PURPOSE or ACTION REQUESTED:
Approval of the City of Mound Local Water Management Plan

PROJECT/PROGRAM LOCATION:
City of Mound

PROJECT TIMELINE:

September 7, 2018	Mound LWMP first draft submitted to MCWD
November 2, 2018	MCWD comments and denial letter sent
December 7, 2018	Mound LWMP revised draft submitted to MCWD
January 9, 2019	MCWD comments sent
February 20, 2019	Mound LWMP revised draft submitted to MCWD
March 18, 2019	MCWD comments sent
April 3, 2019	Mound LWMP final draft submitted to MCWD

PROJECT/PROGRAM COST:
N/A

PAST BOARD ACTION:

June 18, 2009	MCWD approval of Mound local water management plan (09-062) and associated memorandum of understanding (09-063)
January 11, 2018	Approval and adoption of MCWD Watershed Management Plan for the implementation period 2018-2027 (18-004)

SUMMARY:

Background:
MN Statutes § 103B.235 and MN Rules § 8410.0160 grant watershed districts the authority to review and approve local water management plans (LWMPs). Under this framework, watershed districts can assign responsibilities to local government units (LGUs) for carrying out implementation actions defined in the watershed plan. The LWMP is a required element of the LGU comprehensive land use management plan which LGU's were required to adopt by the end of 2018.

The Minnehaha Creek Watershed District (MCWD or District) adopted its new Watershed Management Plan (Plan) in January 2018. The Plan is rooted in the District's Balanced Urban Ecology policy (BUE) as the principal strategy to accomplish its mission. The BUE policy recognizes the inter-dependence of the natural and built environment and that both benefit through a holistic planning approach. The BUE policy establishes the guiding principles of focus in areas of highest resource needs, flexibility to respond to emerging opportunities as a result of land use change in real time, and pursuing clean water goals in partnership with our communities.

The Plan establishes the District as a regional water planning agency. The Plan provides rationale for subwatershed-based planning and prioritization by which to focus implementation efforts for the 2018-2027 Plan cycle. The District has prioritized the subwatersheds of Minnehaha Creek, Six Mile Creek-Halsted Bay and Painter Creek-Jennings Bay based on a combination of resource needs and opportunities for management of some of the State's most prized recreational natural resources of Lake Minnetonka and Minnehaha Creek – including the Minneapolis Chain of Lakes.

In addition to these focused planning and implementation efforts, the District's approach watershed-wide is to remain responsive to opportunities created by local land use change or partner initiatives. The District's responsive approach relies on early and effective coordination by the District's communities to help identify opportunities to integrate plans and investments. As opportunities arise, the District will evaluate them against the resource needs and priorities defined for each subwatershed in the District's Plan and determine the appropriate response. The District has a wide range of services it can mobilize to address resource needs and support partner efforts, including data collection and diagnostics, technical and planning assistance, permitting assistance, education and capacity building, grants, and capital projects.

Integration of land use and water planning is the primary focus of the LWMP requirements set forth in the District's Plan. To effectively integrate the goals of MCWD and its LGUs in a way that maximizes community benefits and effectively leverages public funds, the District has invited a partnership framework with its communities. In addition to the legally required elements of LWMPs, as defined in State statute and rules, the MCWD Plan requires communities to propose a coordination plan which describes how the LGU and MCWD will share information and work together to integrate land use and water planning. Specifically, the purpose of a MCWD/LGU coordination plan is to:

1. Establish a framework to be informed as to current LGU land use and infrastructure planning and enable early coordination of land use and water resources management
2. Foster LGU development regulation that integrates water resource protection before plans are fixed
3. Identify and capitalize on project opportunities for improved water resources outcomes while maximizing other public and private goals

As established in the District's Plan, MCWD will prioritize implementation efforts and resource deployment based on its established priorities and LGU commitment to coordination. This commitment is demonstrated through the coordination plan and its implementation by the LGU.

Mound LWMP Summary:

The City of Mound (City) has submitted its LWMP for MCWD review and approval. District staff reviewed the LWMP and provided detailed comments regarding the goals and requirements of the District's Plan for consideration and incorporation into the LWMP.

The City of Mound occupies approximately 3.6 square miles and is located entirely within the MCWD. The City covers portions of the Lake Minnetonka and Dutch Lake subwatersheds. Primary water resources within the City of Mound include portions of Dutch Lake, Langdon Lake, and several of the northwestern bays of Lake Minnetonka (Jennings, West Arm, Harrisons, Cooks, Halsted, and others). Five of these waterbodies (Dutch, Langdon, Halsted, Jennings, and West Arm) appear on the state's impaired waters list for excess nutrients, and the City has been assigned load reductions under the Upper Watershed Total Maximum Daily Load (TMDL) Study.

The primary management strategies identified for this area in the District's Plan are protection through regulation, promotion of shoreline best management practices to improve ecological integrity, and implementation of opportunity-based stormwater management projects.

Implementation priorities identified by the City for this plan cycle include addressing TMDL load reductions, promoting low impact development techniques, maintaining existing stormsewer system, evaluating street and utility improvement projects for stormwater management potential, correcting flooding issues on City property, and expanding public education. The City recently completed a multi-year infrastructure renewal program and does not anticipate any significant street or utility related capital reconstruction in the near-term. Therefore, the City's Capital Improvement Plan (CIP) does not identify any specific stormwater management projects. Instead, emerging stormsewer infrastructure requirements and improvement opportunities will be evaluated and incorporated into the CIP on an annual basis and shared with the District.

As a required element of the LWMP, the City has developed a MCWD-City Coordination Plan which serves as a framework to support ongoing communication and promote value-added collaboration between the City and MCWD. In its coordination plan, the City has committed to:

- Meet annually with MCWD to review CIPs, opportunities for early coordination of land use change applications, regulatory coordination, operations and maintenance of past partnership projects, and public education plans
- Route requests for land use approvals to the District in an effort to maximize water resource benefits and streamline regulatory processes
- Require documentation of required MCWD permits in advance of issuing applicable City permits
- Collaborate with MCWD on construction site inspections and compliance
- Assist MCWD in the preservation of key conservation areas identified by MCWD by considering them in land use and zoning decisions
- Route significant infrastructure improvements (streets, stormwater, parks) to the MCWD as early in the planning as possible so that the regulatory process may be efficient and integrated water and natural resource improvements may be explored
- Provide support and assistance with the District's educational programs in the form of information sharing and promotion of materials

The City has not proposed to acquire implementation authority for any MCWD water resource regulation and has proposed that the City retain Local Government Unit status for the Wetland Conservation Act.

Recommendation:

Staff has verified that the LWMP meets the requirements of Minnesota Statutes §103B.235, Minnesota Rules 8410.0160, and the MCWD Watershed Management Plan and recommends approval.

Attachments:

1. Mound Map
2. Mound Coordination Plan
3. Mound LWMP (via website and Dropbox)

RESOLUTION

RESOLUTION NUMBER: 19-057

TITLE: Approval of Mound Local Water Management Plan

WHEREAS, on January 11, 2018, the MCWD adopted its Watershed Management Plan (WMP) pursuant to Minnesota Statutes §103B.231 and Minnesota Rules 8410, which describes how the MCWD will fulfill its responsibilities under the Metropolitan Surface Water Management Act for implementation over the period 2018-2027, and which is guided by the organizational strategy and approach defined through the Balanced Urban Ecology policy; and

WHEREAS, the Balanced Urban Ecology policy prioritizes partnership with the land use community to integrate policy, planning, and implementation in order to leverage the value created when built and natural systems are in harmony; and

WHEREAS, the Balanced Urban Ecology policy rests on the guiding principles of focusing in areas of highest resource needs, being flexible to respond to opportunities that arise through land use changes, and working in partnership to achieve the MCWD's goals; and

WHEREAS, on watershed district adoption of its WMP, cities and towns (local government units or LGUs) within the watershed must prepare local water management plans (LWMPs) that meet content requirements of Minnesota Statutes §103B.235, Minnesota Rules 8410.0160 and the WMP; and

WHEREAS, the LWMP is a primary tool to provide a framework for increased early coordination of land use and water planning through the coordination plan that is a required component of the LWMP and the content of which is described in the WMP, Appendix A; and

WHEREAS, the MCWD will prioritize implementation efforts and resource deployment based on its established priorities and LGU commitment to coordination as demonstrated through the coordination plan and its implementation by the LGU; and

WHEREAS, the City of Mound (City) has revised its LWMP and submitted it to the MCWD for review and approval; and

WHEREAS, MCWD staff reviewed the draft LWMP, provided detailed written comments on the LWMP, and thereafter worked with City staff to achieve the development of a proposed LWMP for consideration by the MCWD Board of Managers; and

WHEREAS, the Metropolitan Council has reviewed the LWMP and provided its written comments to the MCWD in a letter on September 24, 2018, and the MCWD has fully considered the comments; and

WHEREAS, the LWMP states that the City does not choose to exercise sole regulatory authority but, instead, wishes that the MCWD continue to require permits for the use and development of land, and otherwise exercise its regulatory authority, within the meaning of Minnesota Statutes §103B.211, subd. 1(a)(3); and

WHEREAS, the LWMP states that the City elects to continue to act as the Local Government Unit responsible to implement the Minnesota Wetland Conservation Act; and

WHEREAS, the LWMP contains a coordination plan that meets the standards set forth in the MCWD WMP, Appendix A; and

WHEREAS, the MCWD has determined that the final revised LWMP meets the requirements of Minnesota Statutes § 103B.235, Minnesota Rules 8410.0160, and is consistent with the MCWD WMP including Appendix A, "Local Water Plan Requirements";

NOW, THEREFORE, BE IT RESOLVED, that the MCWD hereby approves the City of Mound Local Water Management Plan; and

BE IT FURTHER RESOLVED, that the Board approves the associated coordination plan and adopts it on behalf of the MCWD; and

BE IT FINALY RESOLVED that the City is to adopt and implement its LWMP within 120 days, and to notify the MCWD within 30 days thereafter that it has done so.

Resolution Number 19-057 was moved by Manager _____, seconded by Manager _____.
Motion to adopt the resolution ___ ayes, ___ nays, ___abstentions. Date:_____.

_____ Date: _____.
Secretary

National Wetlands Inventory & DNR Public Waters

August 2018

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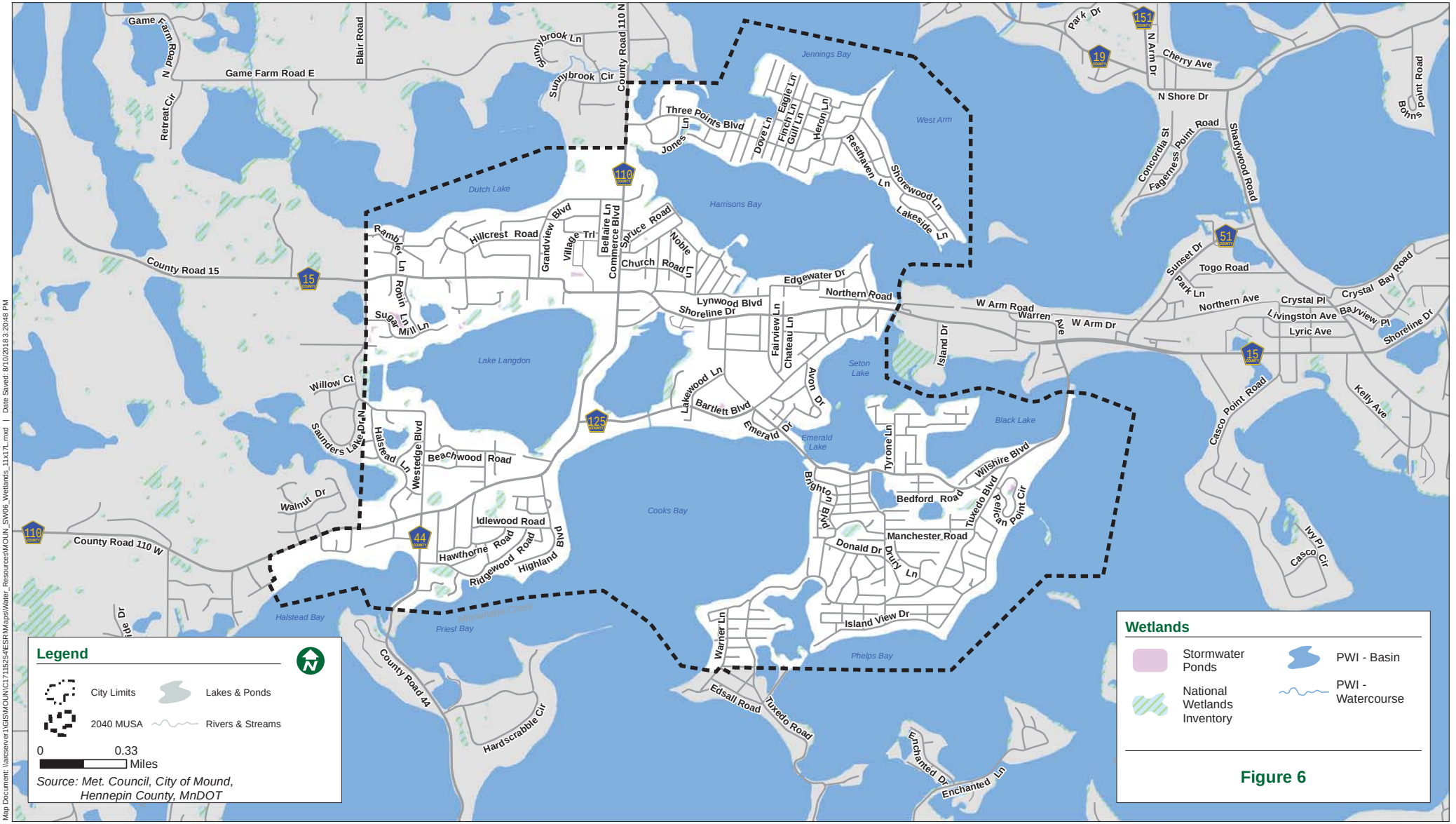

Mound – MCWD Coordination Plan

Early coordination and collaboration between entities is the key to maximizing shared water resource goals and community goals for private redevelopment and public capital improvements. It is the intent of the City to leverage this coordination to efficiently manage water quality, natural resource threats and opportunities that arise through land use change, our shared interest in conservation, and overall maximize the asset value of the City's natural resources in the future.

Coordination Plan

The following coordination plan will be adjusted and expanded as deemed appropriate by the City and MCWD during implementation. The City Manager is the primary City contact and the Policy Planning Manager will be the District contact for the coordination plan.

1. Annual meeting – City and MCWD staff will meet during the first quarter of each year to review the following:
    a. National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer Systems (MS4) reports and activity from the previous year
    b. Draft Capital Improvement Plans (CIP) for each organization for the upcoming year. The City will focus coordination of the Streets, Stormwater and Park CIPs with MCWD.
    c. Opportunities for early or improved coordination and review of land use change applications
    d. Regulatory coordination to identify areas of collaboration
    e. Areas for improved coordination and process improvement.
    f. Public Education plans, resources and opportunities.
    g. Operation and maintenance of partnership projects.

2. Land Use Planning and Regulatory Coordination- The City of Mound staff will continue to route requests for land use approvals to the District in an effort to maximize water resource benefits and streamline regulatory processes. Specific areas of regulatory coordination include the following:
    a. The City will continue to rely on MCWD to maintain authority for reviewing and approving applications for compliance with MCWD's rules and enforcing those rules as necessary. The City will rely on the water resource management standards set forth by MCWD in Mound.
    b. The City will require documentation of required MCWD permits in advance of issuing applicable City permits. Approved MCWD permits will be stored with other project documentation for future reference.
    c. Pre-application meetings and permit reviews will be coordinated with MCWD early in the planning process as necessary.
    d. The City will continue to collaborate with MCWD on construction site inspections and compliance.
    e. MCWD will keep the City appraised of water resource violations and expectations for compliance.
    f. Key Conservation areas- The City will assist MCWD in the preservation of those areas identified by MCWD by considering them in land use and zoning decisions.
    g. The primary person responsible for regulatory coordination at the City of Mound is the City Manager and the Permitting Program Manager at MCWD
    h. The City and MCWD will include each other in the notification protocols for Illicit Discharges.

3. Public Infrastructure Improvements. The City of Mound staff will continue to route significant infrastructure improvements (streets, stormwater and parks in particular) to the MCWD as early

in the planning as possible in order to maximize resourcing opportunities, reduce any regulatory process delays and solicit any best practice expertise/ experience.

a. Infrastructure and land improvements that require MCWD permits will be coordinated early in the planning and design process so that the regulatory process may be efficient and integrated water and natural resource improvements may be explored.
b. The City will brief the MCWD on the Streets, Stormwater and Parks CIPs each year at the annual meeting. The City intends to coordinate applicable projects at the concept stage of project development partner, on competitive grant programs and leverage MCWD technical resources and planning assistance.
c. The City will brief the MCWD on operation and maintenance of partnered improvements per agreements in place each year at the annual meeting. Also, the City intends to utilize the District's resources as necessary throughout the year to adequately operate and maintain these improvements.
d. Evaluate potential collaborative opportunities for cooperative funding through the District's responsive CIP program.

4. Education coordination and partnership. The City will provide support and assistance to MCWD with the District's educational programs in the form of information sharing and help with promotion materials. The City will identify target audiences and educational needs and collaborate with MCWD to create educational opportunities to meet these needs.

BOLTON & MENK

Real People. Real Solutions.

SURFACE WATER MANAGEMENT PLAN
CITY OF MOUND, MN

May 9, 2019

Submitted by:
Bolton & Menk, Inc.
2638 Shadow Lane, Suite 200
Chaska, MN 55318
P: 952-448-8838

Surface Water Management Plan
Mound, Minnesota

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision, and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

By: 

Robert Bean, P.E.
Registration No. 40410

Date: May 9, 2019

TABLE OF CONTENTS

Appendices

1. EXECUTIVE SUMMARY

1.1. Introduction

The City of Mound has prepared this Surface Water Management Plan (SWMP) to provide City staff and its residents with direction concerning the administration and implementation of surface water management activities within the community. The SWMP inventories land and water resources within the City and presents water management policies and goals that address known surface water-related problems and concerns about future development activities. The SWMP also addresses the requirements of the various regulatory agencies involved in surface water management.

1.2. Surface Water Management Plan Content

The City of Mound's SWMP has been developed to meet the needs of the community and address the management planning requirements of the Metropolitan Surface Water Management Act. The SWMP has been prepared in general accordance with Minnesota Rules Chapter 8410 and follows the plan outline identified in the rules. The following paragraphs identify the major sections of the SWMP and where information can be located in the plan document.

SECTION 1: EXECUTIVE SUMMARY
This section presents an introduction for the local water management plan, a summary of City objectives, regulatory requirements included in the plans preparation, and a general overview of the plan contents. This section also summarizes strategic recommendations for consideration by the City in implementing the SWMP.

SECTION 2: SURFACE WATER MANAGEMENT PLAN PURPOSE
This section outlines the purpose of this plan.

SECTION 3: WATER RESOURCES MANAGEMENT RESPONSIBILITIES AND RELATED AGREEMENTS
This section identifies any surface water-related agreements between the city and adjacent communities, organizations or government agencies.

SECTION 4: LAND AND WATER RESOURCES INVENTORY
This section categorizes a wide range of information under the subsections entitled Physical Environment, Human Environment, Surface Water System and Groundwater Resource Data. The subsections provide information and references regarding water resource and physical factors within the City of Mound, including the following:

- Climate and Precipitation data.
- Topographic, geologic and groundwater information.
- Surface soils information
- Fish and wildlife habitat
- Unique features and scenic areas
- Land use and public utility services
- Potential pollutant sources
- Surface water, wetlands, flood studies and water quality data
- Groundwater resource data

SECTION 5: GOALS AND POLICIES
This section outlines goals and policies addressing water resource management needs of the City and their relationship with Regional, State, and Federal goals and programs. Goals and policies relating to the following issues are presented:

- Water quality
- Water quantity
- Erosion and sedimentation
- Wetlands
- Public ditch systems
- Groundwater
- Recreation and ecological integrity
- Education and Public Involvement
- Training, Inspection and Enforcement
- Low impact development, natural area preservation and water resource protection
- Municipal Housekeeping

SECTION 6: ASSESSMENT OF ISSUES AND CORRECTIVE ACTIONS
This section provides an assessment of existing or potential water resource related issues within the City. This section also describes potential structural, nonstructural and programmatic solutions to the identified problems. Assessments of the following issues are included:

- Excessive nutrient levels and MCWD phosphorus reduction
- Construction site erosion and sediment control
- Increase in runoff discharge rates from new and redevelopment
- General Storm System Maintenance
- Street and Utility Improvement Project Coordination
- Stormwater Runoff Management and Treatment Project Opportunities

SECTION 7: IMPLEMENTATION PRIORITIZATION and FINANCIAL CONSIDERATIONS
This section ranks the policies and corrective actions from Sections 5 and 6 in an effort to associate a prioritization schedule with the items identified. The section also includes a summary of funding sources available to the city.

SECTION 8: ADMINISTRATION
This section presents the process for plan review, approval, and making amendments.

2. SURFACE WATER MANAGEMENT PLAN PURPOSE

This Surface Water Management Plan (SWMP) meets the requirements of Minnesota Statute 103B.235 and Minnesota Rule 8410. Minnesota Statute 103B.201 states that the purposes of the water management programs are to:

1. Protect, preserve, and use natural surface and groundwater storage and retention systems;
2. Minimize public capital expenditures needed to correct flooding and water quality problems;
3. Identify and plan for means to effectively protect and improve surface and groundwater quality;
4. Establish more uniform local policies and official controls for surface and groundwater management;
5. Prevent erosion of soil into surface water systems;
6. Promote groundwater recharge;
7. Protect and enhance fish and wildlife habitat and water recreational facilities; and
8. Secure the other benefits associated with the proper management of surface and groundwater.

The City of Mound is situated entirely within the Minnehaha Creek watershed, with its drainage ultimately being directed to Lake Minnetonka. Figure 1 shows the City, adjacent communities and Lake Minnetonka.

3. WATER RESOURCES MANAGEMENT RESPONSIBILITIES AND RELATED AGREEMENTS

The City of Mound is responsible for construction, maintenance, and other projects in or along the City's storm water management systems (i.e., ponds, pipes, channels, etc.). With regards to land disturbance, stormwater management, and antidegradation policy, the City of Mound must comply with the Minnehaha Creek Watershed District (MCWD) Rules, NPDES General Stormwater Permit for Construction Activity (MN R100001), NPDES Permit for Municipal Separate Storm Sewer Systems (MS4), and the NPDES Multi-Sector General Permit for Industrial Activity.

3.1 Water Resource Agreements

- With MCWD regarding land use or related project improvements permitting to meet District rules within City boundaries shall be performed by the District.

Agreements for the Downtown Redevelopment:

- Phase 1: Villas on Lost Lake: Funding Agreement (ex. 01/2006): Incorporates: Exhibit B (Maintenance Declaration), Exhibit C (License Agreement), and Attachment A (Stormwater Access Areas). Funding Agreement expires after 5 years except paragraphs 3 and 5 which survive expiration
- Phase IV: Transit Station: Maintenance Declaration (ex. 01/2007)
- Phase IV: Cooperative Agreement (ex. 08/2006) between Church of Our Lady of the Lake, City of Mound and MCWD. Incorporated Exhibit B: Easement executed 08/2006 w/Attachment A: Site Plan of Easement and Exhibit C: Operations and Maintenance Plan. Filed and recorded 08/29/2006
- Phase IV: Cooperative Agreement between City of Mound, Upper Tonka Little League, Inc. and MCWD (ex. 09/2006 and 02/2007, resigned correction on porous concrete (not asphalt) 04/2013. Attachment A: Maintenance Declaration (09/60) and incorporated Attachment B: Operation and Maintenance Plan. Recorded Declaration 06/2013
- Cooperative Agreement with Minnehaha Creek Watershed District for the Centerview Park Shoreline Demonstration Project, executed January 20, 2009

The regulations outlined in this plan do not supersede those put forth by the Minnehaha Creek Watershed District or other Local, State, or Federal agencies. If a discrepancy exists between regulations contained in this plan and other agencies, the more restrictive requirement shall govern.

3.2 Plan Coordination

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Education coordination and partnership. The City will provide support and assistance to MCWD with the District's educational programs in the form of information sharing and help with promotion materials. The City will identify target audiences and educational needs and collaborate with MCWD to create educational opportunities to meet these needs.

4. LAND AND WATER RESOURCE INVENTORY

4.1. Physical Environment

4.1.1. Climate and Precipitation

Mound has a Humid Continental Climate, typified by considerable seasonal temperature differences, hot and humid summers, and cold to extremely cold winters, and is located in USDA Plant Hardiness Zone 4b. Native vegetation has a seven month growing season (April to October) and crops have a five month growing season (May to September). Two-thirds of the precipitation occurs during the crop growing season, with a total of almost 31 inches annually. Refer to the links provided below for the 30-year average of temperature and precipitation data and the Point Precipitation Frequency Estimates provided by the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 for estimated precipitation amounts for specific frequencies, durations, and locations.

https://www.ncdc.noaa.gov/data-access/land-based-station-data/land-based-datasets/climate-normals/1981-2010-normals-data

https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=mn

4.1.2. Geology

The general geology of Hennepin County and the City of Mound has been compiled by the Minnesota Geological Survey in a document titled Geologic Atlas of Hennepin County Minnesota (N.H. Balaban, Editor, 1989). The proposed Hennepin County Groundwater Plan (Hennepin Conservation District, 1994) also provides details of the geology and hydrogeology of the County and the City of Mound. Copies of these documents can be viewed at the Hennepin Conservation District Office.

The general surficial geology in the City consists of Des Moines Lobe clayey glacial till. In the southwest part of the city, between Langdon Lake and Halstad Bay, the glacial till deposits are sandy or loamy. Post-glacial deposits of peat and muck occur mainly along the edge of the lakes and bays, but also in low land basins throughout the City. A ridge of sand and gravel (an esker) runs along the southwest corner of the city between Halstad Bay and Priest Bay. These surficial glacial deposits are generally more than 50 feet thick and overlay St. Croix Moraine (Superior Lobe) glacial deposits.

Bedrock is generally at a depth of 150 to 400 feet throughout the City. A buried river valley system crosses the City. In the buried valleys the depth of bedrock is as much as 400 feet. Below the majority of the City the first bedrock contact consists of the Jordan Sandstone Formation. The Jordan Sandstone was eroded in an area from Cooks Bay, to Dutch Lake, to Jennings Bay, exposing the under lying St. Lawrence and Franconia Formations which are fine-grained glauconitic sandstone and shale. The shallowest bedrock occurs in the eastern part of the City from Phelps Bay north to West Arm. The first bedrock contact in this area is the Prairie du Chien Group. The Franconia formation is generally considered an aquitard which separates the Jordan sandstone from the lower aquifer formations. Additional information regarding District geology can be found in the District's Watershed Management Plan.

4.1.3. Topography

The City of Mound consists of gently to steeply rolling hills, separated by several bays or lakes connected to Lake Minnetonka. The Des Moines Lobe till covers the surface but the topography is a general reflection of the underling St. Croix End Moraine. Surface elevations range from 1010 feet above sea level on the west side of the City to 930 feet above sea level along Lake Minnetonka.

4.1.4. Soils

The Natural Resource Conservation Service prepared the Soil Survey for Hennepin County in 1974. This reference shows the location of specific soil types throughout the City of Mound and provides detailed data on the typical characteristics of each soil type (this information is readily viewable on the Hennepin County website).

In general, the soils in the City of Mound have been grouped into the two soils associations as shown on **Figure 4**. Site specific conditions may vary from the general descriptions below especially where development has altered the surface by cutting or filling.

The Erin-Kilkenny-Peaty Muck Association predominates the City. This association consists of gently undulating to hilly, well drained soils on hills with very poorly drained soils in depressions which are commonly connected by drainage-ways. The soils in this association have severe limitations for on-site sewage disposal due to slow percolation rates and/or a high water table. Erosion control on the sloping soils is a significant management concern.

The Hayden-Cordova-Peaty Muck Association dominates the southwest corner of the City. This association consists of undulating to rolling soils on low hills and knolls that are separated by nearly level soils in broad drainage-ways. These soils have moderate to severe limitations for residential and commercial development due to slopes, wetness, and/or frost heaving. Erosion control on the sloping soils is a significant management concern.

4.1.5. Unique Features and Scenic Areas

Dutch Lake, Langdon Lake, Lake Minnetonka and surrounding wetlands provide scenic views and water-based recreational opportunities in Mound. Thirty-one parks and six beaches are scattered throughout the City. A complete listing of parks and beaches, including links to interactive maps, is located on the City's website at the following location:

http://www.cityofmound.com/index.asp?Type=B_BASIC&SEC={0F104A4F-AA36-4390-B573-EAB95D9FF75B}

4.2. Biological Environment

4.2.1. Land Cover

All land within Hennepin County was mapped using the Minnesota Land Cover Classification System (MLCCS). Refer to **Figure 5** for the portion of area in and around Mound. The MLCCS was developed by the Minnesota Department of Natural Resources (MnDNR), and categorizes all areas by type of land cover into two categories. Natural/Semi-natural areas consist of forests, grasslands, wetlands, etc., and Cultural areas consist of urban and agricultural areas. The two categories are further subdivided on the basis of plant types, soil hydrology, plant species, and amount of impervious surface. At this point the city has no goals or policies relating to these classifications. Additional information regarding land use and land cover can be found in MCWD's Watershed Management Plan.

4.2.2. Rare, Threatened, and Endangered Species

The Department of Natural Resources' Natural Heritage and Nongame Research Program maintains a database listing rare plant and animal observations. Currently, no instance of rare plant or animal species is listed within City boundaries.

4.2.3. Fish and Wildlife Habitat

Within Mound, Dutch Lake, Langdon Lake, Lake Minnetonka, and multiple wetlands and woodlands provide habitat for a wide variety of fish, birds, and animals. Fish species include Black Bullhead, Black Crappie, Bluegill, Bowfin, Brown Bullhead, Common Carp, Golden Shiner, Green Sunfish, Hybrid Sunfish, Largemouth Bass, Muskellunge, Northern Pike, Pumpkin Seed, Rock Bass, Smallmouth Bass, Walleye, Yellow Bullhead, and Yellow Perch. Bird species include several of both migratory and non-migratory varieties. Animal species include badger, bat, beaver, chipmunk, coyote, ermine, fox (Gray and Red), Heather vole, Least shrew, Long-tailed weasel, mink, mole, muskrat, Plains pocket mouse, porcupine, rabbit (Eastern Cottontail and White-tailed Jack), raccoon, river otter, Striped skunk, squirrel (Fox, Gray, Red, and Thirteen-lined Ground), Virginia Opossum, and white-tailed deer. Additional information regarding District fish and wildlife habitat can be found in the District's Watershed Management Plan.

4.3. Human Environment

4.3.1. Land Use

The City of Mound is bounded by the Cities of Minnetrista and Spring Park, and very little developable space remains. Land use is an important factor in estimating surface water runoff, as the impervious surface associated with each land use greatly affects the amount of runoff generated. **Figure 2** exhibits existing land uses in Mound, and **Figure 3** exhibits the projected land uses for the year 2040. Land cover consists of mostly residential development, with a few pockets of wetlands and forest. Commercial and industrial land uses are mainly concentrated along County Roads 15 and 110.

4.3.2. Metropolitan Urban Service Area (MUSA)

Mound is located within the MUSA. The Metropolitan Urban Service Area is defined as the area in which the Metropolitan Council oversees the planning, installation, and maintenance of regional facilities, such as sewers and highways.

4.3.3. Open Space and Recreation

Dutch Lake, Langdon Lake, and Lake Minnetonka provide opportunities for sport fishing and water recreational activities during the summer. In the winter, lakes are used for cross-country skiing, snowmobiling, and ice fishing. Numerous city parks provide outdoor recreational opportunities, and the Dakota Rail Trail provides a location for walking, running, and biking. Also, several regional parks, trails and wildlife management areas are located within the county.

Lake Minnetonka has public access from boat launches in Mound at Harrison Bay, Phelps Bay, and Cooks Bay. In addition, there are many public locations for snowmobile access to Lake Minnetonka. Dutch Lake is used for fishing, boating and swimming; the YMCA has a swimming beach on the north central side of the lake (in the City of Minnetrista). Public access and boat launches to the lake are available from City of Mound property on the southeastern side of the lake and on the south side of the lake. Langdon Lake is used for fishing and non-contact recreational activities. There is a

public access from city property on the eastern side of the lake but no public boat launches are located on the lake. Additional information on City parks, trails, and water based recreational areas can be found in the City's Comprehensive Plan.

4.3.4. Potential Pollutant Sources

Potential environmental hazards within the City include known and potential sources of soil and groundwater contamination listed by the Minnesota Pollution Control Agency (MPCA) and wells.

Known and Potential Sources of Soil and Groundwater Contamination: The MPCA maintains a database of sites with known or potential soil and groundwater contamination, including Superfund candidate sites, contaminated soil treatment facilities, leak sites, petroleum brownfields, state assessment sites, and voluntary investigation and cleanup sites. The database contains sites that have already been investigated and cleaned up, sites currently enrolled in MPCA cleanup programs, and sites suspected of contamination but found to be clean after investigation. A complete listing of sources and interactive map is provided at the following link:

https://www.pca.state.mn.us/data/contaminated-sites-data

Wells: When properly installed, wells pose no threat for potential contamination of groundwater. However, if improperly installed or abandoned, wells can provide a conduit for pollutants to enter groundwater. The County maintains an Index of known wells, some of which have been properly abandoned and sealed. However, those still in operation or abandoned but not properly sealed may allow for contamination of aquifers.

4.4. Hydrologic System

4.4.1. Public Waters and Wetlands

The MDNR currently lists 11 protected waters, wetlands and water courses within the City of Mound of 2.5 acres or larger. Minnesota Chapter 103G provides specific criteria for protected status and the MDNR Protected Waters and Wetlands (PWI) maps identify the protected waters. In addition to the MDNR PWI Maps, National Wetlands Inventory (NWI) Maps have been prepared by the U.S. Fish and Wildlife Service. **Figure 6** shows NWI mapping and public waters in and around Mound. Also, Mosquito Wetland Inventory Maps have been prepared by The Metropolitan Mosquito Control District. These maps are available at the following link.

https://www.mmcd.org/

The Minnehaha Creek Watershed District has completed a Functional Assessment of Wetlands (FAW), which includes those within the District in the City of Mound. The assessment identifies the locations of wetlands and provides a functional classification to all wetlands greater than ¼ acre in size. The categories are based on the function and value as determined in the field and include Preserve, Manage 1, Manage 2 and Manage 3. These categories are used to assist in managing water resources and applying buffer standards. The City will utilize the wetlands assessment as part of the site plan review process for individual projects, as well as for "global" planning activities. The City relies on the District for administration of its wetland protection rule. Refer to the following link for more information on MCWD's FAW. The City has accepted responsibility as the Local Government Unit under the Minnesota Wetlands Conservation Act and will review projects impacting wetlands per WCA requirements on a case-by-case basis in accordance with State wetland laws and rules.

http://www.minnehahacreek.org/41-integration-past-planning-efforts/412-functional-assessment-wetlands

4.4.2. Flood Insurance Studies

The current Flood Insurance Study (FIS) applicable for the City is dated November 4, 2016. The Federal Emergency Management Agency (FEMA) Community Number for the City of Mound is 270176. The Firm Panel Number is 0005B. The FIRM identifies areas within the City as being within Zone A: 100-year floodplain (flood elevation not determined); Zone A2: 100-year flood plain (flood elevation determined); Zone B: 100-year to 500-year flood plain; or Zone C: Areas of minimal flooding. The FIRM generally identifies flood levels but only the approximate extent of flooding since it is not based on accurate topography. The City currently uses the floodplain information to review development proposals based upon the extent of flood plains identified in the FIRM. For determination of specific flow rates and floodplain elevations, a detailed hydrologic/hydraulic analysis may be required utilizing survey-accurate topographic data. Refer to the following link for more information regarding the FEMA 100-year floodplain areas around the City.

https://msc.fema.gov/portal/advanceSearch#

4.4.3. Stormwater Management System

As shown on the City's Storm Sewer Map (Figure 8), the City of Mound has an extensive storm sewer system for surface water management. The existing system generally operates efficiently removing stormwater from City property and roadways, with the majority of the system discharging directly into City water bodies and lakes. The major subwatershed areas within the City are shown on the Subwatershed Maps in Appendix B.

As part of the SWMP preparation, a hydrologic analysis was conducted for the major subwatershed areas. The hydrologic modeling utilized the XPSWMM software to determine runoff from design events using the Soil Conservation Service (SCS) TR-20 methodology. It provides a technical planning tool to address risk, along with a mechanism to consider various stormwater-related alternatives. However, the results should not to be used for design-level detail. The analysis included subwatershed delineation from USGS topography, available 2' aerial contours, and field reconnaissance. The analysis determined subwatershed areas, hydrologic conditions, and peak discharge rates for the 1-year, 10-year and 100-year, 24-hour storm events.

4.4.4. Known Flooding Issues

The modeling done here, along with information from city staff, indicates that there are sewer pipes, drainage ways, ponds, and wetlands within the city that must be adequately maintained to keep surface flooding to a minimum. These areas may experience minor inconvenience flooding during extreme events and may not be within the FEMA 100 year floodplains. The city will continue to add pretreatment measures to improve quality of runoff discharged and maintain conveyances and basins as necessary to limit flooding potential.

4.4.5. Water Quality Data & Monitoring Sites

MCWD monitors and collects water quality data in many of the lakes and streams in the District, and the data is publicly available through the Minnesota Pollution Control Agency's Lake and Stream Information Tool at the following link:

https://cf.pca.state.mn.us/water/watershedweb/wdip/index.cfm

4.4.6. Impaired Waters

The Federal Clean Water Act requires states to establish water quality standards, to test surface waters, and formally list those as "impaired" that do not meet the water quality standards. Subsequent sections present more detail on the impaired waters program and its relationship to Mound's stormwater management program. A Total Maximum Daily Load (TMDL) study is the next step for an impaired water, although it can be delayed years after identification of the impairment. The TMDL study can result in very specific water quality obligations for Cities. Once the TMDL Study is accepted by the MPCA, an Implementation Plan must be developed, and MS4 Cities must develop an approach to meet the obligations identified in the TMDL Study.

Currently, several water bodies located partially or entirely within the City boundary are listed as impaired, and three different TMDL Studies and Implementation Plans have been completed. The Minnesota State Mercury TMDL addresses impairment due to high levels of mercury. The Twin Cities Metropolitan Area Chloride TMDL address impairment due to high levels of chlorides. The Upper Minnehaha Creek Watershed Nutrient and Bacteria TMDL address impairments due to high levels of nutrients and bacteria. Impaired waters in Mound, or those receiving discharge from Mound, are summarized in **Table 4.1**.

Table 4.1: Impaired Waters

Waterbody/ Watercourse	AUID#	Listed Pollutant	Impaired Use	Year Listed	Year TMDL Approved	Existing Wasteload (TP)	Allowable Wasteload (TP)
Dutch	27-0181-00	Nutrient/ Eutrophication	Aquatic Recreation	2010	2014	29 lbs/yr	10 lbs/yr
Langdon Lake	27-0182-00	Nutrient/ Eutrophication	Aquatic Recreation	2010	2014	92 lbs/yr	58 lbs/yr
Lake Minnetonka (Halsteds Bay)	27-0133-09	Nutrient/ Eutrophication	Aquatic Recreation	2008	2014	11 lbs/yr	5 lbs/yr
Lake Minnetonka (Jennings Bay)	27-0133-15	Nutrient/ Eutrophication	Aquatic Recreation	2008	2014	31 lbs/yr	8 lbs/yr
Lake Minnetonka (West Arm)	27-0133-14	Nutrient/ Eutrophication	Aquatic Recreation	2008	2014	53 lbs/yr	4 lbs/yr

4.4.7. Shoreland and Flood Plain Ordinances

The City of Mound has prepared and adopted a shoreland ordinance in accordance with MnDNR requirements to provide for the development of shorelands of public waters. The City's Shoreland District is an overlay zoning district existing within 1,000 feet or less of a MnDNR protected water. The district applies restrictions above and beyond the underlying zoning district of the affected property based on the classification of the protected water body. The water body/shoreland classifications determined by the MnDNR are shown in Table 4.2.

Table 4.2: Public Waters Classification for Lakes

		OHWL (feet)	Protected Waters Inventory I.D. #
(1)	**Natural Environment (NE) lakes**		
	Saunders Lake	944.3	27-185
(2)	**Recreational Development (RD) lakes**		
	Dutch Lake	939.2	27-181P
	Langdon Lake	932.1	27-182P
(3)	**General Development (GD) lakes**		
	Lake Minnetonka	929.4	27-133P
	Lost Lake	929.4	27-180

The Shoreland District Ordinance (Sec. 129, Article VIII) identifies allowable uses, lot areas, setbacks and impervious coverage limits for properties adjacent to the protected waters. In addition, the ordinance identifies other development criteria including allowable lowest floor elevations, shoreland alterations, bluff impact zones and agriculture use standards.

To maintain Mound's eligibility in the National Flood Insurance program and to minimize potential losses due to periodic flooding, the City has prepared and adopted a flood management ordinance (Sec 113) in accordance with MnDNR requirements. The floodplain zoning district is an overlay zoning district to existing land use regulations of the city. The ordinance adopts by reference The Flood Insurance Rate Map developed by the Federal Emergency Management Agency and identifies permitted uses, standards, and evaluation criteria for improvements proposed in floodplains. The Shoreland District and Floodplain Management ordinances can be reviewed at the following link:

https://www.cityofmound.com/index.asp?Type=B_BASIC&SEC={C3A02DAE-80D8-4004-B135-482DA4529B14}

4.4.8. Groundwater Resources

Water quality of surface waters can have great effect on groundwater due to the interaction via groundwater recharge and discharge. Mound relies strictly on groundwater (aquifers) for drinking water, and therefore, groundwater quality is equally as important as surface water quality. Multiple aquifers exist within Hennepin County, but the majority of wells are finished in the Prairie du Chien-Jordan Aquifer.

Wellhead Protection

The Safe Drinking Water Act requires states to implement protection programs to prevent contamination of public drinking water sources. Therefore, the Minnesota Department of Health requires public water suppliers to delineate and manage Wellhead Protection Areas (WHPA) surrounding public water sources. Additional information regarding groundwater resources can be found in the City's Water Supply Plan.

5. ESTABLISHMENT OF GOALS AND POLICIES

The City of Mound has developed the goals and policies contained in this section to conform to the water resource purposes specified in Minnesota Statute Section 103B.201. They have been developed to avoid conflict with existing State, Regional, and County goals and policies, and to be generally consistent with the MCWD Plan. The City regulates erosion control, wetlands, floodplain alteration, and stormwater management for all land development within the City limits in accordance with City Ordinance, the NPDES Permit, and the Wetland Conservation Act. The City relies on the Watershed to administer and enforce its Rules.

Additionally, the City's MS4 Storm Water Pollution Prevention Plan (SWPPP) contains information related to the required Best Management Practices (BMPs) and how the City intends to meet the overall goals of the SWPPP, which are directly related to the goals and policies listed here.

The goals and policies developed by the City address:

- Water quality
- Water quantity
- Erosion and sediment control
- Wetlands
- Public ditch systems
- Groundwater
- Recreation, fish and wildlife
- Education and public participation

Outlined below are the goals and policies developed for each of the above items.

5.1. Water Quality

Goal:
To maintain or improve water quality of surface waters throughout the City by reducing sediment and nutrient loads.

Policies:

1. As an MS4 community the City has developed a Storm Water Pollution Prevention Plan (SWPPP) outlining many of the municipal BMPs and associated actions being taken by the City. The SWPPP is referenced here and contains additional information on many of the following topics.

2. In the design and construction of new and redevelopment, treatment of stormwater runoff is required prior to discharge to a surface water or wetland. The City will continue to review and approve construction plans for conformance with the requirements of NPDES permitting.

3. The City will rely on MCWD to administer their rules regarding water quality and will require verification that District permit requirements are met.

4. The City will continually evaluate opportunities to reduce the phosphorus load to the area surface waters. Additionally, the City contributes runoff to multiple public waters currently on the State's

303(d) list of impaired waters for excessive nutrient concentrations. Therefore, the City will implement nutrient reduction BMPs as necessary to meet wasteload allowances approved. Additional information regarding TMDL requirements and tracking can be found in the City's SWPPP, which can be obtained at City Hall.

5. The City will make water resource protection a priority for city property, including: parks, open space, and other recreational areas. Areas are swept as needed and buffer establishment or other retrofit treatment techniques may be incorporated into future projects within these areas, when feasible.

6. The City inspects and maintains its public stormwater management facilities per requirements outlined in the City's MS4 Program and SWPPP in order to ensure their continued effectiveness. When new facilities are required to meet MCWD requirements for public improvements, the City will develop Operation and Maintenance Plans in coordination with the District and add them to the City's SWPPP.

   For private development or re-development, the City may require stormwater management measures to be contained within outlots; however, facilities will remain private, and responsibility for operation and maintenance shall lay with the entity responsible for overall property maintenance. Private facilities can often be inadequately operated and maintained due to expensive remediation costs, under staffing, or lack of knowledge. Since inadequate operation and maintenance can result in these facilities becoming pollutant sources, monitoring of their condition and maintenance are important to keep them operating effectively.

   Currently, the City does not possess a comprehensive inventory of all private facilities within City boundaries used to meet governmental requirements for stormwater management. In order to adequately monitor and maintain private facilities moving forward, maintenance agreements between the City, MCWD, and the property owner will be required for all improvements used to meet governmental requirements and must be recorded to the property. When stormwater management facilities are required for private improvements due to MCWD regulations, the City will rely on the District to approve maintenance agreements and supply a copy of the agreement to the City. When private improvements do not meet threshold for District regulations but stormwater management facilities are necessary to meet City requirements, the City will develop and approve maintenance agreements and supply a copy of the agreement to the District. Maintenance Agreements shall outline maintenance responsibilities following completion of project, specify types and frequencies of inspection and maintenance activities, designate who will conduct inspection and maintenance activities, and outline reporting requirements. As projects are approved, an inventory of private BMPs will be maintained through management of the agreements.

7. The City will continue to sweep paved public streets within the community as outlined in the City's SWPPP and the Housekeeping section, section 5.11 below.

8. The City will continue to implement Best Management Practices (BMPs) on city-owned land as necessary to retain and prevent pollutants from leaving the site.

9. The City requires the preparation and implementation of water resources management and erosion and sediment control plans for construction and land development activities in accordance with NPDES requirements.

10. The City will disperse public education information to foster responsible water quality management practices by city residents and businesses. The public information will include proper lawn fertilizing and other lawn chemical use, disposal of lawn waste and solid, liquid, and household hazardous waste products, as well as many other surface water enhancement educational items.

5.2. Water Quantity

Goal:
To minimize downstream impacts by maintaining peak runoff discharge rates and providing runoff volume reduction.

Policies:
1. The City requires that proposed stormwater discharge rates as a result of development be consistent with the requirements of NPDES Permitting.

2. The City will rely on MCWD to administer their rules regarding peak runoff rates and volume control and will require verification that District permit requirements are met.

3. The City will review downstream stormwater-related impacts (within the community) of development proposals and proactively address water resource-related concerns.

4. The City recognizes the potential environmental impacts associated with constructing new outlets to existing landlocked areas; therefore, the outletting of landlocked areas shall be done only as a last resort and shall be coordinated with the MCWD.

5. The design of new stormwater storage facilities will accommodate the 100-year storm event, providing the required freeboard and avoiding structure flooding. Storm sewers will be designed to pass the10-year rainfall event without the hydraulic grade line extending above the ground at any location, as long as downstream restrictions do not require a reduced-capacity design.

6. Stormwater facilities receiving discharges from adjacent communities will be designed to accommodate existing runoff rates and anticipated volumes.

7. Lowest floor elevations for new buildings shall be at or above the elevations as required by the City's floodplain ordinance, as well as meet the requirements of MCWD's Rules. Wetlands or water bodies without regulatory floodplain elevations or defined ordinary high water levels, but with outlets, shall have low opening elevations a minimum 2 feet above the 100-year high water level and a minimum 1 foot above the emergency overflow elevation. Structures around landlocked basins shall have low opening elevations 2 feet above the back-to-back 100-year events.

8. The City will encourage the use of natural drainageways for conveying stormwater where the drainageway can accommodate or be improved to accommodate proposed flows and volumes.

9. Enhanced infiltration practices will be encouraged, where feasible, in areas where the present or future land use does not have a significant potential to contaminate groundwater.

5.3. Erosion and Sedimentation Control

Goal:
To prevent erosion and sedimentation to the maximum extent practical through construction site permitting, inspection and good municipal housekeeping.

Policies:
1. The City requires the preparation and implementation of erosion and sediment control plans and best management practices for construction and land development activities in accordance with NPDES permit requirements with the ultimate goal of eliminating sediment discharge from the site.

2. The City will enforce the erosion and sediment control plan and best management practices on construction sites through the review and inspection process. Areas adjacent to water bodies and wetlands may require additional BMPs due to their environmental sensitivity.

3. The City will continue to sweep paved public streets as identified in the SWPPP. Areas with direct discharge into lakes, wetlands, and streams will be given first priority and areas requiring additional attention will be swept more on an as-needed basis.

5.4. Wetlands

Goal:
To protect wetland value and ensure conformance with the requirements of the Minnesota Wetlands Conservation Act (WCA), MCWD Rules, and other State and Federal regulations.

Policies:
1. The City administers the review and approval duties associated with the Wetland Conservation Act (WCA). The city defers administrative responsibility to MCWD for conformance with their wetland protection rules.

2. The City will notify parties proposing land disturbing activities (i.e.: altering, dredging, filling, and draining) to verify with MCWD for their wetland protection rules requirements, as well as possible permit requirements from the MDNR and US Army Corps of Engineers (COE).

3. The city contains a large amount of wetland areas that are critical to stormwater drainage throughout the city. The city manages the wetlands as necessary to minimize the potential for structure flooding and maximize public safety. As such, the city must occasionally remove sediment buildup from wetlands and, as in the past, will work with the appropriate agencies on a case-by-case basis.

4. The City will cooperate with interested private or governmental parties on wetland restoration projects and may participate in the State's wetland banking program.

5.5. Public Ditch Systems

Comment:
There are no known county or judicial public ditch systems within the City.

5.6. Groundwater

Goal:
To protect groundwater through prudent management of surface waters and areas of potential contamination.

Policies:
1. The City will cooperate as necessary with County and State agencies to inventory and seal abandoned wells and notify its residents of State standards on well abandonment.

2. The City will consider the significance of sensitive geologic areas when making land use decisions, when reviewing development proposals, or when proposing construction of stormwater facilities. Activities that may have significant contamination potential will be required to include groundwater protection measures.

3. The City will encourage the use of infiltration methods to promote groundwater recharge where groundwater will not be significantly impacted by the land use or stormwater runoff.

5.7. Recreation and Ecological Integrity

Goal:
To protect and enhance recreational facilities, fish and wildlife habitat, and overall ecological continuity.

Policies:
1. The City will support the efforts of Local, State, and Federal agencies promoting public enjoyment, and the protection of fish, wildlife, and recreational resource values in the City.

2. The City will protect wetlands in accordance with the goals and policies of this plan.

3. The City will encourage its residents to retain existing wetlands, vegetation buffers, and open spaces for the benefit of wildlife habitat.

5.8. Education and Public Involvement

Goal:
To educate and inform the decision makers and general public on water resources management issues; and to increase public participation in water management activities.

Policies:
1. The City will continue to promote best management practices for its residents. Public education will include topics such as: fertilizer use and the limited need for phosphorus in fertilizer; lawn care and lawn chemical use; solid, liquid and household hazardous waste disposal; illicit discharge detection; and natural water resource systems and protection methods.

2. The City will distribute educational information or notices regarding various water resources management and protection documents.

5.9. Training, Inspection and Enforcement

Staff training, inspection of City facilities, illicit discharges, and construction sites, and enforcement responses are done in accordance with the City's MS4 Permit requirements. Further information regarding training, inspection and enforcement can be found in the City's SWPPP located at City Hall.

5.10. Low Impact Development/Redevelopment, Natural Area Preservation & General Water Resource Protection

Goal:
To promote Low Impact Development (LID) techniques, preserve natural areas and protect surface water resources.

Policies:
1. The City is aware of the environmental benefits associated with LID and general natural area preservation and will work with development/redevelopment to implement these practices when feasible. These may include, but are not be limited to:

    - Impervious area reduction
    - Impervious area disconnection
    - Decentralized stormwater management
    - Street width reduction
    - Rural street sections
    - Reduced setbacks
    - Ecological/pedestrian corridors
    - Natural space preservation and incorporation into site design
    - Site disturbance minimization
    - Pervious pavement
    - Green Roofs
    - Increased stormwater abstraction (infiltration, filtration, irrigation reuse, etc.)

2. The City currently does not plan to adjust its codes to address LID specifically; however, the codes will continue to be flexible and allow for variance to accommodate LID designs on a case-by-case basis.

3. The City is continually looking for ways to enhance protection of its surface water resources, including the integration of improvement techniques into municipal projects.

5.11. Municipal Housekeeping

Goal:
To conduct operations and maintenance of City facilities and infrastructure as necessary to keep systems operating adequately and limit potential for discharge of pollutants. Additional information regarding municipal housekeeping can be found in the City's MS4 Storm Water Pollution Prevention Plan (SWPPP).

Policies:

1. The City will continue to sweep all paved streets as outlined in the SWPPP.

2. The City will continue to inspect stormwater management facilities, stockpiles, and material handling areas as outlined in the SWPPP.

3. The City will continue to document inspections and maintenance activities as outlined in the SWPPP.

4. The City requires Operation and Maintenance Plans for all stormwater management facilities used to meet governmental requirements. The plans are required to outline operation, maintenance, and inspection schedules and reporting requirements.

6. ASSESSMENT OF ISSUES AND CORRECTIVE ACTIONS

This section contains an assessment of existing and potential water resource related issues presently known within the City, as well as a description of structural, non-structural, or programmatic solutions that are proposed to address or correct the issues. These issues and concerns have been identified by City staff as part of the preparation of this SWMP. Many of the general issues listed here are addressed by policies set forth in Section 5 of this plan, while site-specific issues may have specific proposed solutions.

6.1. Excessive Nutrient Levels and Phosphorus Reduction

Issue:
The City of Mound discharges stormwater runoff directly into Langdon Lake, Dutch Lake and the following bays of Lake Minnetonka: Cooks, Harrisons, Jennings, Phelps, Priests, Seton, Spring Park and West Arm. Runoff carrying nutrients, primarily phosphorus, from developed/undeveloped land to these water bodies ultimately causes elevated nutrient concentration in the waters. High nutrient loads will lead to reduced clarity, excessive algal growth and overall decreased public value of the affected water bodies.

Corrective Action:
The City requires new and redevelopment to apply permanent stormwater treatment measures meeting the requirements of Watershed District and NPDES permitting. In addition, the City must reduce its discharge of phosphorus as outlined in the Upper Minnehaha Creek Watershed Nutrient and Bacteria TMDL (see Section 4 for allowable wasteload for identified impaired waters). In order to achieve the phosphorus wasteload reduction required, the City will employ a variety of BMPs, which may include the following:

- Require development abstraction of additional runoff volume (above that required)
- Evaluate municipal projects for incorporation of additional abstraction
- Evaluate street sweeping effectiveness and adjust as needed
- Natural area preservation
- Partnering with the MCWD for capital projects

Since management of allowable wasteloads defined by TMDLs is required per the MS4 permit, planning of potential BMPs and tracking of pollutant loading is administrated through the City's SWPPP, and the SWPPP should be referred to for the most current information regarding pollutant removal practices and management.

Timeframe:

Ongoing:	Site plan review for permit compliance
Ongoing:	Evaluation of treatment opportunities to decrease pollutant loads
Ongoing:	Reduction of phosphorus discharge to meet wasteload allowed by TMDLs

6.2. Construction Site Erosion and Sediment Control

Issue:
Sediment leaving construction sites pollutes, fills and degrades surface waters, wetlands and conveyance systems.

Corrective Action:
The City will continue to monitor appropriate use of sediment and erosion control practices, as required by NPDES permitting, through the review and inspection process currently in place.

Timeframe:
Ongoing: Plan review and construction site inspection.

6.3. Runoff discharge from new and redevelopment

Issue:
The increased percentage of impervious area typically seen with new and redevelopment can cause a corresponding increase in flowrate and volume discharging from the area. These increases can lead to downstream erosion, flooding and/or decreased water quality if not properly mitigated.

Corrective Action:
The City requires new- and redevelopment to apply permanent stormwater rate and volume attenuation measures meeting the requirements of MCWD and NPDES permitting.

Timeframe:
Ongoing: Site plan review for permit compliance.

6.4. General Storm System Maintenance

Issue:
The existing storm drainage system is performing adequately to convey runoff, although, system maintenance will be required annually.

Corrective Action:
Storm drainage system maintenance required includes pond assessment and cleaning, street sweeping, sewer televising, and GIS/mapping.

Timeframe:
Ongoing: Storm system maintenance.

6.5. Street and Utility Improvement Projects

Issue:
The existing storm drainage system is performing adequately to convey runoff, although, system maintenance will be required annually.

Corrective Action:
As street, sanitary sewer, and water main improvement projects are scheduled, project areas will also be reviewed for potential stormwater management and treatment improvements that were not previously identified. Potential improvements include, but are not limited to, conveyance improvements, stormwater treatment devices, bioretention basins, wet retention ponds, slope stabilizations, and native vegetation restoration.

Timeframe:
Ongoing: Storm system improvements.

6.6. Stormwater Runoff Management and Treatment Projects

Issue:
The existing storm drainage system is performing adequately to convey runoff, although, system maintenance will be required annually.

Corrective Action:
Correct flooding issues on City property as necessary to protect public safety and minimize potential for property damage. Also, collaborate as necessary with the Watershed District and willing private landowners to install stormwater treatment measures (i.e. rain gardens, stormwater treatment devices, etc.) throughout the City to provide additional runoff storage capacity, reduce runoff rates and volumes, and/or reduce pollutant loads. Coordinate stormwater treatment improvements to treat stormwater from areas with inadequate or no treatment and improve the quality of runoff reaching area surface waters.

Timeframe:
Ongoing: Storm system improvements.

7. IMPLEMENTATION PRIORITIZATION & FINANCIAL CONSIDERATIONS

7.1. Implementation Prioritization

Provided below is a generalized ranking of the *policies* and *corrective actions* identified in sections 5 and 6. The High, Medium, and Low format has been selected over a numerical format to emphasize the need for flexibility and the inherent inexactness of trying to quantify something that is fairly subjective. This prioritization is meant as a guide for future planning. Funding appropriations and projects may switch levels at any time given new information/circumstances.

All of the goals and associated policies identified in Section 5 are of high priority. Rather than restate each policy, the following policies are highlighted because they pertain to more recent developments.

Table 7.1: Policy Prioritization

Policy Description	Ranking
Administer and maintain the City MS4 Storm Water Pollution Prevention Plan (SWPPP)	HIGH
Address Total Maximum Daily Load waste load allocations as they are developed (refer to SWPPP for TMDL management)	HIGH
Continued promotion of low impact development techniques, infiltration and general runoff volume reduction • All land improvement proposals, public and private, will be reviewed for stormwater system impacts. City stormwater capacity, system coordination, and pollution prevention BMP activities will be incorporated into project requirements as part of the initial review, approval, and construction permitting processes.	HIGH
Maintain existing storm sewer system to provide adequate treatment and conveyance of runoff • Enhanced sweeping will be conducted throughout all watersheds when weather conditions permit with frequencies based on deposition rates, type/impairment condition of receiving water, and overall TMDL impact. • Publicly-owned stormwater management facilities will be inspected and maintained at frequencies based on MS4 permit criteria, sediment/debris deposition rates, type/impairment condition of receiving water, TMDL impact, and Minnesota Stormwater Manual recommendations. • Shoreline restoration and enhancement will be conducted throughout all watersheds at frequencies based on MS4 permitting criteria, sediment/debris deposition rates, type/impairment condition of receiving water, and TMDL impact.	HIGH

Evaluate street and utility improvement projects for potential stormwater management and treatment improvements • Opportunities for improvement of stormwater capacity, system coordination, and pollution prevention BMP activities will be incorporated into future utility improvement work as appropriate and project financing will allow.	HIGH
Correct flooding issues on City property as necessary and collaborate with MCWD and Private Landowners to install stormwater treatment measures • Stand-alone improvements to stormwater capacity, system coordination, and pollution prevention BMP activities will be evaluated on a case-by-case basis and prioritized based on improvement to public safety, improvement of localized flood mitigation, type/impairment condition of receiving water, and overall TMDL impact.	MED
Expand public education program to make wider use of City website	LOW

7.2. Funding Sources

The City currently has a number of funding sources available to pay for the regulatory controls, management program, and capital improvements identified in this SWMP. They include general tax revenue, special assessments and the City's stormwater utility fee. While general tax revenues and the stormwater utility fee can likely fund the regulatory and management programs, as well as smaller projects, special assessments will generally be required to fund the larger capital improvements projects. The existing City stormwater utility fee generates approximately $110,000 annually for general system maintenance and stormwater management and treatment related improvements. As projects are identified, the stormwater utility fee may be supplemented with the general fund, and if the project provides treatment beyond what is required, grant funding may also be pursued.

7.3. Capital Improvements Program

The City manages capital expenditures for surface water management as part of the Capital Improvement Plan (CIP). The CIP provides long-term planning and management of infrastructure throughout the City. The CIP is a planning document that presents a 10+ year overview of scheduled capital projects to address the City's goals for public infrastructure. The CIP includes a long-term financing plan that allows the City to allocate funds for these projects based on assigned priorities. The 10+ year horizon of the CIP provides the City with an opportunity to evaluate project priorities annually and to adjust the timing, scope and cost of projects as new information becomes available. Changes in community priorities, infrastructure condition and inflation rates require that adjustments be made on a routine basis.

The City has completed a many-years infrastructure renewal program and does not see significant street-related capital reconstruction in the near-term. The capital reconstruction completed in this focused street and utility improvement program included capacity and TMDL removal analysis and projects were incorporated into the yearly projects as determined necessary or appropriate. Therefore, the City does not currently have any potential projects appropriate for a stormwater-oriented CIP. Instead, emerging storm sewer infrastructure requirements and improvement opportunities will be evaluated on a year-on-year basis and incorporated into capital Investment Planning shared with the District annually.

8. AMENDMENT PROCEDURES

8.1. Review and Approval

It is the City's intention to have this SWMP reviewed and approved by the Minnehaha Creek Watershed District (MCWD) in accordance with Minnesota Statutes, Section 103B.235. The plan will also be sent to Metropolitan Council for review and comment, with ultimate adoption as the water resources component of the City's Comprehensive Plan.

8.2. City Amendments

If the City proposes changes to this SWMP, the changes and their impacts will be determined by the City as either a "minor" change or a "major" change. The general descriptions of minor or major changes and the associated review and approval requirements are presented as follows:

Minor Changes would include small adjustments to subwatershed or subdistrict boundaries or other minor changes that would not significantly affect the rate or quality of stormwater runoff discharged across the municipal boundary or significantly affect high water levels within the City. Minor changes also include revisions made to the stormwater related Capital Improvements Program to best meet the City's water resource needs and financial considerations. For proposed minor changes, the City will prepare a document which defines the change and includes information on the scope and impacts of the change. The document will be forwarded to the MCWD for their records. The minor change will be implemented after the document is adopted by the City Council.

Major Changes are those that could have significant impacts on the rates, volumes, water qualities and water levels of stormwater runoff within the City or across its municipal boundaries. For proposed major changes, the City will prepare a document that defines the change and includes information on the scope and impacts of the change. The document will be forwarded to the MCWD for their review and approval. The MCWD shall have 60 days to comment on the proposed revisions. Failure to respond within 60 days will constitute approval. After MCWD approval, the City will adopt the amendment as part of the SWMP.

Appendix A

Figures

2040 Comprehensive Plan

Mound, MN

Study Area

August 2018

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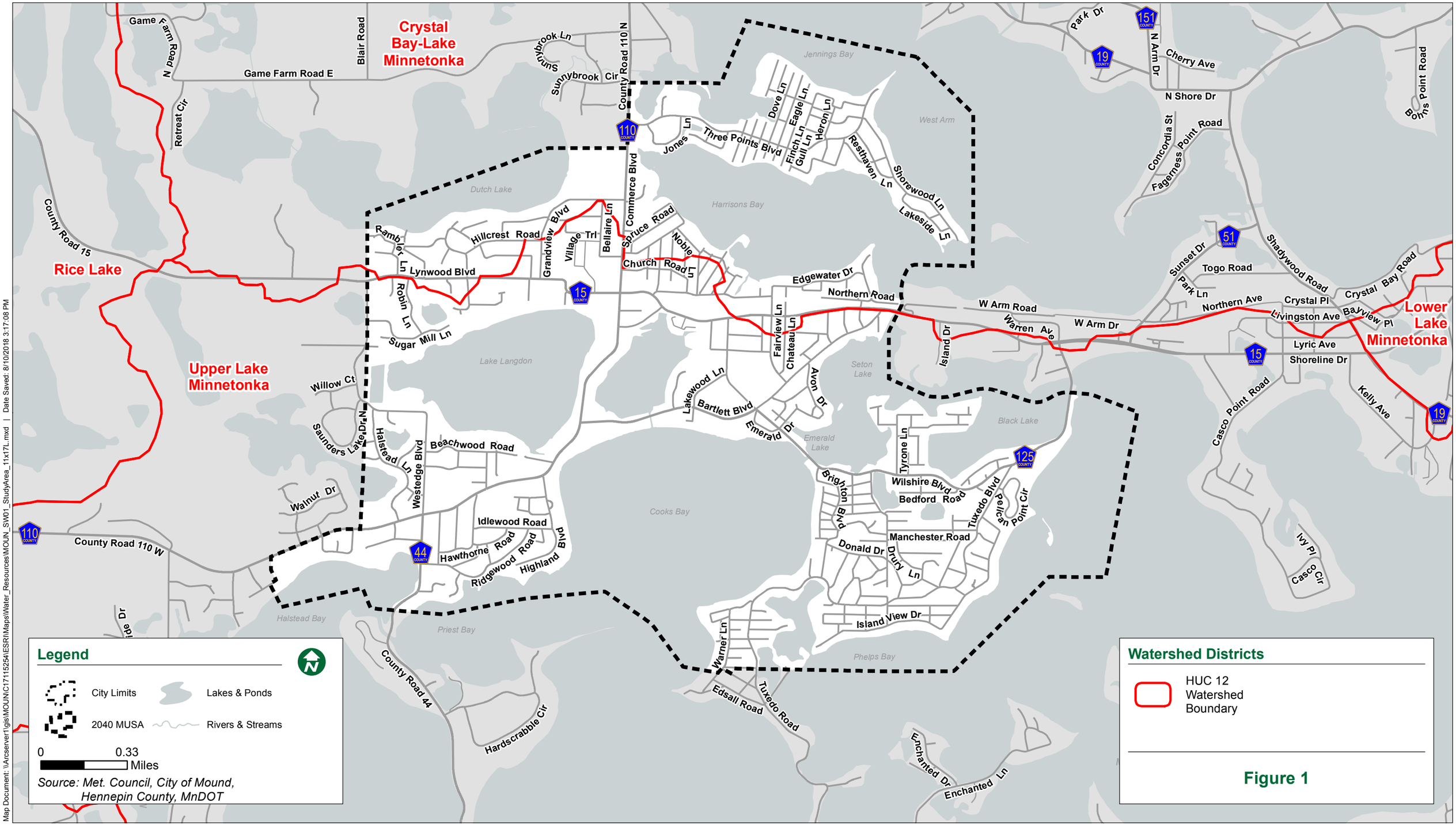

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CITY OF MOUND

2040 Comprehensive Plan

Mound, MN

Existing Land Use

August 2018

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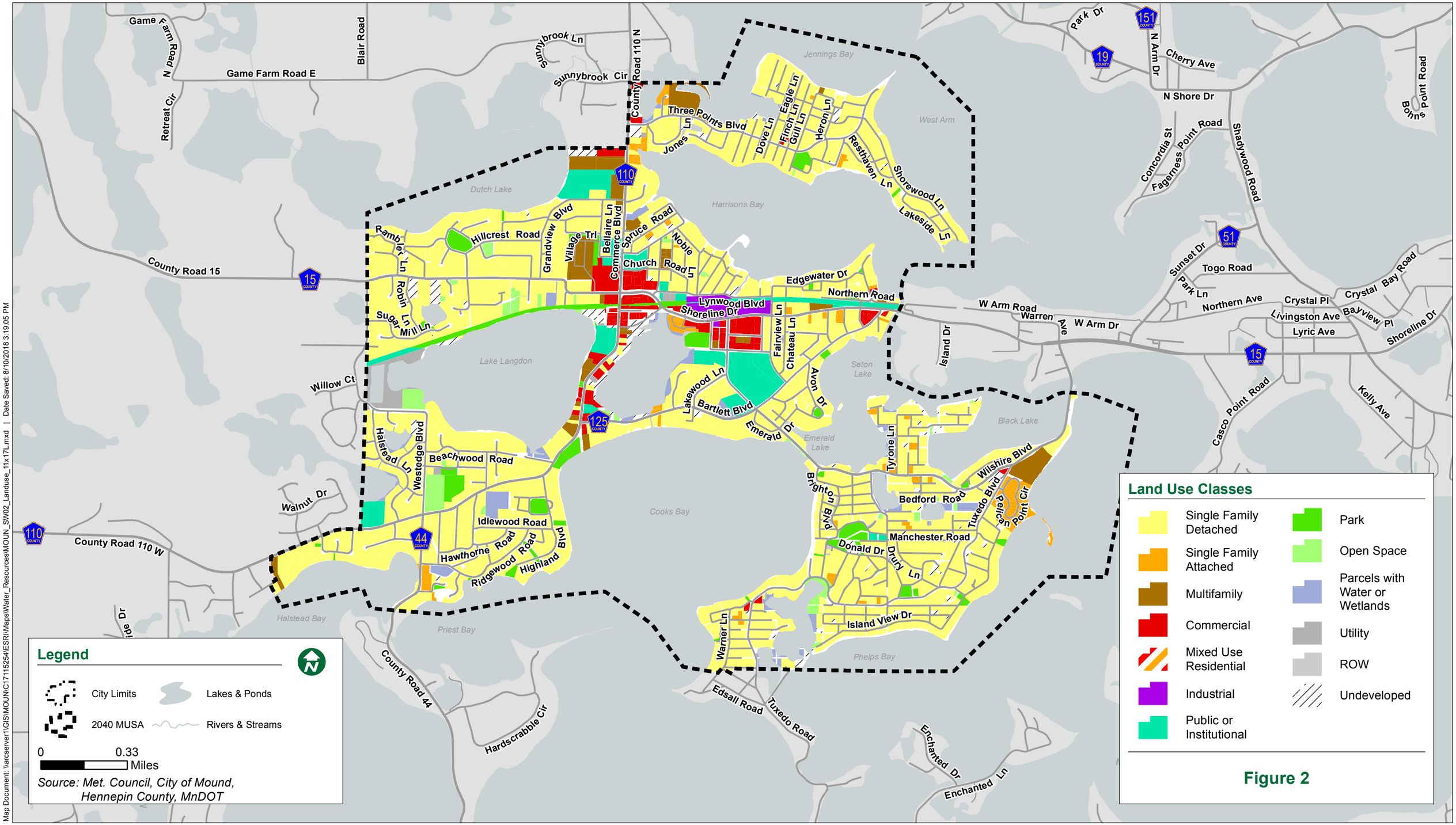

Legend

- City Limits
- 2040 MUSA
- Lakes & Ponds
- Rivers & Streams

0 0.33 Miles

Source: Met. Council, City of Mound, Hennepin County, MnDOT

Land Use Classes

- Single Family Detached
- Single Family Attached
- Multifamily
- Commercial
- Mixed Use Residential
- Industrial
- Public or Institutional
- Park
- Open Space
- Parcels with Water or Wetlands
- Utility
- ROW
- Undeveloped

Figure 2

Map Document: \\arcserver1\GIS\MOUN\C17115254\ESRI\Maps\Water_Resources\MOUN_SW02_Landuse_11x17L.mxd | Date Saved: 8/10/2018 3:19:05 PM

2040 Comprehensive Plan

Mound, MN

Future Land Use

August 2018

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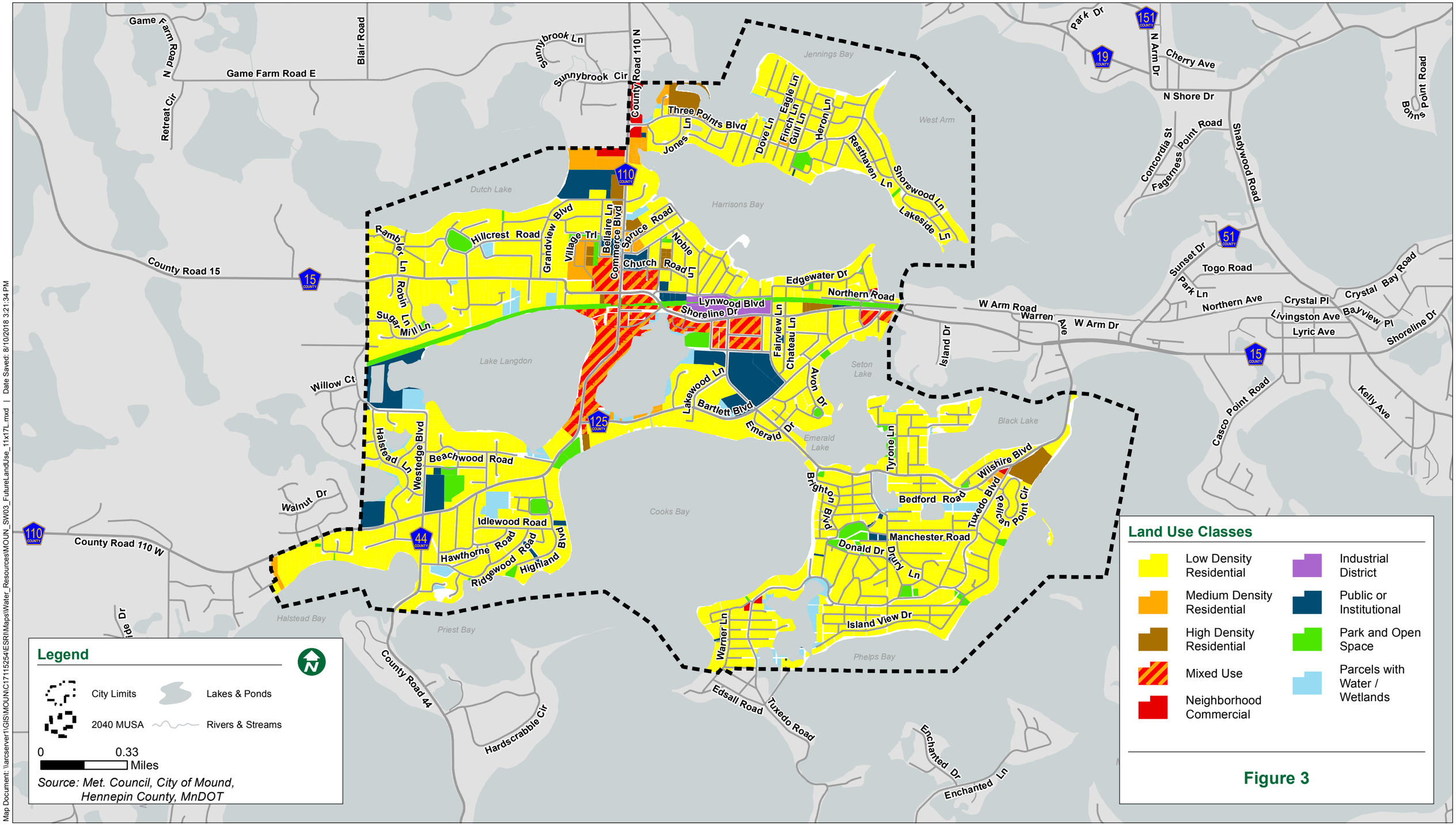

Legend

- City Limits
- 2040 MUSA
- Lakes & Ponds
- Rivers & Streams

0 0.33 Miles

Source: Met. Council, City of Mound, Hennepin County, MnDOT

Land Use Classes

- Low Density Residential
- Medium Density Residential
- High Density Residential
- Mixed Use
- Neighborhood Commercial
- Industrial District
- Public or Institutional
- Park and Open Space
- Parcels with Water / Wetlands

Figure 3

2040 Comprehensive Plan

Mound, MN

Soils

August 2018

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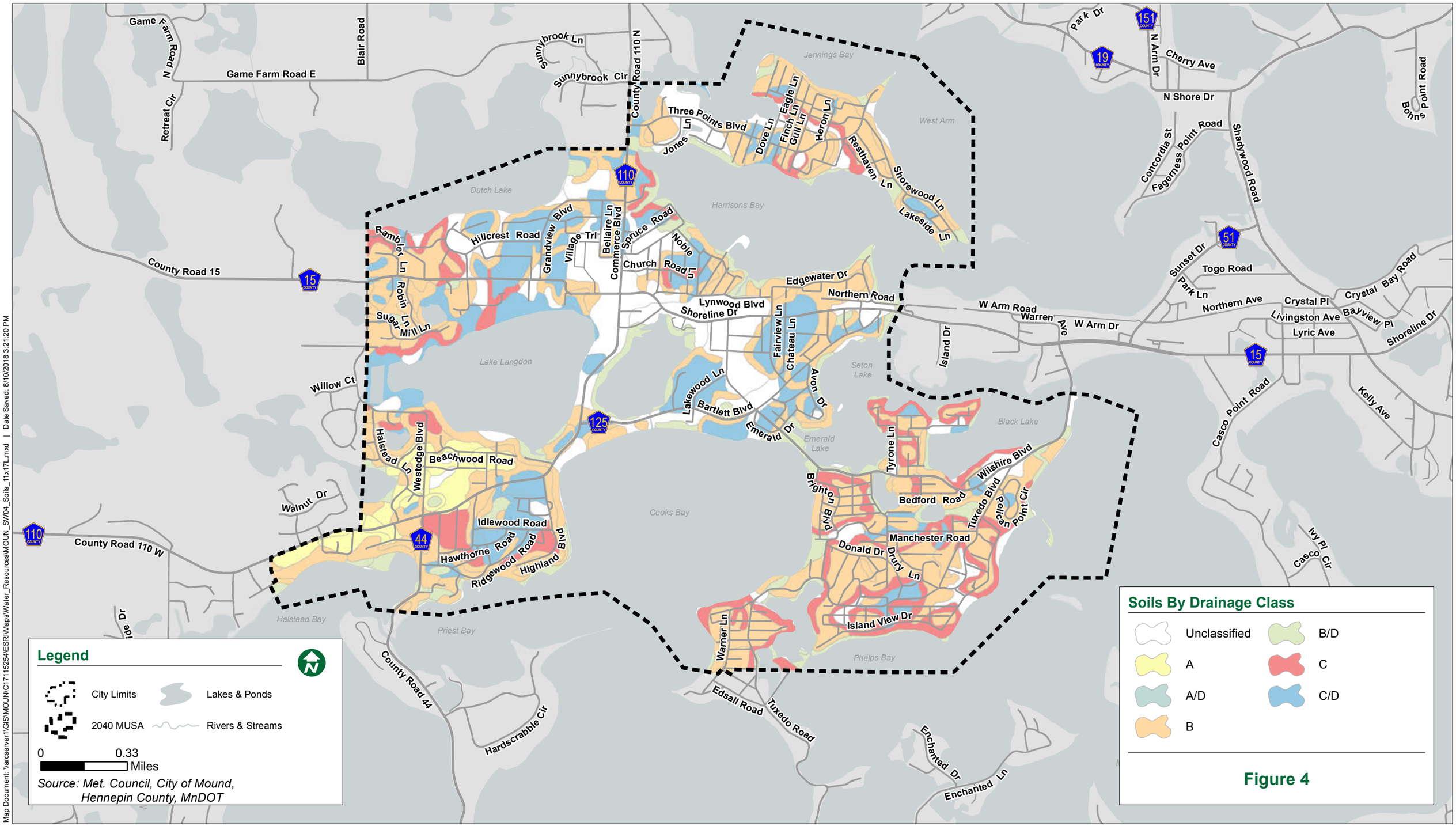


Figure 4

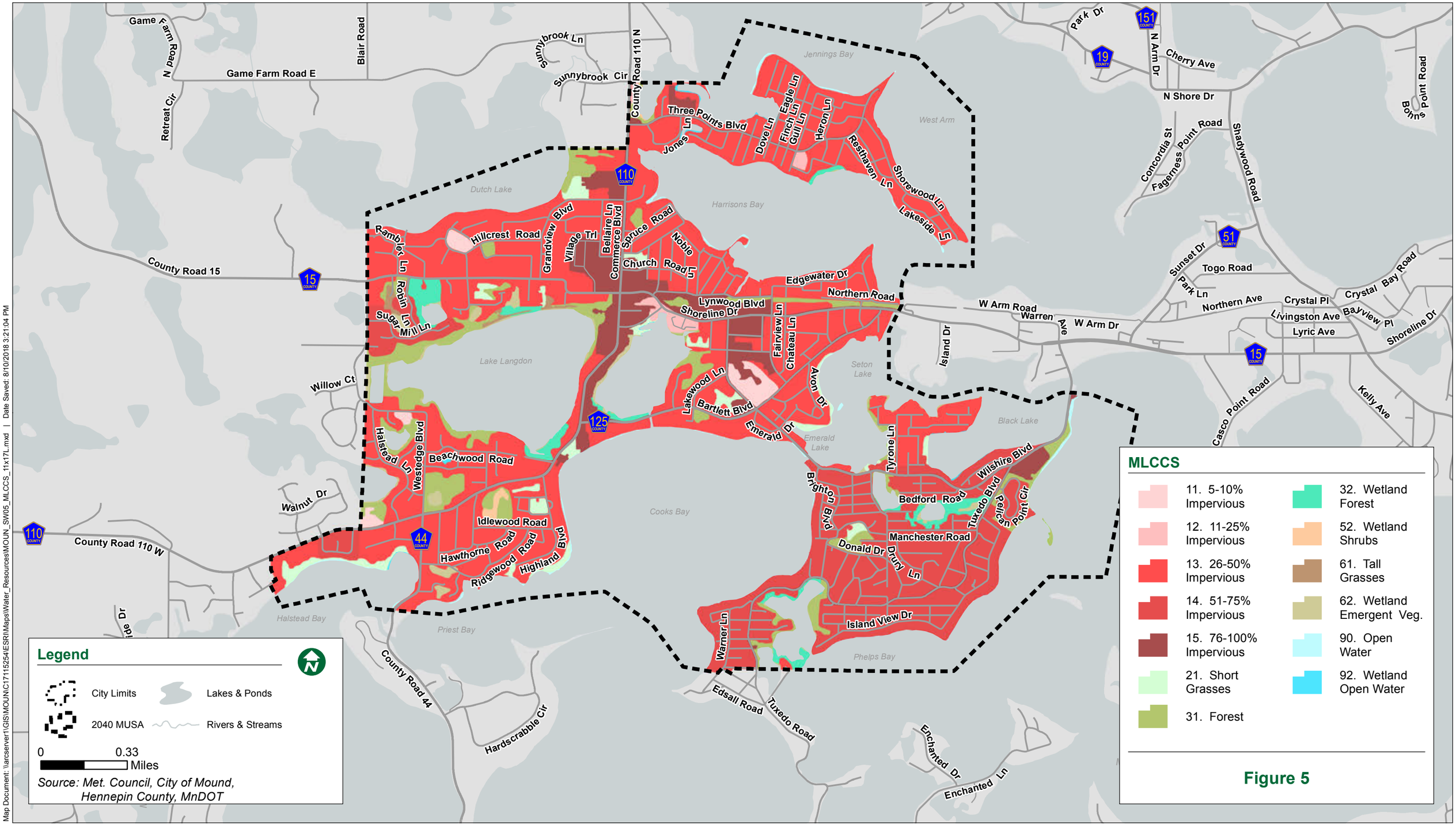
2040 Comprehensive Plan

Mound, MN

Minnesota Land Cover Classification

August 2018

BOLTON & MENK
Real People. Real Solutions.



Legend

- City Limits
- 2040 MUSA
- Lakes & Ponds
- Rivers & Streams

0 0.33 Miles

Source: Met. Council, City of Mound, Hennepin County, MnDOT

MLCCS

- 11. 5-10% Impervious
- 12. 11-25% Impervious
- 13. 26-50% Impervious
- 14. 51-75% Impervious
- 15. 76-100% Impervious
- 21. Short Grasses
- 31. Forest
- 32. Wetland Forest
- 52. Wetland Shrubs
- 61. Tall Grasses
- 62. Wetland Emergent Veg.
- 90. Open Water
- 92. Wetland Open Water

Figure 5

Map Document: \\arcserver1\GIS\MOUN\C17115254\ESRI\Maps\Water_Resources\MOUN_SW05_MLCCS_11x17L.mxd | Date Saved: 8/10/2018 3:21:04 PM

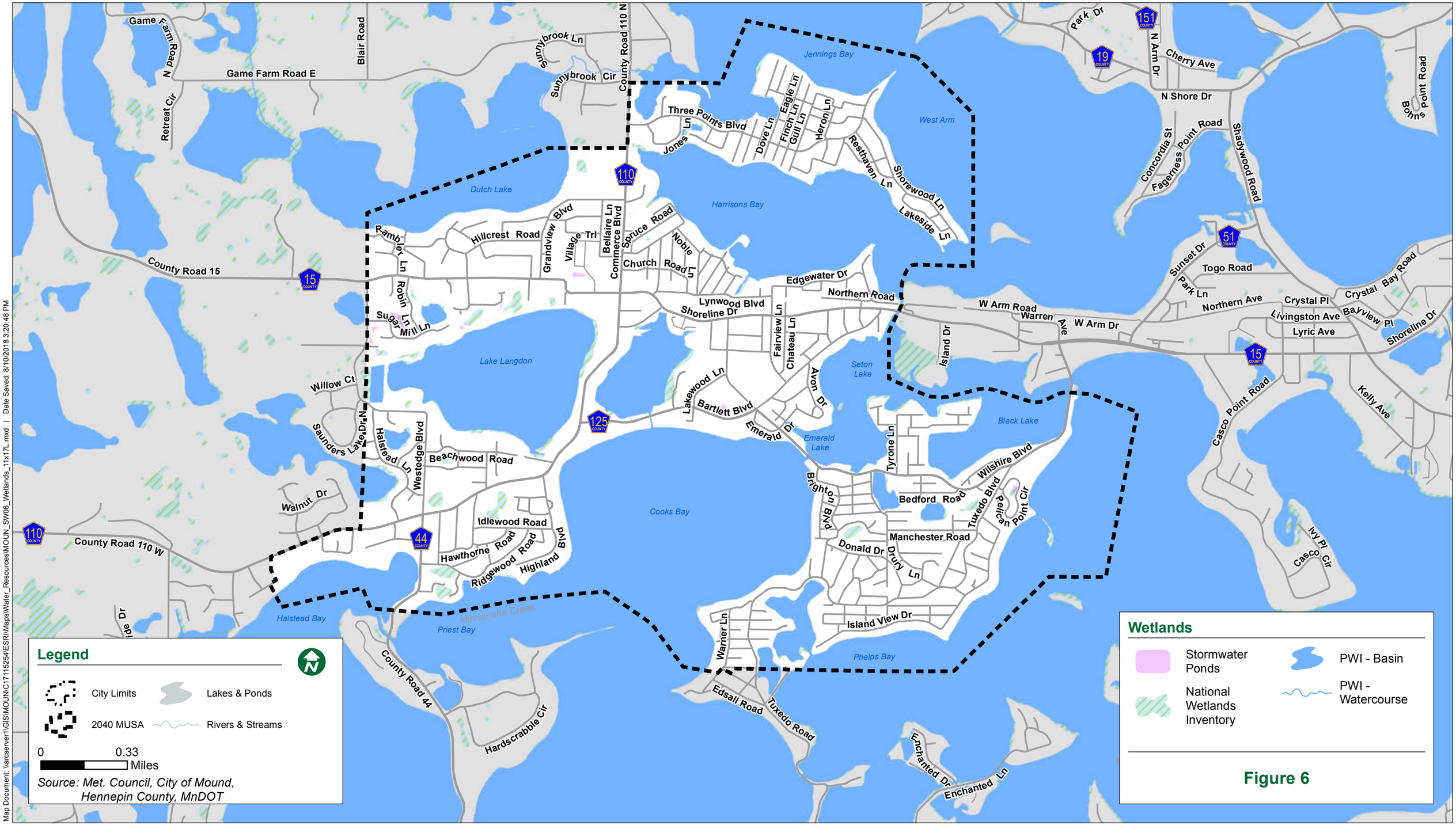
2040 Comprehensive Plan

Mound, MN

National Wetlands Inventory & DNR Public Waters

August 2018

BOLTON & MENK
Real People. Real Solutions.



Legend

- City Limits
- 2040 MUSA
- Lakes & Ponds
- Rivers & Streams

0 0.33 Miles

Source: Met. Council, City of Mound, Hennepin County, MnDOT

Wetlands

- Stormwater Ponds
- National Wetlands Inventory
- PWI - Basin
- PWI - Watercourse

Figure 6

CITY OF MOUND

2040 Comprehensive Plan

Mound, MN

Impaired Waters

August 2018

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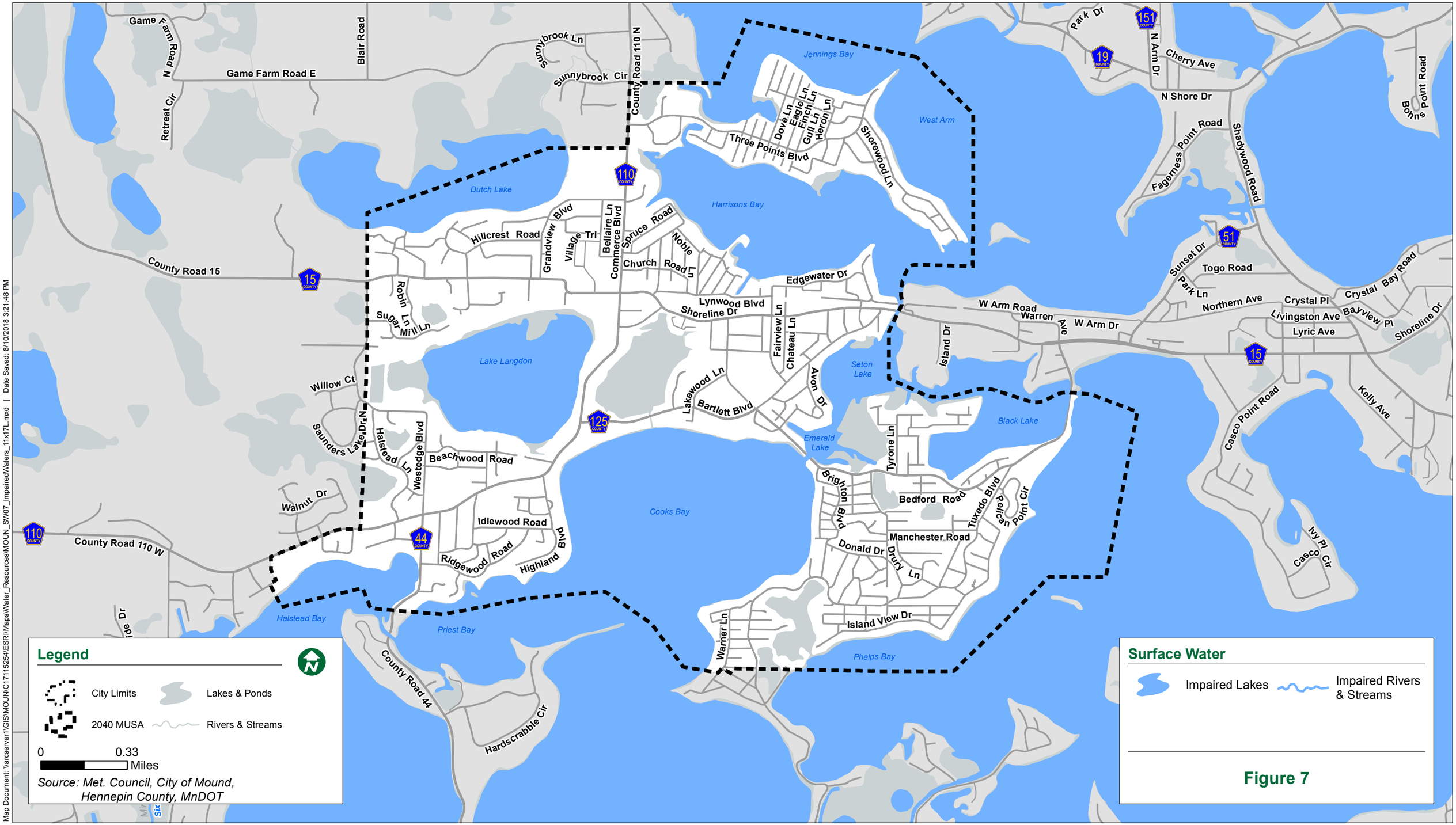

Legend

- City Limits
- 2040 MUSA
- Lakes & Ponds
- Rivers & Streams

0 0.33 Miles

Source: Met. Council, City of Mound, Hennepin County, MnDOT

Surface Water

- Impaired Lakes
- Impaired Rivers & Streams

Figure 7

Map Document: \\arcserver1\GIS\MOUN\C17115254\ESRI\Maps\Water_Resources\MOUN_SW07_ImpairedWaters_11x17L.mxd | Date Saved: 8/10/2018 3:21:48 PM

2040 Comprehensive Plan

Mound, MN

Existing Storm Sewer System

August 2018

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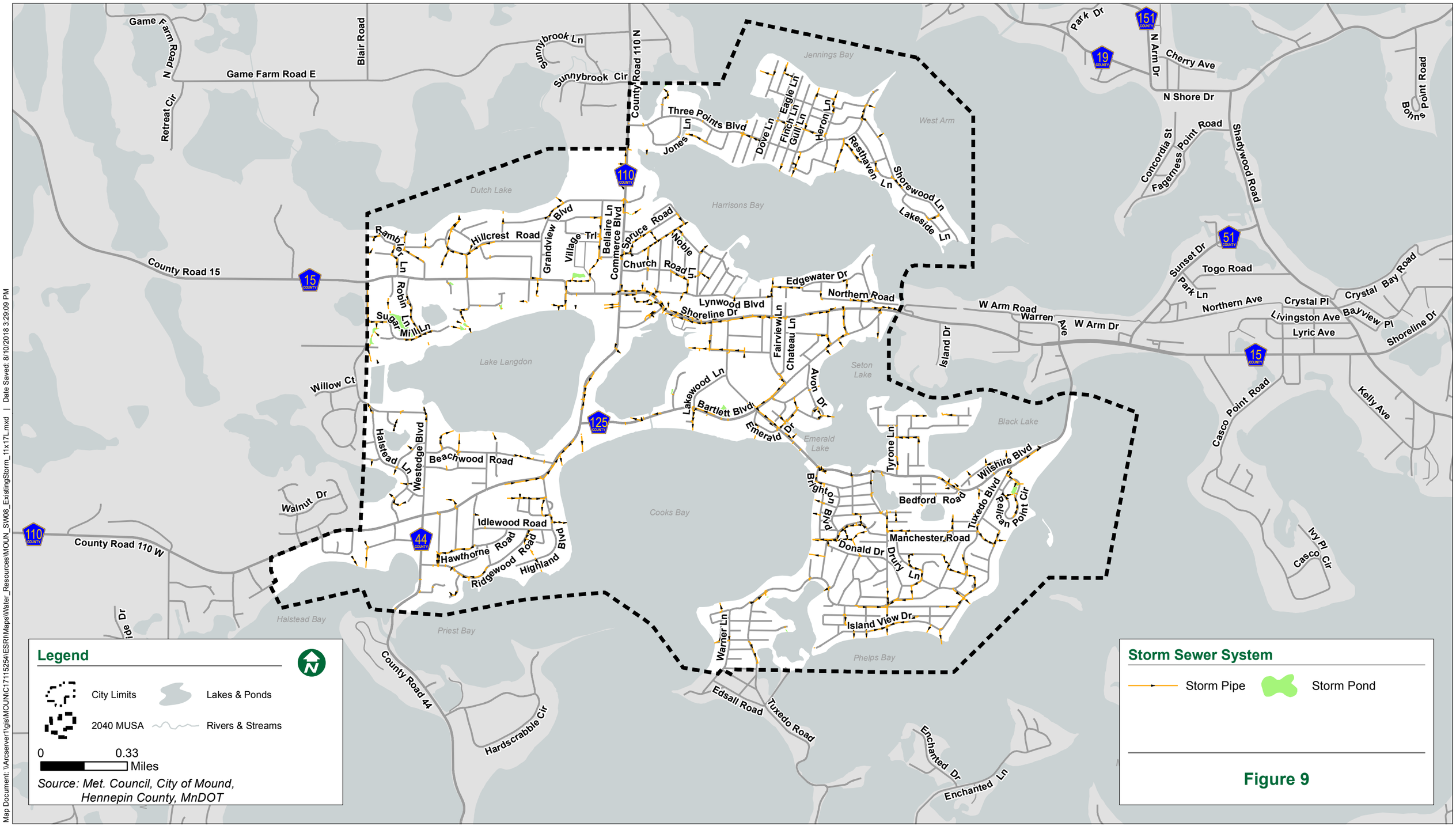


Legend

- City Limits
- 2040 MUSA
- Lakes & Ponds
- Rivers & Streams

0 0.33 Miles

Source: Met. Council, City of Mound, Hennepin County, MnDOT

Storm Sewer System

- Storm Pipe
- Storm Pond

Figure 9

Appendix B

Subwatershed Maps

SURFACE WATER MANAGEMENT PLAN

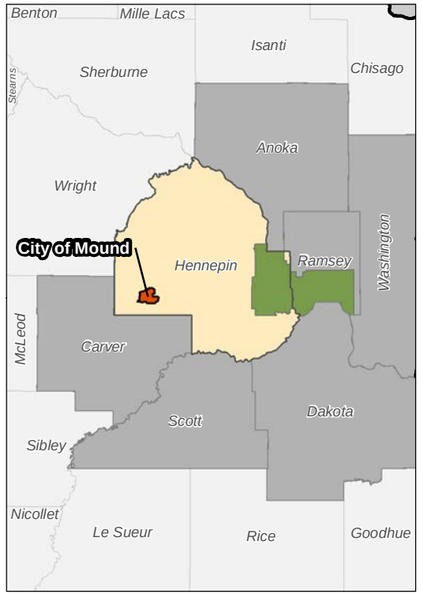
10-YEAR EXISTING CONDITION

CITY OF MOUND

A3 A4 A5
B3 B4 B5
C1 C2 C3 C4 C5 C6
D1 D2 D3 D4 D5
E1 E2 E3 E4 E5 E6 E7
F1 F2 F3 F5 F6
G1 G2 G4 G5 G6

19 COUNTY
151 COUNTY
110 COUNTY
15 COUNTY
51 COUNTY
125 COUNTY
44 COUNTY

LOCATION MAP



Legend

- Grid
- City Limits
- Interstate
- U.S. Highways
- State Highways
- County Roads
- Local Roads
- Protected Waters - Basin
- Protected Waters - Watercourse

0 1,500 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT

BOLTON & MENK
Real People. Real Solutions.

September 2018

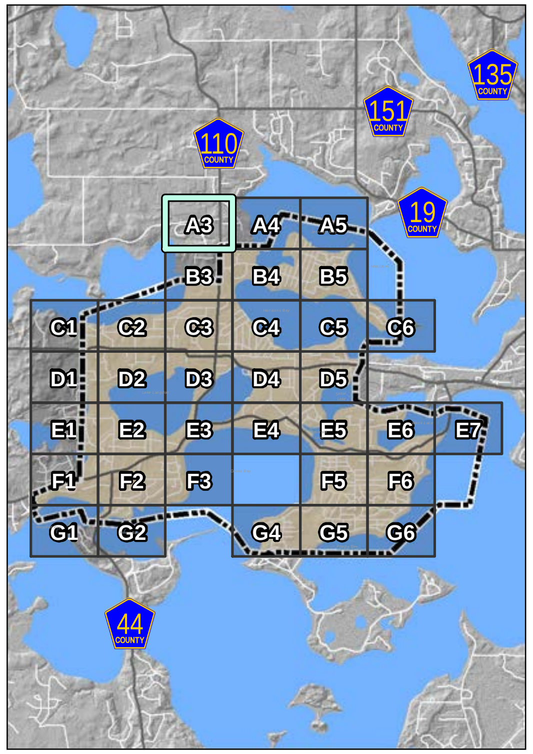
Map Document: \\arcserver1\GIS\MOUN\C171152541ESRI\Maps\Water_Resources\Mound_Subwatershed_10yr_LocationMap_11x17.mxd | Date Saved: 8/15/2018 4:14:18 PM

SURFACE WATER MANAGEMENT PLAN

10-YEAR EXISTING CONDITION

CITY OF MOUND

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

10-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: *City of Mound, Hennepin County MnDNR, MnDOT, Nearmap*

BOLTON & MENK

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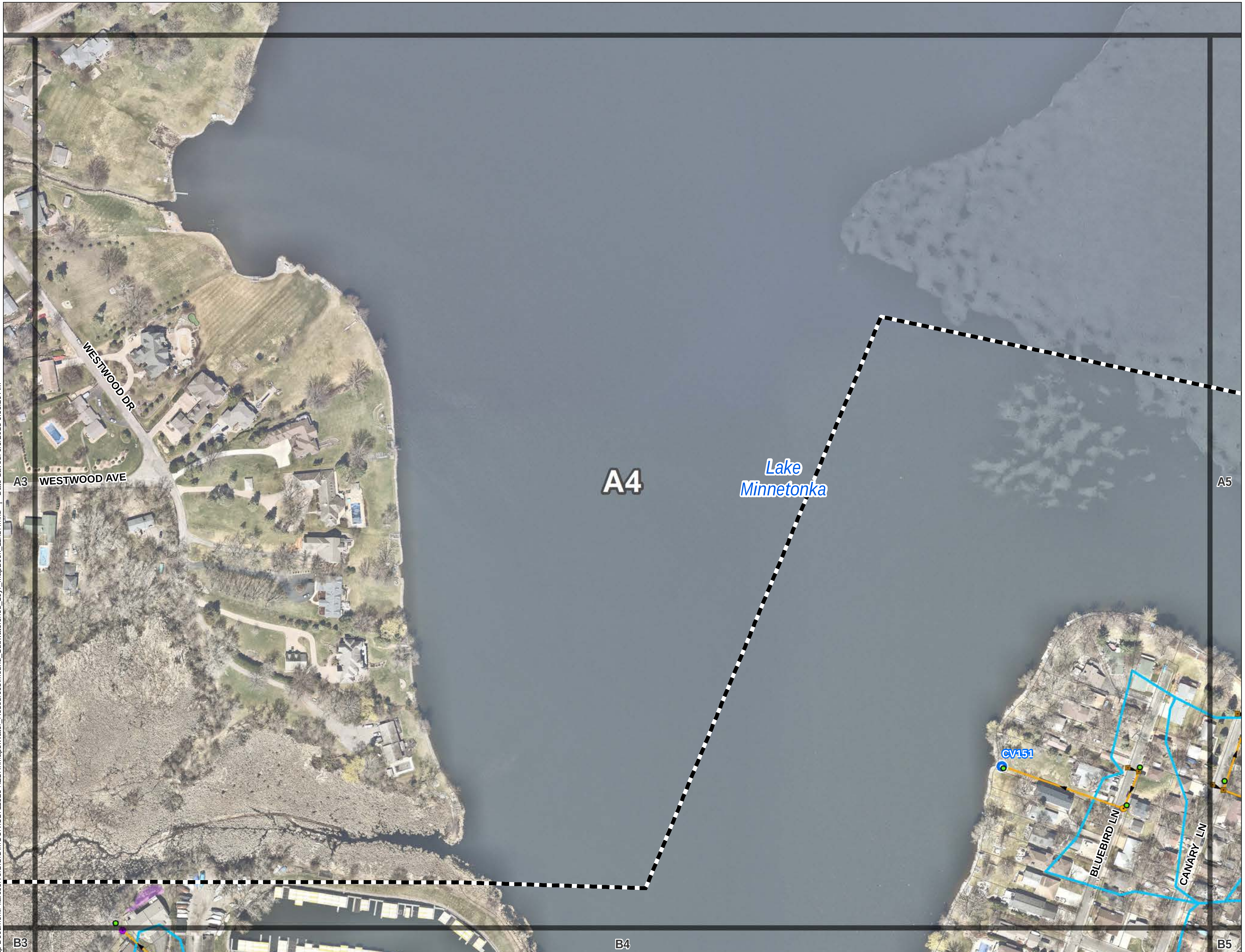
A3

September 2018

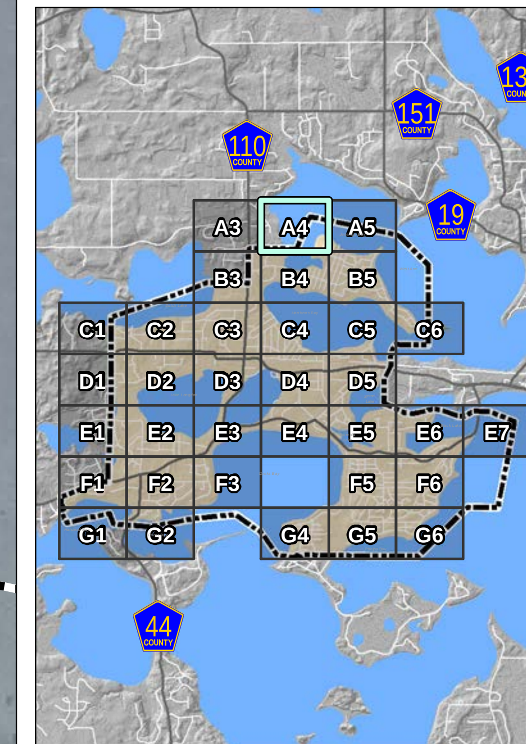
Map Document: \\arcserver1\GIS\MOUN\C17115254\ESRI\Maps\Water_Resources\Mound_Subwatershed_10yr_MapBook_11x17.mxd | Date Saved: 9/5/2018 9:38:20 AM



SURFACE WATER MANAGEMENT PLAN

10-YEAR EXISTING CONDITION

LOCATION MAP



Legend

Storm Outfall	**10-year Event Flooding Depths**
Storm Manhole	No Flooding
Storm Control Structure	0-1 Ft
Catch Basin	1-2 Ft
Storm Culvert	>2 ft
Storm Pipe	Grid
Watersheds	Parcels
Stormwater Ponds	City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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A4

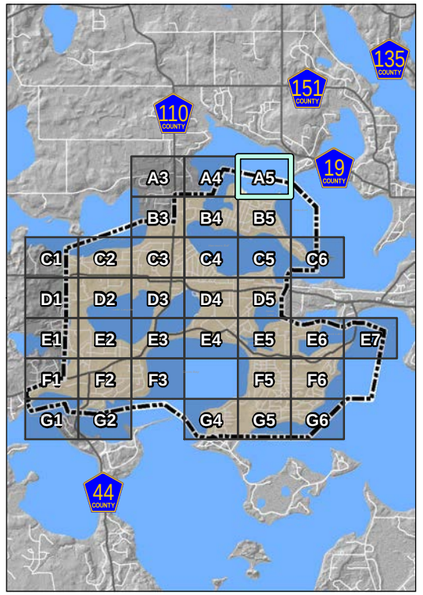
September 2018

CITY OF MOUND

SURFACE WATER MANAGEMENT PLAN

10-YEAR EXISTING CONDITION

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

10-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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A5

September 2018

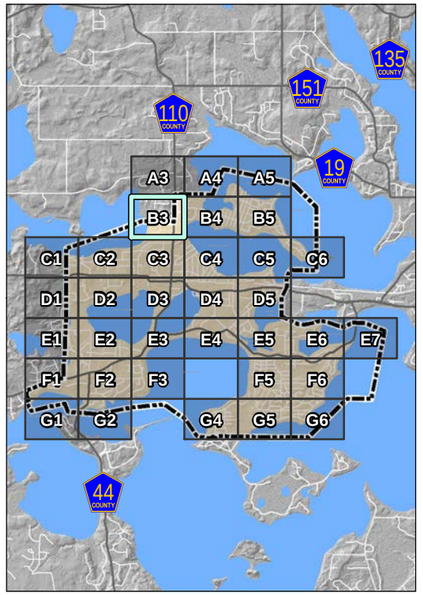
Map Document: \\arcserver1\GIS\MOUN\C17115254\ESRI\Maps\Water_Resources\Mound_Subwatershed_10yr_MapBook_11x17.mxd | Date Saved: 9/5/2018 9:38:20 AM

CITY OF MOUND

SURFACE WATER MANAGEMENT PLAN

10-YEAR EXISTING CONDITION

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

10-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

BOLTON & MENK
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B3

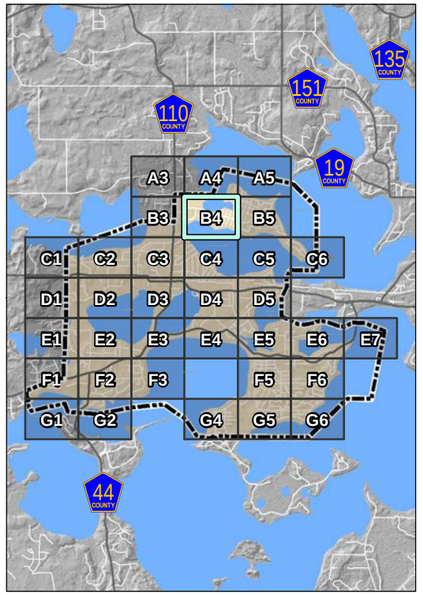
Map Document: \\arcserver1\GIS\MOUNC1711525\4\ESRI\Maps\Water_Resources\Mound_Subwatershed_10yr_MapBook_11x17.mxd | Date Saved: 9/5/2018 9:38:20 AM

SURFACE WATER MANAGEMENT PLAN

10-YEAR EXISTING CONDITION

CITY OF MOUND

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

10-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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B4

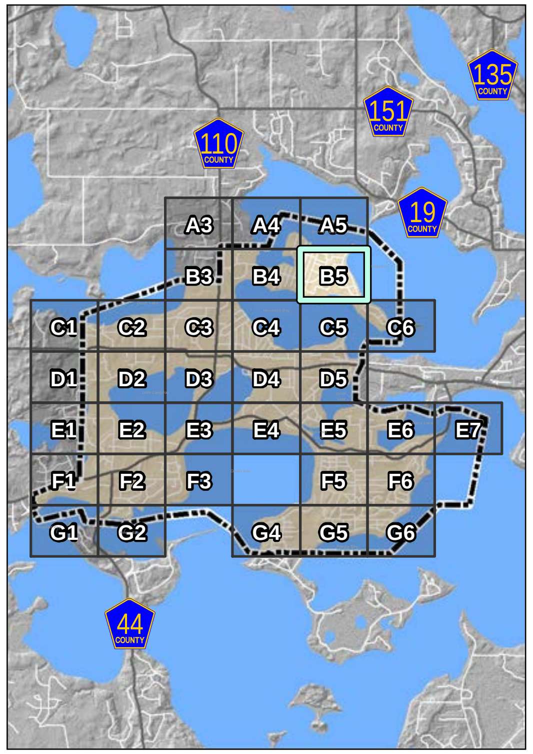
Map Document: \\arcserver1\GIS\MOUNC\1711525\4\ESRI\Maps\Water_Resources\Mound_Subwatershed_10yr_MapBook_11x17.mxd | Date Saved: 9/5/2018 9:38:20 AM

CITY OF MOUND

SURFACE WATER MANAGEMENT PLAN

10-YEAR EXISTING CONDITION

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

10-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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B5

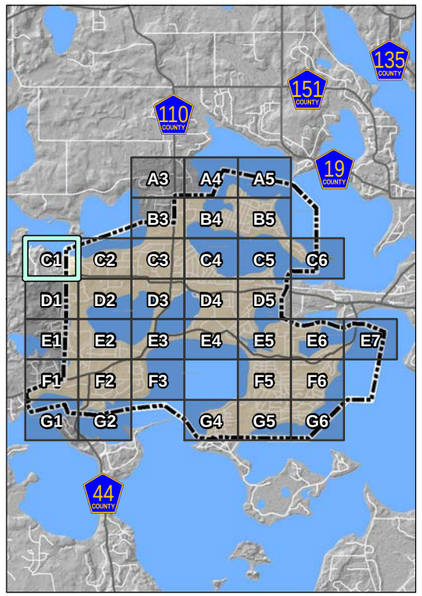
September 2018

SURFACE WATER MANAGEMENT PLAN

10-YEAR EXISTING CONDITION

CITY OF MOUND

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

10-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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C1

September 2018

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SURFACE WATER MANAGEMENT PLAN

10-YEAR EXISTING CONDITION

CITY OF MOUND

Dutch Lake

B3

C1

C2

C3

D1

D2

D3

LINDEN LN

DUTCH LN

RED OAK RD

BIRCH LN

RAMBLER LN

ROBIN LN

ASPEN RD

CLOVER CIR

FOREST LN

SOUTHVIEW LN

SUNSET RD

SYCAMORE LN

HILLCREST RD

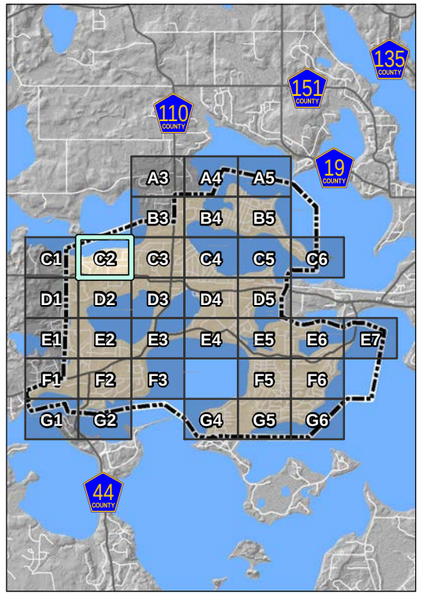
DIAMOND LN

GUMWOOD RD

LYNWOOD BLVD

15 COUNTY

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

10-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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C2

September 2018

Map Document: \\arcserver1\GIS\MOUNC1711525\4\ESRI\Maps\Water_Resources\Mound_Subwatershed_10yr_MapBook_11x17.mxd | Date Saved: 9/5/2018 9:38:20 AM

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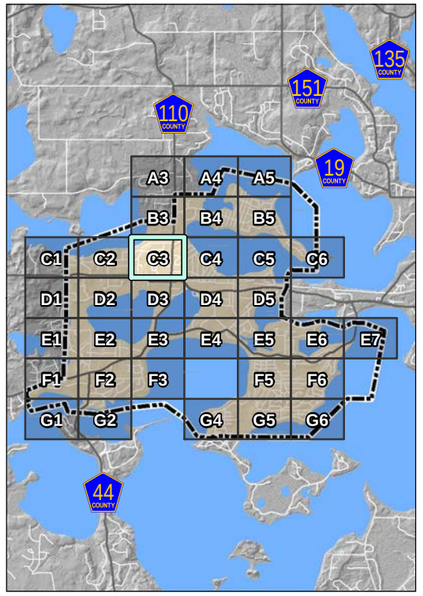
SURFACE WATER MANAGEMENT PLAN

10-YEAR EXISTING CONDITION

CITY OF MOUND

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

10-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

BOLTON & MENK
Real People. Real Solutions.

C3

SURFACE WATER MANAGEMENT PLAN

10-YEAR EXISTING CONDITION

CITY OF MOUND

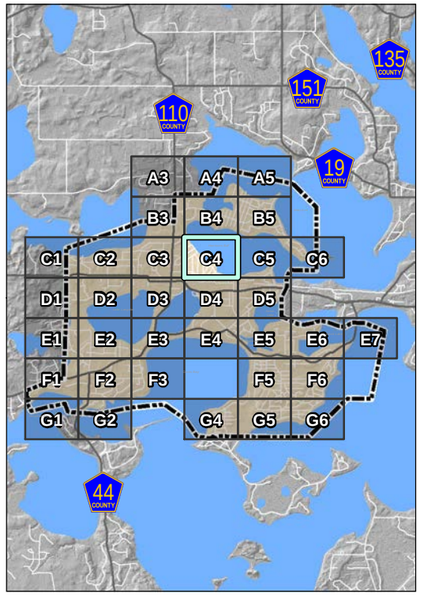
B3 B4 B5 C3 C4 C5 D3 D4 D5

Lake Minnetonka

BREEZY DR
WATERSIDE LN
HARRISON LN
SPRUCE RD
TONKAWOOD RD
BELMONT LN
BASSWOOD LN
CEDAR LN
NOBLE LN
OVERLAND LN
CENTERVIEW LN
PIKE RD
CHURCH RD
ASHLAND LN
CARDINAL LN
EDGEWATER DR

CV176
CV169
CV162

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

10-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

BOLTON & MENK
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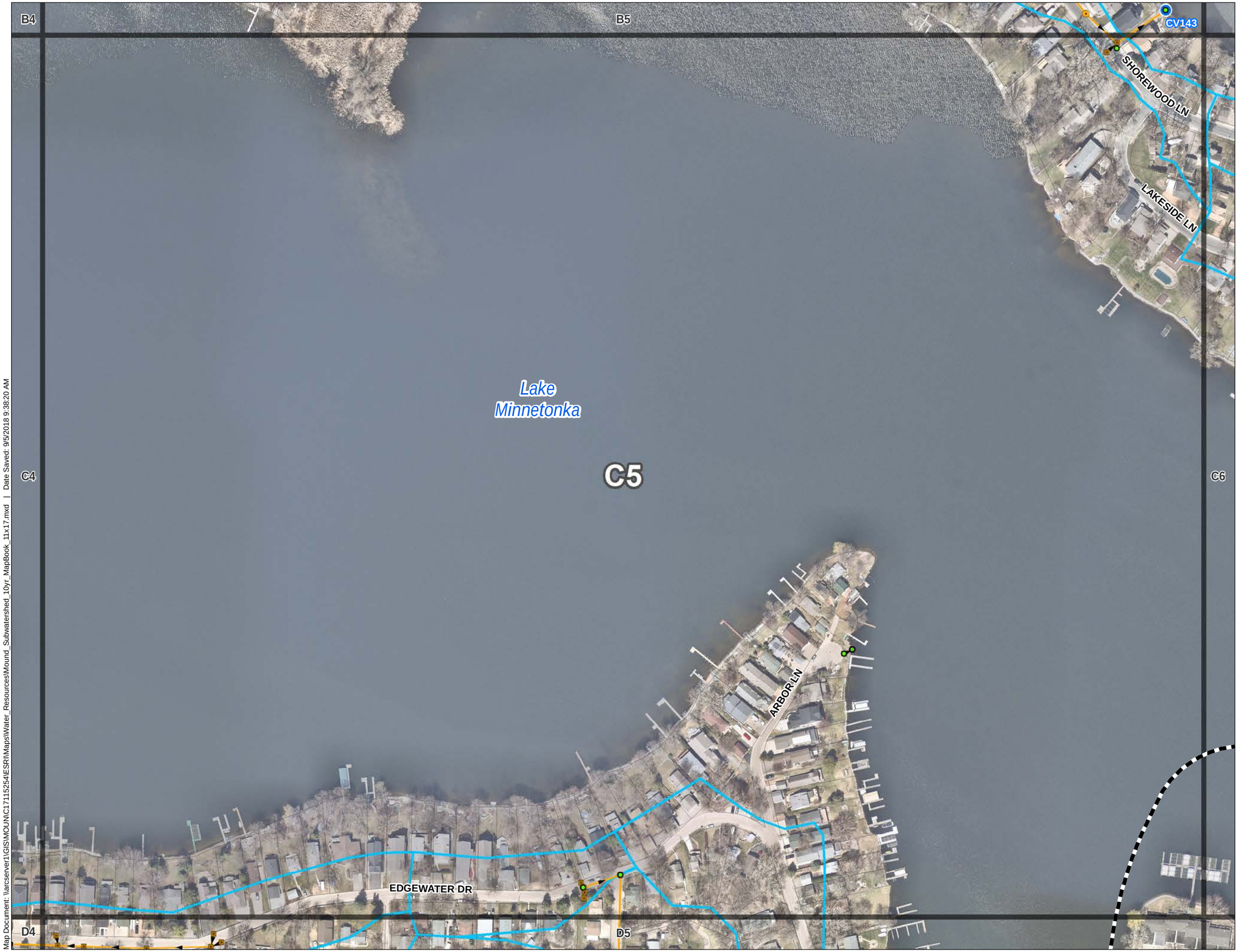
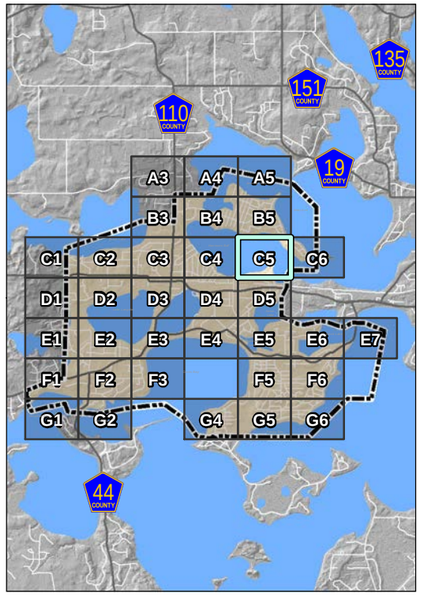
C4

Map Document: \\arcserver1\GIS\MOUND\C1711525 4\ESRIMaps\Water_Resources\Mound_Subwatershed_10yr_MapBook_11x17.mxd | Date Saved: 9/5/2018 9:38:20 AM



CITY OF MOUND

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

10-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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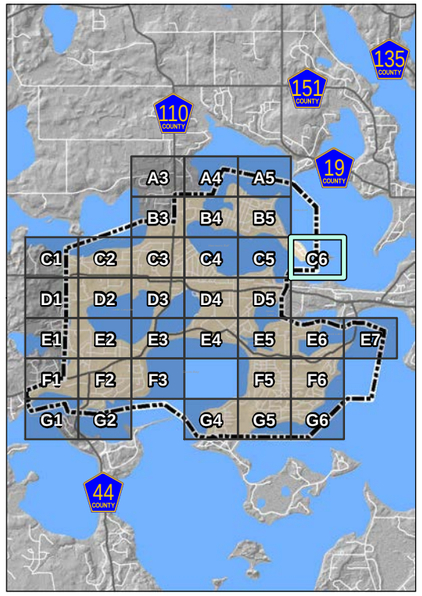
CITY OF MOUND

SURFACE WATER MANAGEMENT PLAN

10-YEAR EXISTING CONDITION

LOCATION MAP



Legend

- Storm Outfall
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10-year Event Flooding Depths

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- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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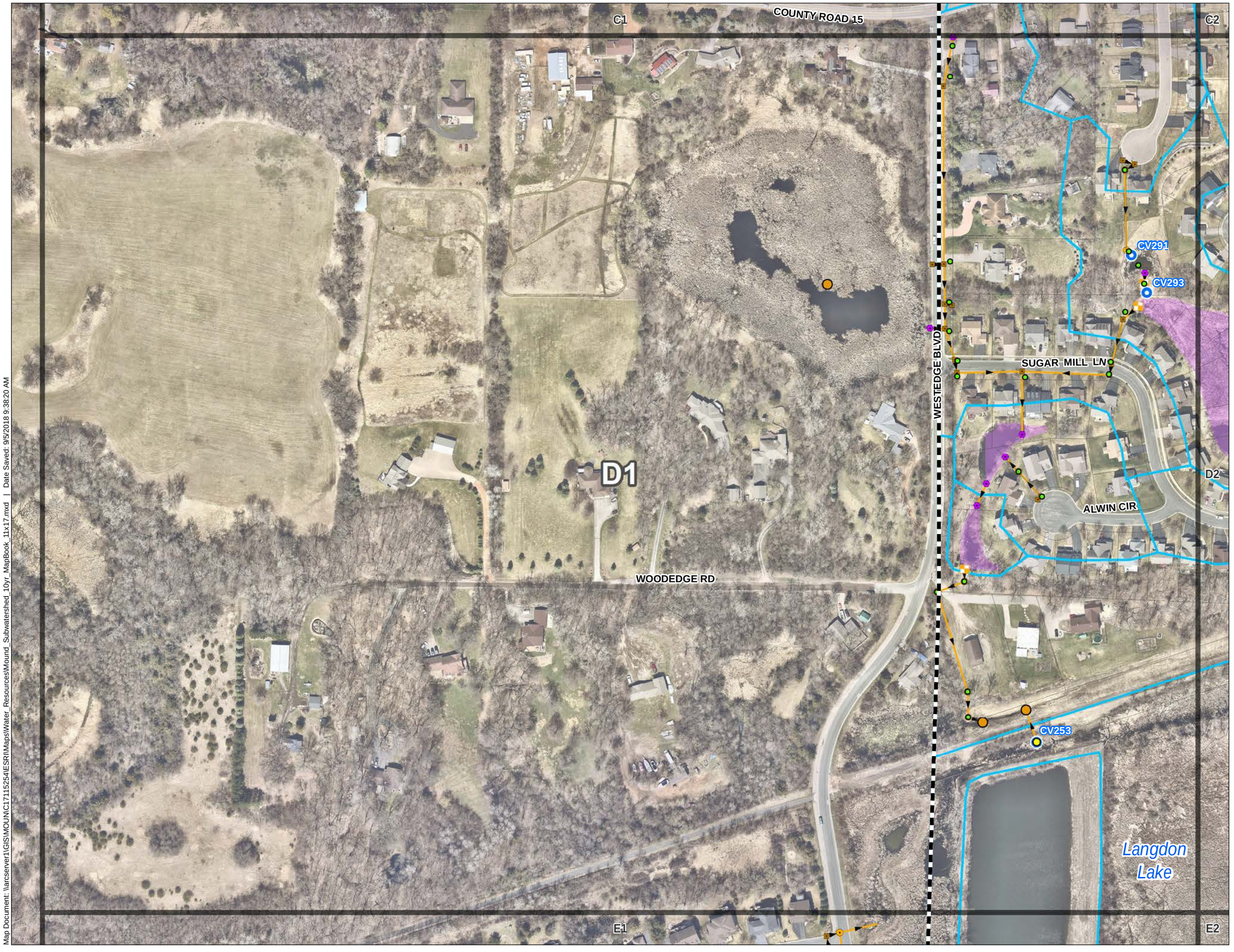
September 2018

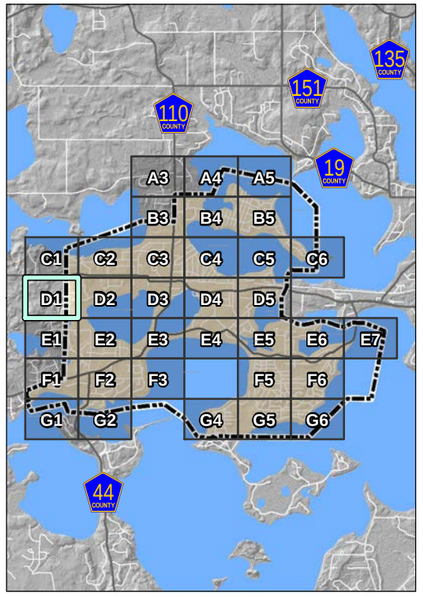


CITY OF MOUND

SURFACE WATER MANAGEMENT PLAN

10-YEAR EXISTING CONDITION

LOCATION MAP



Legend

- Storm Outfall
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10-year Event Flooding Depths

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- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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D1

September 2018

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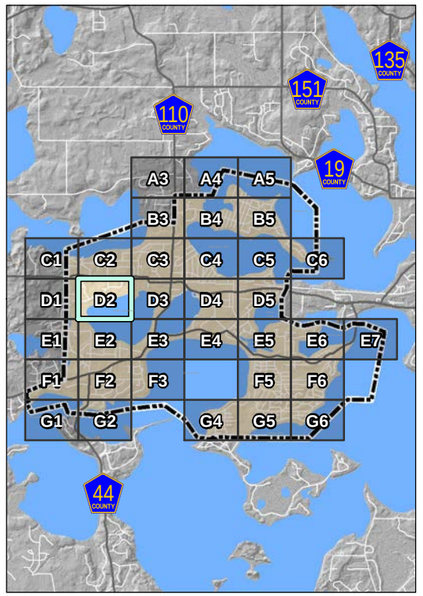
CITY OF MOUND

SURFACE WATER MANAGEMENT PLAN

10-YEAR EXISTING CONDITION

LOCATION MAP



Legend

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- Parcels
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0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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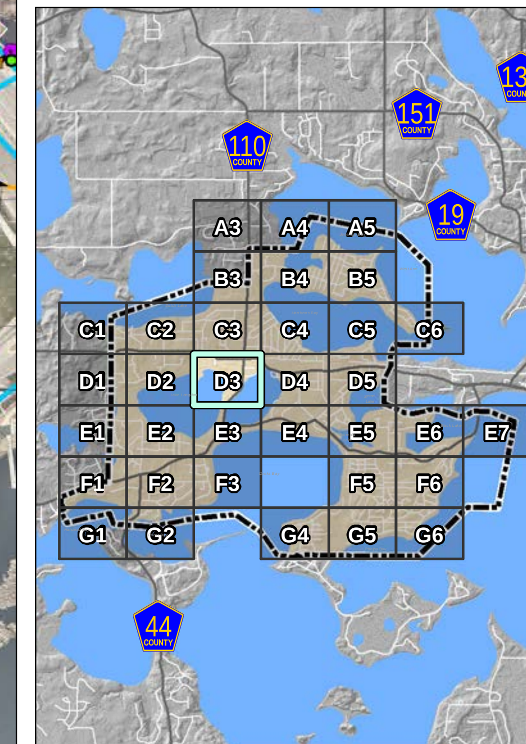
SURFACE WATER MANAGEMENT PLAN

10-YEAR EXISTING CONDITION

CITY OF MOUND

LOCATION MAP



Legend

Storm Outfall
Storm Manhole
Storm Control Structure
Catch Basin
Storm Culvert
Storm Pipe
Watersheds
Stormwater Ponds

10-year Event Flooding Depths

No Flooding
0-1 Ft
1-2 Ft
>2 ft
Grid
Parcels
City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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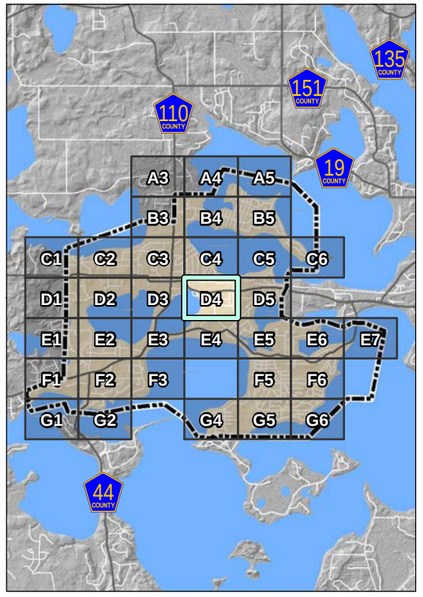
D3

SURFACE WATER MANAGEMENT PLAN

10-YEAR EXISTING CONDITION

CITY OF MOUND

LOCATION MAP



Legend

- Storm Outfall
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- Storm Control Structure
- Catch Basin
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- Watersheds
- Stormwater Ponds

10-year Event Flooding Depths

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- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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D4

September 2018

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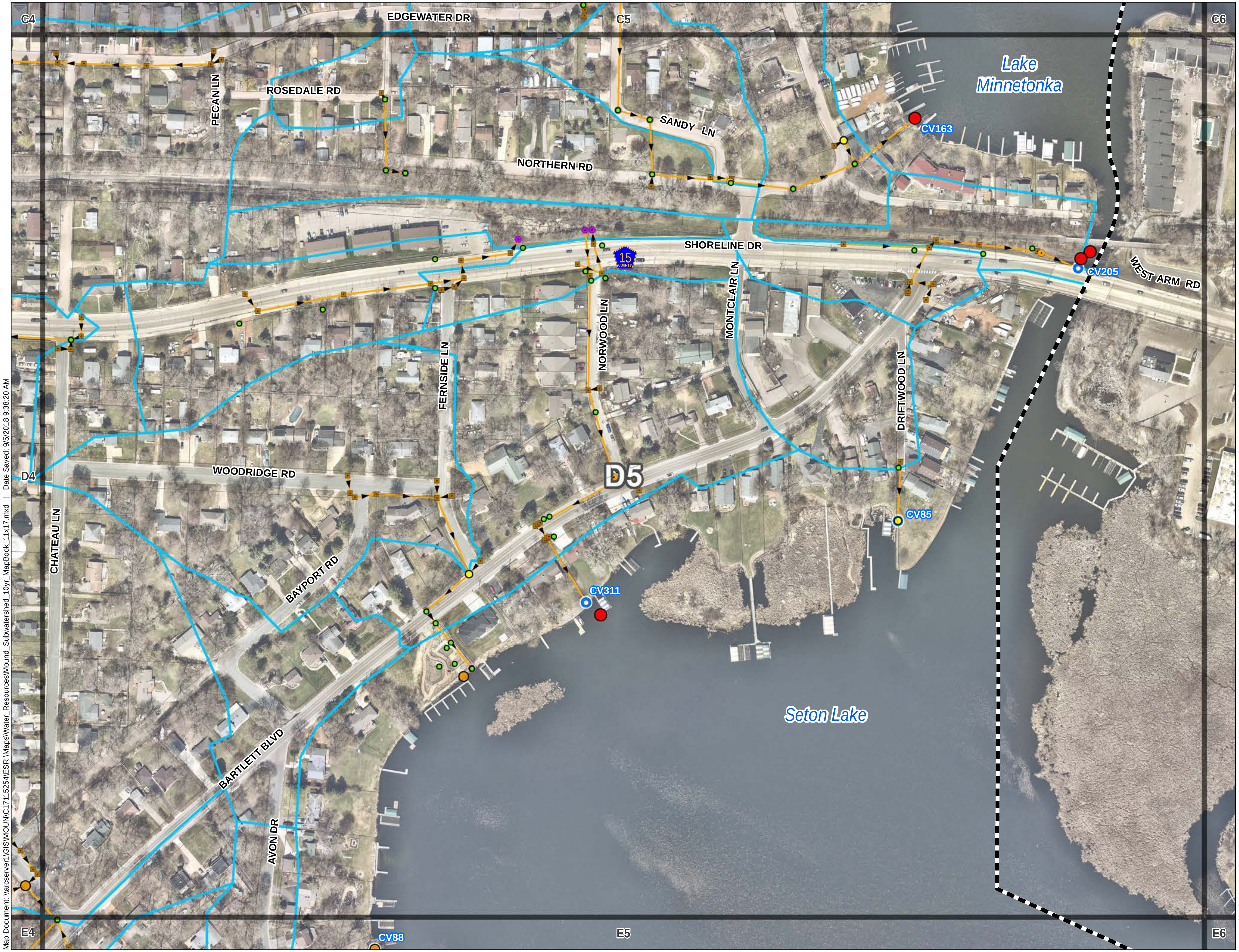

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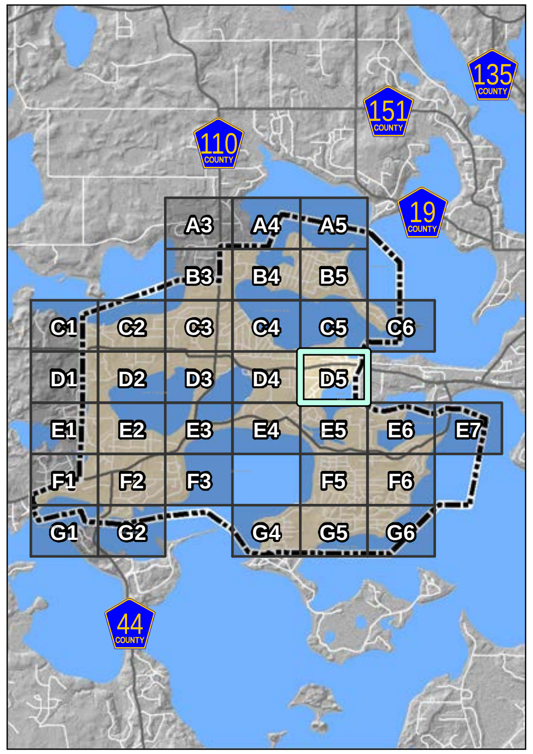
CITY OF MOUND

SURFACE WATER MANAGEMENT PLAN

10-YEAR EXISTING CONDITION

LOCATION MAP



Legend

- Storm Outfall
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- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

10-year Event Flooding Depths

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- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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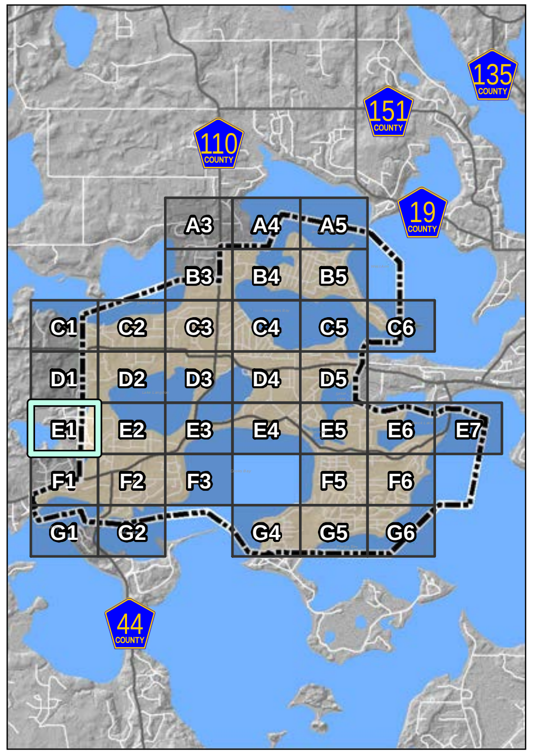
CITY OF MOUND

SURFACE WATER MANAGEMENT PLAN

10-YEAR EXISTING CONDITION

LOCATION MAP



Legend

- Storm Outfall
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10-year Event Flooding Depths

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- >2 ft
- Grid
- Parcels
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0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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E1

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SURFACE WATER MANAGEMENT PLAN

10-YEAR EXISTING CONDITION

CITY OF MOUND

D1 D2 D3

Langdon Lake

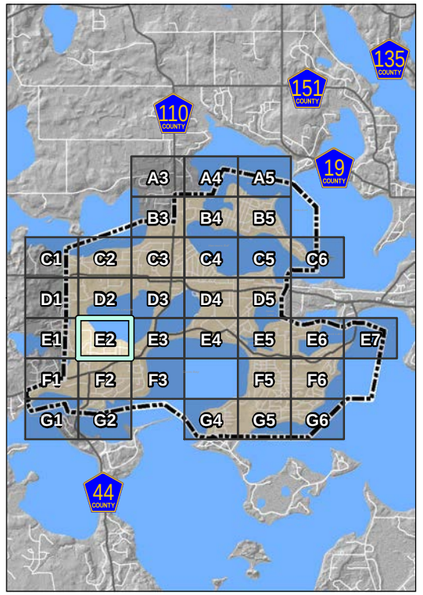
CV270 CV271 CV252 CV257 CV92

E1 E2 E3

F1 F2 F3

WESTEDGE BLVD
GRANGER LN
DEERWOOD DR
WESTWOOD CIR
HALSTEAD LN
ROSEWOOD LN
EVERGREEN RD
BEACHWOOD RD
GARDEN LN
GROVE LN
RUSTICWOOD RD
BARTLETT BLVD

LOCATION MAP



Legend

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Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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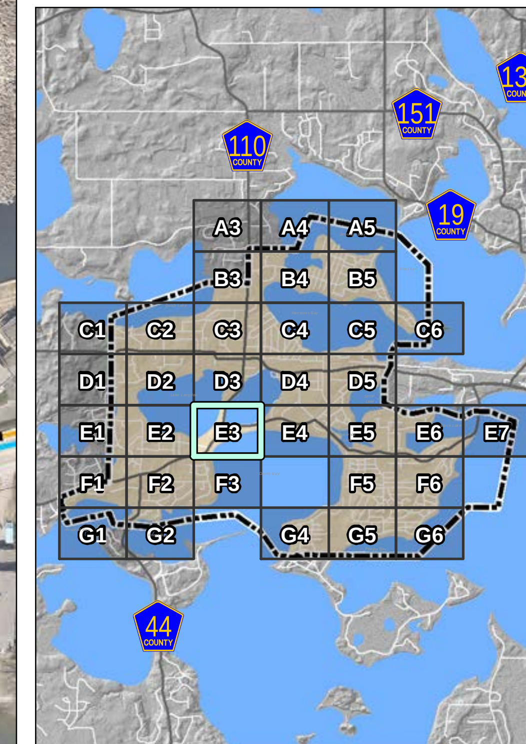
SURFACE WATER MANAGEMENT PLAN

10-YEAR EXISTING CONDITION

CITY OF MOUND

LOCATION MAP



Legend

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- Storm Culvert
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10-year Event Flooding Depths

- No Flooding
- 0-1 Ft
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- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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E3

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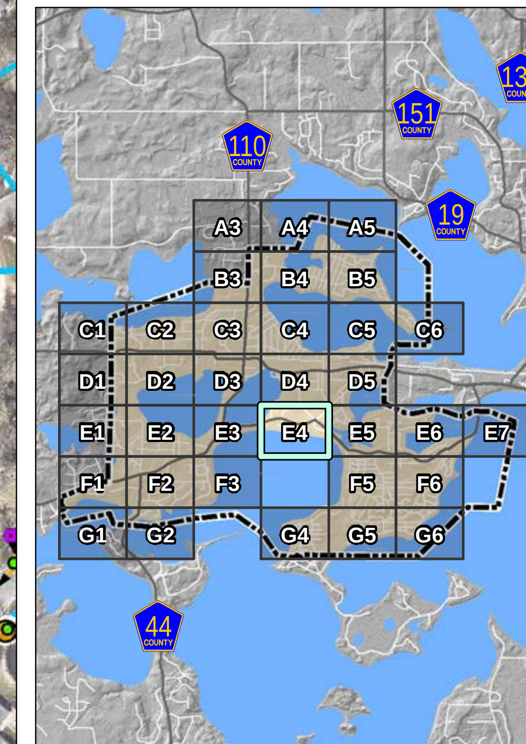
SURFACE WATER MANAGEMENT PLAN

10-YEAR EXISTING CONDITION

LOCATION MAP



Legend

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- Catch Basin
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10-year Event Flooding Depths

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0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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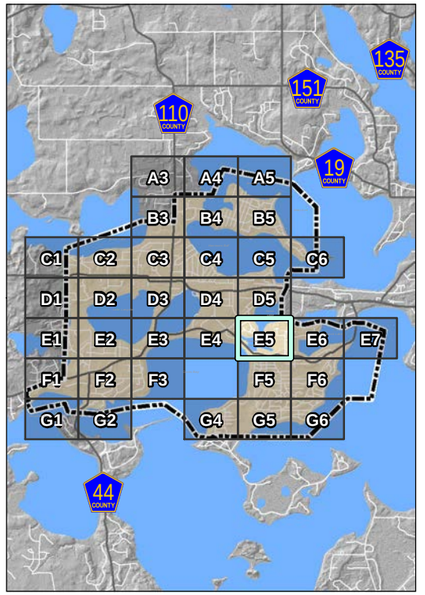
E4

Map Document: \\arcserver1\GIS\MOUN\C17115254\ESRI\Maps\Water_Resources\Mound_Subwatershed_10yr_MapBook_11x17.mxd | Date Saved: 9/5/2018 9:38:20 AM

CITY OF MOUND

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

10-year Event Flooding Depths

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- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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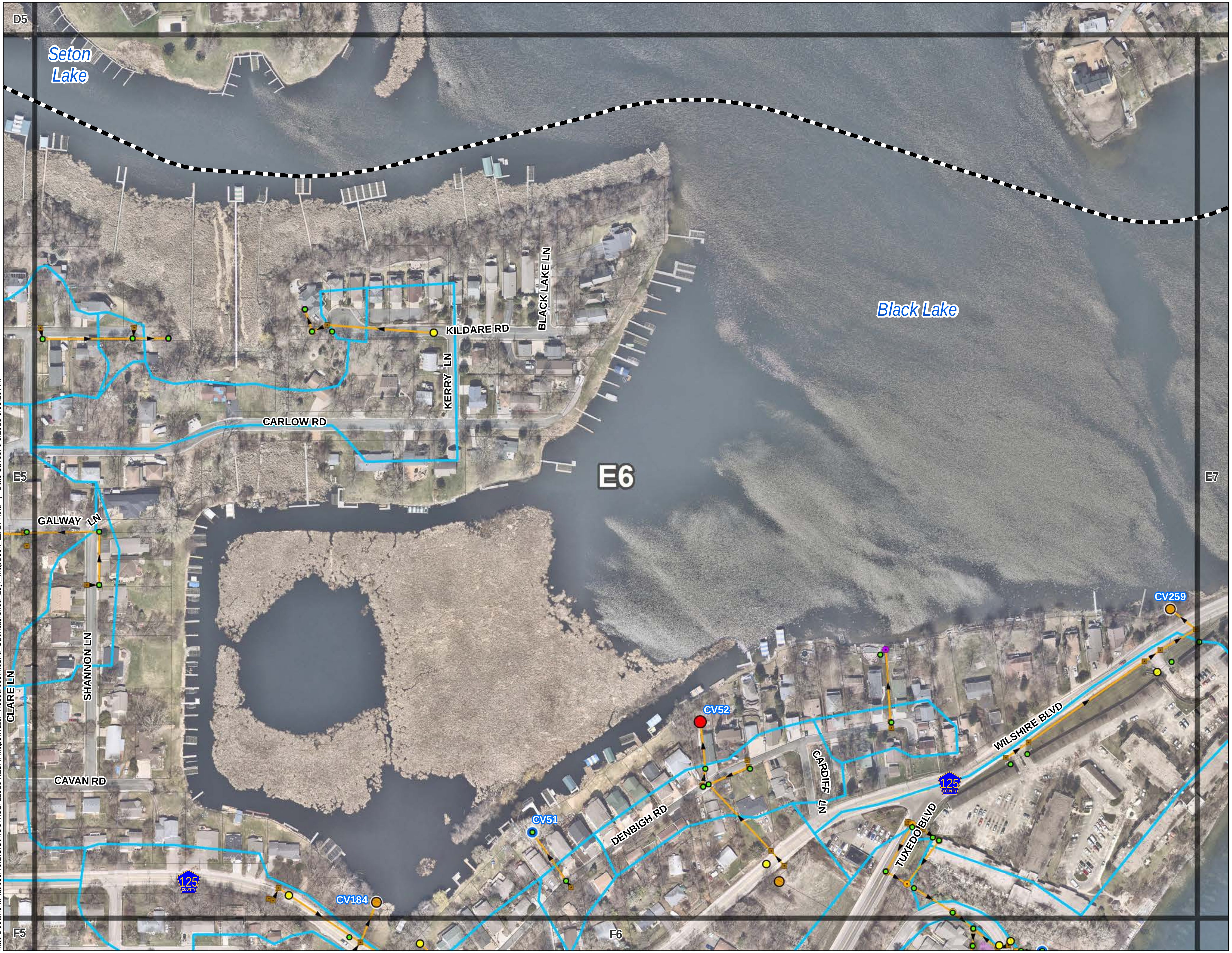
E5

Map Document: \\arcserver1\GIS\MOUN\C17115254\ESRI\Maps\Water_Resources\Mound_Subwatershed_10yr_MapBook_11x17.mxd | Date Saved: 9/5/2018 9:38:20 AM

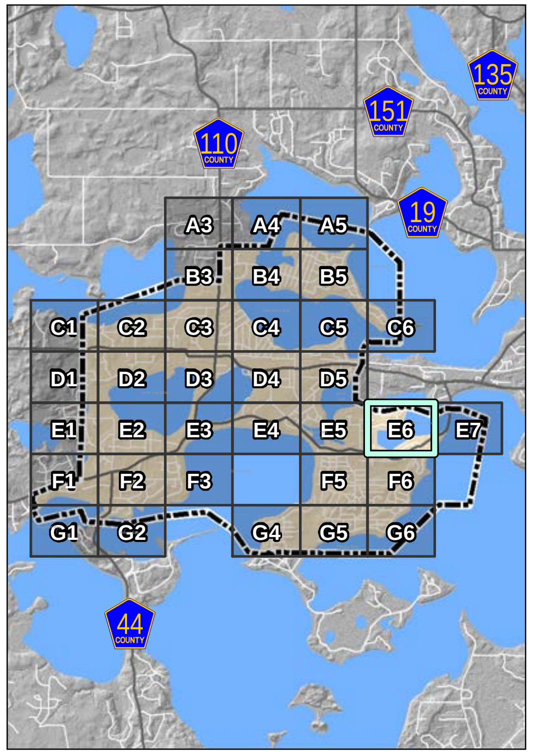
SURFACE WATER MANAGEMENT PLAN

CITY OF MOUND

10-YEAR EXISTING CONDITION



LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

10-year Event Flooding Depths

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- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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E6

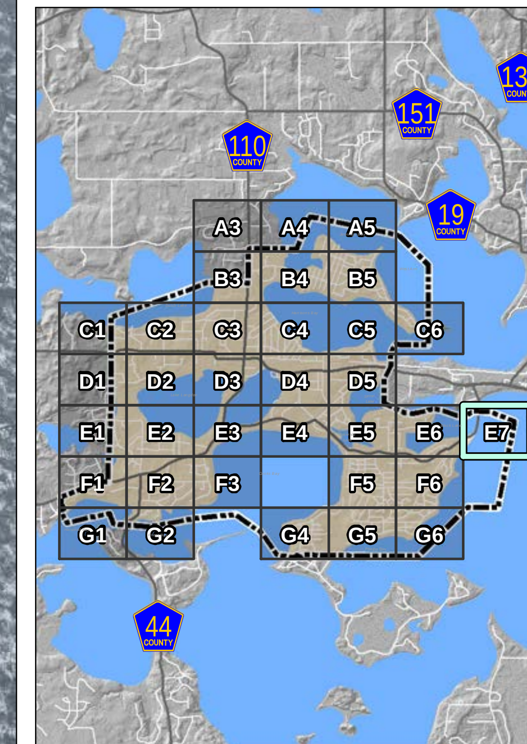
Map Document: \\arcserver1\GIS\MOUN\C17115254\ESRI\Maps\Water_Resources\Mound_Subwatershed_10yr_MapBook_11x17.mxd | Date Saved: 9/5/2018 9:38:20 AM

CITY OF MOUND

SURFACE WATER MANAGEMENT PLAN

10-YEAR EXISTING CONDITION

LOCATION MAP



Legend

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10-year Event Flooding Depths

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- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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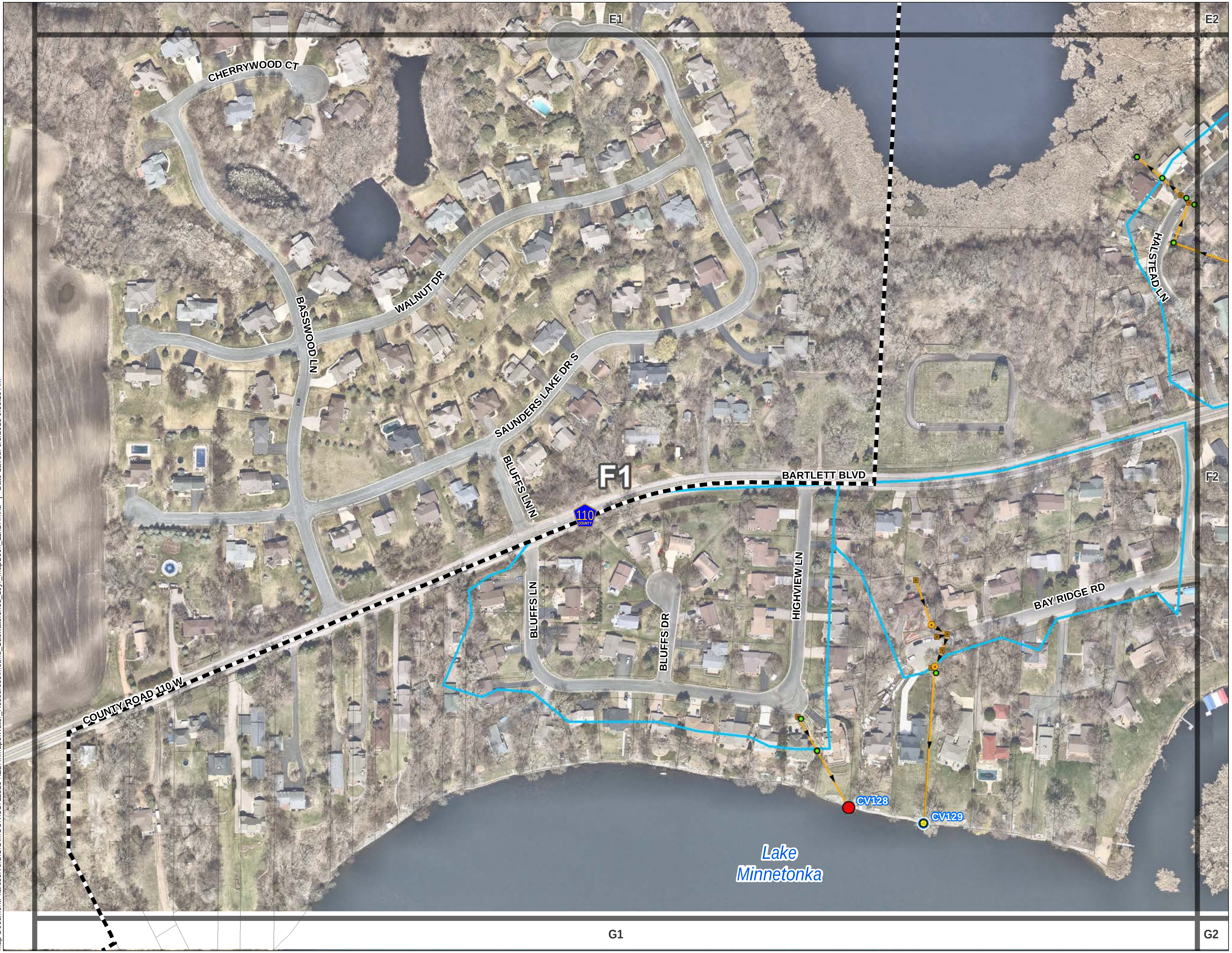
E7

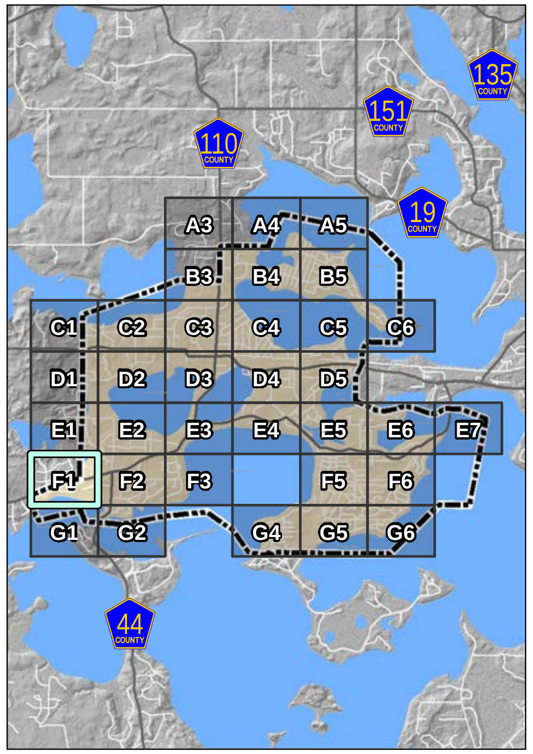


SURFACE WATER MANAGEMENT PLAN

CITY OF MOUND

10-YEAR EXISTING CONDITION

LOCATION MAP



Legend

Storm Outfall		10-year Event Flooding Depths	
Storm Manhole		No Flooding	
Storm Control Structure		0-1 Ft	
Catch Basin		1-2 Ft	
Storm Culvert		>2 ft	
Storm Pipe		Grid	
Watersheds		Parcels	
Stormwater Ponds		City Limits	

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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F1

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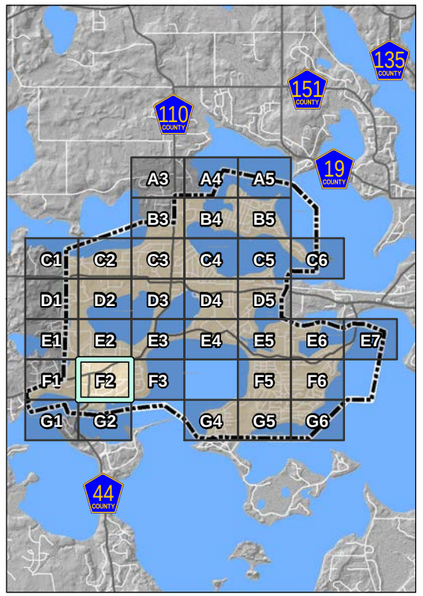
CITY OF MOUND

SURFACE WATER MANAGEMENT PLAN

10-YEAR EXISTING CONDITION

LOCATION MAP



Legend

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0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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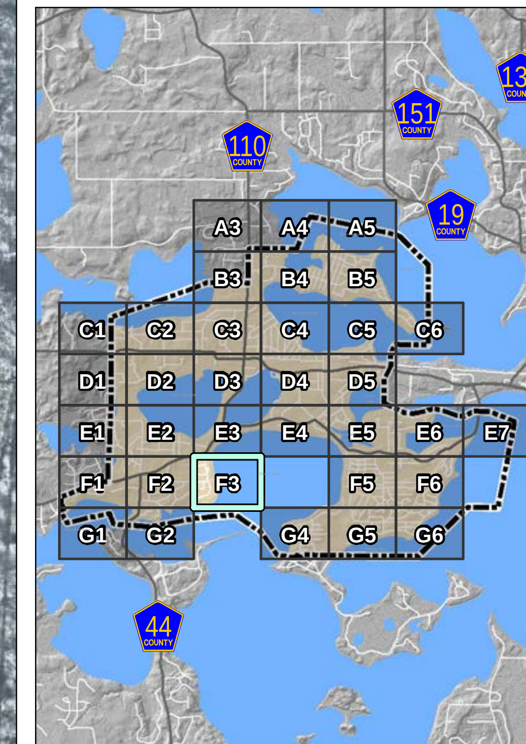
F2

SURFACE WATER MANAGEMENT PLAN

10-YEAR EXISTING CONDITION

CITY OF MOUND

LOCATION MAP



Legend

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10-year Event Flooding Depths

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0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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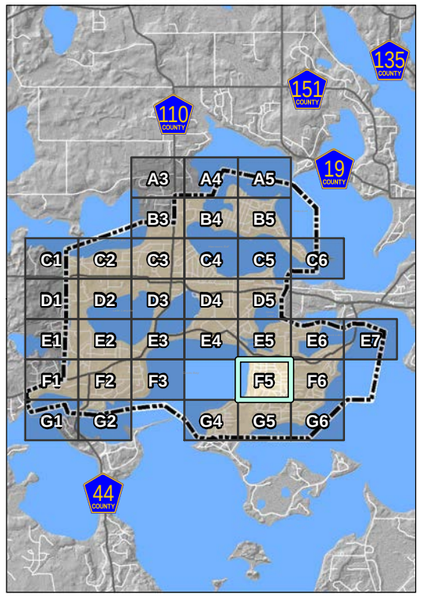
SURFACE WATER MANAGEMENT PLAN

10-YEAR EXISTING CONDITION

CITY OF MOUND

LOCATION MAP



Legend

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10-year Event Flooding Depths

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0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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September 2018

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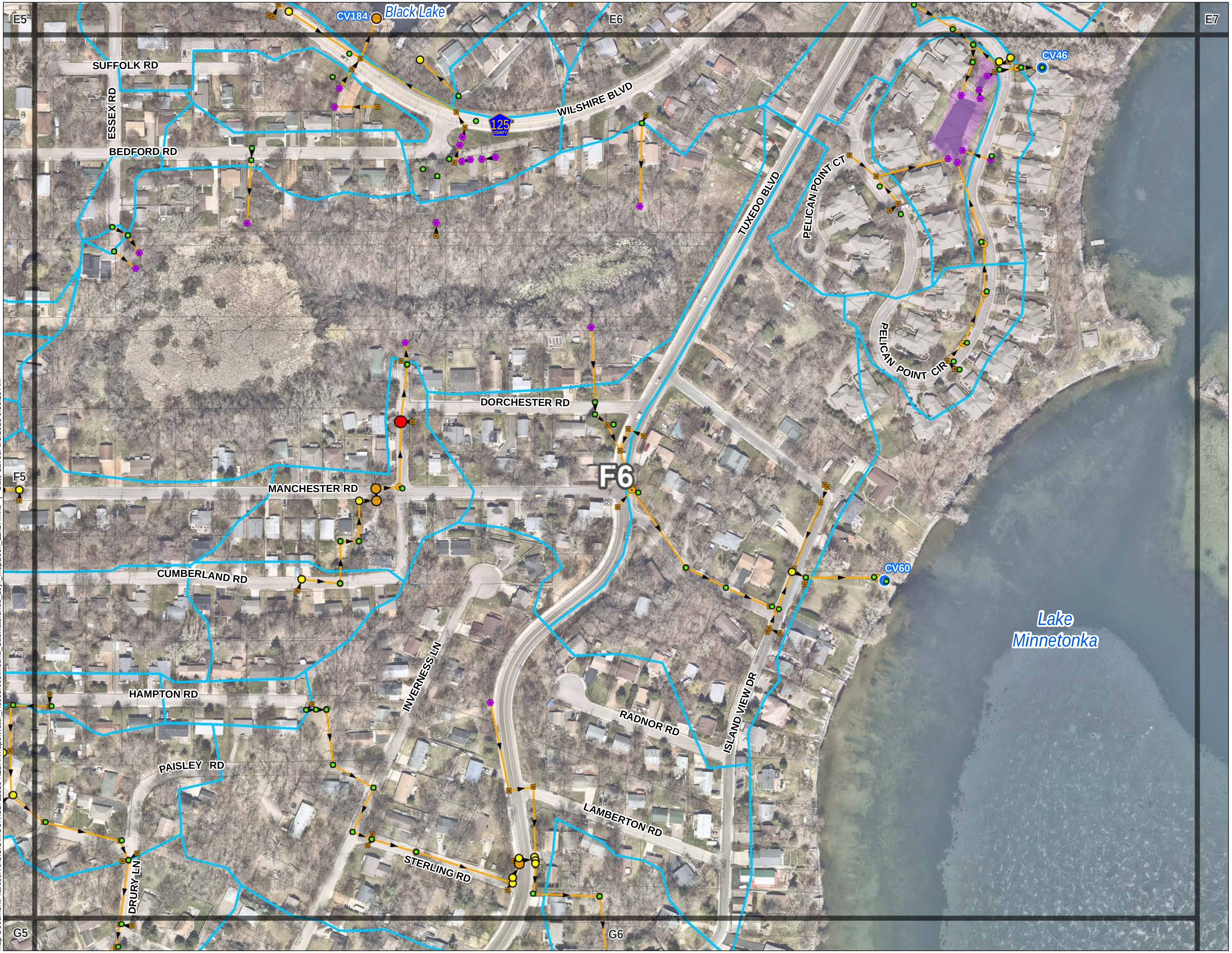
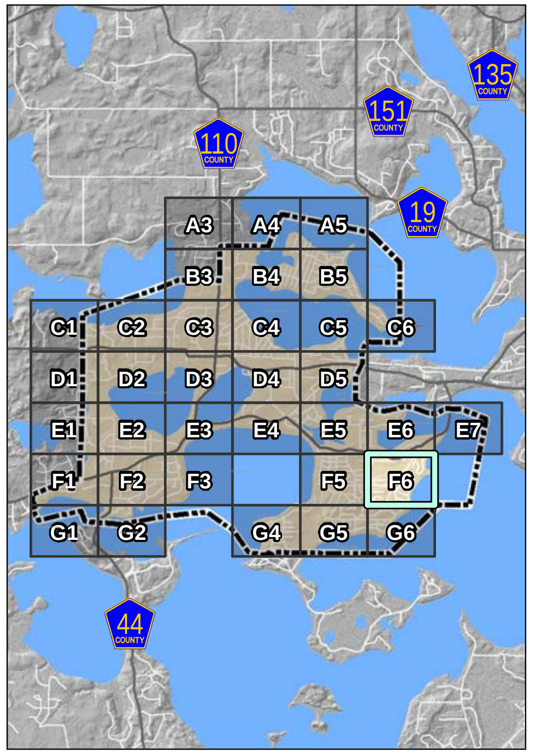
SURFACE WATER MANAGEMENT PLAN

CITY OF MOUND

10-YEAR EXISTING CONDITION



LOCATION MAP



Legend

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0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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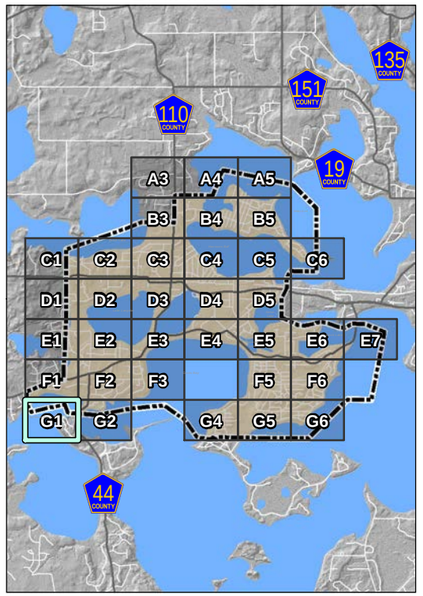
Map Document: \\arcserver1\GIS\MOUN\C17115254\ESRI\Maps\Water_Resources\Mound_Subwatershed_10yr_MapBook_11x17.mxd | Date Saved: 9/5/2018 9:38:20 AM

CITY OF MOUND

SURFACE WATER MANAGEMENT PLAN

10-YEAR EXISTING CONDITION

LOCATION MAP



Legend

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10-year Event Flooding Depths

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- Parcels
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0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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G1

September 2018

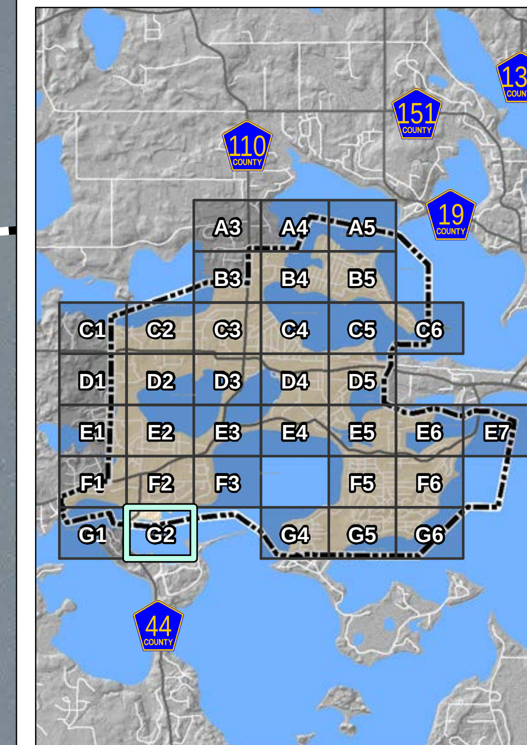
Map Document: \\arcserver1\GIS\MOUN\C17115254\ESRI\Maps\Water_Resources\Mound_Subwatershed_10yr_MapBook_11x17.mxd | Date Saved: 9/5/2018 9:38:20 AM

SURFACE WATER MANAGEMENT PLAN

10-YEAR EXISTING CONDITION

CITY OF MOUND

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

10-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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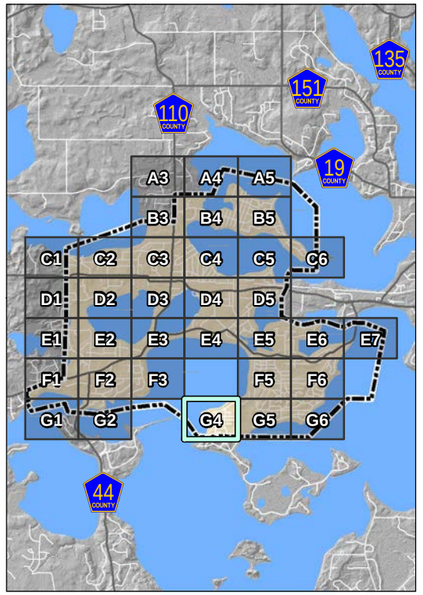
G2

September 2018

CITY OF MOUND

LOCATION MAP



F3

F5

CV49

PIPER RD

TUXEDO BLVD

HANOVER RD

CHARLES LN

FRANKLIN RD

GLADSTONE LN

DRUMMOND RD

G4

G5

WINDSOR RD

CV303

WATERBURY RD

CV275

WARNER LN

PHELPS RD

SEABURY RD

SULGROVE RD

SAINT MARYS RD

TUXEDO RD

Lake Minnetonka

Legend

- Storm Outfall
- Storm Manhole
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- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

10-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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G4

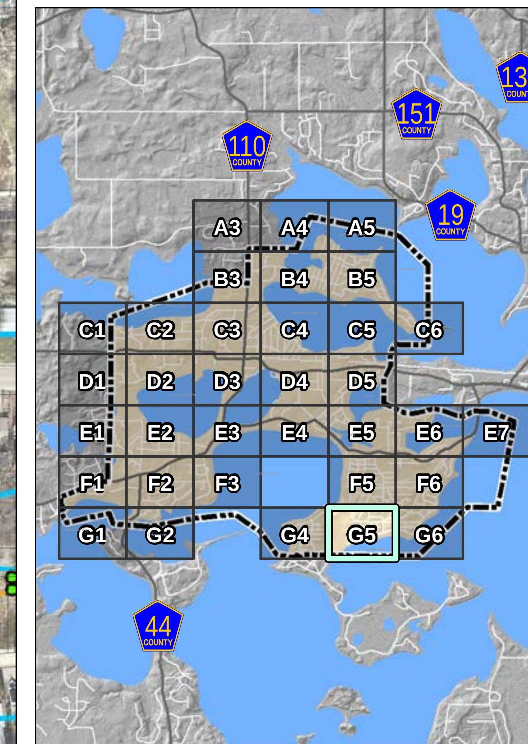
September 2018

Map Document: \\arcserver1\GIS\MOUNC\17115254\ESRI\Maps\Water_Resources\Mound_Subwatershed_10yr_MapBook_11x17.mxd | Date Saved: 9/5/2018 9:38:20 AM

SURFACE WATER MANAGEMENT PLAN

10-YEAR EXISTING CONDITION

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

10-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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September 2018

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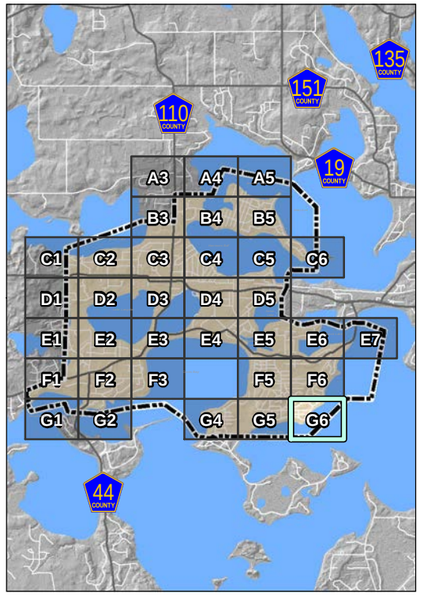
CITY OF MOUND

SURFACE WATER MANAGEMENT PLAN

10-YEAR EXISTING CONDITION

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

10-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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September 2018

Map Document: \\arcserver1\GIS\MOUN\C17115254\ESRI\Maps\Water_Resources\Mound_Subwatershed_10yr_MapBook_11x17.mxd | Date Saved: 9/5/2018 9:38:20 AM

SURFACE WATER MANAGEMENT PLAN

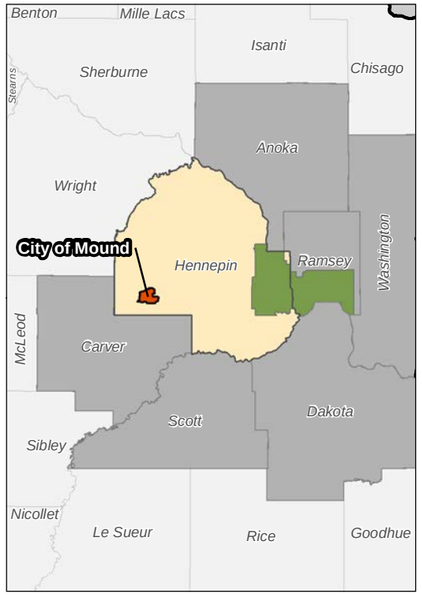
100-YEAR EXISTING CONDITION

CITY OF MOUND

A3 A4 A5
B3 B4 B5
C1 C2 C3 C4 C5 C6
D1 D2 D3 D4 D5
E1 E2 E3 E4 E5 E6 E7
F1 F2 F3 F5 F6
G1 G2 G4 G5 G6

19 COUNTY
151 COUNTY
110 COUNTY
15 COUNTY
51 COUNTY
125 COUNTY
44 COUNTY

LOCATION MAP



Legend

- Grid
- City Limits
- Interstate
- U.S. Highways
- State Highways
- County Roads
- Local Roads
- Protected Waters - Basin
- Protected Waters - Watercourse

0 1,500 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT

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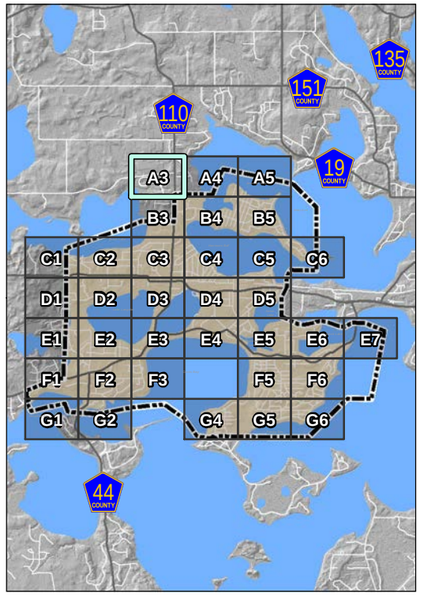
Map Document: \\arcserver1\GIS\MOUN\C171525401\ESRI\Maps\Water_Resources\Mound_Subwatershed_100yr_LocationMap_11x17.mxd | Date Saved: 8/15/2018 4:14:38 PM

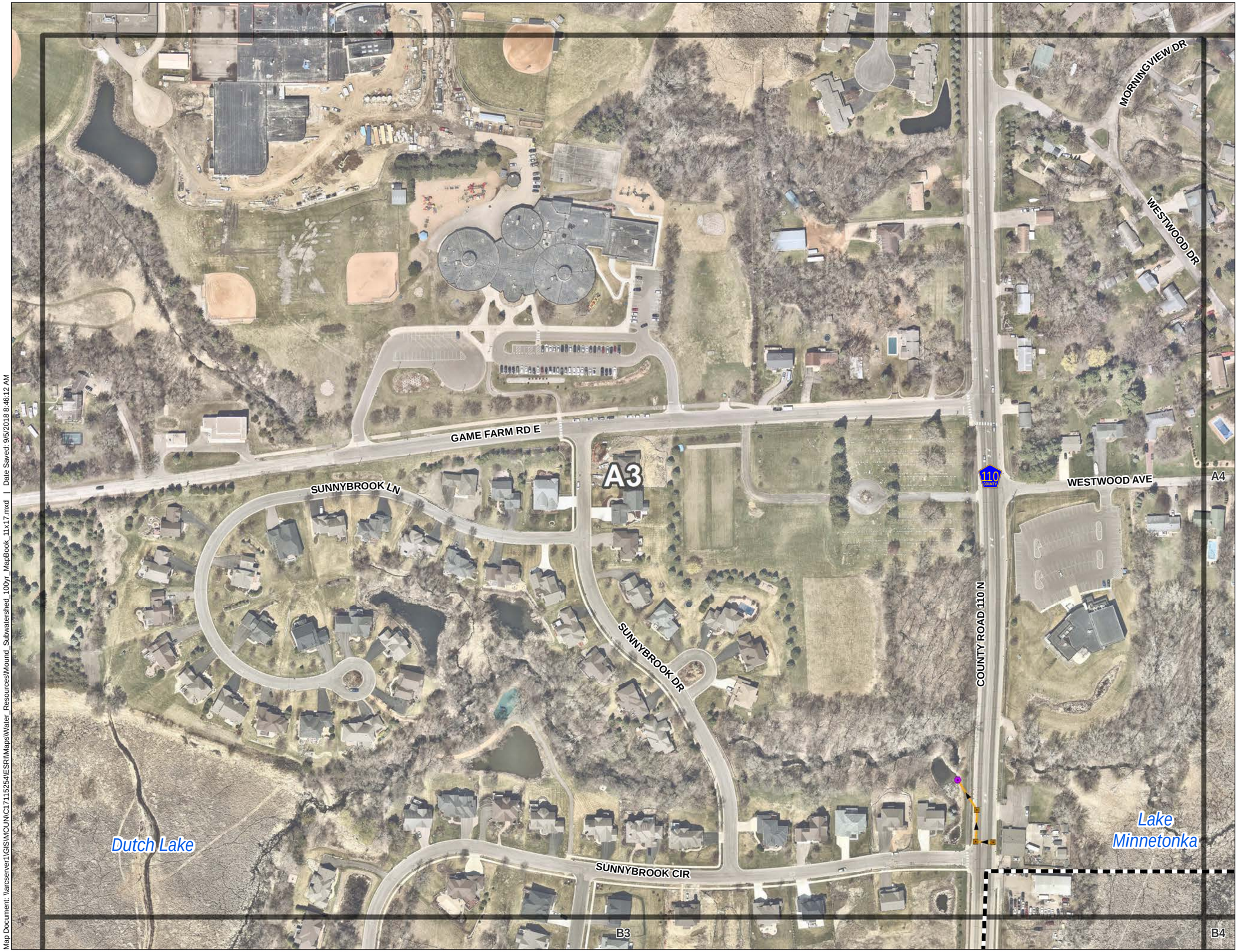
CITY OF MOUND

SURFACE WATER MANAGEMENT PLAN

100-YEAR EXISTING CONDITION

LOCATION MAP





Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

100-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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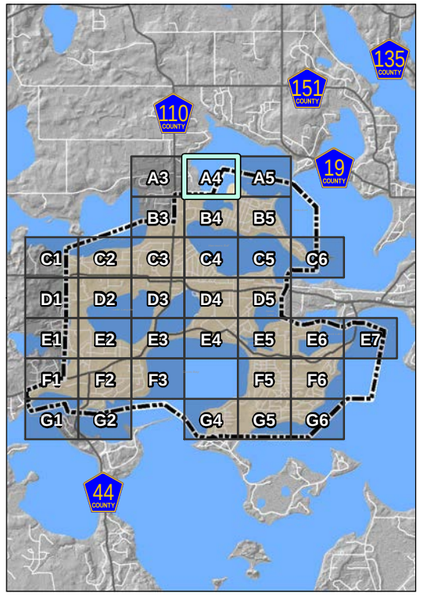
A3

September 2018

Map Document: \\arcserver1\GIS\MOUNC\1711525\4\ESRI\Maps\Water_Resources\Mound_Subwatershed_100yr_MapBook_11x17.mxd | Date Saved: 9/5/2018 8:46:12 AM

CITY OF MOUND

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

100-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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A4

September 2018

Map Document: \\arcserver1\GIS\MOUN\C171152\4\ESRI\Maps\Water_Resources\Mound_Subwatershed_100yr_MapBook_11x17.mxd | Date Saved: 9/5/2018 8:46:12 AM

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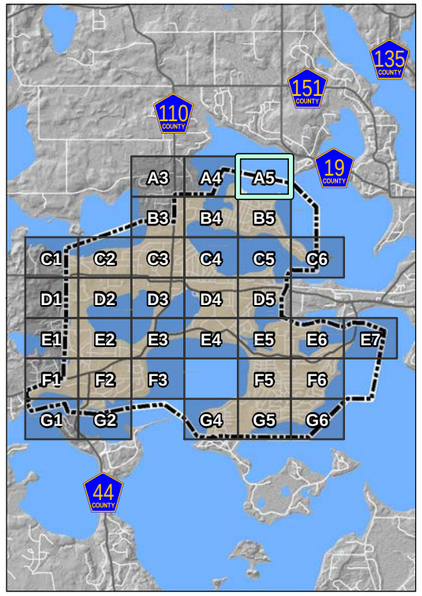
CITY OF MOUND

SURFACE WATER MANAGEMENT PLAN

100-YEAR EXISTING CONDITION

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

100-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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A5

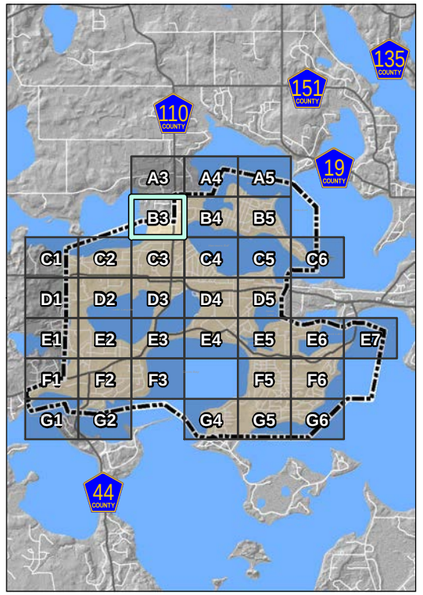
September 2018

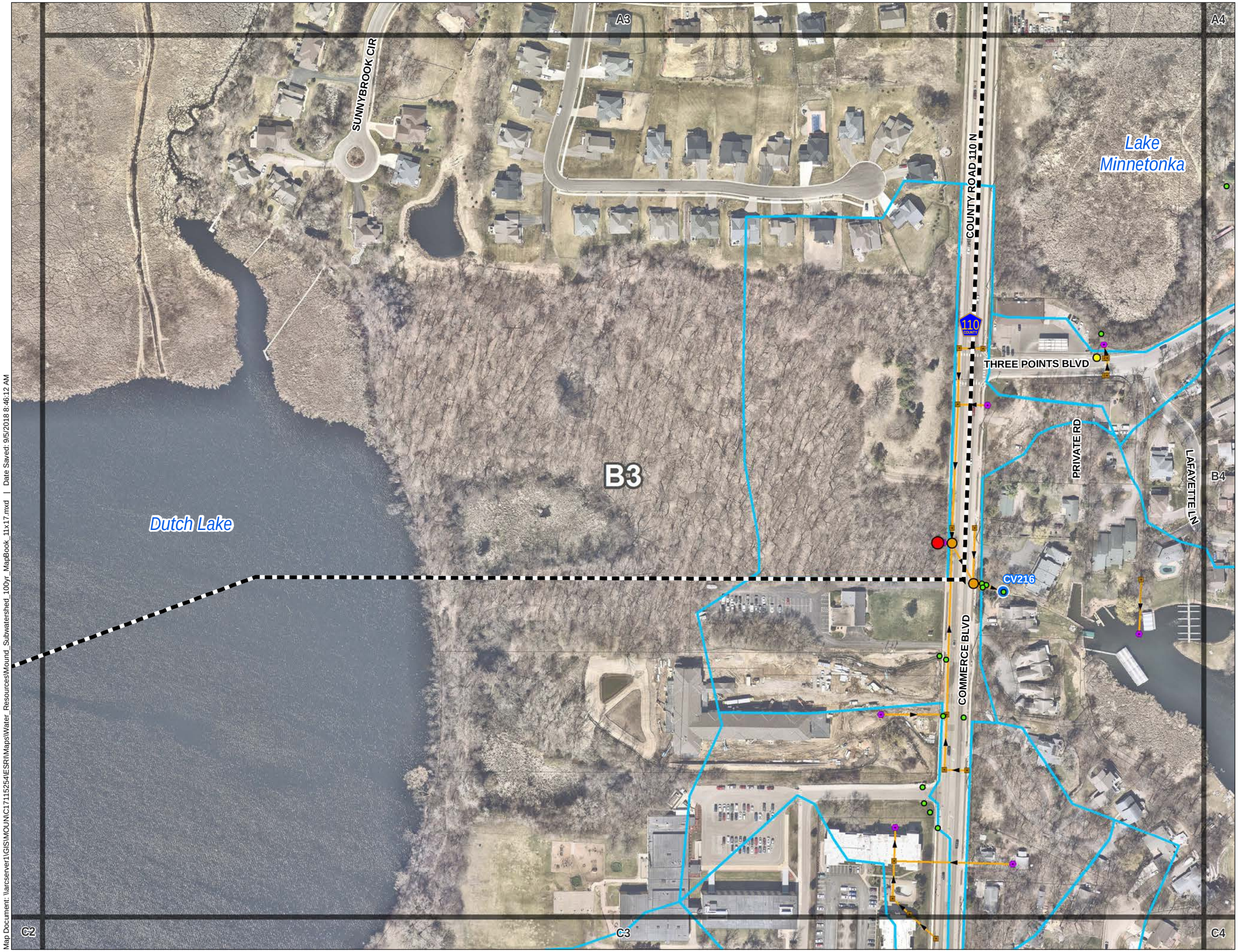
CITY OF MOUND

SURFACE WATER MANAGEMENT PLAN

100-YEAR EXISTING CONDITION

LOCATION MAP





Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

100-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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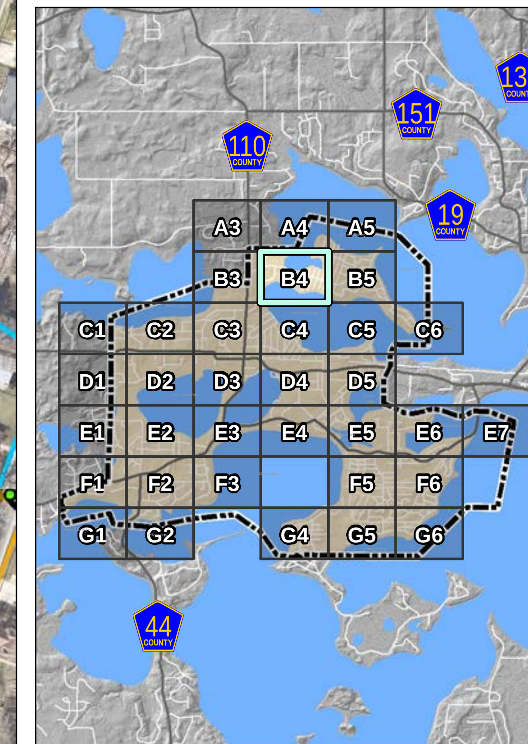
B3

SURFACE WATER MANAGEMENT PLAN

100-YEAR EXISTING CONDITION

CITY OF MOUND

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

100-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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B4

Map Document: \\arcserver1\GIS\MOUN\C17115254\ESRI\Maps\Water_Resources\Mound_Subwatershed_100yr_MapBook_11x17.mxd | Date Saved: 9/5/2018 8:46:12 AM

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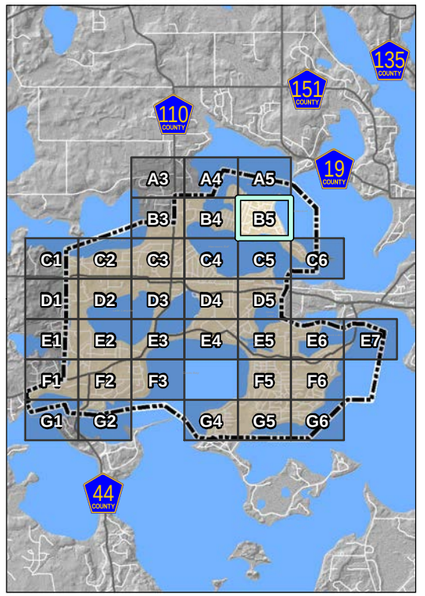
SURFACE WATER MANAGEMENT PLAN

100-YEAR EXISTING CONDITION

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

100-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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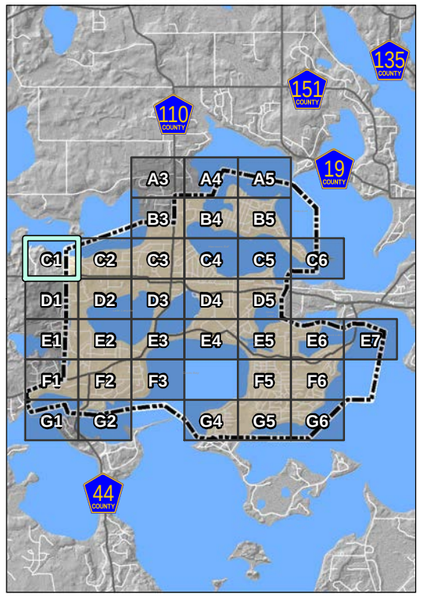
B5

CITY OF MOUND

SURFACE WATER MANAGEMENT PLAN

100-YEAR EXISTING CONDITION

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

100-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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C1

September 2018

Map Document: \\arcserver1\GIS\MOUND\171152541ESRI\Maps\Water_Resources\Mound_Subwatershed_100yr_MapBook_11x17.mxd | Date Saved: 9/5/2018 8:46:12 AM

CITY OF MOUND

Dutch Lake

B3

C1

C2

C3

D1

D2

D3

LINDEN LN

DUTCH LN

RED OAK RD

BIRCH LN

RAMBLER LN

ROBIN LN

CLOVER CIR

ASPEN RD

FOREST LN

SOUTHVIEW LN

SUNSET RD

SYCAMORE LN

DIAMOND LN

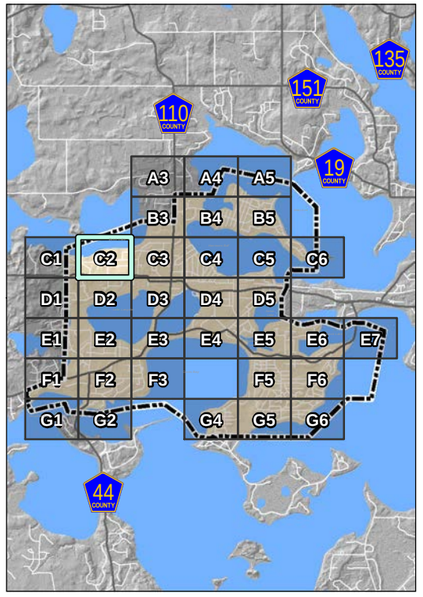
HILLCREST RD

GUMWOOD RD

LYNWOOD BLVD

15 COUNTY

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

100-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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C2

Map Document: \\arcserver1\GIS\MOUNC1711525\4\ESRI\Maps\Water_Resources\Mound_Subwatershed_100yr_MapBook_11x17.mxd | Date Saved: 9/5/2018 8:46:12 AM

Dutch Lake

Lake Minnetonka

B3

B4

C2

C3

C4

D2

D3

D4

GRANDVIEW BLVD

SUNSET RD

ELM RD

HILLCREST RD

VILLAGE TRL

BELLAIRE LN

SHERWOOD DR

CV157

IRONWOOD LN

OLD SCHOOL TRL

COLONY LN

ALDER RD

COMMERCE BLVD

SPRUCE RD

TONKAWOOD RD

CHURCH RD

FERN LN

LANGDON LN

PRIVATE RD

LYNWOOD BLVD

110

15

135

151

19

44

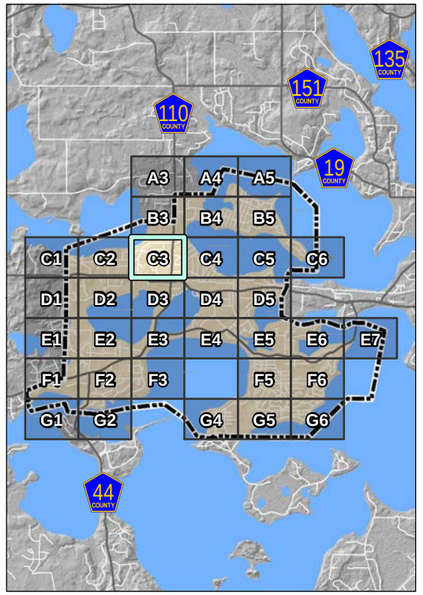
Map Document: \\arcserver1\GIS\MOUNC1711525\4\ESRI\MapsWater_Resources\Mound_Subwatershed_100yr_MapBook_11x17.mxd | Date Saved: 9/5/2018 8:46:12 AM

SURFACE WATER MANAGEMENT PLAN

100-YEAR EXISTING CONDITION

CITY OF MOUND

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

100-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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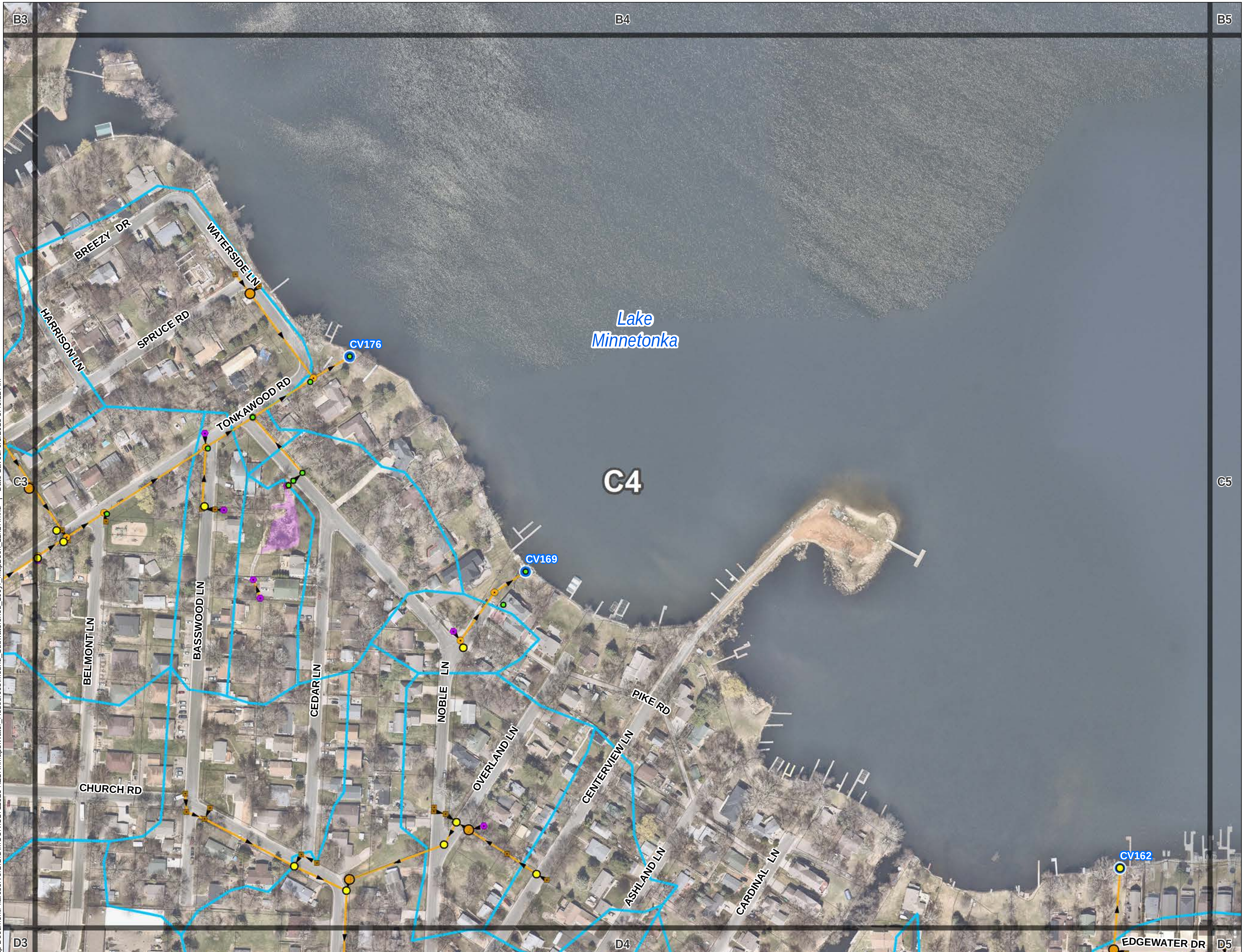
C3

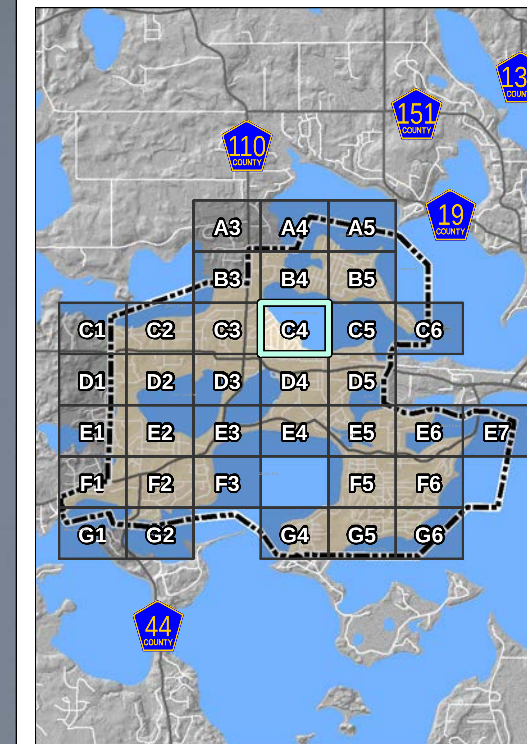


SURFACE WATER MANAGEMENT PLAN

CITY OF MOUND

100-YEAR EXISTING CONDITION

LOCATION MAP



Legend

Storm Outfall		**100-year Event Flooding Depths**	
Storm Manhole		No Flooding	
Storm Control Structure		0-1 Ft	
Catch Basin		1-2 Ft	
Storm Culvert		>2 ft	
Storm Pipe		Grid	
Watersheds		Parcels	
Stormwater Ponds		City Limits	

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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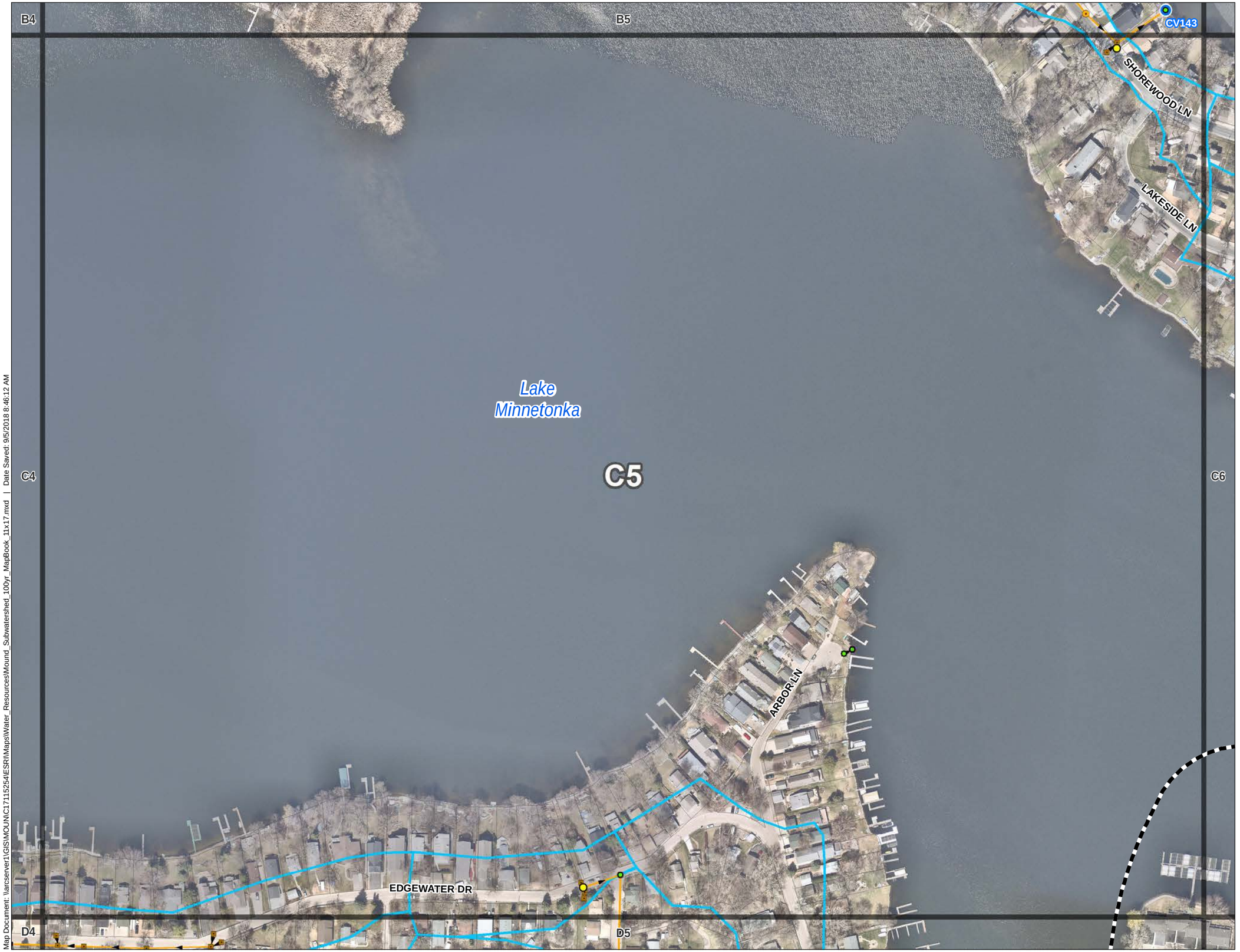
C4

Map Document: \\arcserver1\GIS\MOUND\C17115254\ESRI\Maps\Water_Resources\Mound_Subwatershed_100yr_MapBook_11x17.mxd | Date Saved: 9/5/2018 8:46:12 AM



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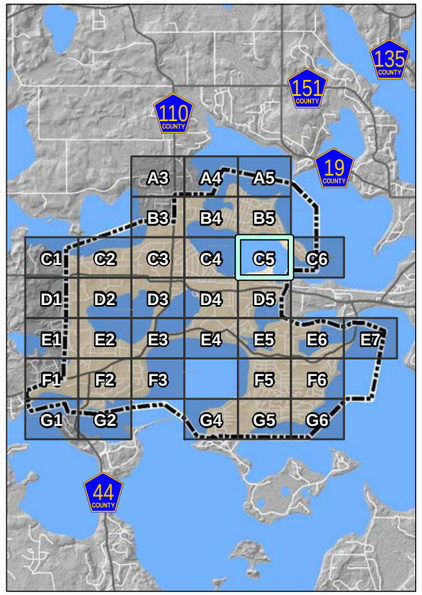
CITY OF MOUND

SURFACE WATER MANAGEMENT PLAN

100-YEAR EXISTING CONDITION

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

100-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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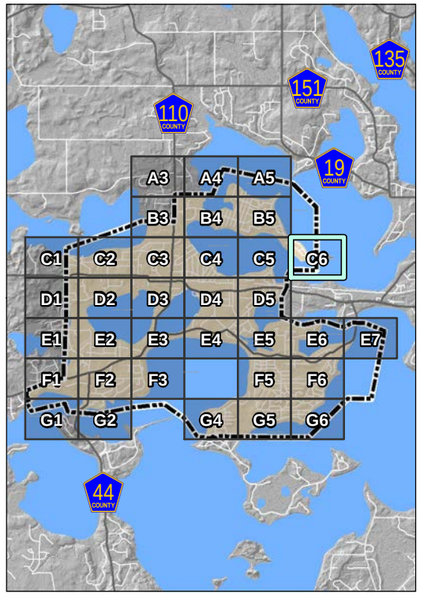
C5

SURFACE WATER MANAGEMENT PLAN

100-YEAR EXISTING CONDITION

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

100-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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C6

September 2018

Map Document: \\arcserver1\GIS\MOUN\C171152541ESRI\Maps\Water_Resources\Mound_Subwatershed_100yr_MapBook_11x17.mxd | Date Saved: 9/5/2018 8:46:12 AM

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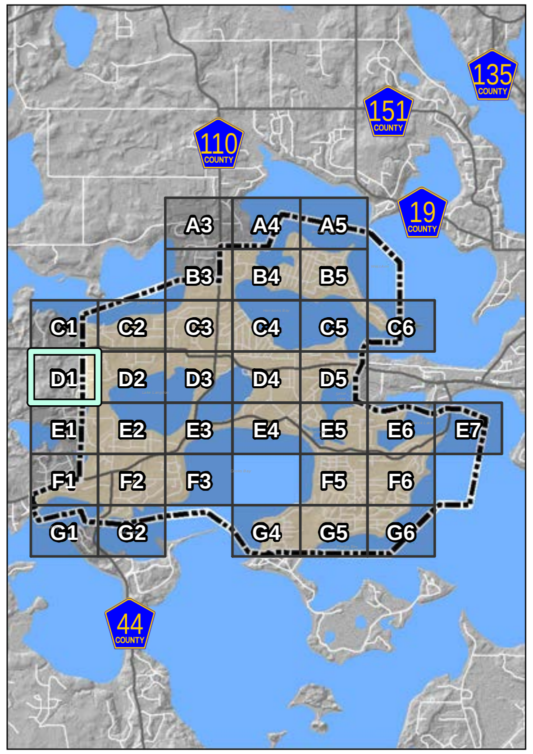
CITY OF MOUND

SURFACE WATER MANAGEMENT PLAN

100-YEAR EXISTING CONDITION

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
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- Stormwater Ponds

100-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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D1

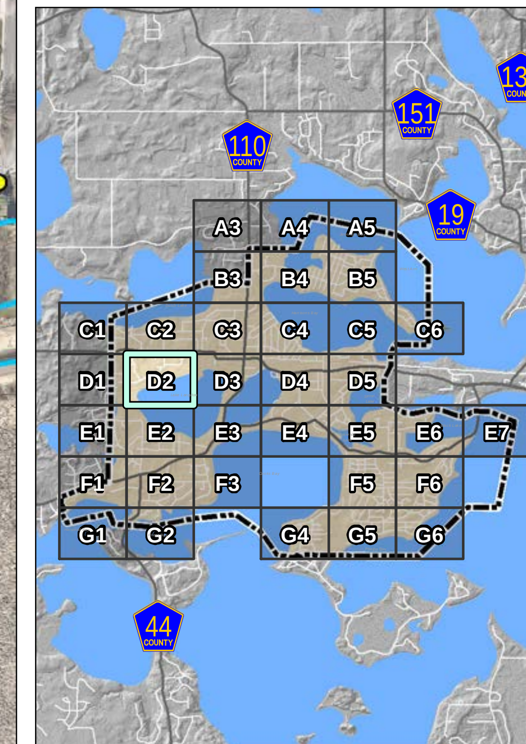
September 2018

SURFACE WATER MANAGEMENT PLAN

100-YEAR EXISTING CONDITION

CITY OF MOUND

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

100-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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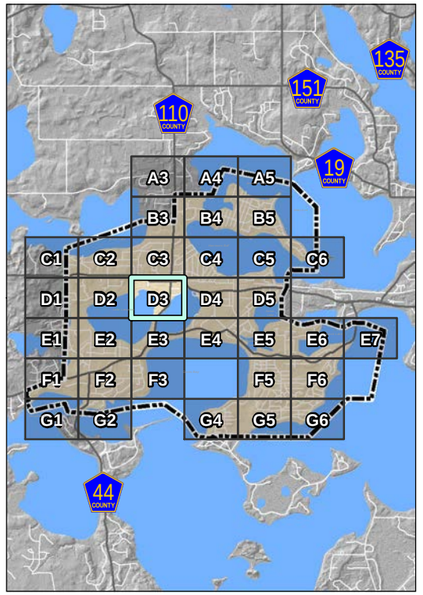
D2

September 2018

Map Document: \\arcserver1\GIS\MOUN\C17115254\ESRI\Maps\Water_Resources\Mound_Subwatershed_100yr_MapBook_11x17.mxd | Date Saved: 9/5/2018 8:46:12 AM

CITY OF MOUND

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

100-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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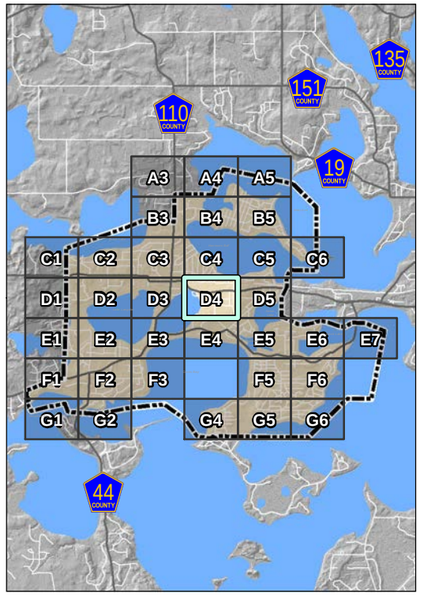
D3

SURFACE WATER MANAGEMENT PLAN

100-YEAR EXISTING CONDITION

CITY OF MOUND

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

100-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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D4

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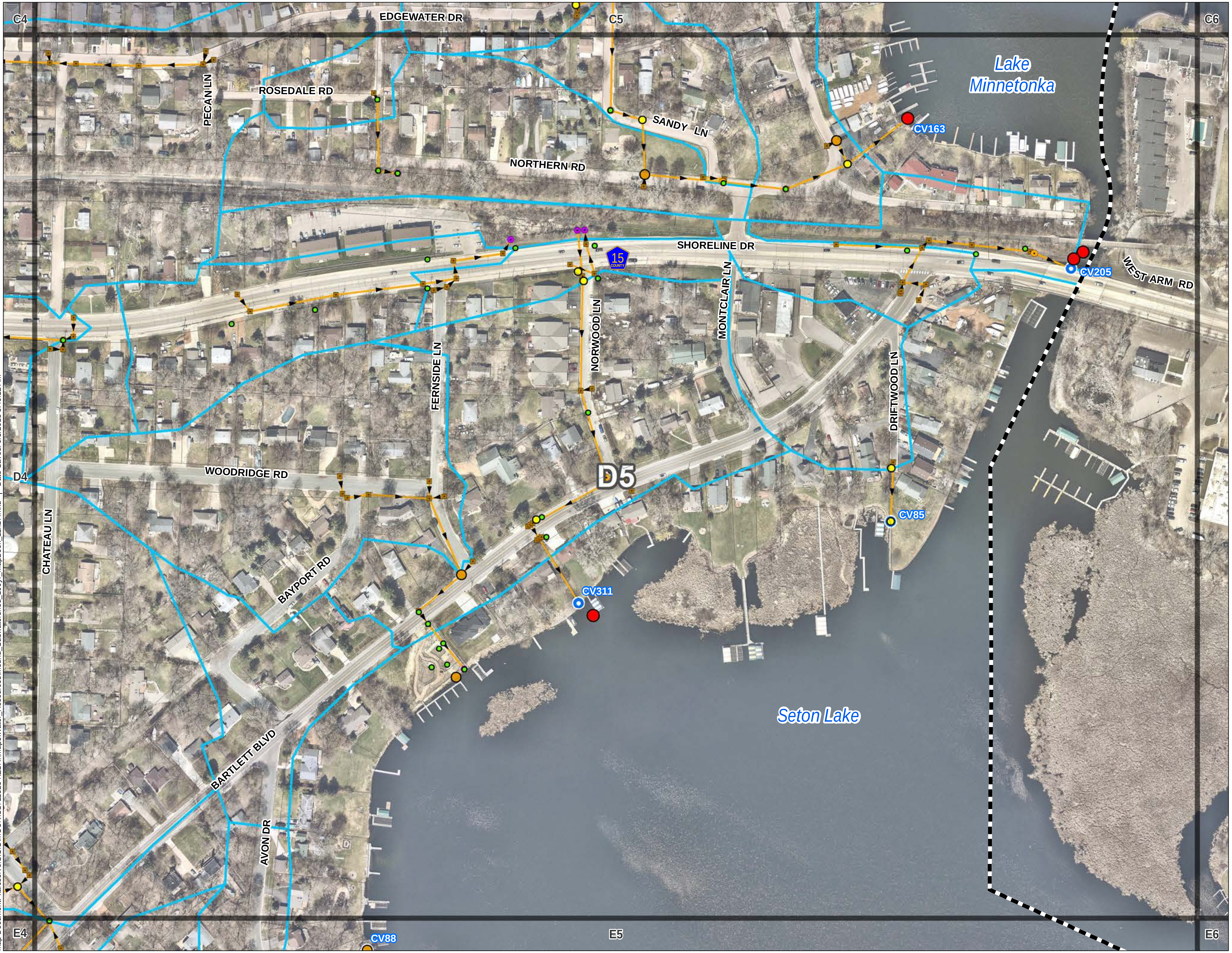
Map Document: \\arcserver1\GIS\MOUN\C17115254\ESRI\Maps\Water_Resources\Mound_Subwatershed_100yr_MapBook_11x17.mxd | Date Saved: 9/5/2018 8:46:12 AM

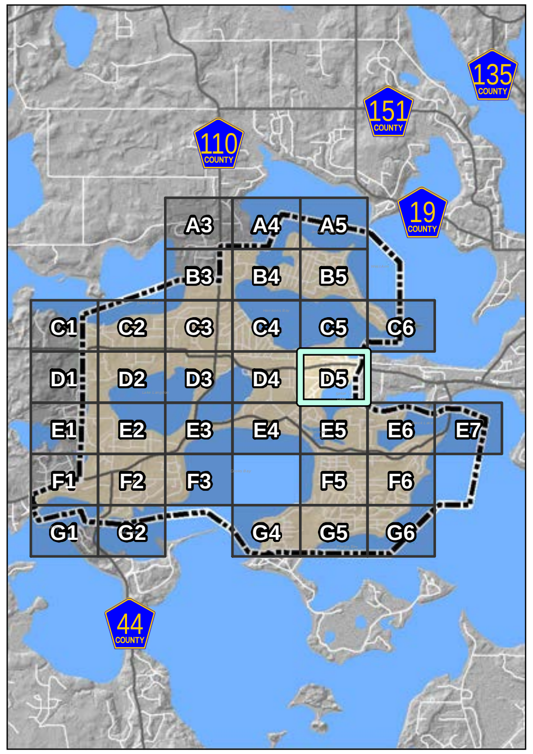
SURFACE WATER MANAGEMENT PLAN

CITY OF MOUND

100-YEAR EXISTING CONDITION



LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

100-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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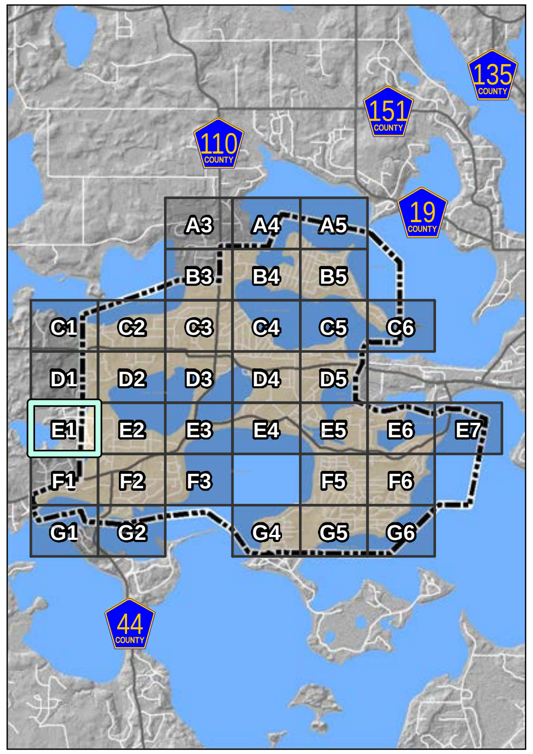
September 2018

SURFACE WATER MANAGEMENT PLAN

CITY OF MOUND

100-YEAR EXISTING CONDITION

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

100-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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E1

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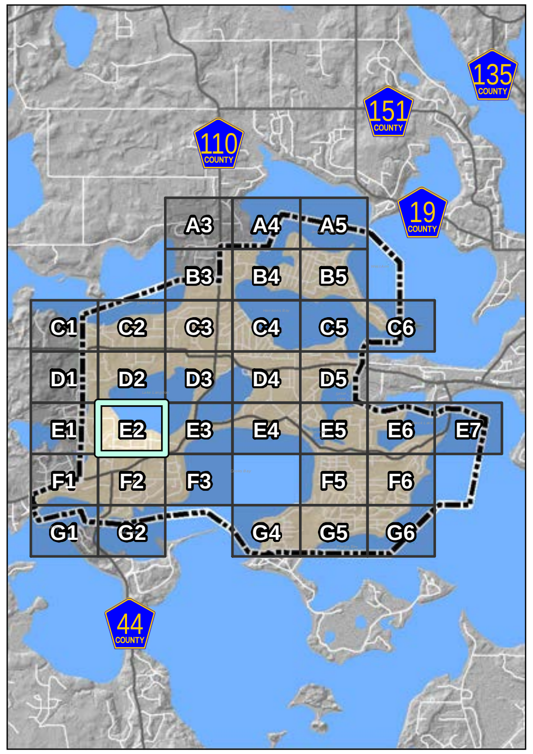
SURFACE WATER MANAGEMENT PLAN

100-YEAR EXISTING CONDITION

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

100-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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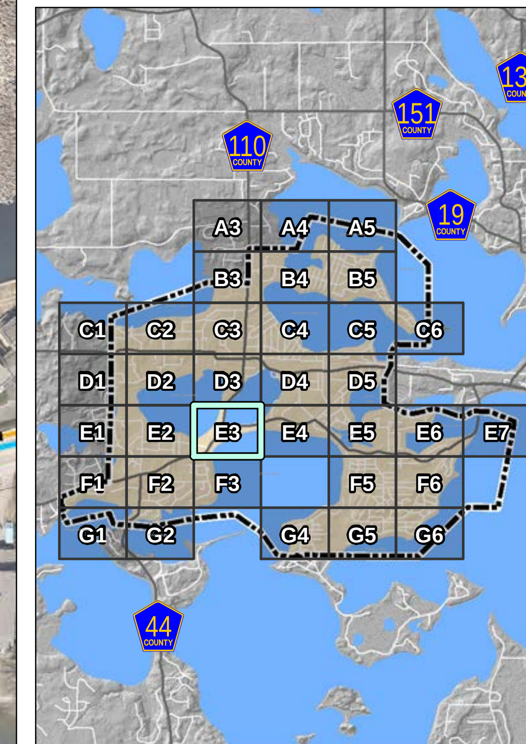
E2

SURFACE WATER MANAGEMENT PLAN

100-YEAR EXISTING CONDITION

LOCATION MAP



Legend

Storm Outfall		**100-year Event Flooding Depths**	
Storm Manhole		No Flooding	
Storm Control Structure		0-1 Ft	
Catch Basin		1-2 Ft	
Storm Culvert		>2 ft	
Storm Pipe		Grid	
Watersheds		Parcels	
Stormwater Ponds		City Limits	

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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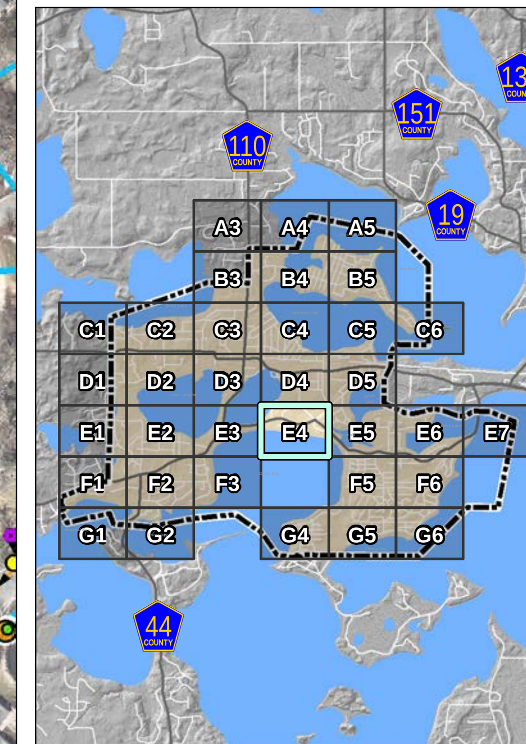
SURFACE WATER MANAGEMENT PLAN

100-YEAR EXISTING CONDITION

CITY OF MOUND

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

100-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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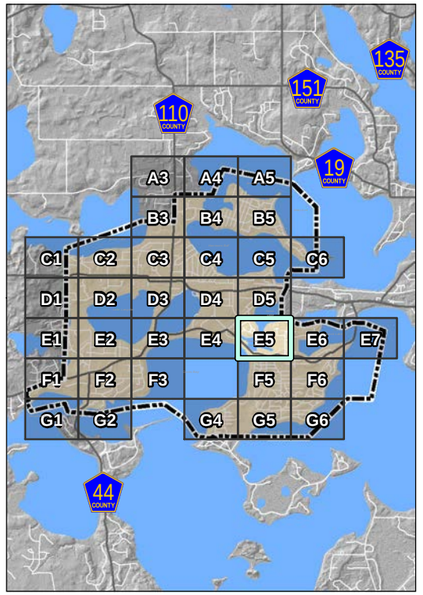
E4

CITY OF MOUND

SURFACE WATER MANAGEMENT PLAN

100-YEAR EXISTING CONDITION

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

100-year Event Flooding Depths

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- 0-1 Ft
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- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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E5

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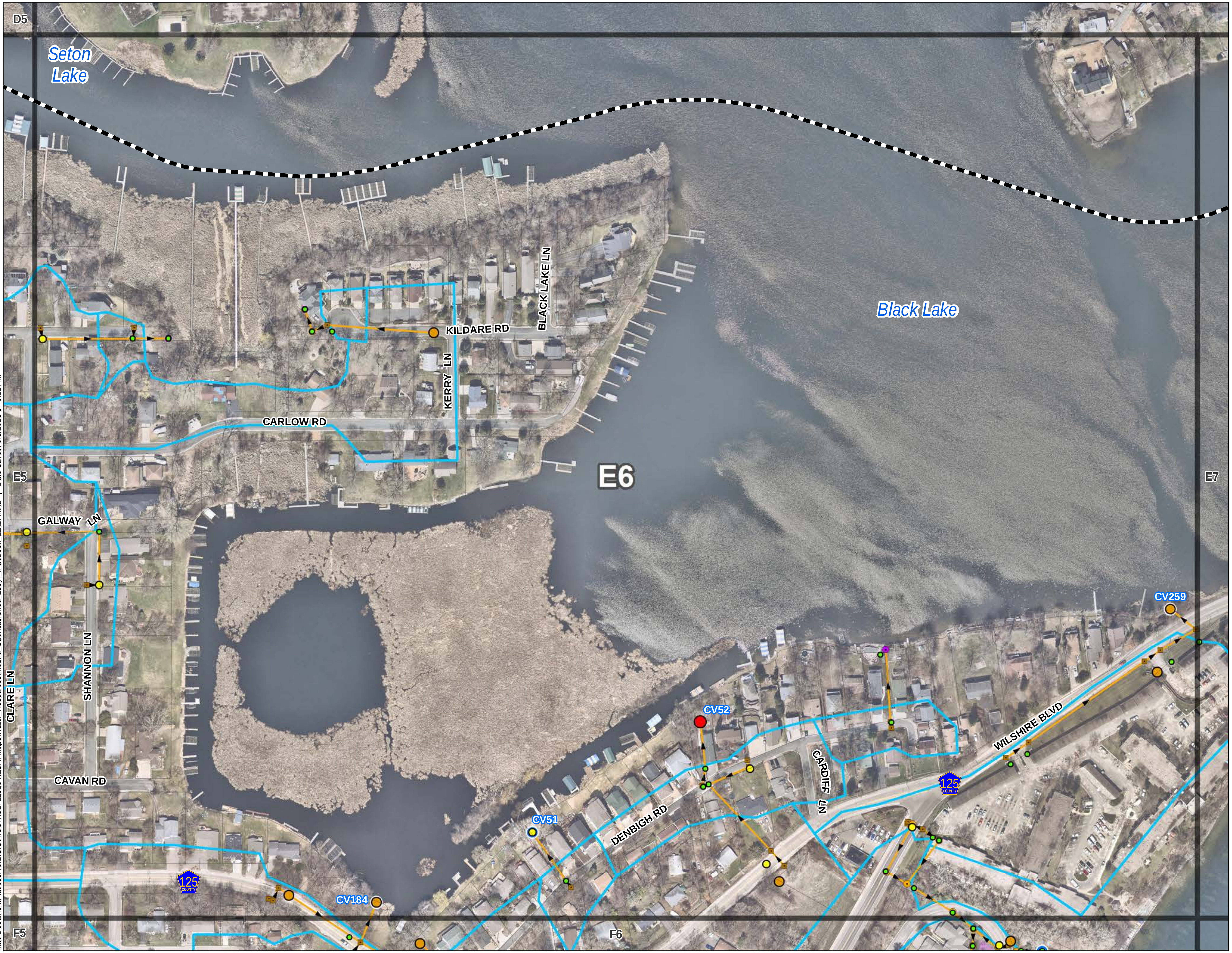
Map Document: \\arcserver1\GIS\MOUN\C17115254\ESRI\Maps\Water_Resources\Mound_Subwatershed_100yr_MapBook_11x17.mxd | Date Saved: 9/5/2018 8:46:12 AM

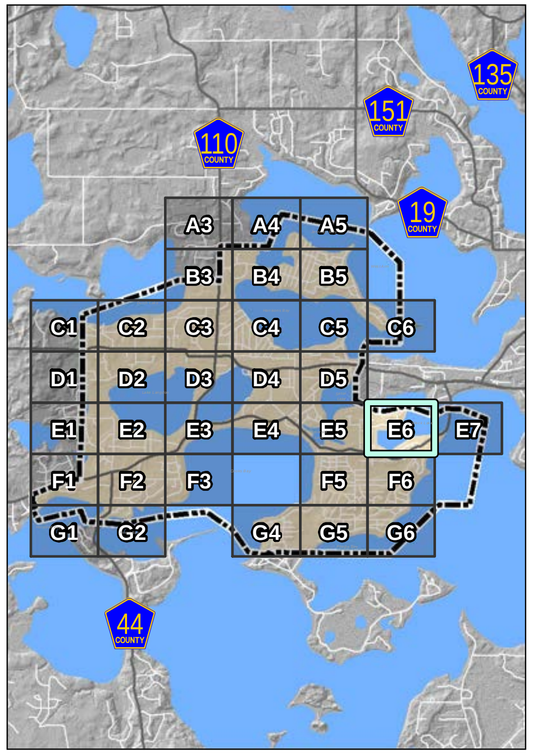
SURFACE WATER MANAGEMENT PLAN

100-YEAR EXISTING CONDITION

CITY OF MOUND



LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
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- Storm Culvert
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- Watersheds
- Stormwater Ponds

100-year Event Flooding Depths

- No Flooding
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- >2 ft
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- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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E6

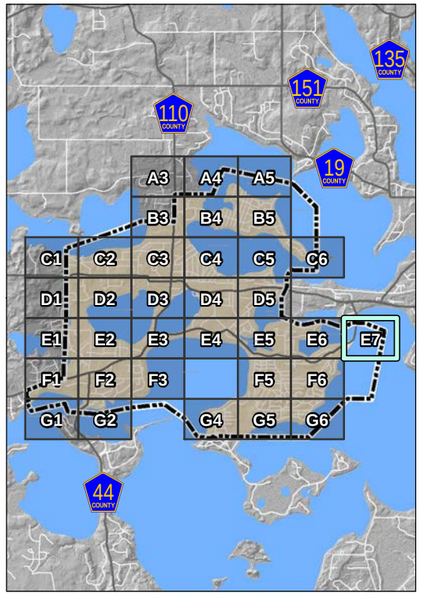
September 2018

Map Document: \\arcserver1\GIS\MOUNC\C17115254\ESRI\Maps\Water_Resources\Mound_Subwatershed_100yr_MapBook_11x17.mxd | Date Saved: 9/5/2018 8:46:12 AM

SURFACE WATER MANAGEMENT PLAN

100-YEAR EXISTING CONDITION

LOCATION MAP



Legend

- Storm Outfall
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100-year Event Flooding Depths

- No Flooding
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- >2 ft
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- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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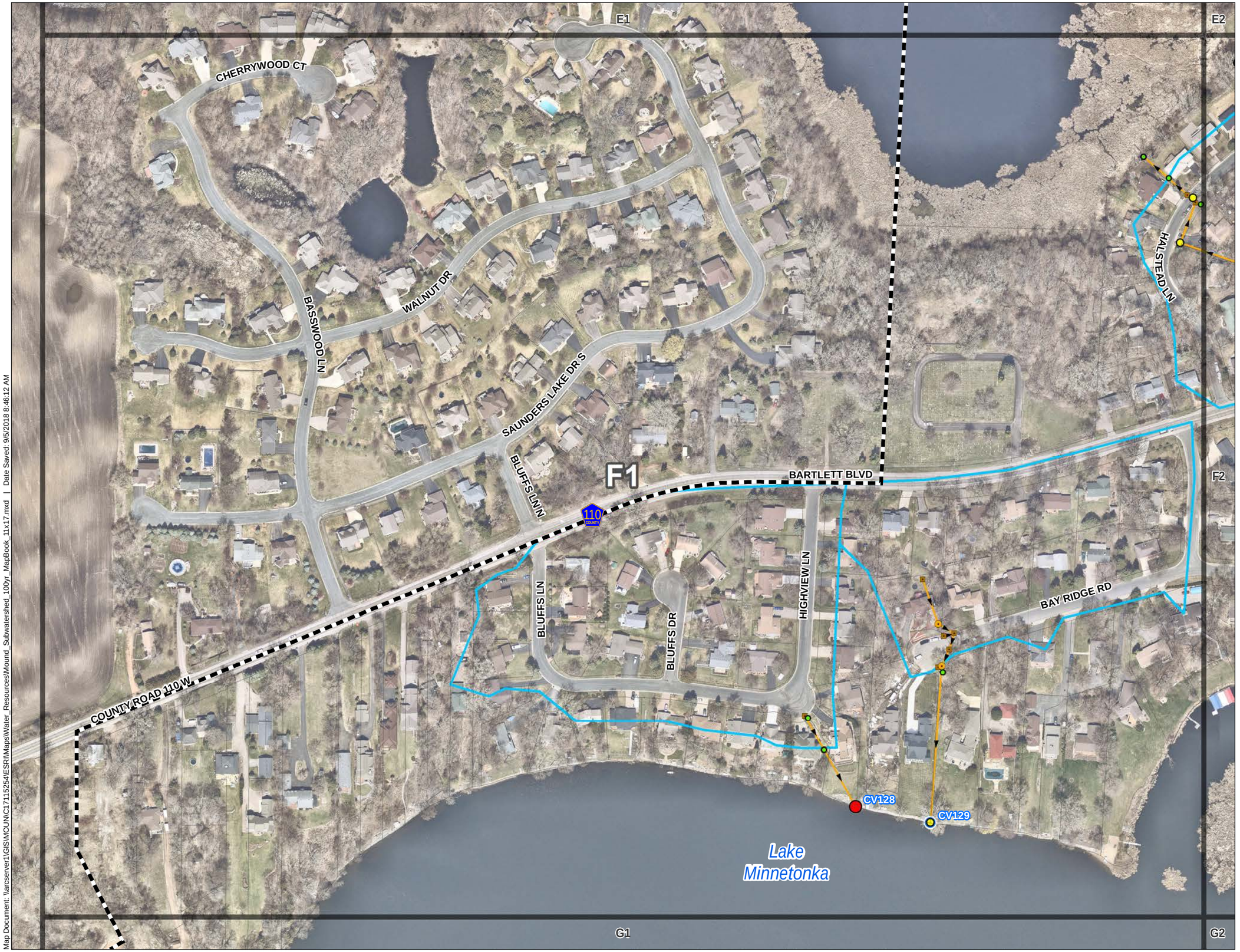
E7

Map Document: \\arcserver1\GIS\MOUNC1711525\4\ESRI\Maps\Water_Resources\Mound_Subwatershed_100yr_MapBook_11x17.mxd | Date Saved: 9/5/2018 8:46:12 AM

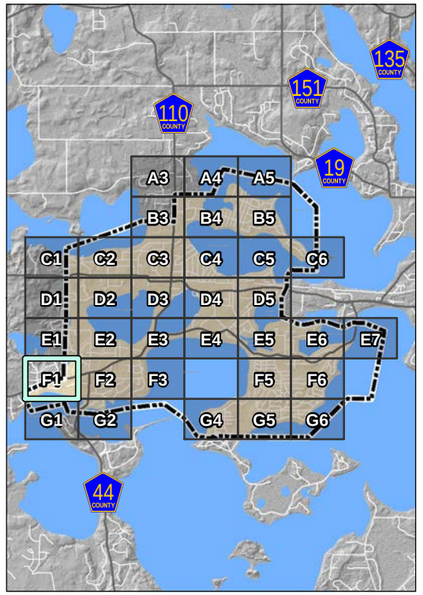


CITY OF MOUND

SURFACE WATER MANAGEMENT PLAN

100-YEAR EXISTING CONDITION

LOCATION MAP



Legend

- Storm Outfall
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- Storm Culvert
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- Stormwater Ponds

100-year Event Flooding Depths

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- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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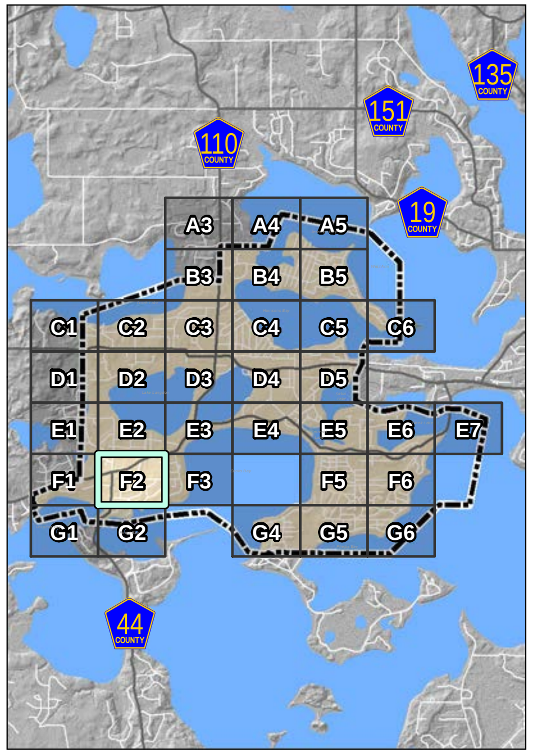
F1

SURFACE WATER MANAGEMENT PLAN

100-YEAR EXISTING CONDITION

CITY OF MOUND

LOCATION MAP



Legend

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- Storm Control Structure
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100-year Event Flooding Depths

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- >2 ft
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- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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F2

September 2018

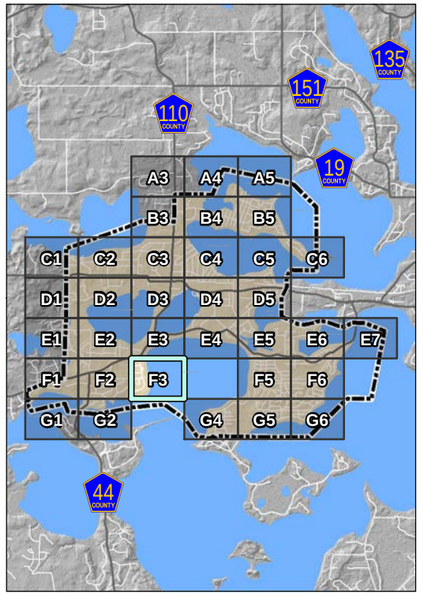
Map Document: \\arcserver1\GIS\MOUN\C1711525\4\ESRI\Maps\Water_Resources\Mound_Subwatershed_100yr_MapBook_11x17.mxd | Date Saved: 9/5/2018 8:46:12 AM

CITY OF MOUND

SURFACE WATER MANAGEMENT PLAN

100-YEAR EXISTING CONDITION

LOCATION MAP



Legend

- Storm Outfall
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100-year Event Flooding Depths

- No Flooding
- 0-1 Ft
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- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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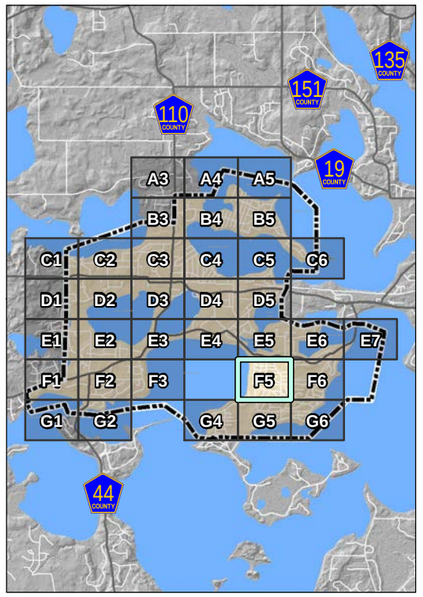
F3

CITY OF MOUND

LOCATION MAP



Legend

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- Stormwater Ponds

100-year Event Flooding Depths

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- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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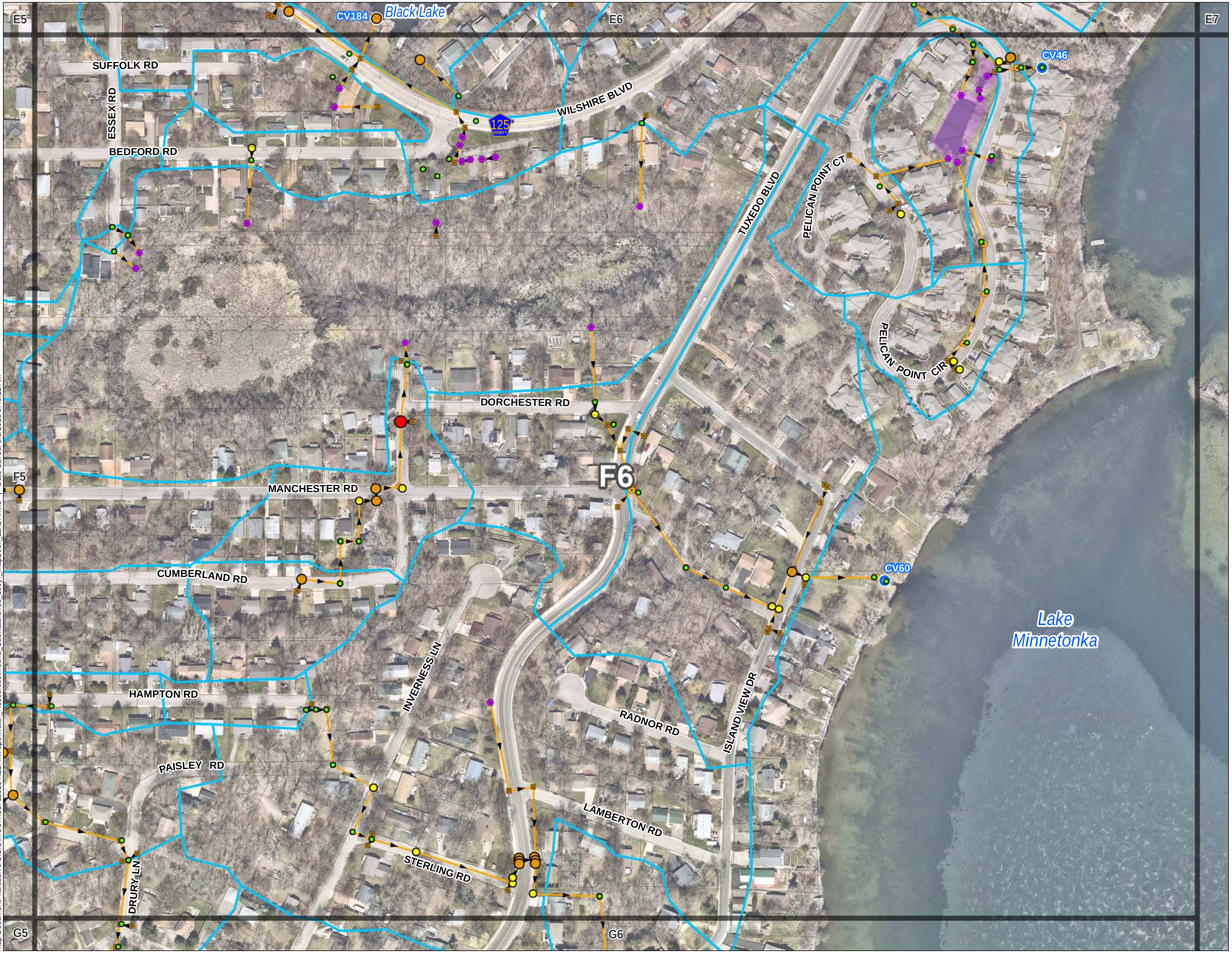
F5

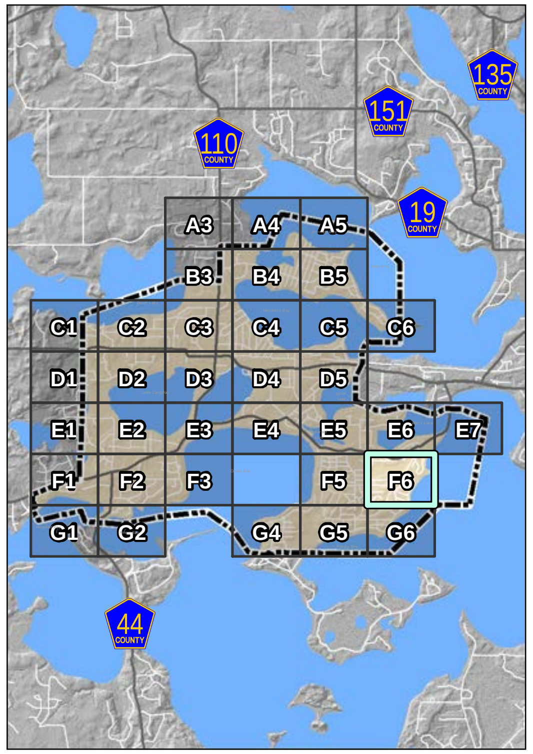


SURFACE WATER MANAGEMENT PLAN

CITY OF MOUND

100-YEAR EXISTING CONDITION

LOCATION MAP



Legend

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- Stormwater Ponds

100-year Event Flooding Depths

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- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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F6

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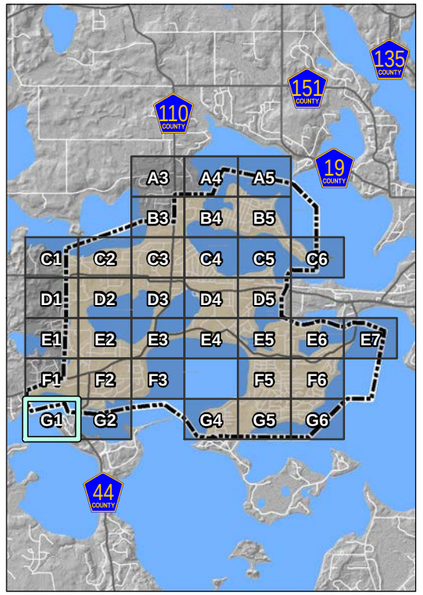
SURFACE WATER MANAGEMENT PLAN

100-YEAR EXISTING CONDITION

CITY OF MOUND

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
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- Storm Culvert
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- Stormwater Ponds

100-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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G1

September 2018

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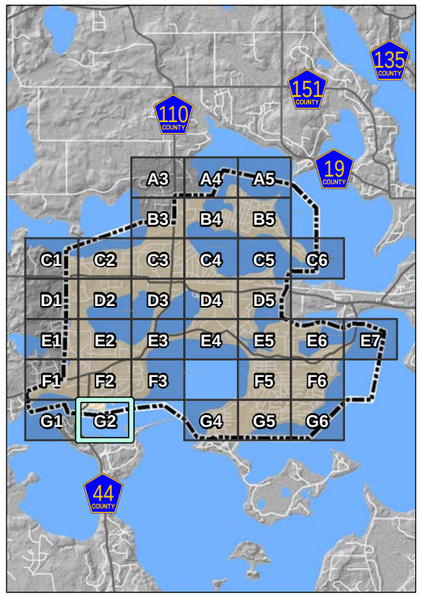
CITY OF MOUND

SURFACE WATER MANAGEMENT PLAN

100-YEAR EXISTING CONDITION

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

100-year Event Flooding Depths

- No Flooding
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- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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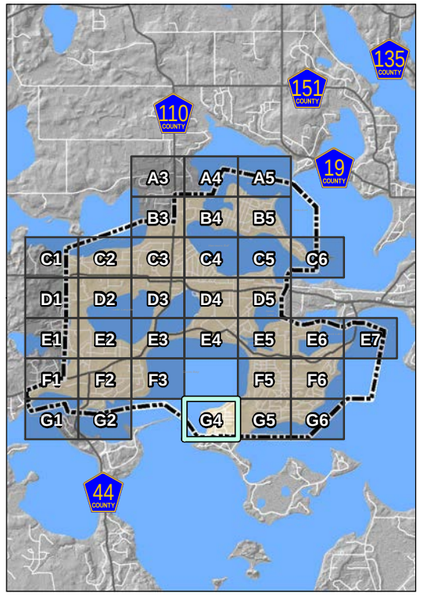
G2

SURFACE WATER MANAGEMENT PLAN

100-YEAR EXISTING CONDITION

CITY OF MOUND

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

100-year Event Flooding Depths

- No Flooding
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- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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G4

September 2018

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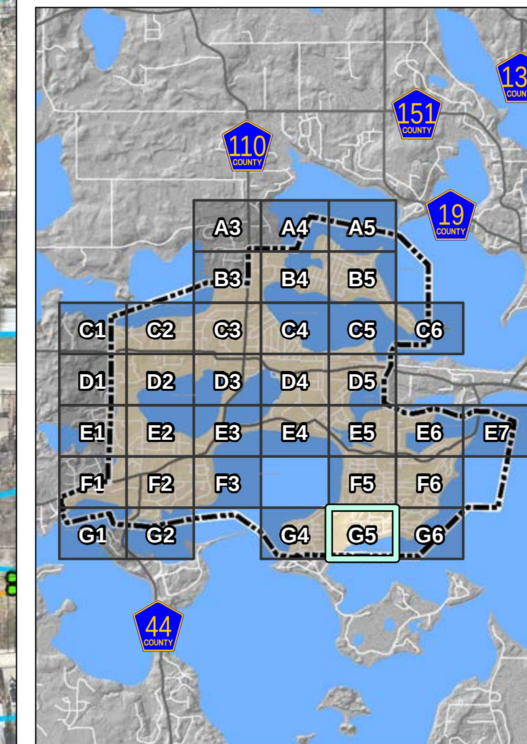
CITY OF MOUND

SURFACE WATER MANAGEMENT PLAN

100-YEAR EXISTING CONDITION

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

100-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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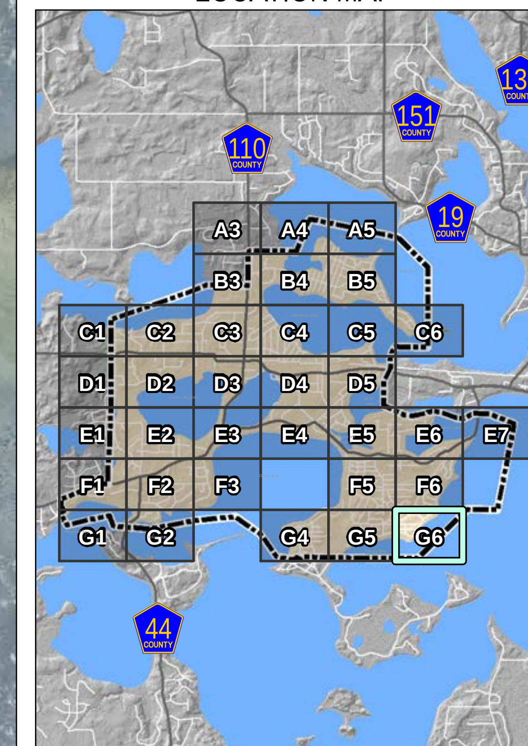
G5

September 2018

LOCATION MAP



Legend

- Storm Outfall
- Storm Manhole
- Storm Control Structure
- Catch Basin
- Storm Culvert
- Storm Pipe
- Watersheds
- Stormwater Ponds

100-year Event Flooding Depths

- No Flooding
- 0-1 Ft
- 1-2 Ft
- >2 ft
- Grid
- Parcels
- City Limits

0 200 Feet

Source: City of Mound, Hennepin County MnDNR, MnDOT, Nearmap

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G6

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Appendix C

Modeling Methodology

MODELING METHODOLOGY AND MAPPING

1. The general procedure used in the runoff modeling aspects of this analysis has been performed using the XPSWMM modeling software. The typical analysis is based on Soil Conservation Service, Technical Release No. 20 (SCS TR-20). The SCS procedure is based on a standard synthetic rainfall hydrograph, which is modified by local parameters (i.e., rainfall, soil type, time to peak flow, etc.) and is widely accepted among drainage engineers across the United States.

2. For purposes of this report and using precipitation depths from Atlas 14, typical 24-hour rainfall events of 2.48", 4.23" and 7.24" have been chosen to analyze runoff/development interaction. These events are best described as those having probabilities of 100%, 10%, and 1% of occurring in any given year, respectively.

3. The probabilities of occurrence do not imply that a 2.48", 4.23" and 7.24" rainfall cannot occur multiple times within the same year; they simply say that on the average a 2.48" rainfall has a 100% probability of occurring in any given year, a 4.23" rainfall has a 10% probability of occurring in any given year, and a 7.24" rainfall has a 1% probability of occurring in any given year.

Appendix D

Modeling Results – Available upon Request

Appendix E

Capital Improvement Plan

10-YEAR CAPITAL IMPROVEMENT PLAN (CIP): 2019-2028
STORM WATER FUND PROJECT COSTS
3-Apr-19
(Includes 30% Indirect Cost and Street Replacement Cost [If Not Assessable Project])

PROJECT	FUNDING SOURCE	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
DUTCH LAKE SUBWATERSHED											
General Storm System Maintenance (including Pond Cleaning)	Storm Water Utility Fund	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67
Street and Utility Improvement Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Storm Water Runoff Management and Treatment Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Annual Outfall Maintenance	Storm Water Utility Fund	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11
Subtotal		$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78
LAKE LANGDON SUBWATERSHED											
General Storm System Maintenance (including Pond Cleaning)	Storm Water Utility Fund	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67
Street and Utility Improvement Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Storm Water Runoff Management and Treatment Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Annual Outfall Maintenance	Storm Water Utility Fund	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11
Subtotal		$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78
SAUNDERS LAKE SUBWATERSHED											
General Storm System Maintenance (including Pond Cleaning)	Storm Water Utility Fund	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67
Street and Utility Improvement Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Storm Water Runoff Management and Treatment Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Annual Outfall Maintenance	Storm Water Utility Fund	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11
Subtotal		$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78
HALSTED BAY SUBWATERSHED											
General Storm System Maintenance (including Pond Cleaning)	Storm Water Utility Fund	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67
Street and Utility Improvement Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Storm Water Runoff Management and Treatment Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Annual Outfall Maintenance	Storm Water Utility Fund	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11
Subtotal		$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78
PREIST BAY SUBWATERSHED											
General Storm System Maintenance (including Pond Cleaning)	Storm Water Utility Fund	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67
Street and Utility Improvement Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Storm Water Runoff Management and Treatment Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Annual Outfall Maintenance	Storm Water Utility Fund	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11
Subtotal		$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78
WEST COOK'S BAY SUBWATERSHED											
General Storm System Maintenance (including Pond Cleaning)	Storm Water Utility Fund	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67
Street and Utility Improvement Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Storm Water Runoff Management and Treatment Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Annual Outfall Maintenance	Storm Water Utility Fund	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11
Subtotal		$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78
EAST COOK'S BAY SUBWATERSHED											
General Storm System Maintenance (including Pond Cleaning)	Storm Water Utility Fund	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67
Street and Utility Improvement Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Storm Water Runoff Management and Treatment Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Annual Outfall Maintenance	Storm Water Utility Fund	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11
Subtotal		$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78
LOST LAKE SUBWATERSHED											
General Storm System Maintenance (including Pond Cleaning)	Storm Water Utility Fund	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67

PROJECT	FUNDING SOURCE	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Street and Utility Improvement Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Storm Water Runoff Management and Treatment Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Annual Outfall Maintenance	Storm Water Utility Fund	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11
Subtotal		$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78
SOUTH HARRISON BAY SUBWATERSHED											
General Storm System Maintenance (including Pond Cleaning)	Storm Water Utility Fund	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67
Street and Utility Improvement Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Storm Water Runoff Management and Treatment Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Annual Outfall Maintenance	Storm Water Utility Fund	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11
Subtotal		$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78
NORTH HARRISON BAY SUBWATERSHED											
General Storm System Maintenance (including Pond Cleaning)	Storm Water Utility Fund	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67
Street and Utility Improvement Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Storm Water Runoff Management and Treatment Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Annual Outfall Maintenance	Storm Water Utility Fund	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11
Subtotal		$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78
JENNING'S BAY SUBWATERSHED											
General Storm System Maintenance (including Pond Cleaning)	Storm Water Utility Fund	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67
Street and Utility Improvement Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Storm Water Runoff Management and Treatment Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Annual Outfall Maintenance	Storm Water Utility Fund	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11
Subtotal		$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78
WEST ARM SUBWATERSHED											
General Storm System Maintenance (including Pond Cleaning)	Storm Water Utility Fund	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67
Street and Utility Improvement Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Storm Water Runoff Management and Treatment Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Annual Outfall Maintenance	Storm Water Utility Fund	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11
Subtotal		$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78
SETON LAKE SUBWATERSHED											
General Storm System Maintenance (including Pond Cleaning)	Storm Water Utility Fund	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67
Street and Utility Improvement Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Storm Water Runoff Management and Treatment Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Annual Outfall Maintenance	Storm Water Utility Fund	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11
Subtotal		$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78
EMERALD LAKE SUBWATERSHED											
General Storm System Maintenance (including Pond Cleaning)	Storm Water Utility Fund	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67
Street and Utility Improvement Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Storm Water Runoff Management and Treatment Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Annual Outfall Maintenance	Storm Water Utility Fund	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11
Subtotal		$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78
BLACK LAKE SUBWATERSHED											
General Storm System Maintenance (including Pond Cleaning)	Storm Water Utility Fund	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67
Street and Utility Improvement Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Storm Water Runoff Management and Treatment Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Annual Outfall Maintenance	Storm Water Utility Fund	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11
Subtotal		$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78
SPRING PARK BAY SUBWATERSHED											
General Storm System Maintenance (including Pond Cleaning)	Storm Water Utility Fund	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67

PROJECT	FUNDING SOURCE	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Street and Utility Improvement Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Storm Water Runoff Management and Treatment Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Annual Outfall Maintenance	Storm Water Utility Fund	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11
Subtotal		$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78
PHELPS BAY SUBWATERSHED											
General Storm System Maintenance (including Pond Cleaning)	Storm Water Utility Fund	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67
Street and Utility Improvement Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Storm Water Runoff Management and Treatment Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Annual Outfall Maintenance	Storm Water Utility Fund	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11
Subtotal		$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78	$ 2,777.78
WHIPPLE WETLAND SUBWATERSHED											
General Storm System Maintenance (including Pond Cleaning)	Storm Water Utility Fund	$ 1,666.63	$ 1,666.63	$ 1,666.63	$ 1,666.63	$ 1,666.63	$ 1,666.63	$ 1,666.63	$ 1,666.63	$ 1,666.63	$ 1,666.63
Street and Utility Improvement Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Storm Water Runoff Management and Treatment Projects	Storm Water Utility Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Annual Outfall Maintenance	Storm Water Utility Fund	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11	$ 1,111.11
Subtotal		$ 2,777.74	$ 2,777.74	$ 2,777.74	$ 2,777.74	$ 2,777.74	$ 2,777.74	$ 2,777.74	$ 2,777.74	$ 2,777.74	$ 2,777.74
TOTAL		$ 50,000.00	$ 50,000.00	$ 50,000.00	$ 50,000.00	$ 50,000.00	$ 50,000.00	$ 50,000.00	$ 50,000.00	$ 50,000.00	$ 50,000.00

Notes:

1. Capital costs for storm system improvements to completed as part of overall Street and Utility Improvement and specific Storm Water Runoff Management and Treatment Projects shall be determined on an annual basis as improvements are planned for the upcoming year.
2. Annual outfall maintenance estimate includes 10 outfalls cleaned per year throughout entire City. Locations of outfalls to be determined annually.

Appendix F

MS4 Stormwater Pollution Prevention Plan

CITY OF MOUND

MS4 PROGRAM

STORMWATER POLLUTION PREVENTION PLAN

MS4 To-Do-List
City of Mound

- **Quarterly**
  - Inspect stockpiles and storage and material handling areas, as identified in facility inventory, to determine any maintenance needs and proper function of BMPs.
  - Circulate stormwater education articles in the City newsletter.

- **Annually**
  - Inspect structural stormwater BMPs to determine structural integrity, proper function, and maintenance needs. Maintain structural stormwater BMPs per inspection findings to ensure maximum treatment effectiveness.
  - Conduct public meeting, prior to June 30th, to receive public opinion on adequacy and effectiveness of City's SWPPP. Meeting can be held concurrently with regular City Council meeting. Appropriate public notice requirements must be provided.
  - Conduct presentation to City Council regarding previous year's progress towards implantation of SWPPP provisions.
  - Provide training for employees commensurate with their job duties.
  - Conduct assessment of SWPPP to determine program compliance, suitability of Best Management Practices (BMPs), and progress towards achieving measurable goals identified for the current permit.
  - Submit Annual Report to MPCA by June 30th.

- **On-Going**
  - Maintain City's Stormwater Management webpage.
  - Accept correspondence from residents regarding illicit discharges, comments on SWPPP, or construction site erosion control violations. Route comments to responsible City staff.

- **Once During Permit**
  - Inspect all ponds and outfalls in order to determine structural integrity, proper function, and maintenance needs.

MS4 PROGRAM INDEX
CITY OF MOUND

1. **MS4 SWPPP (2013)**

2. **MCM 1/MCM2 – Public Education & Public Participation Program**
   a. Education Work Plan

3. **MCM 3 - Illicit Discharge Detection and Elimination (IDDE)**
   a. IDDE Program

4. **MCM 6 – Pollution Prevention/Good Housekeeping for Municipal Operations**
   a. Municipal Operations BMPs
   b. Municipal Facility Inventory
   c. Employee Training Plan
   d. Pond Assessment Procedures and Schedule

5. **Enforcement Response Procedures (ERPs)**

6. **Checklists/Forms:**
   a. MS4 Annual Assessment
   b. Stormwater Pollution Prevention Plan (SWPPP) Review Checklist
   c. Subdivision/Non-residential Lot Grading Review Checklist
   d. Construction Stormwater Inspection Checklist
   e. Pond Inspection Checklist
   f. Structural Pollution Control Device (SPCD) Inspection Checklist
   g. Outfall Inspection Checklist
   h. Stormwater IDDE Report & Response Form

7. **Documentation**
   a. Employee Training Documentation
   b. SWPPP Comments
   c. IDDE Reports
   d. Inspections
   e. Maintenance Activities
   f. Pond Assessment Data
   g. MS4 Annual Assessment

APPENDIX

A. Annual MS4 Reports
B. MS4 Pond, Wetland, and Lake Inventory
C. MCWD Memorandum of Understanding (2009 & 2011 Update)

Pocket Folders

- Municipal Facility Inventory Map
- Storm Sewer Map

1. MS4 SWPPP Application for Reauthorization

Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194

MS4 SWPPP Application for Reauthorization

for the NPDES/SDS General Small Municipal Separate Storm Sewer System (MS4) Permit MNR040000 reissued with an effective date of August 1, 2013

Stormwater Pollution Prevention Program (SWPPP) Document

Doc Type: Permit Application

Instructions: This application is for authorization to discharge stormwater associated with Municipal Separate Storm Sewer Systems (MS4s) under the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) Permit Program. **No fee** is required with the submittal of this application. Please refer to "Example" for detailed instructions found on the Minnesota Pollution Control Agency (MPCA) MS4 website at http://www.pca.state.mn.us/ms4.

Submittal: This *MS4 SWPPP Application for Reauthorization* form must be submitted electronically via e-mail to the MPCA at ms4permitprogram.pca@state.mn.us from the person that is duly authorized to certify this form. All questions with an asterisk (*) are required fields. All applications will be returned if required fields are not completed.

Questions: Contact Claudia Hochstein at 651-757-2881 or claudia.hochstein@state.mn.us, Dan Miller at 651-757-2246 or daniel.miller@state.mn.us, or call toll-free at 800-657-3864.

General Contact Information (*Required fields)

MS4 Owner (with ownership or operational responsibility, or control of the MS4)

*MS4 permittee name: City of Mound *County: Hennepin
(city, county, municipality, government agency or other entity)

*Mailing address: 2415 Wilshire Boulevard

*City: Mound *State: MN *Zip code: 55364

*Phone (including area code): (952) 472-0603 *E-mail: CarltonMoore@cityofmound.com

MS4 General contact (with Stormwater Pollution Prevention Program [SWPPP] implementation responsibility)

*Last name: Moore *First name: Carlton
(department head, MS4 coordinator, consultant, etc.)

*Title: Public Works Director

*Mailing address: 2415 Wilshire Boulevard

*City: Mound *State: MN *Zip code: 55364

*Phone (including area code): (952) 472-0636 *E-mail: CarltonMoore@cityofmound.com

Preparer information (complete if SWPPP application is prepared by a party other than MS4 General contact)

Last name: Bean First name: Robert
(department head, MS4 coordinator, consultant, etc.)

Title: Water Resources Engineer

Mailing address: 2638 Shadow Lane, Suite 200

City: Chaska State: MN Zip code: 55318

Phone (including area code): (612) 756-3184 E-mail: bobbe@bolton-menk.com

Verification

1. I seek to continue discharging stormwater associated with a small MS4 after the effective date of this Permit, and shall submit this *MS4 SWPPP Application for Reauthorization* form, in accordance with the schedule in Appendix A, Table 1, with the SWPPP document completed in accordance with the Permit (Part II.D.). ☒ Yes
2. I have read and understand the NPDES/SDS MS4 General Permit and certify that we intend to comply with all requirements of the Permit. ☒ Yes

Certification (All fields are required)

☒ Yes - *I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted.*

I certify that based on my inquiry of the person, or persons, who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of civil and criminal penalties.

This certification is required by Minn. Stat. §§ 7001.0070 and 7001.0540. The authorized person with overall, MS4 legal responsibility must certify the application (principal executive officer or a ranking elected official).

By typing my name in the following box, I certify the above statements to be true and correct, to the best of my knowledge, and that this information can be used for the purpose of processing my application.

Name: Carlton Moore
(This document has been electronically signed)

Title: Public Works Director Date (mm/dd/yyyy): 12/20/2013

Mailing address: 2415 Wilshire Boulevard

City: Mound State: MN Zip code: 55364

Phone (including area code): (952) 472-0636 E-mail: CarltonMoore@cityofmound.com

***Note:** The application will not be processed without certification.*

Stormwater Pollution Prevention Program Document

I. Partnerships: (Part II.D.1)

A. List the **regulated small MS4(s)** with which you have established a partnership in order to satisfy one or more requirements of this Permit. Indicate which Minimum Control Measure (MCM) requirements or other program components that each partnership helps to accomplish (List all that apply). Check the box below if you currently have no established partnerships with other regulated MS4s. If you have more than five partnerships, hit the tab key after the last line to generate a new row.

☐ No partnerships with regulated small MS4s

Name and description of partnership	MCM/Other permit requirements involved
Minnehaha Creek Watershed District Provides review, regulation, and inspection for Construction Site Stormwater Runoff Control and Post-construction Stormwater Management. Partner to provide educational materials and engage public with various programs. Partner to inspect for illicit discharges.	MCM 1-5

B. If you have additional information that you would like to communicate about your partnerships with other regulated small MS4(s), provide it in the space below, or include an attachment to the SWPPP Document, with the following file naming convention: *MS4NameHere_Partnerships.*

II. Description of Regulatory Mechanisms: (Part II.D.2)

Illicit discharges

A. Do you have a regulatory mechanism(s) that effectively prohibits non-stormwater discharges into your small MS4, except those non-stormwater discharges authorized under the Permit (Part III.D.3.b.)? ☐ Yes ☒ No

1. If **yes:**

   a. Check which *type* of regulatory mechanism(s) your organization has (check all that apply):

   ☐ Ordinance ☐ Contract language
   ☐ Policy/Standards ☐ Permits
   ☐ Rules
   ☐ Other, explain: _____

   b. Provide either a direct link to the mechanism selected above or attach it as an electronic document to this form; or if your regulatory mechanism is either an Ordinance or a Rule, you may provide a citation:

   Citation:

   Direct link:

   ☐ Check here if attaching an electronic copy of your regulatory mechanism, with the following file naming convention: *MS4NameHere_IDDEreg.*

2. If **no:**

Describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, this permit requirement is met:

The City will update its ordinances to meet permit requirements regarding Illicit Discharge Detection and Elimination within 12 months of permit coverage being extended. Also, MCWD recently adopted a final version of their IDDE rule. The City will partner with MCWD to inspect for illicit discharges.

Construction site stormwater runoff control

A. Do you have a regulatory mechanism(s) that establishes requirements for erosion and sediment controls and waste controls? ☒ Yes ☐ No

1. If **yes:**

a. Check which *type* of regulatory mechanism(s) your organization has (check all that apply):

☐ Ordinance ☐ Contract language
☐ Policy/Standards ☐ Permits
☐ Rules
☒ Other, explain: Minnehaha Creek Watershed District - Erosion Control Rule

b. Provide either a direct link to the mechanism selected above or attach it as an electronic document to this form; or if your regulatory mechanism is either an Ordinance or a Rule, you may provide a citation:

Citation:

MCWD: Erosion Control Rule

Direct link:

MCWD:
http://www.minnehahacreek.org/sites/minnehahacreek.org/files/pdfs/regulatory/Erosion%20Control%20Rule.pdf

☐ Check here if attaching an electronic copy of your regulatory mechanism, with the following file naming convention: *MS4NameHere_CSWreg.*

B. Is your regulatory mechanism at least as stringent as the MPCA general permit to Discharge Stormwater Associated with Construction Activity (as of the effective date of the MS4 Permit)? ☐Yes ☒ No

If you answered **yes** to the above question, proceed to C.

If you answered **no** to either of the above permit requirements listed in A. or B., describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

The City has given its regulatory authority to Minnehaha Creek Watershed District regarding construction site stormwater runoff control, and a Memorandum of Understanding between the City and MCWD outlines permitting authority. A copy of the MOU and the City Resolution returning authority to MCWD have been attached as CityofMound_MCWD-MOU and CityofMound_MCWD-MOU2011update. MCWD's rule does not currently meet permit requirements. MCWD will update their rule within 12 months of their permit coverage being extended, and Mound will coordinate with MCWD to make sure the City is aware of all rule updates.

C. Answer **yes** or **no** to indicate whether your regulatory mechanism(s) requires owners and operators of construction activity to develop site plans that incorporate the following erosion and sediment controls and waste controls as described in the Permit (Part III.D.4.a.(1)-(8)), and as listed below:

1.	Best Management Practices (BMPs) to minimize erosion.	☒ Yes ☐ No
2.	BMPs to minimize the discharge of sediment and other pollutants.	☒ Yes ☐ No
3.	BMPs for dewatering activities.	☒ Yes ☐ No
4.	Site inspections and records of rainfall events	☒ Yes ☐ No
5.	BMP maintenance	☒ Yes ☐ No
6.	Management of solid and hazardous wastes on each project site.	☐ Yes ☒ No
7.	Final stabilization upon the completion of construction activity, including the use of perennial vegetative cover on all exposed soils or other equivalent means.	☒ Yes ☐ No
8.	Criteria for the use of temporary sediment basins.	☐ Yes ☒ No

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

The City has given its regulatory authority to Minnehaha Creek Watershed District regarding construction site stormwater runoff control, and a Memorandum of Understanding between the City and MCWD outlines permitting authority. A copy of

the MOU and the City Resolution returning authority to MCWD have been attached as CityofMound_MCWD-MOU and CityofMound_MCWD-MOU2011update. MCWD's rule does not currently meet permit requirements. MCWD will update their rule within 12 months of their permit coverage being extended, and Mound will coordinate with MCWD to make sure the City is aware of all rule updates.

Post-construction stormwater management

A. Do you have a regulatory mechanism(s) to address post-construction stormwater management activities?
☒ Yes ☐ No

1. If **yes:**

a. Check which *type* of regulatory mechanism(s) your organization has (check all that apply):

☐ Ordinance ☐ Contract language
☐ Policy/Standards ☐ Permits
☐ Rules
☒ Other, explain: Minnehaha Creek Watershed District - Stormwater Management Rule

b. Provide either a direct link to the mechanism selected above or attach it as an electronic document to this form; or if your regulatory mechanism is either an Ordinance or a Rule, you may provide a citation:

Citation:

MCWD: Stormwater Management Rule

Direct link:

http://www.minnehahacreek.org/sites/minnehahacreek.org/files/pdfs/regulatory/Stormwater%20Management%20Rule.pdf

☐ Check here if attaching an electronic copy of your regulatory mechanism, with the following file naming convention: *MS4NameHere_PostCSWreg.*

B. Answer **yes** or **no** below to indicate whether you have a regulatory mechanism(s) in place that meets the following requirements as described in the Permit (Part III.D.5.a.):

1. **Site plan review:** Requirements that owners and/or operators of construction activity submit site plans with post-construction stormwater management BMPs to the permittee for review and approval, prior to start of construction activity. ☒ Yes ☐ No

2. **Conditions for post construction stormwater management:** Requires the use of any combination of BMPs, with highest preference given to Green Infrastructure techniques and practices (e.g., infiltration, evapotranspiration, reuse/harvesting, conservation design, urban forestry, green roofs, etc.), necessary to meet the following conditions on the site of a construction activity to the Maximum Extent Practicable (MEP):

a. For new development projects – no net increase from pre-project conditions (on an annual average basis) of: ☐ Yes ☒ No
   1) Stormwater discharge volume, unless precluded by the stormwater management limitations in the Permit (Part III.D.5.a(3)(a)).
   2) Stormwater discharges of Total Suspended Solids (TSS).
   3) Stormwater discharges of Total Phosphorus (TP).

b. For redevelopment projects – a net reduction from pre-project conditions (on an annual average basis) of: ☐ Yes ☒ No
   1) Stormwater discharge volume, unless precluded by the stormwater management limitations in the Permit (Part III.D.5.a(3)(a)).
   2) Stormwater discharges of TSS.
   3) Stormwater discharges of TP.

3. **Stormwater management limitations and exceptions:**

a. Limitations
   1) Prohibit the use of infiltration techniques to achieve the conditions for post-construction stormwater management in the Permit (Part III.D.5.a(2)) when the infiltration structural stormwater BMP will receive discharges from, or be constructed in areas: ☐ Yes ☒ No
      a) Where industrial facilities are not authorized to infiltrate industrial stormwater under an NPDES/SDS Industrial Stormwater Permit issued by the MPCA.
      b) Where vehicle fueling and maintenance occur.
      c) With less than three (3) feet of separation distance from the bottom of the infiltration system to the elevation of the seasonally saturated soils or the top of bedrock.
      d) Where high levels of contaminants in soil or groundwater will be mobilized by the infiltrating stormwater.

2) Restrict the use of infiltration techniques to achieve the conditions for post-construction stormwater management in the Permit (Part III.D.5.a(2)), without higher engineering review, sufficient to provide a functioning treatment system and prevent adverse impacts to groundwater, when the infiltration device will be constructed in areas: ☐ Yes ☒ No

   a) With predominately Hydrologic Soil Group D (clay) soils.
   b) Within 1,000 feet up-gradient, or 100 feet down-gradient of active karst features.
   c) Within a Drinking Water Supply Management Area (DWSMA) as defined in Minn. R. 4720.5100, subp. 13.
   d) Where soil infiltration rates are more than 8.3 inches per hour.

3) For linear projects where the lack of right-of-way precludes the installation of volume control practices that meet the conditions for post-construction stormwater management in the Permit (Part III.D.5.a(2)), the permittee's regulatory mechanism(s) may allow exceptions as described in the Permit (Part III.D.5.a(3)(b)). The permittee's regulatory mechanism(s) shall ensure that a reasonable attempt be made to obtain right-of-way during the project planning process. ☐ Yes ☒ No

4. **Mitigation provisions:** The permittee's regulatory mechanism(s) shall ensure that any stormwater discharges of TSS and/or TP not addressed on the site of the original construction activity are addressed through mitigation and, at a minimum, shall ensure the following requirements are met:

   a. Mitigation project areas are selected in the following order of preference: ☒ Yes ☐ No
      1) Locations that yield benefits to the same receiving water that receives runoff from the original construction activity.
      2) Locations within the same Minnesota Department of Natural Resource (DNR) catchment area as the original construction activity.
      3) Locations in the next adjacent DNR catchment area up-stream
      4) Locations anywhere within the permittee's jurisdiction.

   b. Mitigation projects must involve the creation of new structural stormwater BMPs or the retrofit of existing structural stormwater BMPs, or the use of a properly designed regional structural stormwater BMP. ☒ Yes ☐ No

   c. Routine maintenance of structural stormwater BMPs already required by this permit cannot be used to meet mitigation requirements of this part. ☒ Yes ☐ No

   d. Mitigation projects shall be completed within 24 months after the start of the original construction activity. ☒ Yes ☐ No

   e. The permittee shall determine, and document, who will be responsible for long-term maintenance on all mitigation projects of this part. ☒ Yes ☐ No

   f. If the permittee receives payment from the owner and/or operator of a construction activity for mitigation purposes in lieu of the owner or operator of that construction activity meeting the conditions for post-construction stormwater management in Part III.D.5.a(2), the permittee shall apply any such payment received to a public stormwater project, and all projects must be in compliance with Part III.D.5.a(4)(a)-(e). ☒ Yes ☐ No

5. **Long-term maintenance of structural stormwater BMPs:** The permittee's regulatory mechanism(s) shall provide for the establishment of legal mechanisms between the permittee and owners or operators responsible for the long-term maintenance of structural stormwater BMPs not owned or operated by the permittee, that have been implemented to meet the conditions for post-construction stormwater management in the Permit (Part III.D.5.a(2)). This only includes structural stormwater BMPs constructed after the effective date of this permit and that are directly connected to the permittee's MS4, and that are in the permittee's jurisdiction. The legal mechanism shall include provisions that, at a minimum:

   a. Allow the permittee to conduct inspections of structural stormwater BMPs not owned or operated by the permittee, perform necessary maintenance, and assess costs for those structural stormwater BMPs when the permittee determines that the owner and/or operator of that structural stormwater BMP has not conducted maintenance. ☒ Yes ☐ No

   b. Include conditions that are designed to preserve the permittee's right to ensure maintenance responsibility, for structural stormwater BMPs not owned or operated by the permittee, when those responsibilities are legally transferred to another party. ☒ Yes ☐ No

   c. Include conditions that are designed to protect/preserve structural stormwater BMPs and site features that are implemented to comply with the Permit (Part III.D.5.a(2)). If site configurations or structural stormwater BMPs change, causing decreased structural stormwater BMP effectiveness, new or improved structural stormwater BMPs must be implemented to ensure the conditions for post-construction stormwater management in the Permit (Part III.D.5.a(2)) continue to be met. ☒ Yes ☐ No

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to assure that, within twelve (12) months of the date permit coverage is extended, these permit requirements are met:

The City has given its regulatory authority to Minnehaha Creek Watershed District regarding post-construction stormwater management, and a Memorandum of Understanding between the City and MCWD outlines permitting authority. A copy of the MOU and the City Resolution returning authority to MCWD have been attached as CityofMound_MCWD-MOU and CityofMound_MCWD-MOU2011update. MCWD's rule does not currently meet permit requirements. MCWD will update their rule within 12 months of their permit coverage being extended, and Mound will coordinate with MCWD to make sure the City is aware of all rule updates.

III. Enforcement Response Procedures (ERPs): (Part II.D.3)

A. Do you have existing ERPs that satisfy the requirements of the Permit (Part III.B.)? ☐ Yes ☒ No

1. If **yes**, attach them to this form as an electronic document, with the following file naming convention: *MS4NameHere_ERPs.*
2. If **no**, describe the tasks and corresponding schedules that will be taken to assure that, with twelve (12) months of the date permit coverage is extended, these permit requirements are met:

   Within 12 months from the date permit coverage is extended, the City will develop written procedures that will satisfy these requirements.

B. Describe your ERPs:

IV. Storm Sewer System Map and Inventory: (Part II.D.4.)

A. Describe how you manage your storm sewer system map and inventory:

The storm sewer map was initially completed in 2008 and is updated annually as development occurs. The map was updated with the pond inventory, including structural BMPs and outfalls, in 2011, and the Pond Inventory Form was submitted to the MPCA on October 31, 2011.

B. Answer **yes** or **no** to indicate whether your storm sewer system map addresses the following requirements from the Permit (Part III.C.1.a-d), as listed below:

1. The permittee's entire small MS4 as a goal, but at a minimum, all pipes 12 inches or greater in diameter, including stormwater flow direction in those pipes. ☒ Yes ☐ No
2. Outfalls, including a unique identification (ID) number assigned by the permittee, and an associated geographic coordinate. ☒ Yes ☐ No
3. Structural stormwater BMPs that are part of the permittee's small MS4. ☒ Yes ☐ No
4. All receiving waters. ☒ Yes ☐ No

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

C. Answer **yes** or **no** to indicate whether you have completed the requirements of 2009 Minnesota Session Law, Ch. 172. Sec. 28: with the following inventories, according to the specifications of the Permit (Part III.C.2.a.-b.), including:

1. All ponds within the permittee's jurisdiction that are constructed and operated for purposes of water quality treatment, stormwater detention, and flood control, and that are used for the collection of stormwater via constructed conveyances. ☒ Yes ☐ No
2. All wetlands and lakes, within the permittee's jurisdiction, that collect stormwater via constructed conveyances. ☒ Yes ☐ No

D. Answer **yes** or **no** to indicate whether you have completed the following information for each feature inventoried.

1. A unique identification (ID) number assigned by the permittee. ☒ Yes ☐ No
2. A geographic coordinate. ☒ Yes ☐ No
3. Type of feature (e.g., pond, wetland, or lake). This may be determined by using best professional judgment. ☒ Yes ☐ No

If you have answered **yes** to all above requirements, and you have already submitted the Pond Inventory Form to the MPCA, then you do not need to resubmit the inventory form below.

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

E. Answer **yes** or **no** to indicate if you are attaching your pond, wetland and lake inventory to the MPCA on the form provided on the MPCA website at: http://www.pca.state.mn.us/ms4 , according to the specifications of Permit (Part III.C.2.b.(1)-(3)). Attach with the following file naming convention: *MS4NameHere_inventory*. ☐ Yes ☒ No

If you answered **no,** the inventory form must be submitted to the MPCA MS4 Permit Program within 12 months of the date permit coverage is extended.

V. Minimum Control Measures (MCMs) (Part II.D.5)

A. MCM1: Public education and outreach

1. The Permit requires that, within 12 months of the date permit coverage is extended, existing permittees revise their education and outreach program that focuses on illicit discharge recognition and reporting, as well as other specifically selected stormwater-related issue(s) of high priority to the permittee during this permit term. Describe your **current** educational program, including **any high-priority topics included**:

   Mound is primarily residential, and therefore, the focus for education is mostly on residential issues. However, no specific high-priority topics have been identified. Stormwater articles are included in the City newsletter, which is distributed quarterly. A presentation is given to the City Council annually explaining the specific components of the SWPPP. The City also relies on the Minnehaha Creek Watershed District (MCWD) for education, including the posting of stormwater management and pollution prevention information on their website and the sponsoring of water resources related events.

2. List the categories of BMPs that address your public education and outreach program, including the distribution of educational materials and a program implementation plan. Use the first table for categories of BMPs that you have established and the second table for categories of BMPs that you plan to implement over the course of the permit term.

   Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. Refer to the U.S. Environmental Protection Agency's (EPA) *Measurable Goals Guidance for Phase II Small MS4s* (http://www.epa.gov/npdes/pubs/measurablegoals.pdf).

   If you have more than five categories, hit the tab key after the last line to generate a new row.

Established BMP categories	**Measurable goals and timeframes**
Distribute Educational Materials	Circulate a newsletter that includes stormwater articles to approximately 4,200 households and businesses. Display various stormwater brochures at City Hall for public use. – newsletter quarterly
Community Events	Sponsor community events to help manage and increase awareness of stormwater runoff and associated pollutants (e.g. cleanup days). – annually
Presentation to City Council	Present to City Council on components of SWPPP to increase Council awareness of stormwater runoff issues. – annually
Partner with MCWD for Public Education and Outreach	Provide assistance with water resources related events. – as requested by MCWD
Stormwater Education on City Website	Post information regarding NPDES requirements and stormwater to the city website. – as necessary
Training	Train all City staff on erosion and sediment control, illicit discharge detection, and stormwater runoff management. - annually

BMP categories to be implemented	**Measurable goals and timeframes**
Partner with MCWD for Public Education and Outreach	Post links to events and activities sponsored by MCWD on the City's website. – within 12 months of permit coverage being extended
Social Media	Post messages or provide links regarding stormwater management and pollution prevention on Facebook and Twitter.

	– within 12 months of permit coverage being extended
Stormwater Education on City Website	Develop a Stormwater Information page with information regarding stormwater management, pollution prevention, and additional resources to be included on the City's website. Provide a link to MCWD's website. Also provide links to current SWPPP, MS4 permit, and application for public viewing. – within 12 months of permit coverage being extended
Program Evaluation	Review Education Program for effectiveness and future needs. - annually

3. Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:

   Carlton Moore - Public Works Director

B. MCM2: Public participation and involvement

1. The Permit (Part III.D.2.a.) requires that, within 12 months of the date permit coverage is extended, existing permittees shall revise their current program, as necessary, and continue to implement a public participation/involvement program to solicit public input on the SWPPP. Describe your current program:

   Every year, the City presents and hears comments on the SWPPP at a regular City Council meeting. This is typically done at a meeting in the Spring, and a notice is provided to the public on the City's website and at City Hall.

2. List the categories of BMPs that address your public participation/involvement program, including solicitation and documentation of public input on the SWPPP. Use the first table for categories of BMPs that you have established and the second table for categories of BMPs that you plan to implement over the course of the permit term.

   Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. Refer to the EPA's *Measurable Goals Guidance for Phase II Small MS4s* (http://www.epa.gov/npdes/pubs/measurablegoals.pdf). **If you have more than five categories**, hit the tab key after the last line to generate a new row.

Established BMP categories	**Measurable goals and timeframes**
Appropriate Public Notice	Provide a notice of 30 days for the annual public meeting to present accomplishments and discuss the SWPPP. The meeting will run concurrently with a City Council meeting. Notice will be posted in local newspapers, the City website, and at City Hall. - annually
Solicit Public Input	Accept correspondence to report illicit discharges, provide comments regarding the SWPPP, and report construction site runoff violations. All comments received are documented and then routed to appropriate staff. – continuously
Annual Meeting	Host annual meeting to run concurrently with City Council meeting to present accomplishments and discuss the SWPPP. - annually

BMP categories to be implemented	**Measurable goals and timeframes**
Online Availability of SWPPP Document	Provide a PDF of the current SWPPP on the City's Stormwater Information page. - update annually.

3. Do you have a process for receiving and documenting citizen input? ☒ Yes ☐ No

   If you answered **no** to the above permit requirement, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, this permit requirement is met:

4. Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:

   Carlton Moore - Public Works Director

C. MCM 3: Illicit discharge detection and elimination

1. The Permit (Part III.D.3.) requires that, within 12 months of the date permit coverage is extended, existing permittees revise their current program as necessary, and continue to implement and enforce a program to detect and eliminate illicit discharges into the small MS4. Describe your current program:

   The City will update its ordinances to meet permit requirements regarding Illicit Discharge Detection and Elimination within 12 months of permit coverage being extended. Also, MCWD recently adopted a final version of their IDDE rule. The City will partner with MCWD to inspect for illicit discharges. A Storm Sewer Map has been created that shows the locations of all storm catchbasins, manholes, pipes over 12", and outfalls within the City.

2. Does your Illicit Discharge Detection and Elimination Program meet the following requirements, as found in the Permit (Part III.D.3.c.-g.)?

   a. Incorporation of illicit discharge detection into all inspection and maintenance activities conducted under the Permit (Part III.D.6.e.-f.)Where feasible, illicit discharge inspections shall be conducted during dry-weather conditions (e.g., periods of 72 or more hours of no precipitation). ☒ Yes ☐ No

   b. Detecting and tracking the source of illicit discharges using visual inspections. The permittee may also include use of mobile cameras, collecting and analyzing water samples, and/or other detailed procedures that may be effective investigative tools. ☒ Yes ☐ No

   c. Training of all field staff, in accordance with the requirements of the Permit (Part III.D.6.g.(2)), in illicit discharge recognition (including conditions which could cause illicit discharges), and reporting illicit discharges for further investigation. ☐ Yes ☒ No

   d. Identification of priority areas likely to have illicit discharges, including at a minimum, evaluating land use associated with business/industrial activities, areas where illicit discharges have been identified in the past, and areas with storage of large quantities of significant materials that could result in an illicit discharge. ☐ Yes ☒ No

   e. Procedures for the timely response to known, suspected, and reported illicit discharges. ☐ Yes ☒ No

   f. Procedures for investigating, locating, and eliminating the source of illicit discharges. ☐ Yes ☒ No

   g. Procedures for responding to spills, including emergency response procedures to prevent spills from entering the small MS4. The procedures shall also include the immediate notification of the Minnesota Department of Public Safety Duty Officer, if the source of the illicit discharge is a spill or leak as defined in Minn. Stat. § 115.061. ☐ Yes ☒ No

   h. When the source of the illicit discharge is found, the permittee shall use the ERPs required by the Permit (Part III.B.) to eliminate the illicit discharge and require any needed corrective action(s). ☐ Yes ☒ No

   If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

   The City will update its ordinances to meet permit requirements regarding Illicit Discharge Detection and Elimination within 12 months of permit coverage being extended. Also, MCWD recently adopted a final version of their IDDE rule. The City will partner with MCWD to inspect for illicit discharges. The training program for all City staff will be updated, if necessary, regarding IDDE, and staff is currently directed to inspect for illicit discharges during all normal work activities. High potential areas for IDDE will be identified and added to the City's Storm Sewer Map. Procedures for response, investigating, locating, and eliminating illicit discharges will be developed. All required tasks will be completed within 12 months of permit coverage being extended.

3. List the categories of BMPs that address your illicit discharge, detection and elimination program. Use the first table for categories of BMPs that you have established and the second table for categories of BMPs that you plan to implement over the course of the permit term.

   Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. Refer to the EPA's *Measurable Goals Guidance for Phase II Small MS4s* (http://www.epa.gov/npdes/pubs/measurablegoals.pdf).

   If you have more than five categories, hit the tab key after the last line to generate a new row.

Established BMP categories	Measurable goals and timeframes
Storm System Map	Maintain map and update with changes to City's storm sewer, structural BMPs, ponds, and outfalls. – annually
Inspection	City staff is directed to inspect for illicit discharges during all normal work activities. Site specific inspections are also performed when reports are received from the general public. –

	continuously
Training	Provide training for City staff. – annually
Public and Employee IDDE Information Program	Provide education to City staff, businesses, and the public regarding IDDE through stormwater articles in the newsletter, the MCWD website, and a presentation to City Council.

BMP categories to be implemented	**Measurable goals and timeframes**
Regulatory Control Program	Update ordinances to meet permit requirements for IDDE. – within 12 months of permit coverage being extended
Training	Update training program for all City staff regarding IDDE, if necessary, due to new permit requirements and MCWD rules. – within 12 months of permit coverage being extended
Storm System Map	Add high-priority outfalls and high potential land uses for illicit discharge inspection to the City's storm system map. – within 12 months of permit coverage being extended
Inspection	Designated City staff will perform inspections of high-priority outfalls, and around high potential land uses (fast food restaurants, dumpsters, car washes, mechanics, and oil changers). Information from previous inspections will be used to determine further high potential outfalls. Inspections will be performed in dry-weather as much as possible. – monthly

4. Do you have procedures for record-keeping within your Illicit Discharge Detection and Elimination (IDDE) program as specified within the Permit (Part III.D.3.h.)? ☐ Yes ☒ No

   If you answered **no**, indicate how you will develop procedures for record-keeping of your Illicit Discharge, Detection and Elimination Program, within 12 months of the date permit coverage is extended:

   Procedures for record-keeping of the Illicit Discharge, Detection and Elimination Program will be developed in accordance with the permit requirements and the new MCWD rule within 12 months of permit coverage being extended.

5. Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:

   Carlton Moore - Public Works Director

D. MCM 4: Construction site stormwater runoff control

1. The Permit (Part III.D.4) requires that, within 12 months of the date permit coverage is extended, existing permittees shall revise their current program, as necessary, and continue to implement and enforce a construction site stormwater runoff control program. Describe your current program:

   The City has given its regulatory authority to Minnehaha Creek Watershed District regarding construction site stormwater runoff control, and a Memorandum of Understanding between the City and MCWD outlines permitting authority. The City's requires any application for a building permit, subdivision, land disturbing activity greater than or equal to one acre, or area where City determines activity poses risk to water resources to include a stormwater pollution prevention plan for review. Also, the applications state that City permits will not be released until the City is provided a copy of any MCWD permits required or written confirmation from MCWD that no permit is needed. Review of construction site stormwater pollution prevention plans are performed prior to any land disturbance and appropriate selection and use of BMPs are coordinated with Owners and Contractors. In addition to review, the City relies on MCWD for inspections of construction sites and enforcement of erosion and sediment control violations.

2. Does your program address the following BMPs for construction stormwater erosion and sediment control as required in the Permit (Part III.D.4.b.):
   a. Have you established written procedures for site plan reviews that you conduct prior to the start of construction activity? ☒ Yes ☐ No
   b. Does the site plan review procedure include notification to owners and operators proposing construction activity that they need to apply for and obtain coverage under the MPCA's general permit to *Discharge Stormwater Associated with Construction Activity No. MN R100001*? ☒ Yes ☐ No
   c. Does your program include written procedures for receipt and consideration of reports of noncompliance or other stormwater related information on construction activity submitted by the public to the permittee? ☒ Yes ☐ No
   d. Have you included written procedures for the following aspects of site inspections to determine compliance with your regulatory mechanism(s):
      1) Does your program include procedures for identifying priority sites for inspection? ☒ Yes ☐ No

2) Does your program identify a frequency at which you will conduct construction site inspections? ☒ Yes ☐ No

3) Does your program identify the names of individual(s) or position titles of those responsible for conducting construction site inspections? ☒ Yes ☐ No

4) Does your program include a checklist or other written means to document construction site inspections when determining compliance? ☒ Yes ☐ No

e. Does your program document and retain construction project name, location, total acreage to be disturbed, and owner/operator information? ☒ Yes ☐ No

f. Does your program document stormwater-related comments and/or supporting information used to determine project approval or denial? ☒ Yes ☐ No

g. Does your program retain construction site inspection checklists or other written materials used to document site inspections? ☒ Yes ☐ No

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met.

3. List the categories of BMPs that address your construction site stormwater runoff control program. Use the first table for categories of BMPs that you have established and the second table for categories of BMPs that you plan to implement over the course of the permit term.

   Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. Refer to the EPA's *Measurable Goals Guidance for Phase II Small MS4s* (http://www.epa.gov/npdes/pubs/measurablegoals.pdf). **If you have more than five categories**, hit the tab key after the last line to generate a new row.

Established BMP categories	**Measurable goals and timeframes**
Ordinance and other Regulatory Program	Rely on City code and MCWD regulatory requirements for plan review and approvals. Rely on MCWD for inspection of construction sites and enforcement of erosion and sediment control violations. – continuously

BMP categories to be implemented	**Measurable goals and timeframes**

4. Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:

   Carlton Moore - Public Works Director

E. MCM 5: Post-construction stormwater management

1. The Permit (Part III.D.5.) requires that, within 12 months of the date permit coverage is extended, existing permittees shall revise their current program, as necessary, and continue to implement and enforce a post-construction stormwater management program. Describe your current program:

   The City has given its regulatory authority to Minnehaha Creek Watershed District regarding post-construction stormwater management, and a Memorandum of Understanding between the City and MCWD outlines permitting authority. City applications state that City permits will not be released until the City is provided a copy of any MCWD permits required or written confirmation from MCWD that no permit is needed. Also, a copy of maintenance agreements for any required stormwater management facilities must be submitted to the City prior to any land disturbance. The City also reviews stormwater management plans to ensure any structural facilities fit City needs and vision.

2. Have you established written procedures for site plan reviews that you will conduct prior to the start of construction activity? ☒ Yes ☐ No

3. Answer **yes** or **no** to indicate whether you have the following listed procedures for documentation of post-construction stormwater management according to the specifications of Permit (Part III.D.5.c.):

   a. Any supporting documentation that you use to determine compliance with the Permit (Part III.D.5.a), including the project name, location, owner and operator of the construction activity, any checklists used for conducting site plan reviews, and any calculations used to determine compliance? ☒ Yes ☐ No

   b. All supporting documentation associated with mitigation projects that you authorize? ☒ Yes ☐ No

   c. Payments received and used in accordance with Permit (Part III.D.5.a.(4)(f))? ☒ Yes ☐ No

   d. All legal mechanisms drafted in accordance with the Permit (Part III.D.5.a.(5)), including date(s) of the agreement(s) and names of all responsible parties involved? ☒ Yes ☐ No

   If you answered **no** to any of the above permit requirements, describe the steps that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met.

4. List the categories of BMPs that address your post-construction stormwater management program. Use the first table for categories of BMPs that you have established and the second table for categories of BMPs that you plan to implement over the course of the permit term.

   Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. Refer to the EPA's *Measurable Goals Guidance for Phase II Small MS4s* (http://www.epa.gov/npdes/pubs/measurablegoals.pdf). **If you have more than five categories**, hit the tab key after the last line to generate a new row.

Established BMP categories	**Measurable goals and timeframes**
Regulatory Program	Rely on MCWD to review and approve post-construction stormwater management plans for required projects. Review stormwater management plans regarding City needs and vision. – continuously
Long Term Operation and Maintenance	Operate and maintain publicly owned stormwater management facilities in accordance with permit requirements. Rely on MCWD for Maintenance Agreements requiring property owners/Homeowners Associations to maintain structural facilities. Inspect all facilities in the next five years. – continuously

BMP categories to be implemented	**Measurable goals and timeframes**

5. Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:

   Carlton Moore - Public Works Director

F. MCM 6: Pollution prevention/good housekeeping for municipal operations

1. The Permit (Part III.D.6.) requires that, within 12 months of the date permit coverage is extended, existing permittees shall revise their current program, as necessary, and continue to implement an operations and maintenance program that prevents or reduces the discharge of pollutants from the permittee owned/operated facilities and operations to the small MS4. Describe your current program:

   Mound inspects its structural pollution control devices on an annual basis and inspects all ponds and outfalls at least once every five years. City staff inspects publically owned areas for potential discharges. Street sweeping is conducted twice a year, in the spring and fall, to remove deposits of sand and debris.

2. Do you have a facilities inventory as outlined in the Permit (Part III.D.6.a.)? ☐ Yes ☒ No

3. If you answered **no** to the above permit requirement in question 2, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, this permit requirement is met:

   A Faciltiy Inventory will be developed in accordance with pemit requirements within 12 months of permit coverage being extended.

4. List the categories of BMPs that address your pollution prevention/good housekeeping for municipal operations program. Use the first table for categories of BMPs that you have established and the second table for categories of BMPs that you plan to implement over the course of the permit term.

   Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. For an explanation of measurable goals, refer to the EPA's *Measurable Goals Guidance for Phase II Small MS4s* (http://www.epa.gov/npdes/pubs/measurablegoals.pdf).

   If you have more than five categories, hit the tab key after the last line to generate a new row.

Established BMP categories	**Measurable goals and timeframes**
Training	Provide training for City staff. – annually
Street Sweeping	Sweep streets to remove sediment and debris from paved surfaces and minimize amount of material received by storm drainage system. – annually
Inspection	Inspect all stormwater pollution control devices annually. Inspect all outfalls and ponds once every five years. Inspect all exposed stockpiles, storage, and material handling areas after all rain events of 1" or greater.

BMP categories to be implemented	**Measurable goals and timeframes**
Facility Inventory	Develop a Facility inventory of City-owned properties and buildings. – complete within 12 months of permit coverage extension and update annually
Pond Assessment Procedures	Develop procedures for determining TSS and TP treatment effectiveness of City ponds used for stormwater treatment. – complete procedure development within 12 months of permit coverage extension and implement assessment of all ponds within the next five years.
Inspection	Increase inspection frequency of public facilities to once a week and after any rain event. Increase inspection frequency of stockpiles and storage and material handling areas as described in the Facility Inventory to once a quarter. Utilize a checklist that documents findings and allows staff to compare to previous inspections. – continuously
SWPPP Update	Update SWPPP to include Enforcement Response Procedures (ERPs), IDDE High Potential Map, Facility Inventory, BMP Effectiveness Assessment Procedures, and any other revisions necessary to meet requirements of new permit. – complete within 12 months of permit coverage extension

5. Does discharge from your MS4 affect a Source Water Protection Area (Permit Part III.D.6.c.)? ☒ Yes ☐ No

   a. If **no**, continue to 6.

   b. If **yes**, the Minnesota Department of Health (MDH) is in the process of mapping the following items. Maps are available at http://www.health.state.mn.us/divs/eh/water/swp/maps/index.htm. Is a map including the following items available for your MS4:

      1) Wells and source waters for drinking water supply management areas identified as vulnerable under Minn. R. 4720.5205, 4720.5210, and 4720.5330? ☒ Yes ☐ No

      2) Source water protection areas for surface intakes identified in the source water ☒ Yes ☐ No

assessments conducted by or for the Minnesota Department of Health under the federal Safe Drinking Water Act, U.S.C. §§ 300j – 13?

c. Have you developed and implemented BMPs to protect any of the above drinking water sources? ☒ Yes ☐ No

6. Have you developed procedures and a schedule for the purpose of determining the TSS and TP treatment effectiveness of all permittee owned/operated ponds constructed and used for the collection and treatment of stormwater, according to the Permit (Part III.D.6.d.)? ☐ Yes ☒ No

7. Do you have inspection procedures that meet the requirements of the Permit (Part III.D.6.e.(1)-(3)) for structural stormwater BMPs, ponds and outfalls, and stockpile, storage and material handling areas? ☒ Yes ☐ No

8. Have you developed and implemented a stormwater management training program commensurate with each employee's job duties that:

   a. Addresses the importance of protecting water quality? ☒ Yes ☐ No

   b. Covers the requirements of the permit relevant to the duties of the employee? ☒ Yes ☐ No

   c. Includes a schedule that establishes initial training for new and/or seasonal employees and recurring training intervals for existing employees to address changes in procedures, practices, techniques, or requirements? ☒ Yes ☐ No

9. Do you keep documentation of inspections, maintenance, and training as required by the Permit (Part III.D.6.h.(1)-(5))? ☒ Yes ☐ No

If you answered **no** to any of the above permit requirements listed in **Questions 5 – 9**, then describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

Within 12 months of permit coverage being extended, Mound will develop procedures for determining TSS and TP removal effectiveness of stormwater treatment ponds and a schedule for implementation.

10. Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:

Carlton Moore - Public Works Director

VI. Compliance Schedule for an Approved Total Maximum Daily Load (TMDL) with an Applicable Waste Load Allocation (WLA) (Part II.D.6.)

A. Do you have an approved TMDL with a Waste Load Allocation (WLA) prior to the effective date of the Permit? ☐ Yes ☒ No

1. If **no**, continue to section VII.

2. If **yes**, fill out and attach the MS4 Permit TMDL Attachment Spreadsheet with the following naming convention**:** *MS4NameHere_TMDL.*

   This form is found on the MPCA MS4 website: http://www.pca.state.mn.us/ms4.

VII. Alum or Ferric Chloride Phosphorus Treatment Systems (Part II.D.7.)

A. Do you own and/or operate any Alum or Ferric Chloride Phosphorus Treatment Systems which are regulated by this Permit (Part III.F.)? ☐ Yes ☒ No

1. If **no**, this section requires no further information.

2. If **yes**, you own and/or operate an Alum or Ferric Chloride Phosphorus Treatment System within your small MS4, then you must submit the Alum or Ferric Chloride Phosphorus Treatment Systems Form supplement to this document, with the following naming convention: *MS4NameHere_TreatmentSystem*.

   This form is found on the MPCA MS4 website: http://www.pca.state.mn.us/ms4.

VIII. Add any Additional Comments to Describe Your Program

2. MCM 1 / MCM 2 – Public Education & Public Participation Program

CITY OF MOUND

Education Work Plan

2015

EDUCATION WORK PLAN
CITY OF MOUND

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EDUCATION WORK PLAN
CITY OF MOUND

Introduction

Minimum Control Measure (MCM) 1 of the City's Stormwater Pollution Prevention Plan (SWPPP) addresses public education and outreach. The Education Work Plan outlines the focus of education and implementation tools for the City to use in increasing public knowledge on protection, preservation and management of the City's water resources.

Section 1: Target Audience

Educational needs are dependent on the target audience. Each target audience plays a different role in the protection, preservation and management of water resources. Thus, programs and tools are tailored to different target audiences. This plan lays out the priority area education programs and tools according to the target audiences listed below.

- Local Officials & Decision makers: appointed/elected officials such as city councils and planning commissions.
- Staff: planners, engineers and public works staff.
- Homeowners/Landowners: citizens.

Section 2: Topic Areas/Issues of Concern

- Increase public knowledge on protecting and improving the water quality of City lakes, streams, and wetlands.
- Increase City staff and local officials' knowledge on illicit discharges, illicit discharge detection, and municipal operations best management practices (BMPs).

Section 3: Responding to Public Comments

- Appropriate City staff shall provide a response to any comments received regarding the SWPPP within three business days.
- The public comment and City response shall be documented per MS4 requirements and maintained by the City for at least three years beyond the term of the current permit.

Section 4: Timeline, Methods, and Responsibilities

- <u>Quarterly</u>
  The City of Mound will develop, or solicit from outside entities, stormwater articles for the City newsletter to inform residents and businesses about stormwater issues. The newsletter shall be published quarterly. The City shall attempt to publish an article in each of the newsletters that discusses Stormwater Pollution Prevention and generally cover such issues as yard waste disposal, soil erosion control and impaired water bodies; however, other topics will be covered as necessary.

- <u>Annually</u>
  City staff shall prepare a presentation to the City Council on an annual basis to explain the past year's progress towards implementing SWPPP provisions and what is planned for the upcoming year. This presentation shall be used as an opportunity to increase Council awareness of storm water runoff issues and the importance of implementing

SWPPP provisions. Staff shall cover issues relating to each of the six minimum control measures in the presentation.

- Annually
  The City shall conduct an annual public meeting to receive public opinion on the adequacy and effectiveness of the SWPPP program, and serve as an opportunity to provide public awareness of stormwater runoff issues.

- Annually
  The City shall conduct annual employee training for all staff commensurate with their job duties. At a minimum, all staff shall be trained in illicit discharge detection. Public works staff shall also be trained on inspections, maintenance activities, illicit discharge elimination, and municipal operations. Refer to the City's Employee Training Program for specific education topics defined for staff.

- Ongoing
  City Website – Stormwater Management page: The City shall maintain the Stormwater Management web page, which provides the audience with general information regarding the effects of polluted stormwater, prevention techniques, and resources for additional information. As a goal, the City shall provide information on the website to address each of the six minimum control measures. Also, the City shall post the approved SWPPP on the website for public viewing.

- Ongoing
  The City shall accept any correspondence regarding illicit discharges, construction site sedimentation and erosion violations, or the general adequacy and effectiveness of the SWPPP. All comments received will be routed to appropriate staff, and responses shall be documented in the Annual Report and Documentation section of the SWPPP.

3. MCM 3 – Illicit Discharge Detection and Elimination (IDDE)

CITY OF MOUND

Illicit Discharge Detection and Elimination Program

2015

ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
CITY OF MOUND

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APPENDIX

ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
CITY OF MOUND

Introduction

The purpose of the Illicit Discharge Detection and Elimination (IDDE) Program is to detect and eliminate sources of pollution to the municipal separate storm sewer system (MS4) as required by the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) permit program, permit number: MNR040000.

The primary goal of the IDDE program is to identify and then eliminate illicit discharges. Examples of illicit discharges include:

- Direct or indirect sanitary wastewater discharges that connect to the storm drainage system, such as a shop floor drain connected to a storm drain, a cross-connection between the municipal sewer and storm sewer systems, a damaged sanitary sewer line that is leaking sewage into a cracked storm sewer line, or a failing septic system that is leaking into a water course.
- Materials (e.g., used motor oil) that have been dumped illegally into a storm drain catch basin or other stormwater facility.
- Improper home or business owner activities such as washing paint brushes into a catch basin, washing new textured concrete driveways into a storm drain, draining swimming pools to the storm system (swimming pools have high pH and chlorine), excess use of fertilizers, or washing cars with chemicals that enter the storm drainage system.
- Sediment and sediment-laden runoff from construction sites entering the storm drainage system.

Additional goals of the IDDE program include:

- Improve water-quality in local water bodies by reducing incidences of pollution.
- Increase awareness among municipal employees, businesses, and the general public of the direct connection between the storm drainage system and local water bodies.
- Educate municipal employees, businesses, and the general public of the hazards associated with illicit discharges and best management practices (BMPs) available.
- Facilitate consistency in response to incidences of illicit discharges to the storm drainage system through a coordinated system of procedures and education.

The NPDES Permit sets forth the minimum elements of the plan which are listed below. These minimum elements are described throughout the remainder of this document.

Section 1: Municipal Storm System Mapping (Part III.D.3.a)
Section 2: Regulatory Mechanism (Part III. D.3.b)
Section 3: Incorporating Illicit Discharge Detection into Maintenance and Inspection Activities (Part III.D.3.c)
Section 4: Visual Inspection Procedures to Detect and Track Illicit Discharges (Part III.D.3d)
Section 5: Illicit Discharge Recognition Training for Field Staff (Part III.D.3e)
Section 6: Identification of Priority Areas (Part III.D.3.f)
Section 7: Response Procedures (Part III.D.3.g)
Section 8: Documentation (Part III.D.3.h).

Section 1: Municipal Storm System Mapping

The NPDES Phase II Permit outlines minimum information that shall be included in the City's Municipal Storm System map:

- Location of all known municipal storm sewer conveyances 12" or greater in diameter, including the stormwater flow direction in the pipes,
- Outfalls, including a unique identification (ID) number assigned by the City, and associated geographic coordinate,
- Structural stormwater BMPs that are part of the City's small MS4,
- All receiving waters.

The City has completed GIS mapping of the city's stormwater system, including all basins, pipes, ditches and stormwater facilities, and all outfalls, structural BMPs, ponds, and wetlands have been assigned unique ID numbers. The City shall update the Storm System Map annually, and the map shall be used to schedule and track maintenance activities, as well as plan for capital improvement projects.

Section 2: Regulatory Mechanism

Chapter 74 of the City's current municipal code prohibits illicit discharges. Connections to the storm drainage system must contain only stormwater and groundwater; otherwise they are to be eliminated. The IDDE ordinance is included in the appendix for reference.

Section 3: Incorporating Illicit Discharge Detection into Maintenance and Inspection Activities

All Public Works staff shall be trained in detection of illicit discharges and shall conduct inspections for illicit discharges while performing regular job duties, including maintenance and inspection activities. When a discharge is discovered by staff, response procedures shall be initiated according to **Section 7** of this program. When feasible, illicit discharge inspections shall be conducted during dry weather conditions (72 hours or more of no precipitation).

Section 4: Visual Inspection Procedures to Detect and Track Illicit Discharges

4.1. Tracking the Source

Source tracking begins when an illicit discharge is identified through outfall inspections, field assessment/testing, or a report from City staff or residents. When an illegal dumping or the source of an illicit discharge is directly observed by City staff, no investigation is necessary and corrective actions outlined in **Section 7** shall be implemented. When the source of the non-stormwater discharge is unknown, one of two primary visual inspection methods shall be used to locate the source of the illicit discharge:

- Method A – Storm Drain Network Investigations
- Method B – Drainage Area Investigations

The method used depends on the type of information collected or reported, level of understanding of the drainage network, and existing knowledge of operations and activities on the surrounding properties. All source tracking investigations shall be documented and recorded.

4.1.1. Method A – Storm Drain Network Investigation

This method involves progressive investigation at manholes in the storm drain network to narrow down the location where the illicit discharge is entering the drainage system. This method is best used to identify constant or frequent discharge sources, such as failing septic systems or restaurant sink drain connections to the storm system. Infrequent discharges, such as a surface spills or intentional dumping, shall be investigated using Method B described later in this section.

Investigations using this method shall include the following steps:

4.1.1.1. Consult Outfall Inspection records and previous IDDE Reports for any background information that may be relevant to the current investigation.

4.1.1.2. Consult the Storm System Map and identify manholes at downstream end of major branches upstream of illicit discharge.

4.1.1.3. Investigate manholes identified from Storm System Map for evidence of illicit discharge and determine branch containing source. For larger networks, the first two steps shall be repeated as necessary to narrow search and limit number of manholes potentially investigated.

4.1.1.4. Once branch of network is identified, progressively investigate upstream manholes until evidence of discharge is no longer present.

4.1.1.5. Once manhole is found with no discharge present, investigate potential sources between last manhole with discharge and clean manhole for evidence of illicit discharge.

4.1.1.6. If source cannot be determined by surface investigation, additional field tests shall be performed as necessary. The type of field test used shall be at the discretion of field staff and shall best suit the conditions of the investigation. Additional field test types shall include Dye Testing, Smoke Testing, and Televising. The Center for Watershed Protection's Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments (Pitt *et al*., 2004) provides instructions for employing these testing techniques. The relevant pages from that manual are included in **Appendix C**.

4.1.1.7. If the potential source appears to be located on private property, field staff shall coordinate with the City Administrator to initiate proper site entry procedures in order to identify exact source.

4.1.1.8. Once source of illicit discharge is identified, field staff shall provide inspection report and investigation notes to the City Administrator to coordinate response procedures outlined in **Section 7** of this program. All investigation procedures and findings shall be documented using the IDDE Report and Response Form located in **Appendix A**. Additional documentation may be provided with form as necessary.

4.1.2. Method B – Drainage Area Investigation

The Drainage Area Investigation method shall be used if the illicit discharge is infrequent or when the discharge has a distinct or unique characteristic that allows for quick determination of source.

Investigations using this method shall include the following steps:

4.1.2.1. Consult Outfall Inspection records and previous IDDE Reports for any background information that may be relevant to the current investigation.

4.1.2.2. Discuss potential source with field staff, consultant Inspectors, consultant Engineers, and other knowledgeable City staff to identify the most likely source. **Table 4.1** lists common activities or land uses most likely associated with specific illicit discharges.

4.1.2.3. Consult City Land Use and Storm System Map to identify probable locations of the potential source discussed in Step 1.

4.1.2.4. Conduct a visual inspection of the probable locations to determine the source of the illicit discharge.

4.1.2.5. If the potential source appears to be located on private property, field staff shall coordinate with the City Administrator to initiate proper site entry procedures in order to identify exact source.

4.1.2.6. Once source of illicit discharge is identified, field staff shall provide inspection report and investigation notes to the City Administrator to coordinate response procedures outlined in **Section 7** of this program. All investigation procedures and findings shall be documented using the IDDE Report and Response Form located in **Appendix A**. Additional documentation may be provided with form as necessary.

Table 4.1: Common Illicit Discharges and Potential Sources

Illicit Discharge	Potential Causes
Clogging Sediment	• Construction activity without proper erosion and sediment controls • Roadway sanding operations • Outdoor work areas or material storage areas
Thick Algae Growth	• Fertilizer leak or spill • Landscaping operations • Hydroseeding following construction • Failing or leaking septic system
Oil	• Refueling operations • Vehicle or machinery maintenance activities
Sudsy Discharge	• Power washing of buildings • Vehicle or equipment washing operations • Mobile cleaning crew dumping • Laundry or Cleaner • Household greywater discharge
Clogged Grease	• Restaurant sink drain connection to stormwater system
Sewage	• Failing or leaking septic systems

4.1.3. Equipment

Prior to conducting investigations, field staff shall assemble the equipment necessary. Table 4.2 lists common equipment needed for illicit discharge investigations.

Table 4.2: Field Equipment for Illicit Discharge Investigations	
Field Notebook/Pencils	Watch with second hand
Safety Gear – vest, work boots, cones	Flash light or head lamp
Map or Aerial Photo of Inspection Area	Tool Box – hammer, tape measure, duct tape, zip ties
Cell phone w/ charged battery	First Aid Kit
Digital camera w/ charged battery	Clear sample bottles

Section 5: Illicit Discharge Recognition Training for Field Staff

The City has developed a training schedule to meet the requirements of the NPDES Phase II Permit. Two primary training topics have been identified related to IDDE:

- Illicit discharge recognition and reporting procedures
- Illicit discharge investigation and response procedures

These trainings shall be generally conducted using materials developed for the IDDE program. Training shall include Power Point presentations, webcast material, and printed material distributed at staff meetings. The Education Work Plan and Employee Training Program outline training to be implemented by City.

Section 6: Identification of Priority Areas

Priority areas more likely to have illicit discharges have been identified by the City. Priority areas were identified through evaluation of land uses associated with certain business / industrial activities, storage areas of large quantities of significant materials, and prior illicit discharge reports.

6.1. Developing Areas to Review for Illicit Discharge Potential

Developing areas to review for illicit discharge potential is the first step in identifying priority areas for inspection. This process can be achieved through three fundamental steps:

6.1.1. Collection and study of all available information regarding land uses, material storage areas, and prior illicit discharges.

6.1.2. Performance of dry weather field screenings for non-stormwater discharges.

6.1.3. Review of water quality sampling and analysis for non-stormwater discharges.

6.2. Identifying Priority Areas

To identify areas with high potential for illicit discharges, the information developed in Section 6.1 shall be used to create a list of higher probability locations for illicit discharges.

Following are potential locations that shall be reviewed in conjunction with information collected:

6.2.1. Locations where there have been repeated problems in the past. This includes locations with known water quality data, as well as locations where numerous complaints have been received.

6.2.2. Systems connected to sensitive waterbodies (e.g. drinking water sources, areas containing unique biodiversity, swimming areas, etc.)

6.2.3. Older neighborhoods that may contain a higher percentage of illegal connections and/or have deteriorating sewer lines.

6.2.4. Commercial and/or industrial neighborhoods. These areas may contain a higher percentage of illegal connections and have discharges with higher potential to affect water quality.

6.2.5. Areas where large quantities of materials are stored (e.g. stockpiles, vessels containing hazardous solids or liquids, etc.).

6.2.6. High potential land uses (e.g. restaurants, dumpsters, car washes, mechanics, and oil changers).

Priority Areas Identified by the City of Mound:
Using the guidelines provided above, the City has identified the following priority areas within the city limits:

- Industrial and Commercial properties. Staff is encouraged to use the Minnesota Pollution Control Agency's online search tool "What's in My Neighborhood" - http://pca-gis02.pca.state.mn.us/wimn2/index.html to locate businesses that have the potential to discharge contaminated pollutants to the environment within the City limits.

Section 7: Response Procedures

Illicit discharges can be revealed through routine inspections, maintenance, or reports from City staff and residents. If the discharge requires immediate action, the Immediate Response Procedures in this section shall be implemented. If the discharge does not require immediate action, an investigation shall be initiated within three (3) days. Refer to **Section 4** for Visual Inspection procedures.

7.1. Immediate Response Procedures

7.1.1. Field personnel shall be prepared to take immediate action in the event of encountering one of the following situations:

7.1.1.1. Individuals actively in the process of introducing illegal substances or materials to the storm drain system.

7.1.1.2. Very strong chemical odor emanating from storm drain system.

7.1.1.3. Presence of fumes or smoke emanating from storm drain system.

7.1.1.4. Visible significant stream of a controlled chemical or petroleum product flowing in storm system or downstream waters.

7.1.1.5. Large chemical plume in stream or river downstream of a City outfall.

7.1.1.6. Any condition that poses or could pose an immediate threat to property, human health or safety, or aquatic life.

7.1.2. Personnel shall take the following steps if one of the above situations is encountered:

7.1.2.1. Ensure public safety by instructing people to stay clear of the area.

7.1.2.2. Call **911** to report a major spill, active illegal dumping or a potential fire incident.

7.1.2.3. Initiate Emergency Spill Response Procedures outlined in this section.

7.1.2.4. The following offices shall be called if an unauthorized discharge of oil or hazardous material has occurred:

- Non-Emergency Police Dispatch at 952-525-6216
- Mound Fire Department at 952-472-3555
- Minnesota Duty Officer at 651-649-5451
- Minnehaha Creek Watershed District at 952-471-0590

7.1.2.5. If a spill is encountered the following information shall be recorded if possible:

- Where.
- What.
- How much.
- How concentrated is the material.
- Who.
- Status of cleanup.
- Damages to resources.
- Contact information for person reporting discharge.
- Any notes, photos, and video that can be used for subsequent investigation.

7.1.2.6. After discharge is contained, contact Minnesota Pollution Control Agency at (651) 296-6300 to determine if any additional reporting is necessary.

7.2. Emergency Spill Response Procedures

7.2.1. Stop the spill. The leak or spill shall be stopped if this can be done safely. Hit the **Emergency Stop** button (if available), or turn off nozzles or valves from the leaking container.

7.2.2. **Contain the spill**. Contain the spill if it can be done safely. Soil, sand, or granular absorbents (floor-dry/kitty litter, etc) can be used to build a berm around the flowing liquid on the ground. **Build the berm to keep the liquid from entering the storm drainage system!** Buckets, pails or other containers can be used under leaking valves or punctured tanks.

7.2.3. **Recover the spill**. Once contained, the liquid must be recovered. If City personnel are trained and can perform these tasks safely, recovery shall begin immediately. Otherwise, staff shall cordon off area and maintain safe distance until personnel qualified in hazardous material recovery arrive.

If the spill has already reached water in a ditch, pond or wetland, petroleum recovery should be started using oil-only absorbent pads.

Collect contaminated absorbents. Brooms can be used to sweep up granular absorbent material. Place into buckets, garbage cans, drums or into heavy-duty plastic bags. Remember to control ignition sources. On slippery roadways, fresh granular material such as sand or absorbents can then be re-spread on the roadway for traction. With the exception of used oil, waste generated from petroleum spills that have been reported and cleaned up immediately are exempt from Minnesota's Hazardous Waste rules.

7.2.4. **Arrange for disposal of the wastes**. Contact appropriate level of waste management facility for wastes created and coordinate proper disposal.

7.2.4.1. Responsibility under State law (condensed, see rule citation for complete requirements).

- *MN Stat 115.061. Duty to Notify and Avoid Water Pollution*: Report petroleum spills over 5 gallons immediately and begin cleanup immediately. Report and recover any other materials which could cause pollution to waters of the state.

For more information on spill prevention, cleanup and disposal, City personnel can contact the MPCA at (651) 296-6300 or 1-800-657-3864 and ask for a member of the Emergency Response Team or go to www.pca.state.mn.us/cleanup/pubs/ertpubs.html on the internet.

7.3. Corrective Actions

7.3.1. Once the source of illicit discharge has been identified, the City shall notify the property owner or operator of the problem and coordinate stopping the discharge.

7.3.2. Enforcement actions shall be implemented as outlined in the Enforcement Response Procedures chapter of the SWPPP.

7.3.3. Response Plans shall be supervised by field staff to ensure discharge is properly contained and waste properly disposed.

7.3.4. Voluntary compliance to address illicit discharges shall be pursued by the City for initial violations. The City shall attempt to correct violation through discussion with and education of the party responsible for the discharge prior to any other measures. Investigation report, education materials regarding illicit discharges, and recommendations for correcting illicit discharge shall be provided.

7.3.5. Property owners shall be held responsible for correcting operational problems that are leading to illegal discharges to the storm drainage system. This could include moving washing activities indoor or undercover, covering material storage areas, locating an appropriate discharge location for liquid wastes, or other operational modifications. The City may provide technical assistance through site visits and education to assist owners in identifying necessary modifications.

7.3.6. Illicit connections discovered in public right-of-way shall be re-routed to the sanitary sewer system. For illicit connections discovered on private property, the City shall hold the owner responsible for re-routing of discharge to an approved sanitary sewer system. The City may provide technical assistance through site visits and education to assist owners in identifying necessary modifications.

Section 8: Documentation

8.1. Upon discovery of illicit discharge, a report shall be initiated using the IDDE Report & Response Form in **Appendix A**.

8.2. An incident number will be assigned using the current year and number of illicit discharge discovered within the year.

8.3. Additional materials (maps, photos, sketches, videos, notes, laboratory tests, correspondence, proof of corrective work completion, etc.) shall be included with report form provided.

8.4. An accurate log of labor, materials, and costs associated with the investigation shall be kept for potential invoicing of the responsible party

8.5. All documents shall be kept by the City for at least three years after the current MS4 permit expires.

APPENDIX A

IDDE Report & Response Form

IDDE Report & Response Form

I. Incident Report

Incident Number: _____

Date/Time: _____AM / PM Received By: _____

Location: _____

Initial Report of Conditions: _____

_____

Reported By: _____ Phone: _____

II. Investigation

Date: _____ By: _____

Location Description/Storm Drain ID/Outfall: _____

Discharge Entered Storm Drain System/Receiving Waters? ___Yes ___No

Material Type

- ☐ Hazardous
- ☐ Sediment
- ☐ Wastewater
- ☐ Oil/Grease
- ☐ Other_____
- ☐ Unknown

Est. Quantity: _____

Additional Information: _____

Sample(s) Collected: ____ Yes _____No Photo(s) Taken: ____ Yes _____No

Observed Land Use

- ☐ Residential
- ☐ Commercial/Industrial Stormwater Permit ___Yes ___No ___Unknown
- ☐ Public

Direct/Constructed Connections Found? ___ Yes ___ No

Source Description: _____

Source/Responsible Party: _____

III. Action and Closure

Referred To: _____ Date: _____

Action Taken: _____

_____

Date Closed: _____

APPENDIX B

Enforcement Response Procedures (ERPs)

(See this chapter in the SWPPP)

APPENDIX C

Dye Testing, Video Testing/Televising & Smoke Testing

Excerpts from The Center for Watershed Protection's:

Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments

Table 56: Techniques to Locate the Discharge

Technique	Best Applications	Limitations
Dye Testing	• Discharge limited to a very small drainage area (<10 properties is ideal) • Discharge probably caused by a connection from an individual property • Commercial or industrial land use	• May be difficult to gain access to some properties
Video Testing	• Continuous discharges • Discharge limited to a single pipe segment • Communities who own equipment for other investigations	• Relatively expensive equipment • Cannot capture non-flowing discharges • Often cannot capture discharges from pipes submerged in the storm drain
Smoke Testing	• Cross-connection with the sanitary sewer • Identifying other underground sources (e.g., leaking storage techniques) caused by damage to the storm drain	• Poor notification to public can cause alarm • Cannot detect all illicit discharges

TIP

The Wayne County Department of the Environment provides excellent training materials on on-site investigations, as well as other illicit discharge techniques. More information about this training can be accessed from their website: http://www.wcdoe.org/Watershed/Programs___Srvcs_/IDEP/idep.htm.

Figure 63: Dye Testing Plumbing (NEIWPCC, 2003)

Dye Testing

Dye testing is an excellent indicator of illicit connections and is conducted by introducing non-toxic dye into toilets, sinks, shop drains and other plumbing fixtures (see Figure 63). The discovery of dye in the storm drain, rather than the sanitary sewer, conclusively determines that the illicit connection exists.

Before commencing dye tests, crews should review storm drain and sewer maps to identify lateral sewer connections and how they can be accessed. In addition, property owners must be notified to obtain entry permission. For industrial or commercial properties, crews should carry a letter to document their legal authority to gain access to the property. If time permits, the letter can be sent in advance of the dye testing. For residential properties, communication can be more challenging. Unlike commercial properties, crews are not guaranteed access to homes, and should call ahead to ensure that the owner will be home on the day of testing.

Communication with other local agencies is also important since any dye released to the storm drain could be mistaken for a spill or pollution episode. To avoid a costly and embarrassing response to a false alarm,

crews should contact key spill response agencies using a "quick fax" that describes when and where dye testing is occurring (Tuomari and Thomson, 2002). In addition, crews should carry a list of phone numbers to call spill response agencies in the event dye is released to a stream.

At least two staff are needed to conduct dye tests – one to flush dye down the plumbing fixtures and one to look for dye in the downstream manhole(s). In some cases, three staff may be preferred, with two staff entering the private residence or building for both safety and liability purposes.

The basic equipment to conduct dye tests is listed in Table 57 and is not highly specialized. Often, the key choice is the type of dye to use for testing. Several options are profiled in Table 58. In most cases, liquid dye is used, although solid dye tablets can also be placed in a mesh bag and lowered into the manhole on a rope (Figure 64). If a

Table 57: Key Field Equipment for Dye Testing
(Source: Wayne County, MI, 2000)

Maps, Documents
- Sewer and storm drain maps (sufficient detail to locate manholes)
- Site plan and building diagram
- Letter describing the investigation
- Identification (e.g., badge or ID card)
- Educational materials (to supplement pollution prevention efforts)
- List of agencies to contact if the dye discharges to a stream.
- Name of contact at the facility

Equipment to Find and Lift the Manhole Safely (small manhole often in a lawn)
- Probe
- Metal detector
- Crow bar
- Safety equipment (hard hats, eye protection, gloves, safety vests, steel-toed boots, traffic control equipment, protective clothing, gas monitor)

Equipment for Actual Dye Testing and Communications
- 2-way radio
- Dye (liquid or "test strips")
- High powered lamps or flashlights
- Water hoses
- Camera

Figure 64: Dye in a mesh bag is placed into an upstream manhole (left); Dye observed at a downstream manhole traces the path of the storm drain (right)

longer pipe network is being tested, and dye is not expected to appear for several hours, charcoal packets can be used to detect the dye (GCHD, 2002). Charcoal packets can be secured and left in place for a week or two, and then analyzed for the presence of dye. Instructions for using charcoal packets in dye testing can be accessed at the following website: http://bayinfo.tamug.tamu.edu/gbeppubs/ms4.pdf.

The basic drill for dye tests consists of three simple steps. First, flush or wash dye down the drain, fixture or manhole. Second, pop open downgradient sanitary sewer manholes and check to see if any dye appears. If none is detected in the sewer manhole after an hour or so, check downgradient storm drain manholes or outfalls for the presence of dye. Although dye testing is fairly straightforward, some tips to make testing go more smoothly are offered in Table 59.

Table 58: Dye Testing Options

Product	Applications
Dye Tablets	• Compressed powder, useful for releasing dye over time • Less messy than powder form • Easy to handle, no mess, quick dissolve • Flow mapping and tracing in storm and sewer drains • Plumbing system tracing • Septic system analysis • Leak detection
Liquid Concentrate	• Very concentrated, disperses quickly • Works well in all volumes of flow • Recommended when metering of input is required • Flow mapping and tracing in storm and sewer drains • Plumbing system tracing • Septic system analysis • Leak detection
Dye Strips	• Similar to liquid but less messy
Powder	• Can be very messy and must dissolve in liquid to reach full potential • Recommended for very small applications or for very large applications where liquid is undesirable • Leak detection
Dye Wax Cakes	• Recommended for moderate-sized bodies of water • Flow mapping and tracing in storm and sewer drains
Dye Wax Donuts	• Recommended for large sized bodies of water (lakes, rivers, ponds) • Flow mapping and tracing in storm and sewer drains • Leak detection

Table 59: Tips for Successful Dye Testing
(Adapted from Tuomari and Thompson, 2002)

Dye Selection
- Green and liquid dyes are the easiest to see.
- Dye test strips can be a good alternative for residential or some commercial applications. (Liquid can leave a permanent stain).
- Check the sanitary sewer before using dyes to get a "base color." In some cases, (e.g., a print shop with a permitted discharge to the sanitary sewer), the sewage may have an existing color that would mask a dye.
- Choose two dye colors, and alternate between them when testing multiple fixtures.

Selecting Fixtures to Test
- Check the plumbing plan for the site to isolate fixtures that are separately connected.
- For industrial facilities, check most floor drains (these are often misdirected).
- For plumbing fixtures, test a representative fixture (e.g., a bathroom sink).
- Test some locations separately (e.g., washing machines and floor drains), which may be misdirected.
- If conducting dye investigations on multiple floors, start from the basement and work your way up.
- At all fixtures, make sure to flush with plenty of water to ensure that the dye moves through the system.

Selecting a Sewer Manhole for Observations
- Pick the closest manhole possible to make observations (typically a sewer lateral).
- If this is not possible, choose the nearest downstream manhole.

Communications Between Crew Members
- The individual conducting the dye testing calls in to the field person to report the color dye used, and when it is dropped into the system.
- The field person then calls back when dye is observed in the manhole.
- If dye is not observed (e.g., after two separate flushes have occurred), dye testing is halted until the dye appears.

Locating Missing Dye
- The investigation is not complete until the dye is found. Some reasons for dye not appearing include:
- The building is actually hooked up to a septic system.
- The sewer line is clogged.
- There is a leak in the sewer line or lateral pipe.

Video Testing

Video testing works by guiding a mobile video camera through the storm drain pipe to locate the actual connection producing an illicit discharge. Video testing shows flows and leaks within the pipe that may indicate an illicit discharge, and can show cracks and other pipe damage that enable sewage or contaminated water to flow into the storm drain pipe.

Video testing is useful when access to properties is constrained, such as residential neighborhoods. Video testing can also be expensive, unless the community already owns and uses the equipment for sewer inspections. This technique will not detect all types of discharges, particularly when the illicit connection is not flowing at the time of the video survey.

Different types of video camera equipment are used, depending on the diameter and condition of the storm sewer being tested.

Field crews should review storm drain maps, and preferably visit the site before selecting the video equipment for the test. A field visit helps determine the camera size needed to fit into the pipe, and if the storm drain has standing water.

In addition to standard safety equipment required for all manhole inspections, video testing requires a Closed-Circuit Television (CCTV) and supporting items. Many commercially available camera systems are specifically adapted to televise storm sewers, ranging from large truck or van-mounted systems to much smaller portable cameras. Cameras can be self-propelled or towed. Some specifications to look for include:

- The camera should be capable of radial view for inspection of the top, bottom, and sides of the pipe and for looking up lateral connections.
- The camera should be color.
- Lighting should be supplied by a lamp on the camera that can light the entire periphery of the pipe.

When inspecting the storm sewer, the CCTV is oriented to keep the lens as close as possible to the center of the pipe. The camera can be self-propelled through the pipe using a tractor or crawler unit or it may be towed through on a skid unit (see Figures 65 and 66). If the storm drain has ponded water, the camera should be attached to a raft, which floats through the storm sewer from one manhole to the next. To see details of the sewer, the camera and lights should be able to swivel both horizontally and vertically. A video record of the inspection should be made for future reference and repairs (see Figure 67).

Figure 65: Camera being towed

Smoke Testing

Smoke testing is another "bottom up" approach to isolate illicit discharges. It works by introducing smoke into the storm drain system and observing where the smoke surfaces. The use of smoke testing to detect illicit discharges is a relatively new application, although many communities have used it to check for infiltration and inflow into their sanitary sewer network. Smoke testing can find improper

Figure 66: Tractor-mounted camera

Figure 67: Review of an inspection video

connections, or damage to the storm drain system (Figure 68). This technique works best when the discharge is confined to the upper reaches of the storm drain network, where pipe diameters are to small for video testing and gaining access to multiple properties renders dye testing infeasible.

Notifying the public about the date and purpose of smoke testing before starting is critical. The smoke used is non-toxic, but can cause respiratory irritation, which can be a problem for some residents. Residents should be notified at least two weeks prior to testing, and should be provided the following information (Hurco Technologies, Inc., 2003):

- Date testing will occur
- Reason for smoke testing
- Precautions they can take to prevent smoke from entering their homes or businesses
- What they need to do if smoke enters their home or business, and any health concerns associated with the smoke
- A number residents can call to relay any particular health concerns (e.g., chronic respiratory problems)

Program managers should also notify local media to get the word out if extensive smoke testing is planned (e.g., television, newspaper, and radio). On the actual day of testing, local fire, police departments and 911 call centers should be notified to handle any calls from the public (Hurco Technologies, Inc., 2003).

The basic equipment needed for smoke testing includes manhole safety equipment, a smoke source, smoke blower, and sewer plugs. Two smoke sources can be used for smoke testing. The first is a smoke "bomb," or "candle" that burns at a controlled rate and releases very white smoke visible at relatively low concentrations (Figure 69). Smoke bombs are suspended beneath a blower in a manhole. Candles are available in 30 second to three minute sizes. Once opened, smoke bombs should be kept in a dry location and should be used within one year.

The second smoke source is liquid smoke, which is a petroleum-based product that is injected into the hot exhaust of a blower where it is heated and vaporized (Figure 70). The length of smoke production can vary depending on the length of the pipe being

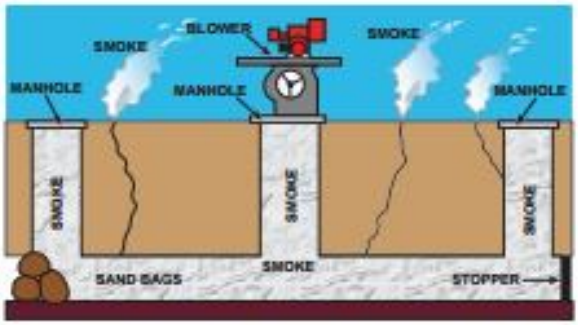

Figure 68: Smoke Testing System Schematic

Figure 69: Smoke Candles

Figure 70: Smoke blower

tested. In general, liquid smoke is not as consistently visible and does not travel as far as smoke from bombs (USA Blue Book).

Smoke blowers provide a high volume of air that forces smoke through the storm drain pipe. Two types of blowers are commonly used: "squirrel cage" blowers and direct-drive propeller blowers. Squirrel cage blowers are large and may weigh more than 100 pounds, but allow the operator to generate more controlled smoke output. Direct-drive propeller blowers are considerably lighter and more compact, which allows for easier transport and positioning.

Three basic steps are involved in smoke testing. First, the storm drain is sealed off by plugging storm drain inlets. Next, the smoke is released and forced by the blower through the storm drain system. Lastly, the crew looks for any escape of smoke above-ground to find potential leaks.

One of three methods can be used to seal off the storm drain. Sandbags can be lowered into place with a rope from the street surface. Alternatively, beach balls that have a diameter slightly larger than the drain can be inserted into the pipe. The beach ball is then placed in a mesh bag with a rope attached to it so it can be secured and retrieved. If the beach ball gets stuck in the pipe, it can simply be punctured, deflated and removed. Finally, expandable plugs are available, and may be inserted from the ground surface.

Blowers should be set up next to the open manhole after the smoke is started. Only one manhole is tested at a time. If smoke candles are used, crews simply light the candle, place it in a bucket, and lower it in the manhole. The crew then watches to see where smoke escapes from the pipe. The two most common situations that indicate an illicit discharge are when smoke is seen rising from internal plumbing fixtures (typically reported by residents) or from sewer vents. Sewer vents extend upward from the sewer lateral to release gas buildup, and are not supposed to be connected to the storm drain system.

13.4 Septic System Investigations

The techniques for tracing illicit discharges are different in rural or low-density residential watersheds. Often, these watersheds lack sanitary sewer service and storm water is conveyed through ditches or swales, rather than enclosed pipes. Consequently, many illicit discharges enter the stream as indirect discharges, through surface breakouts of septic fields or through straight pipe discharges from bypassed septic systems.

The two broad techniques used to find individual septic systems—on-site investigations and infrared imagery—are described in this section.

APPENDIX D

Illicit Discharge Detection and Elimination Ordinance

CITY OF MOUND
ORDINANCE NO. 03-2016

AN ORDINANCE AMENDING CHAPTER 74, ARTICLE V, OF THE MOUND CITY CODE ADDING ILLICIT DISCHARGE DETECTION AND ELIMINATION AND AMENDING TITLES

The City of Mound does ordain:

SECTION 1. That the titles of Article V and Division 2 of Chapter 74 of the Mound City Code are amended to read as follows:

ARTICLE V. STORM DRAINAGE SYSTEMS

DIVISION 2. STORMWATER UTILITY

SECTION 2. That Chapter 74, Article V. of the Mound City Code is amended to add the following new Division:

DIVISION 3. STORMWATER ILLICIT DISCHARGE DETECTION AND ELIMINATION

Sec 74-303. PURPOSE AND OBJECTIVES: The purpose of this Article is to provide for the health, safety, and general welfare of the citizens of the City of Mound through the regulation of non-stormwater discharges to the storm drainage system to the maximum extent practicable as required by state and federal law. This Article establishes methods for controlling the introduction of pollutants into the municipal separate storm sewer system (MS4) in order to comply with requirements of the National Pollutant Discharge Elimination System (NPDES) MS4 permit process. The objectives of this Article are:

A. To regulate the contribution of pollutants to the municipal separate storm sewer system by stormwater discharges by any user;

B. To prohibit Illicit Connections and Discharges to the municipal separate storm sewer system; and

C. To establish legal authority to carry out all inspection, surveillance, and monitoring procedures necessary to ensure compliance with this Article.

Sec 74-304. DEFINITIONS: For the purposes of this Article, the following terms shall have the following meanings:

Authorized Enforcement Agency: employees or designees of the City of Mound or the Minnesota Pollution Control Agency as designated to enforce this Article.

Best Management Practices (BMPs): Schedules of activities, prohibitions of practices, general good housekeeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly into stormwater, receiving waters, or stormwater conveyance systems. BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.

City: The City of Mound

Clean Water Act: The federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.), and any subsequent amendments thereto.

Construction Activity: Activities subject to NPDES Construction Permits. These include construction projects resulting in land disturbance of 1 acre or more and projects that disturb less than

1 acre if they are part of a larger common plan of development. Such activities include but are not limited to clearing and grubbing, grading, excavating, and demolition.

Hazardous Materials: Any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment, when improperly treated, stored, transported, disposed of, or otherwise managed.

Illegal Discharge: Any direct or indirect non-stormwater discharge to the storm drain system, except as exempted in Section 74-309 of this Article.

Illicit Connections: An illicit connection is defined as either of the following: (i) Any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the storm drain system including, but not limited to, any conveyances which allow any non-stormwater discharge including sewage, process wastewater, and wash water to enter the storm drain system and any connections to the storm drain system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by the City or, (ii) any drain or conveyance connected from a commercial or industrial land use to the storm drain system which has not been documented in plans, maps, or equivalent records and approved by the City.

Industrial Activity: Activities subject to NPDES Industrial Permits as defined in 40 CFR, Section 122.26 (b)(14).

Minnesota Pollution Control Agency (MPCA).

Municipal Separate Storm Sewer System (MS4): A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) owned and operated by the City and designed or used for collecting or conveying Storm Water.

National Pollutant Discharge Elimination System (NPDES) Stormwater Discharge Permit: A permit issued by EPA (or by the State of Minnesota under authority delegated pursuant to 33 USC § 1342(b)) that authorizes the discharge of pollutants to Waters of the State, whether the permit is applicable on an individual, group, or general area-wide basis.

Non-Stormwater Discharge: Any discharge to the storm drain system that is not composed entirely of storm water.

Person: Any individual, association, organization, partnership, firm, corporation or other entity recognized by law and acting as either the owner or as the owner's agent.

Pollutant: Anything which causes or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; non-hazardous liquids, solid wastes, and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned

objects, and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure; and noxious or offensive matter of any kind.

Premises: Any building, lot, parcel of land, or portion of land whether improved or unimproved including adjacent sidewalks and boulevards.

Storm Drainage System: Publicly-owned facilities by which stormwater is collected and/or conveyed, including but not limited to any roads with drainage systems, municipal streets, gutters, curbs, inlets, piped storm drains, pumping facilities, infiltration, retention and detention basins, natural and human-made or altered drainage channels, reservoirs, and other drainage structures.

Stormwater: Any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation, and resulting from such precipitation.

Stormwater Pollution Prevention Plan (SWPPP): A document which describes the Best Management Practices and activities to be implemented by a person or business to identify sources of pollution or contamination at a site and the actions to eliminate or reduce pollutant discharges to Stormwater, Stormwater Conveyance Systems, and/or Receiving Waters to the maximum extent practicable.

Wastewater: Any water or other liquid, other than uncontaminated stormwater, discharged from a facility or property.

Waters of the State: All streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, which are contained within, flow through, or border upon the state of Minnesota or any portion thereof.

Sec 74-305. APPLICABILITY: This Article shall apply to all water entering the storm drain system generated on any developed or undeveloped lands unless explicitly exempted by an authorized enforcement agency.

Sec 74-306. RESPONSIBILITY FOR ADMINISTRATION: The City of Mound shall administer, implement, and enforce the provisions of this Article. Any powers granted or duties imposed upon by the MPCA may be delegated in writing by the Director of Public Works of the City of Mound to persons or entities acting in the beneficial interest of or in the employ of the City.

Sec 74-307. SEVERABILITY: The provisions of this Article are hereby declared to be severable. If any provision, clause, sentence, or paragraph of this Article or the application thereof to any person, establishment, or circumstances shall be held invalid, such invalidity shall not affect the other provisions or application of this Article.

Sec 74-308. ULTIMATE RESPONSIBILITY: The standards set forth herein and promulgated pursuant to this Article are minimum standards; therefore this Article does not intend nor imply that compliance by any person will ensure that there will be no contamination, pollution, nor unauthorized discharge of pollutants.

Sec 74-309. DISCHARGE PROHIBITIONS:

A. Prohibition of Illegal Discharges and Connections

No person shall discharge or cause to be discharged into the municipal storm drain system or Waters of the State any materials, including but not limited to pollutants or waters containing any pollutants that cause or contribute to a violation of applicable water quality standards, other than stormwater. The commencement, conduct or continuance of any illegal discharge to the storm drain system is prohibited:

1. The construction, use, maintenance or continued existence of illicit connections to the storm drain system is prohibited.

2. This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

3. A person is considered to be in violation of this Article if the person connects a line conveying sewage to the MS4, or allows such a connection to continue.

4. Connection of private sump pump and/or drain tile lines to public storm sewers is prohibited unless a Right of Way permit is obtained from the City Engineer.

B. Exemptions

Except as otherwise provided herein, the following discharges are exempt from discharge prohibitions established by this Article: water line flushing or other potable water sources, landscape irrigation or lawn watering, diverted stream flows, rising groundwater, groundwater infiltration to storm drains, uncontaminated pumped groundwater, foundation or footing drains that discharge uncontaminated water, crawl space pumps, air conditioning condensation, springs, non-commercial washing of vehicles, natural riparian habitat or wetland flows, swimming pools (if de-chlorinated - typically less than one PPM chlorine), fire-fighting activities, street cleaning activities and any other water source not containing pollutants.

1. Discharges specified in writing by the MPCA as being necessary to protect public health and safety.

2. Dye testing is an allowable discharge, but requires a verbal notification to the Director of Public Works 48-hours prior to the start of the test.

3. Any non-stormwater discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the MPCA or Federal Environmental Protection Agency, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for any discharge to the storm drain system.

Sec 74-310. SUSPENSION OF MS4 ACCESS:

A. Suspension due to Illicit Discharges in Emergency Situations. The City of Mound may, without prior notice, suspend MS4 discharge access to a person when such suspension is necessary to stop an actual or threatened discharge which presents or may present imminent and substantial danger to the environment, or to the health or welfare of persons, or to the MS4 or Waters of the State. If the violator fails to comply with a suspension order issued in an emergency, the City may take such steps as deemed necessary to prevent or minimize damage to the MS4 or Waters of the State, or to minimize danger to persons.

B. Suspension due to the Detection of Illicit Discharge. Any person discharging to the MS4 in violation of this Article may have their MS4 access terminated if such termination would abate or reduce an illicit discharge. The City will notify a violator of the proposed termination of its MS4 access.

C. A person commits an offense if the person reinstates MS4 access to premises terminated pursuant to this Section, without the prior approval of the City.

Sec 74-311. INDUSTRIAL OR CONSTRUCTION ACTIVITY DISCHARGES: Any person subject to an Industrial or Construction Activity NPDES stormwater discharge permit shall comply with all provisions of such permit. Proof of compliance with said permit may be required in a form acceptable to the City prior to the allowing of discharges to the MS4.

Sec 74-312. MONITORING OF DISCHARGES:

A. Applicability. This section applies to all facilities that have stormwater discharges associated with industrial activity, including construction activity.

B. Access to Facilities.

1. The City shall be permitted to enter and inspect facilities subject to regulation under this Article as often as may be necessary to determine compliance with this Article. If a discharger has security measures in force which require proper identification and clearance before entry into its premises, the discharger shall make the necessary arrangements to allow access to representatives of the authorized enforcement agency.

2. Facility operators shall allow the City ready access to all parts of the premises for the purposes of inspection, sampling, examination and copying of records that must be kept under the conditions of the NPDES permit to discharge stormwater, and the performance of any additional duties as defined by state and federal law.

3. The City shall have the right to set up on any permitted facility such devices as are necessary in the opinion of the City to conduct monitoring and/or sampling of the facility's stormwater discharge.

4. The City has the right to require the discharger to install monitoring equipment as necessary. The facility's sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the discharger at its own expense. All devices used to measure stormwater flow and quality shall be calibrated to ensure their accuracy per manufacturer's recommendations.

5. Any temporary or permanent obstruction to safe and easy access to the facility to be inspected and/or sampled shall be promptly removed by the operator at the written or oral request of the City and shall not be replaced. The costs of clearing such access shall be borne by the operator.

6. Unreasonable delays in allowing the City access to a permitted facility is a violation of the stormwater discharge permit and of this Article. A person who is the operator of a facility with a NPDES permit to discharge stormwater associated with industrial activity commits an offense if the person denies the City reasonable access to the permitted facility for the purpose of conducting any activity authorized or required by this Article.

7. If the City has been refused access to any part of the premises from which stormwater is discharged, and he/she is able to demonstrate probable cause to believe that there may be a violation of this Article, or that there is a need to inspect and/or sample as part of a routine inspection and sampling program designed to verify compliance with this Article or any order issued hereunder, or to protect the overall public health, safety, and welfare of the community, then the City may seek issuance of a search warrant from any court of competent jurisdiction.

Sec 74-313. REQUIREMENT TO PREVENT, CONTROL, AND REDUCE STORMWATER POLLUTANTS BY THE USE OF BEST MANAGEMENT PRACTICES: The City of Mound has adopted requirements identifying Best Management Practices for any activity, operation, or facility which may cause or contribute to pollution or contamination of stormwater, the storm drain system, or Waters of the State. The owner or operator of a commercial or industrial establishment shall provide, at their own expense, reasonable protection from accidental discharge of prohibited materials or other wastes into the municipal storm drain system or Waters of the State through the use of these structural and non-structural BMPs. Further, any person responsible for a property or premise, which is, or may be, the source of an illicit discharge, may be required to implement, at said person's expense, additional structural and non-structural BMPs to prevent the further discharge of pollutants to the municipal separate storm sewer system. Compliance

with all terms and conditions of a valid NPDES permit authorizing the discharge of stormwater associated with industrial activity, to the extent practicable, shall be deemed compliant with the provisions of this section. These BMPs shall be part of a stormwater pollution prevention plan (SWPPP) as necessary for compliance with requirements of the NPDES permit.

Sec 74-314. WATERCOURSE PROTECTION: Every person owning property through which a watercourse passes, or such person's lessee, shall keep and maintain that part of the watercourse within the property free of trash, debris, excessive vegetation, and other obstacles (including grass clippings, leaves or any other organic material) that would pollute, contaminate, or significantly retard the flow of water through the watercourse. In addition, the owner or lessee shall maintain existing privately owned structures within or adjacent to a watercourse, so that such structures will not become a hazard to the use, function, or physical integrity of the watercourse.

Sec 74-315. NOTIFICATION OF SPILLS: Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation has information of any known or suspected release of materials which are resulting or may result in illegal discharges or pollutants discharging into stormwater, the storm drain system, or Waters of the State, said person shall take all necessary steps to ensure the discovery, containment, and cleanup of such a release. In the event of such a release of hazardous materials said person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services by calling 911. In the event of a release of non-hazardous materials, said person shall notify the City in person or by phone or facsimile no later than the next business day. Notifications in person or by phone shall be confirmed by written notice addressed and mailed to the City of Mound within three business days of the phone notice. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years.

Sec 74-316. ENFORCEMENT: Whenever the City finds that a person has violated a prohibition or failed to meet a requirement of this Article, the City may order compliance by written Notice of Violation to the responsible person. Such notice may require without limitation:

A. The performance of monitoring, analyses, and reporting;

B. The elimination of illicit connections or discharges;

C. The violating discharges, practices, or operations shall cease and desist;

D. The abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property; and

E. Payment of a fine to cover administrative and remediation costs;

F. The implementation of source control or treatment BMPs; and

G. The deadline within which to remedy the violation.

If abatement of a violation and/or restoration of affected property is required, the notice shall set forth a deadline within which such remediation or restoration must be completed. Said notice shall further advise that, should the violator fail to remediate or restore within the established deadline, the work will be done by a designated governmental agency or a contractor and the expense thereof shall be charged to the violator.

Sec 74-317. APPEAL OF NOTICE OF VIOLATION: Any person receiving a Notice of Violation may appeal the determination of the City. The notice of appeal must be received by the City within 15 days from the date of the Notice of Violation. The appeal shall be heard by the City Council within 30 days from the date of receipt of the notice of appeal. The decision of the City Council shall be final.

Sec 74-318. ENFORCEMENT MEASURES AFTER APPEAL: If the violation has not been corrected pursuant to the requirements set forth in the Notice of Violation, or, in the event of an appeal, within the deadline extended by the decision of the City Council, then representatives of the City shall enter upon the subject private property and are authorized to take any and all measures necessary to abate the violation and/or restore the property. It shall be unlawful for any person, owner, agent, or person in possession of any premises to refuse to allow the City or its designated contractor to enter upon the premises for the purposes set forth above.

Sec 74-319. COST OF ABATEMENT OF THE VIOLATION: Within 30 days after abatement of the violation, the owner of the property will be notified of the cost of abatement, including administrative costs, and the deadline to pay the abatement costs. The property owner may file a written protest objecting to the costs and payment terms of the abatement within 15 days. The appeal shall be heard by the City Council within 30 days from the date of receipt of the notice of appeal. If the amount due is not paid within a timely manner as determined by the decision of the City Council after hearing the appeal, the charges will be filed with Hennepin County and shall become a special assessment against the property and shall constitute a lien on the property for the amount of the assessment.

Sec 74-320. INJUNCTIVE RELIEF: It shall be unlawful for any person to violate any provision or fail to comply with any of the requirements of this Article. If a person has violated or continues to violate the provisions of this Article, the authorized enforcement agency may petition for a preliminary or permanent injunction restraining the person from activities which would create further violations or compelling the person to perform abatement or remediation of the violation.

Sec 74-321. COMPENSATORY ACTION: In lieu of enforcement proceedings, penalties, and remedies authorized by this Article, the authorized enforcement agency may impose upon a violator alternative compensatory actions, such as storm drain stenciling, attendance at compliance workshops, creek cleanup, etc.

Sec 74-322. VIOLATIONS DEEMED A PUBLIC NUISANCE: In addition to the enforcement processes and penalties provided, any condition caused or permitted to exist in

violation of any of the provisions of this Article is a threat to public health, safety, and welfare, and is declared and deemed a nuisance, and may be summarily abated or restored at the violator's expense, and/or a civil action to abate, enjoin, or otherwise compel the cessation of such nuisance may be taken.

Sec 74-323 CRIMINAL PROSECUTION: Any person that violates this Article shall be deemed guilty of a misdemeanor and upon conviction thereof, may be subject to the maximum fine and imprisonment allowed by State law. Each such violation shall constitute a separate offense punishable to the maximum extent of the law. The authorized enforcement agency may recover all attorneys' fees court costs and other expenses associated with enforcement of this Article, including sampling and monitoring expenses.

Sec 74-324. REMEDIES NOT EXCLUSIVE:

The remedies listed in this Article are not exclusive of any other remedies available under any applicable federal, state or local law and it is within the discretion of the authorized enforcement agency to seek cumulative remedies.

Passed by the City Council on March 8, 2016

4. MCM 6 – Pollution Prevention / Good Housekeeping for Municipal Operations

CITY OF MOUND

Municipal Operations Best Management Practices

2015

MUNICIPAL OPERATIONS BEST MANAGEMENT PRACTICES
CITY OF MOUND

TABLE OF CONTENTS

MUNICIPAL OPERATIONS BEST MANAGEMENT PRACTICES
CITY OF MOUND

Section 1: Waste Disposal and Storage

Improper storage and handling of waste materials can allow a number of pollutants including oils and greases, toxic and chemical compounds (including nutrients), bacteria, metals, and other wastes to enter waterways through stormwater runoff and non-stormwater discharges. Proper handling, along with recycling and waste reduction will reduce the potential for polluting waterways, groundwater, and recharge points.

1.1. Ensure that all waste areas and dumpsters are covered and not leaking.
1.2. Place waste receptacles indoors or under a roof overhang whenever possible.
1.3. Keep all container lids closed at all times unless adding or removing material.
1.4. Liquid wastes should be kept out of the dumpster and the lid kept closed to keep storm water out.
1.5. Waste oil, antifreeze, spent solvents, and other liquids from vehicle maintenance activities should be recycled.
1.6. Spent batteries should be disposed of as hazardous waste or returned for reclamation and reuse.
1.7. Arrange for waste to be picked up regularly and disposed of at approved disposal facilities. If the amount of generated waste exceeds the capacity of waste containers, obtain more containers or increase frequency of pickups.
1.8. Protect or block storm drain inlets, open manholes, and roadside ditches during utility activities with rock socks, wattles or covers. Always check that these BMP's are in place before starting work on a construction site.
1.9. Arrange for waste to be picked up regularly and disposed of at approved disposal facilities. If the amount of generated waste exceeds the capacity of waste containers, obtain more containers or increase frequency of pickups.
1.10. Do not wash out waste containers or dumpsters outdoors. Return dumpsters to the owners for cleaning at the owner's facility. If municipally owned containers must be washed, do so at a sink or floor drain so that wastewater goes to the sanitary sewer.
1.11. Only wash concrete mixing and pouring equipment in designated concrete washout areas at each job site. Never wash into a storm drain inlet.

Section 2: Management of Stockpiles

Stockpile Management procedures and practices are designed to reduce or eliminate air and stormwater pollution from stockpiles of soil, paving materials such as portland cement concrete rubble, reclaimed asphalt pavement (RAP), hot mixed-cold laid bituminous mixes, limestone rock asphalt, pre-coated aggregates, and various patching mixes.

2.1. Locates stockpiles away from concentrated flows of stormwater, drainage courses, and inlets.
2.2. Protects all stockpiles from stormwater run-on using temporary perimeter sediment barriers such as berms, dikes, fiber rolls, silt fences, sandbag, gravel bags, or straw bale barriers.
2.3. Manages stockpiles of contaminated soil as follows:
  2.3.1. Cover stockpiles with plastic sheeting or tarps.
  2.3.2. Install berms around stockpiles to prevent runoff from leaving the area.

2.3.3. Locate as far from storm drains or watercourses as possible.

2.4. Place bagged materials on pallets and under cover.

2.5. While activities associated with the BMP are under way, inspect weekly during the rainy season and at two-week intervals in the non-rainy season to verify continued BMP implementation.

2.6. Repair and/or replace perimeter controls and covers as needed to keep them functioning properly.

Section 3: Vehicle Fueling, Washing and Maintenance

Activities associated with fueling and cleaning of municipal vehicles and equipment can easily contribute pollutants to stormwater discharges or directly discharge to the municipal separate storm sewer (MS4). Spills and leaks that occur during vehicle and equipment fueling can contribute hydrocarbons, oils, grease, metals, and other toxic chemicals to stormwater run-off or discharge directly into storm sewers or receiving waters. Pollutants from washing and maintaining vehicles can vary from engine oil to chemicals within detergents such as phosphates. Properly designed and constructed fueling and wash areas will reduce the potential for contaminated discharges.

3.1. General Washing Practices

3.1.1. Keep equipment clean; do not allow a buildup of oil/grease.

3.1.2. A commercial vehicle wash is the ideal location for washing vehicles. Commercial vehicle washes have the ability to recycle their water on-site as well as to contain wash water so it will not enter the storm drain.

3.1.3. If no commercial vehicle washes are available, then vehicles should be washed indoors (that will drain to sanitary sewers) or on grass/pervious surfaces.

3.1.4. Place spill clean-up materials in readily available locations by the wash area (clearly mark location of spill clean-up materials).

3.1.5. Clean up spills or any wash water that may improperly discharge.

3.1.6. Use phosphate-free detergents.

3.1.7. Do not store solvents or degreasers in the wash area.

3.2. General Fueling Practices

3.2.1. Place drip pans or absorbent pads under direct fueling location if fueling will occur over a permeable surface.

3.2.2. Do not "top off" fuel tanks.

3.2.3. Do not place used spill response materials in adjacent trash receptacles. Dispose in a proper manner.

3.2.4. Do not leave active fueling operations unattended.

3.3. General Maintenance Practices

3.3.1. Keep all wash areas neat and orderly.

3.3.2. Perform monthly inspections and clean and maintain any sumps or oil/water separators installed at the wash area.

3.3.3. Inspect and maintain washing equipment, especially the hoses, wands and nozzles. Make sure they deliver the proper rate of water and shut-off automatically when not in use.

3.3.4. For wash areas that are plumbed to a sanitary sewer, clean the sewer inlet at least weekly.
3.3.5. Inspect all fueling equipment and fuel islands at least daily for leaks, drips, corrosion, wear or damage. Repair or replace all faulty equipment promptly.

Section 4: Routine Street and Parking Lot Sweeping

Regular street and parking lot sweeping removes sediment and organic material that would otherwise be washed into stormwater ponds or surface waters. Sweeping should be performed at least twice a year on all roads and preferably more in high priority areas (adjacent to high value surface waters, high percentage of tree canopy, and areas with minimal structural stormwater BMPs).

4.1. Operate all sweepers according to the manufacturer's recommended procedures.
4.2. Develop a street sweeping schedule including prioritized roads, secondary roads and frequency of sweeping.
4.3. Make sure brushes and water spray hoses are functional before starting sweeping operations.
4.4. Clean out solid debris and store in an impervious area or in a temporary disposal area such as a truck or dumpster.
4.5. Scrape out left over debris from the hopper after the last dump of the day. Dispose of waste in trash or dumpster temporary storage area.
4.6. Always wash sweepers in a wash area or wash bay that drains to a sanitary sewer.
4.7. Avoid conducting sweeping operations during rain events.
4.8. High priority areas shall be swept more often and shall include the following:
4.8.1. Areas where storm inlets frequently clog due to organic material (leaves, grass clippings, etc.). Sweep as needed to keep inlets free draining.
4.8.2. Neighborhoods with a high percentage of tree canopy. Sweep in spring, in summer after bloom, and autumn after leaves fall.
4.8.3. Drainage areas with minimal structural stormwater management measures. Sweep in spring, in summer after bloom, and autumn after leaves fall.
4.8.4. Areas used for special events (street fairs, art shows, parades, etc.). Sweep immediately after event.
4.8.5. Street construction projects. Sweep at the end of every day.
4.8.6. Right-of-way areas. Sweep immediately after grass cutting operations.

Section 5: Emergency Response

In the event of a spill or leak that threatens property or life, call **911** and contact the Minnesota Department of Public Safety Duty Officer at 1-800-422-0798 (toll free) or 651-649-5451 (Metro area), if the source is a spill or leak as defined in Minnesota Statute § 115.061.

Spilled chemicals shall be effectively and quickly contained and cleaned up. City personnel shall clean up spills themselves **only if properly trained and protected**. Employees who are not trained in spill cleanup procedures shall report the spill, warn other employees, and

maintain a safe distance. The **Response Procedures** outlined in the **Illicit Discharge Detection and Elimination Program** shall be followed.

Section 6: Cleaning of Maintenance Equipment, Building Exteriors and Dumpsters

Municipal vehicle washing can generate dry weather runoff contaminated with detergents, oils, grease, and heavy metals. Equipment and building washing BMPs can eliminate contaminated wash water discharges to the storm sewer system.

6.1. Proper equipment maintenance includes:
- 6.1.1. Maintain equipment regularly. Check for leaks and fix immediately.
- 6.1.2. Capture leaks during maintenance activities with a container.
- 6.1.3. Cover equipment stored outside with tarps.

6.2. Proper infrastructure cleaning includes:
- 6.2.1. Perform cleaning activities during dry weather periods.
- 6.2.2. Use non-toxic chemicals and/or non-phosphate detergents.
- 6.2.3. Minimize use of solvents.

6.3. Building Repair, Remodeling, and Construction:
- 6.3.1. Do not dump any toxic substance or liquid waste on the pavement, the ground, or toward a storm drain.
- 6.3.2. Use ground or drop cloths underneath outdoor painting, scraping, and sandblasting work and properly dispose of collected material daily.

6.4. Proper dumpster cleaning includes:
- 6.4.1. Do not drain wash water into storm drainage system.
- 6.4.2. Wash dumpsters in area that drains to sanitary system or contact waste management company that owns dumpster for cleaning at the company's facility.
- 6.4.3. Properly dispose of all materials used to clean dumpsters.

Section 7: Use, Storage and Disposal of Significant Materials

The storage, use and disposal of hazardous materials and chemicals require consideration of a number of environmental health and safety factors. These include inventory control, as well as the proper use and disposal of containers and equipment.

7.1. BMPs for chemicals and hazardous materials:
- 7.1.1. Keep lids on all containers and store under cover.
- 7.1.2. Properly close all containers when not in use.
- 7.1.3. Use secondary containment for hazardous materials and protect from rain. Store hazardous materials in an area where spills will not reach storm drains.
- 7.1.4. Label all hazardous materials according to hazardous waste regulations.
- 7.1.5. Label purchase date on container.
- 7.1.6. Maintain storage area at proper temperature and humidity.

7.2. BMPs for flammable materials:
- 7.2.1. Store flammable materials in ventilated storage cabinets or approved safety cans. Lids of safety containers shall be kept closed, as well as doors of storage cabinets.
- 7.2.2. Maintain an adequate spill kit near all storage areas where spills are possible.
- 7.2.3. Isolate flammable and combustible materials from ignition sources.

7.2.4. Maintain proper fire suppression equipment in areas containing flammable materials...

7.3. BMPs for significant materials:

7.3.1. Do not combine significant materials with other materials during storage. Combining materials can create a safety hazard and reduce options for disposal.

7.3.2. Do not combine significant material waste with other materials (e.g. used oil with used fuel). Combining materials can create a safety hazard and reduce options for disposal.

7.3.3. Use secondary containment measures for bulk fluids stored in amounts greater than 55 gallons.

7.3.4. Keep storage areas clean and dry. Conduct regular inspections to detect leaks and spills.

7.3.5. Store batteries indoors and secure to avoid breakage or acid spills. Recycle batteries when spent.

7.3.6. Elevate treated wood products stored outdoors from ground with pallets and cover with tarps.

Section 8: Landscaping, Park and Lawn Maintenance

Conventional vegetation management practices significantly impact stormwater runoff. Frequent watering, over-fertilizing, improper disposal of vegetation clippings, and the use of pesticides/herbicides increase conveyance of nutrients and chemicals to surface waters. Incorporation of vegetation management BMPs can greatly reduce pollutant loads from City green spaces.

8.1. BMPs for vegetation management

8.1.1. Perform mowing during optimal conditions (i.e. dry weather, minimal wind).

8.1.2. Mulch grass during mowing when possible.

8.1.3. Dispose organic material at compost facility when possible. If a compost facility is not available, dispose organic material at approved waste management facility. Do not dispose organic materials by washing into storm drainage system or dumping in ditches.

8.1.4. Install perimeter erosion control measures when performing landscape maintenance or repairs adjacent to surface waters.

8.1.5. Use mulch or erosion control blanket to cover exposed soils and flower beds.

8.1.6. Do not direct grass clippings from mowing on to impervious surfaces. Remove organic material deposited on impervious surfaces immediately after mowing operations are completed.

8.1.7. Irrigate areas at rate appropriate for vegetation and soils. Do not irrigate at rate that exceeds soil infiltration rate.

Section 9: Road Maintenance

Maintenance activities for roads and bridges generate stormwater pollutants, including sediment, heavy metals, solvents, oils, and fuel. The use of BMPs during these maintenance activities help reduce pollutant loads to surface waters.

9.1. BMPs for road and bridge maintenance:

9.1.1. Install perimeter erosion control measures in critical areas prior to start of maintenance activities. Install siltfence/silt curtain in areas adjacent to surface waters, inlet protection on storm drains immediately down gradient, and rock entrances for areas that can be isolated from traffic.

9.1.2. Sweep or vacuum dry waste material immediately after maintenance activity is completed (e.g. saw-cutting pavement, removing pavement striping, etc.).

9.1.3. Do not apply pavement striping during windy, wet, or rainy conditions.

9.1.4. When not in use, turn wet saw equipment off and place drip pans under or watertight barriers around equipment to contain leaks.

9.1.5. Wash out mixers, delivery vehicles, or other equipment in designated washout areas only.

Section 10: Right-of-Way Maintenance

Public right-of-way must be maintained to adequately convey traffic. Periodic maintenance of streets, utilities, and vegetation is required to provide acceptable driving surfaces, adequate storm drainage capacity, and appropriate sight lines.

10.1. BMPs for right-of-way maintenance:

10.1.1. Install perimeter erosion control measures in critical areas prior to start of maintenance activities. Install siltfence/silt curtain in areas adjacent to surface waters, inlet protection on storm drains immediately down gradient, and rock entrances for areas that can be isolated from traffic.

10.1.2. Perform mowing during optimal conditions (i.e. dry weather, minimal wind).

10.1.3. Dispose organic material at compost facility when possible. If a compost facility is not available, dispose organic material at approved waste management facility. Do not dispose organic materials by washing into storm drainage system or dumping in ditches.

10.1.4. Dispose non-organic debris at approved waste management facility.

10.1.5. Remove any obstructions blocking runoff from entering the storm drainage system.

10.1.6. Repair/stabilize any channel erosion immediately upon discovery.

Section 11: Application of Herbicides, Pesticides and Fertilizers

Fertilizers, herbicides, and pesticides possess a relatively high potential for contributing pollutants to surface waters, both while being stored and during application. Proper management of materials and effective training will reduce the pollutant load discharged.

11.1. BMPs for use of herbicides, Pesticides and fertilizers:

11.1.1. City personnel responsible for storage and application of Restricted Use Pesticides shall obtain the Certified Applicator credential per the Federal Insecticide, Fungicide and Rodenticide Act.

11.1.2. City personnel that come in contact with any herbicide, pesticide, or fertilizer shall review the material safety data sheets (MSDS) and follow the procedures for storage and use defined therein.

11.1.3. Apply herbicides, pesticides, and fertilizers during dry weather conditions.

11.1.4. Do not apply herbicides, pesticides, and fertilizers during windy conditions.
11.1.5. Employ application techniques that increase efficiency. Calibrate equipment, follow label instructions, and use the lowest effective application rates.
11.1.6. Apply fertilizers during growing season only. Minimize or eliminate the use of non-phosphate fertilizers.
11.1.7. Use only pesticides and herbicides that are quickly absorbed by soil and vegetation.
11.1.8. Mix and load materials in contained area in case of spill or leak.
11.1.9. Never submerge a water supply hose in a chemical container.

Section 12: Cold Weather Operations

Road salt and deicers are necessary for traffic and pedestrian safety. However, their application directly on impervious surface allows for chlorides and other toxic chemicals to dissolve in runoff and enter the storm drainage system. Since chlorides are extremely difficult to remove from water, they must be judiciously applied.

12.1. Use trucks equipped with salt spreading calibration devices.
12.2. Regulate the application of deicing salt at the lowest effective rate.
12.3. Use alternative deicing materials (sand or salt substitutes) or minimize amount of salt in sensitive areas (areas with no structural BMPs, adjacent to surface waters, etc.).
12.4. Consider temperature when determining application rate. If temperatures above freezing are expected, minimize use of salt.
12.5. Maintain and wash trucks used for deicing in contained area that drains to sanitary sewer system.
12.6. Do not dump or plow snow into drainage ditches or on to frozen water bodies.

References

California Stormwater Quality Association BMP Handbook @ http://www.caasqa.org/bmp-handbooks/municipal-bmp-handbook

EPA Pollution Prevention/Good Housekeeping for Municipal Operators @ http://water.epa.gov/polwaste/npdes/swbmp/Pollution-Prevention-Good-Housekeeping-for-Municipal-Operatators.cfm

LIMC Good Housekeeping Guidance and BMP Manual @ http://www.lancasterintermunicipalcommittee.org/programs_stormwater.php

Partners For A Clean Environment @ http://www.pacepartners.com/stormwater/municipal-operations/72-municipal-stormwater-program-tools#SOP

MUNICIPAL FACILITY INVENTORY
City of Mound, MN

		Municipal Operations Best Management Practices											
		1	2	3	4	5	6	7	8	9	10	11	12
FACILITY ID	Facility Name / Land Use	Proper Waste Management, Storage & Disposal	Proper Stockpile Management	Proper Vehicle Fueling, Washing, & Maintenance	Routine Pavement Sweeping	Proper Emergency Response Procedures	Proper Cleaning of Maintenance Equipment, Buildings, & Dumpsters	Proper Use, Storage, and Disposal of Significant Materials	Proper Lawn and Landscape Maintenance	Proper Road Maintenance	Proper Right-of-Way Maintenance	Proper Application of Herbicides, Pesticides, and Fertilizers	Proper Snow Removal and Deicing Operations
1	Municipal Property								X			X	
2	Municipal Property	X			X		X		X	X		X	X
3	Harrison Shores Harbor											X	
4	Crescent Park	X							X	X	X	X	X
5	Municipal Property								X			X	
6	Municipal Property								X			X	
7	Canary Park	X							X			X	
8	Municipal Property								X			X	
9	Municipal Property								X			X	
10	Dove Lane Pond (SP-18)								X			X	
11	Three Points Park	X			X		X		X			X	X
12	Municipal Property								X			X	
13	Municipal Property								X			X	
14	Municipal Property								X			X	
15	Philbrook Park	X					X		X			X	
16	Diamond Lake NCA								X			X	
17	Weiland Park	X					X		X			X	
18	Municipal Property								X			X	
19	Mound Marketplace	X			X		X		X	X		X	X
20	Mill Pond Lane Pond (SP-13)								X			X	
21	Municipal Property								X			X	
22	Municipal Property								X			X	
23	Alwin Park	X					X		X			X	
24	City Trail								X			X	
25	Municipal Property								X			X	
26	Chestnut Road Wetland (W50)								X			X	
27	Municipal Property								X			X	
28	Cottonwood Lane Wetland (W48)								X			X	
29	Municipal Property								X			X	
30	Municipal Property								X			X	
31	Municipal Property								X			X	
32	Veteran's Park	X							X			X	
33	Commerce Boulevard Pond (SP-8)								X			X	
34	Indian Knoll Manor	X			X		X		X	X		X	X
35	Municipal Property								X			X	
36	Belmomt Park	X					X		X			X	
37	Noble Lane Pond (SP-7)								X			X	
38	Municipal Property				X				X	X	X	X	X
39	Public Works Facility	X		X	X	X	X	X	X	X		X	X
40	Shorline Drive Pond (SP-19)												
41	Public Works Lot	X	X				X	X	X	X		X	X
42	Overland Lane Rain Garden (RG-3)												
43	Edgewater Park	X			X		X		X	X		X	X
44	Edgewater Park	X			X		X		X	X		X	X
45	Municipal Property				X				X	X		X	X
46	Seton Park	X					X		X			X	
47	Municipal Property								X		X	X	
48	Veteran's Memorial Plaza	X			X		X		X	X		X	X
49	Old Shoreline Drive Parking Lot	X			X				X	X		X	X

		Municipal Operations Best Management Practices											
		1	2	3	4	5	6	7	8	9	10	11	12
FACILITY ID	Facility Name / Land Use	Proper Waste Management, Storage & Disposal	Proper Stockpile Management	Proper Vehicle Fueling, Washing, & Maintenance	Routine Pavement Sweeping	Proper Emergency Response Procedures	Proper Cleaning of Maintenance Equipment, Buildings, & Dumpsters	Proper Use, Storage, and Disposal of Significant Materials	Proper Lawn and Landscape Maintenance	Proper Road Maintenance	Proper Right-of-Way Maintenance	Proper Application of Herbicides, Pesticides, and Fertilizers	Proper Snow Removal and Deicing Operations
50	Auditor's Subdivision	X			X		X		X	X	X	X	X
51	Lost Lake Harbor	X					X		X			X	
52	Wolner Field	X			X		X		X	X		X	X
53	Lost Lake (W142)								X			X	
54	Lost Lake Park								X			X	
55	City Hall/Fire Department	X		X	X	X	X	X	X	X		X	X
56	Municipal Property								X			X	
57	Municipal Property								X			X	
58	Bartlett Boulevard Pond (SP-2)								X			X	
59	Chataeu Lane Water Tower	X			X		X		X	X		X	X
60	Carlson Park	X							X			X	
61	Avon Park	X							X			X	
62	Municipal Property								X			X	
63	Indian Mound NCA								X			X	
64	Setter Circle Wetland (W38)								X			X	
65	Municipal Property								X			X	
66	Surfside Park	X			X		X		X	X		X	X
67	Municipal Property								X			X	
68	Sorbo Park	X			X		X		X	X		X	X
69	Rustic Place NCA								X			X	
70	Glenwood Road Wetland (W34)								X			X	
71	Highland Park	X							X			X	
72	Municipal Property	X			X		X		X	X		X	X
73	Bluff's Park (Undeveloped)								X			X	
74	Mound Union Cemetary	X	X		X		X		X	X		X	X
75	Bluff's Beach	X							X			X	
76	Municipal Property								X			X	
77	Ridgewood Road Wetland (W29)								X			X	
78	Sinclair Court Wetland (W27)								X			X	
79	Ridgewood Park				X				X	X		X	X
80	Highland End Park								X			X	
81	Twin Park	X			X		X		X	X		X	X
82	Municipal Property								X			X	
83	Municipal Property								X			X	
84	Municipal Property								X			X	
85	Municipal Property										X		
86	Municipal Property								X			X	
87	Municipal Property								X			X	
88	Tyrone Park	X					X		X			X	
89	Municipal Property	X					X		X	X		X	X
90	Municipal Property										X		
91	Bradford Lane Wetland (W36)								X			X	
92	4758 Richmond Rd	X					X		X	X		X	X
93	Municipal Property								X			X	
94	Municipal Property								X			X	
95	Dorchester Road WetlandS (W31/32)								X			X	
96	Municipal Property								X			X	
97	Municipal Property								X			X	
98	Municipal Property								X			X	
99	Manchester Road Public Works Facilities	X		X	X	X	X	X	X	X		X	X
100	Swenson Park	X			X		X		X	X		X	X

		Municipal Operations Best Management Practices											
		1	2	3	4	5	6	7	8	9	10	11	12
FACILITY ID	Facility Name / Land Use	Proper Waste Management, Storage & Disposal	Proper Stockpile Management	Proper Vehicle Fueling, Washing, & Maintenance	Routine Pavement Sweeping	Proper Emergency Response Procedures	Proper Cleaning of Maintenance Equipment, Buildings, & Dumpsters	Proper Use, Storage, and Disposal of Significant Materials	Proper Lawn and Landscape Maintenance	Proper Road Maintenance	Proper Right-of-Way Maintenance	Proper Application of Herbicides, Pesticides, and Fertilizers	Proper Snow Removal and Deicing Operations
101	Municipal Property										X		
102	Municipal Property								X			X	
103	3026 Brighton Boulevard								X			X	
104	Dundee Park	X							X			X	
105	Municipal Property										X		
106	Devon Lane Water Tower	X					X		X			X	X
107	Municipal Property								X			X	
108	Municipal Property								X			X	
109	Avalon Park	X			X		X		X	X		X	X
110	Chester Park	X							X	X		X	
111	Municipal Property				X		X		X	X		X	X
112	Island View Drive Wetlands (W26/28)								X			X	
113	Municipal Property								X	X		X	X
114	Municipal Property								X			X	
115	Municipal Property				X				X	X		X	X
116	Doone Park								X			X	
117	Municipal Property								X			X	
118	Municipal Property										X		
119	Scherven Park	X			X		X		X	X		X	X
120	Municipal Property										X		
121	Municipal Property								X			X	
122	Municipal Property										X		
123	Zero Gravity Park	X							X			X	
124	Bradford Lane Rain Garden (RG-11)						X		X			X	
125	Jennings Bay Boat Ramp								X	X		X	
126	Beachside Park								X			X	
127	Lakeside Park								X			X	
128	Centerview Beach	X			X		X		X	X		X	X
129	Dutch Lake Boat Ramp	X					X		X	X		X	X
130	Wychwood Beach	X							X			X	

CITY OF MOUND

Employee Training Program

2015

EMPLOYEE TRAINING PROGRAM
CITY OF MOUND

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EMPLOYEE TRAINING PROGRAM
CITY OF MOUND

Introduction

As required by the General Permit to Discharge Stormwater associated with small Municipal Separate Storm Sewer Systems, the City's Storm Water Pollution Prevention Plan (SWPPP) must include an Employee Training Program commensurate with each employee's job duties as they relate to the SWPPP, including reporting and assessment activities. Training materials from various sources will be utilized, including from the United States Environmental Protection Agency (USEPA), State and Federal agencies, and other organizations as appropriate and will address the importance of protecting water quality.

Section 1: Initial Training

Initial training must be provided to all employees upon implementation of the new SWPPP and proposed Employee Training Program, new employees hired after implementation of the new SWPPP, and all employees if significant changes are made to the SWPPP in the future.

1.1. Public Works Staff

1.1.1. Illicit Discharge Detection and Elimination

- Review the IDDE Program
- Review inspection procedures and forms
- Hazardous Materials Training (optional)
- Additional training as directed by MS4 Manager

1.1.2. Best Management Practices

- Review the Municipal Operation BMPs section of the SWPPP
- Review the Municipal Facility Inventory
- Review the Pond, Wetland, and Lake Inventory
- Review the Storm Sewer Map
- Review Pond Assessment Procedures and Schedule
- Review all Operator Manuals for any equipment to be used
- Review all Material Safety Data Sheets for any significant materials to be used
- Additional training as directed by the MS4 Manager

1.1.3. Inspections and Enforcement

- Review inspection forms for Construction Stormwater, Stormwater Ponds, and Structural BMPs
- Review Enforcement Response Procedures

1.2. Non-Public Works Staff

1.2.1. Illicit Discharge Detection and Elimination

- Review the IDDE Program

1.2.2. Best Management Practices

- Review the Municipal Operation BMPs section of the SWPPP
- Review the Municipal Facility Inventory
- Review the Pond, Wetland, and Lake Inventory
- Review the Storm Sewer Map
- Additional training as directed by the MS4 Manager

1.2.3. Inspections and Enforcement

- Review inspection forms for Construction Stormwater, Stormwater Ponds, and Structural BMPs
- Review Enforcement Response Procedures

Section 2: Recurring Training

Annual training will be provided to all employees commensurate with their job duties as they relate to stormwater management.

2.1. Public Works Staff

2.1.1. Illicit Discharge Detection and Elimination

- Review the IDDE Program
- Review inspection procedures and forms
- Hazardous Materials Training (optional)
- Additional training as directed by MS4 Manager

2.1.2. Best Management Practices

- Review the Municipal Operation BMPs section of the SWPPP
- Review Municipal Facility Inventory updates
- Review Storm Sewer Map updates
- Review all Operator Manuals for any equipment to be used
- Review all Material Safety Data Sheets for any significant materials to be used
- Additional training as directed by the MS4 Manager

2.2. Non-Public Works Staff

2.2.1. Illicit Discharge Detection and Elimination

- Review the IDDE Program

2.2.2. Best Management Practices

- Additional training as directed by the MS4 Manager

Section 3: Seasonal Employees

Seasonal employees will be provided with stormwater management training tailored to their required job duties.

3.1. Seasonal Staff

3.1.1. Illicit Discharge Detection and Elimination

- Review the IDDE Program

3.1.2. Best Management Practices

- Review the Municipal Operation BMPs section of the SWPPP
- Review the Municipal Facility Inventory
- Review the Pond, Wetland, and Lake Inventory
- Review the Storm Sewer Map
- Review all Operator Manuals for any equipment to be used
- Review all Material Safety Data Sheets for any significant materials to be used
- Additional training as directed by the MS4 Manager

CITY OF MOUND

Pond Assessment Program

2015

POND ASSESSMENT PROGRAM
CITY OF MOUND

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POND ASSESSMENT PROGRAM
CITY OF MOUND

Section 1: Assessment Procedures

1.1. Determine Existing Conditions

1.1.1. Delineate watersheds for every pond maintained by City.
- Review Storm Sewer Map
- Review LiDAR topographic mapping
- Perform visual inspections

1.1.2. Define watershed characteristics (impervious surface percentage, time-of-concentrations, areas, soil types, etc.)
- Review aerial mapping
- Review Land Use Plan
- Review Storm Sewer Map
- Review LiDAR topographic mapping
- Perform visual inspections

1.1.3. Define pond characteristics (design permanent volume, existing permanent volume, outlet, normal water level, etc.)
- Review Construction Plans and Record Plans
- Perform visual inspections
- Perform site surveys
- Perform bathymetric surveys
- Perform sediment testing for pollutants

1.2. Assess TSS and TP Treatment Effectiveness

1.2.1. Create P8 models for every pond maintained by City
- Input information gathered into models
- Calculate TSS and TP removal efficiencies

1.2.2. Define TSS and TP treatment effectiveness required for every pond
- Establish permanent volumes required to meet NURP standards (60% TSS removal, 62% PP removal, 34% TP removal)
- Determine additional reductions required to meet TMDLs, if any
- Determine additional reductions required to provide increased water quality benefits

1.2.3. Rate pond effectiveness / need for maintenance
- MN Stormwater Manual recommends sediment removal after 50% of permanent pool capacity has been lost
- Compare existing removal efficiencies to required efficiencies
- Review proximity to surface waters
- Review proximity to Impaired waters
- Review TMDL requirements
- Determine Management Level of Sediment
- Rate pond based on following system:

Table 1: Pond Rating System

Rating	Description
1	- Pond completely ineffective - Pollutant removal efficiency reduced well below 50 % NURP / required standards (60% reduction or more) - Efficiency reduced below 50% NURP / required standards (50-60% reduction) and discharges directly to surface water or located in Impaired Water watershed - Maintenance required as soon as possible to prevent further pollutant discharge
2	- Pollutant removal efficiency reduced below 50% NURP / required standards (50-60% reduction) but does not discharge directly to surface water and is not located in Impaired Water watershed - Pollutant removal efficiency reduced to approximately 50% NURP / required standards and discharges directly to surface water or located in Impaired Water watershed - Maintenance should be provided as soon as funds are available
3	- Pollutant removal efficiency reduced to approximately 50% NURP / required standards - Does not discharge directly to surface water and not located in Impaired Water watershed - Maintenance should be planned for near future
4	- Pollutant removal efficiency reduction approaching 50% NURP / required standards (25-50% reduction) - Pond should be checked yearly to monitor permanent pool volume reduction and determine if change in rating is necessary
5	- Pond recently constructed or dredged, pollutant removal efficiency at maximum level (0-25% reduction) - Pond should be checked for permanent pool volume capacity starting 5 years after initial construction or dredging and every 5 years after until rating decrease is warranted

Section 2: Schedule

2.1. 2016

- Delineate watersheds
- Define watershed characteristics
- Define pond characteristics

2.2. 2017

- Create P8 models
- Define TSS and TP treatment effectiveness required
- Rate pond effectiveness / need for maintenance

5. Enforcement Response Procedures (ERPs)

CITY OF MOUND

Enforcement Response Procedures (ERPs) for MS4 Permit Violations

2015

ENFORCEMENT RESPONSE PROCEDURES (ERPs) FOR MS4 PERMIT VIOLATIONS
CITY OF MOUND

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ENFORCEMENT RESPONSE PROCEDURES (ERPs) FOR MS4 PERMIT VIOLATIONS
CITY OF MOUND

Introduction

Under the terms of the General NPDES/SDS Permit MNR040000, the City of Mound is required to develop and implement enforcement authority for construction activities that take place within the boundaries of the Municipal Separate Storm Sewer System (MS4). The purpose of this Enforcement Response Plan (ERP) is to communicate how enforcement tools can be used to achieve compliance. The Enforcement Response Plan also specifies criteria by which City personnel can determine the enforcement action most appropriate to instances of non-compliance. This plan outlines the City procedures that can be followed when construction stormwater, illicit discharge or post-construction violations are discovered. This plan is a guide; any of the enforcement responses may be used at the City's discretion. The City may also choose to pursue an enforcement case by skipping intermediate steps.

Section 1: Types of Enforcement Responses

1.1. Verbal Warning

1.1.1. Verbal warnings shall specify the nature of the violation, required corrective actions, the time frame for correction, and a follow-up inspection date.

1.1.2. Verbal warnings may be given at the discretion of the inspector when it appears the condition is not causing undue harm to public health or the environment and can be corrected by the violator within a reasonable time.

1.1.3. Notification of verbal warnings shall be forwarded to Minnehaha Creek Watershed District (MCWD) for their records.

1.2. Notice of Violation (NOV)

1.2.1. NOVs shall specify the nature of the violation, required corrective actions, the time frame for correction, and a follow-up inspection date.

1.2.2. NOVs shall be given if the violator has not responded to verbal warnings within a reasonable time or, if in the opinion of the City, the extents of the violation warrant it.

1.2.3. NOVs shall consist of written communication and can be delivered either by email or letter.

1.2.4. NOVs shall require the violator to take immediate action to terminate unauthorized discharges.

1.2.5. NOVs shall require the violator to submit a Response Plan for satisfactory correction of the violation and prevention of future violations, including a timeline for specific required actions that will be taken.

1.2.6. Notification of NOVs shall be forwarded to Minnehaha Creek Watershed District (MCWD) for their records.

1.3. Stop Work Order

1.3.1. The City may issue a stop work order for any project that has violated or continues to violate City ordinance or any permit or order issued there under.

1.3.2. Stop Work Orders shall specify the nature of the violation, required corrective actions, the time frame for correction, and a follow-up inspection date.

1.3.3. Stop Work Orders shall be given if the violator has not responded to NOVs within a reasonable time or, if in the opinion of the City, the extents of the violation warrant it.

1.3.4. Stop Work Orders shall require the violator to take immediate action to terminate unauthorized discharges.

1.3.5. If a Response Plan was not developed as part of the NOV process, Stop Work Orders shall require the violator to submit a Response Plan for satisfactory correction of the violation and prevention of future violations, including a timeline for specific required actions that will be taken.

1.3.6. The only operations that may proceed while work is stopped shall be to address the violation listed in the Stop Work Order. No other operations may proceed until the corrective measures have been approved by the City.

1.3.7. If the unauthorized discharge is not terminated and appropriate control measures installed within a reasonable time, the City may perform corrective actions as deemed necessary. The violator shall be responsible for any expenses incurred by the City to perform corrective actions, and the City must be reimbursed for such expenses prior to any other work proceeding.

1.3.8. Citations may also be pursued with the Stop Work Order, at the discretion of the City, and any fines must be paid in full prior to any other work proceeding.

1.3.9. Notification of Stop Work Orders shall be forwarded to Minnehaha Creek Watershed District (MCWD) for their records.

1.4. Citations

1.4.1. The City may coordinate with local law enforcement to have citations issued for any project that has violated or continues to violate City ordinance or laws of the State (i.e. littering, illegal dumping, public nuisance, etc.).

1.4.2. Citations shall only be pursued if the violator has not responded to a Stop Work Order and required corrective actions within a reasonable time or, if in the opinion of the City, the extents of the violation warrant it.

1.4.3. If a Stop Work Order was not issued previously but the extents of the violation warrant a Citation, a Stop Work Order shall be issued in conjunction with pursuit of a Citation, and the process for the Stop Work Order shall be followed.

1.4.4. Notification of Citations shall be forwarded to Minnehaha Creek Watershed District (MCWD) for their records.

1.5. Suspension, Revocation, or Modification of Permit

1.5.1. The City may suspend, revoke, or modify a permit authorizing a land development or building project if the permit was issued on the basis of incorrect information or if the work is in violation of any provision of City ordinances or laws of the State.

1.5.2. The City shall suspend or revoke a permit if the violator has not responded to a Stop Work Order within a reasonable time or, if in the opinion of the City, the extents of the violation warrant it.

1.5.3. A suspended or revoked permit may be reinstated after the Applicant has taken the remedial measures set forth in the NOV or Stop Work Order, has reimbursed the City for any corrective actions performed at City expense, and/or paid any outstanding fines for citations issued.

1.5.4. Notification of suspended or revoked permits shall be forwarded to Minnehaha Creek Watershed District (MCWD) for their records.

1.6. Additional Measures

1.6.1. Financial Security

1.6.1.1. The City should request financial security (i.e. check, escrow, etc) from the Permittee prior to the start of project work.

1.6.1.2. The financial security should be sufficient to allow the City to perform actions necessary to terminate any unauthorized discharges and permanently stabilize the site with adequate control measures.
1.6.1.3. The City may use financial security to recover any costs for corrective actions as required to abate violations.
1.6.1.4. If the financial security is used to perform necessary corrective actions, the security should be re-established prior to any additional work proceeding.

1.6.2. Illicit Discharge Assessment
1.6.2.1. Assessments for Illicit Discharges should be levied if the violator has not responded to NOVs within a reasonable time or, if in the opinion of the City, the extents of the violation warrant it.
1.6.2.2. Assessments may include reasonable expenses incurred in investigation of illicit discharge and enforcing corrective actions to eliminate discharge and repair harm.
1.6.2.3. The City should consider the following when assessing damage due to illicit discharge:
1.6.2.3.1 The harm done to the public health or the environment,
1.6.2.3.2 The amount of effort put forth by the violator to remedy this violation,
1.6.2.3.3 Any unusual or extraordinary investigation or enforcement costs incurred by the municipality.
1.6.2.3.4 Any costs incurred by the City to perform corrective actions or repair damage due to inaction on the part of the violator.

1.6.3. Legal Action
1.6.3.1. The City may, through the City Attorney, petition the appropriate court(s) for issuance of preliminary or permanent injunctions to restrain or compel activities of property owners within the City.
1.6.3.2. Legal action should be pursued by the City if all other enforcement efforts have been exhausted and the violator has not responded within a reasonable time or, if in the opinion of the City, the extents of the violation warrant it.

Section 2: NPDES Permit Referrals

2.1. Construction Stormwater
2.1.1. Construction activities disturbing 1 acre or more must obtain a General Permit to Discharge Stormwater Associated with Construction Activity under the National Pollutant Discharge Elimination System / State Disposal System Program.
2.1.2. If the City has used progressive enforcement to achieve compliance with City ordinance, MS4 requirements, and laws of the State and the violator has not responded within a reasonable time or, in the opinion of the City, the extents of the violation warrant it, the City shall refer the violation to the MPCA.
2.1.3. The following information shall be provided to the MPCA:
2.1.3.1. Site Location
2.1.3.2. Name of Owner
2.1.3.3. Name of Contractor
2.1.3.4. Project Size
2.1.3.5. Description of Violation(s)
2.1.3.6. Applicable Inspection Reports
2.1.3.7. Any other applicable correspondence regarding violation

2.1.4. Notification of communication to MPCA shall be forwarded to Minnehaha Creek Watershed District (MCWD) for their records.

2.2. Industrial Stormwater

2.2.1. Certain industrial activities, with a primary Standard Industrial Classification (SIC) code or narrative activity defined in the Code of Federal Regulations, must obtain a Permit to Discharge Stormwater Associated with Industrial Activity under the National Pollutant Discharge Elimination System / State Disposal System Program.

2.2.2. If the City discovers that a Owner / Operator is performing an activity that requires an Industrial Stormwater Permit from the State but has not obtained it, the City shall notify the MPCA of the violation immediately.

2.2.3. The following information shall be provided to the MPCA:
2.2.3.1. Site Location
2.2.3.2. Name of Owner / Operator
2.2.3.3. Description of Industrial Activity
2.2.3.4. SIC Code (if known)
2.2.3.5. Any applicable correspondence

2.2.4. Notification of communication to MPCA shall be forwarded to Minnehaha Creek Watershed District (MCWD) for their records.

Section 3: Recordkeeping

3.1. Construction Activity Violations

3.1.1. Enforcement conducted pursuant to the ERPs shall include, at a minimum, the following documentation for construction activity violations:
3.1.1.1. Site Plans
3.1.1.2. Permits applicable
3.1.1.3. Inspection Records
3.1.1.4. Record of Enforcement Responses
3.1.1.5. Violation Response Plans
3.1.1.6. Any correspondence or documentation relevant to the violation
3.1.1.7. Documentation showing resolution of violation

3.2. Illicit Discharge Violations

3.2.1. Enforcement conducted pursuant to the ERPs shall include, at a minimum, the following documentation for illicit discharge violations:
3.2.1.1. Report of alleged illicit discharge
3.2.1.2. Diagram / Sketch of Violation Area
3.2.1.3. Investigation / Inspection Records
3.2.1.4. Record of Enforcement Responses
3.2.1.5. Violation Response Plans
3.2.1.6. Any correspondence or documentation relevant to the violation
3.2.1.7. Documentation showing resolution of violation

3.3. The City shall keep any records required by the current MS4 General Permit for at least three years beyond the term of the permit.

ENFORCEMENT RESPONSE PROCEDURES (ERPs) FOR MS4 PERMIT VIOLATIONS
CITY OF MOUND

Section 4: Enforcement Action Matrices (EAM)

Table 1 - EAM for Noncompliance with Construction and Post-Construction Requirements.

	TYPE OF VIOLATION				
Enforcement Measures For Use (Increasing in Severity Moving Down the Chart) ↓	**Failure to Obtain Land Alteration Permit Prior to Starting Work**	**Minor Violations** (Failure to Install, Maintain, or Upgrade Measures on Erosion and Sediment Control Plan)	**Major Violation** (Failure to Install, Maintain or Upgrade Measures on Erosion and Sediment Control Plan that Resulted in a Sediment Release from the Project Site)	**Repeat Violation by a Party** (Same Site)	**Repeat Violation by a Party** (Different Site than initial Noncompliance Site)
	Stop Work Order	Verbal Warning or Notice of Violation	Notice Of Violation	Notice Of Violation	Notice Of Violation
		Stop Work Order	Stop Work Order	Stop Work Order and Require Financial Security	Stop Work Order and Require Financial Security
	Legal Action	Suspension or Revocation of Permit	Suspension or Revocation of Permit and Citation	Suspension or Revocation of Permit and Citation	Suspension or Revocation of Permit and Citation
		Legal Action	Legal Action	Legal Action	Legal Action

This plan is a guide; any of the enforcement responses may be used at the City's discretion and the City may choose to escalate an enforcement case by skipping intermediate steps.

ENFORCEMENT RESPONSE PROCEDURES (ERPs) FOR MS4 PERMIT VIOLATIONS
CITY OF MOUND

Table 2 - EAM for Illicit Discharges.

<table>
<tr><td></td><td colspan="3">TYPE OF VIOLATION</td></tr>
<tr><td rowspan="7">Enforcement Measures For Use (Increasing Severity Moving Down the Chart)
  </td><td>First Failure to Remove Illicit Discharge</td><td>Repeat Violation by a Party (Same Site)</td><td>Repeat Violation by a Party (Different Site than initial Noncompliance Site)</td></tr>
<tr><td rowspan="2">Verbal Warning</td><td>Notice Of Violation</td><td>Notice Of Violation</td></tr>
<tr><td>Illicit Discharge Assessment</td><td>Illicit Discharge Assessment</td></tr>
<tr><td>Notice Of Violation</td><td>Citation</td><td>Citation</td></tr>
<tr><td>Illicit Discharge Assessment</td><td rowspan="3">Legal Action</td><td rowspan="3">Legal Action</td></tr>
<tr><td>Citation</td></tr>
<tr><td>Legal Action</td></tr>
</table>

This plan is a guide; any of the enforcement responses may be used at the City's discretion and the City may choose to escalate an enforcement case by skipping intermediate steps.

6. Checklists / Forms

MS4 Annual Assessment

Municipal Stormwater Permit Program
City of Mound

The Annual SWPPP Assessment shall be performed prior to completion of each Annual Report. Use this form to evaluate program compliance, appropriateness of BMP practices, and progress towards identified measurable goals.
Note: This annual assessment shall be done to comply with the requirements of NPDES/SDS Permit MN R100001.

Reviewer(s): _____ Date: _____

1. Program Management (Part III and IV)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	S	M	U	NA
1	Stormwater program organizational structure to implement SWPPP.	☐	☐	☐	☐
2	Internal communication and coordination to implement SWPPP.	☐	☐	☐	☐
3	Effective use of outside groups and/or partnerships to implement SWPPP.	☐	☐	☐	☐
4	Review and evaluation of measurable goals as defined in SWPPP.	☐	☐	☐	☐
5	Process or procedures for establishing stormwater priorities.	☐	☐	☐	☐
6	Program documentation and record retention.	☐	☐	☐	☐
7	Submittal of annual report by June 30th.	☐	☐	☐	☐
8	Prepared for permit compliance evaluation, audit, and provided materials requested by MPCA staff.	☐	☐	☐	☐

Comments:

Recommended Actions:

2. Impaired Waters/TMDLs (Part III.E)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	S	M	U	NA
1	Review of impaired waters and evaluation of SWPPP for appropriate reductions.	☐	☐	☐	☐
2	Implementing BMPs and making progress toward meeting each applicable Waste Load Allocation (WLA).	☐	☐	☐	☐
3	Estimated cumulative reductions in loading and implementing adaptive management strategies for achieving each WLA.	☐	☐	☐	☐

Comments:

Recommended Actions:

3. MCM 1 – Public Education and Outreach (Part III.D.1)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	S	M	U	NA
1	Distributed educational materials or conducted equivalent outreach activities on stormwater-related issue(s) of high priority.	☐	☐	☐	☐
2	Distributed materials or conducted equivalent outreach activities on illicit discharge recognition and reporting.	☐	☐	☐	☐
3	Implementation plan with identified target audiences and activities to reach measurable goals.	☐	☐	☐	☐

Stormwater Pollution Prevention Plan (SWPPP) Review Checklist

CITY OF MOUND

Review Information

Applicant: _____ Project name: _____

Application date: _____ Reviewer name: _____

SWPPP contains a combination of:

Yes	N/A		Notes
☐	☐	Narrative	
☐	☐	Plan sheets	
☐	☐	Standard detail sheets (where appropriate)	

SWPPP Information (does the Narrative contain the following)

Yes	N/A	
☐	☐	Describe the nature of the construction activity?
☐	☐	Address the potential for a discharge of sediment and/or other potential pollutants from the site?
☐	☐	Propose erosion prevention and sediment control Best Management Practices (BMPs) to control the discharge of sediment and/or other potential pollutants (IV.F) from the site.
☐	☐	Identify the person knowledgeable and experienced who will oversee the implementation of the SWPPP; the installation, inspection, and maintenance of the BMPs.
☐	☐	Identify the entity (name or title) responsible for performing future Operations and Maintenance (O&M) of the permanent stormwater management system?
☐	☐	List the chain of responsibility for SWPPP implementation for all operators on the site?
☐	☐	Identify the training requirements are satisfied.
☐	☐	Include the designs and calculations for BMPs.
☐	☐	Describe installation timing for all Erosion Sediment Control (ESC) Best Management Practices (BMPs)?
☐	☐	Describe procedures to amend the SWPPP and establish additional temporary ESC BMPs as necessary for site conditions?
☐	☐	Describe final stabilization methods for all exposed areas? (may be in narrative or on plan sheets)
☐	☐	Identify stormwater management measures needed to mitigate impacts identified as a result of environmental, historical, archaeological, or rare species reviews conducted for the project?
☐	☐	Identify additional measures being taken to protect Drinking Water Supply Management Areas?
☐	☐	If site discharges to special water or impaired reach, identify any site areas discharging to the special or impaired reach?
☐	☐	Methods used to minimize soil compaction and preserve topsoil must be described.
☐	☐	Identify construction areas that are adjacent to and drain to Public Waters for which the Minnesota Department of Natural Resources (DNR) has promulgated “work in waters restrictions” during specified fish spawning time frames.
☐	☐	In designing the stormwater controls, the SWPPP must account for expected amount, frequency, intensity, and duration of precipitation.
☐	☐	In designing the stormwater controls, the SWPPP must account for nature of stormwater runoff and run-on at the site, including factors such as expected flow from impervious surfaces, slopes, and site drainage features.
☐	☐	In designing the stormwater controls, the SWPPP must account for the range of soil particle sizes expected to be present on the site.
☐	☐	Identify any specific chemicals and the chemical treatment systems that may be used for enhancing the sedimentation process on the site, and how compliance will be achieved with the permit requirements.
☐	☐	For design requirements or SWPPP components where Permittee determines that compliance with the requirement is infeasible; the SWPPP must document that determination and the substitute BMPs.

Comments: _____

Do plan sheets identify the following:

Yes	N/A	
☐	☐	Existing and proposed topography.
☐	☐	Locations and types of all temporary and permanent (including infiltration areas) ESC BMPs.
☐	☐	Stormwater flow directions and surface water divides for all pre- and post-construction drainage areas.
☐	☐	Impervious areas (Pre- and Post-Construction).
☐	☐	Soil types.

Subdivision / Non-Residential Lot Grading Review Checklist

CITY OF MOUND

Review Information

Applicant: _____ Project name: _____

Application date: _____ Reviewer name: _____

General

Yes	N/A	
☐	☐	NPDES permit including SWPPP is referred to on plan.
☐	☐	Completed grading permit application form.
☐	☐	Final grading plan is signed by a licensed professional.
☐	☐	Submitted and signed Drainage Report.
☐	☐	Owner name(s) and addresses listed on Grading Plan.
☐	☐	Plan is 1”=50’ or larger scale. North arrow shown.
☐	☐	Plan is drawn in two-foot contours. All finished contours and adequate existing contours are labeled.
☐	☐	Existing contours are dashed and proposed are solid.
☐	☐	Directional arrows are shown for proposed drainage.
☐	☐	Details of terrain and drainage are provided for areas adjacent to the proposed grading.
☐	☐	Existing public and private utilities are shown.
☐	☐	Boundaries of drainage areas shown (in drainage report).
☐	☐	Soil types shown (in drainage report).
☐	☐	Areas not to be disturbed clearly defined.
☐	☐	All receiving waters, including wetlands, within 1 mile shown or identified, including impaired waters.
☐	☐	Property limits are shown. Streets are labeled. Lot & block information. Street address shown, if known.
☐	☐	Proposed sidewalk shown for commercial/industrial sites.
☐	☐	County/MNDOT permit obtained for work in their ROW.
☐	☐	Schedule of BMP installation shown.
☐	☐	BMP details included.
☐	☐	Concrete washout management BMP addressed on plan.
☐	☐	Dewatering activities discharge to treatment facility.

The following areas are tabulated for residential (acres):

☐	☐	Total platted area (site area).
☐	☐	Total area disturbed.
☐	☐	Total developable area (excluding floodway, natural steep slopes, & wetlands).

The following areas are tabulated for non-residential (acres):

☐	☐	Total project area.
☐	☐	Total impervious areas of project, existing & proposed.
☐	☐	Tabulation of total and impervious area by tax parcel.

Comments: _____

_____

Site Grading, Sediment & Erosion Control

Yes	N/A	
☐	☐	Down-slope sediment control scheduled before grading.
☐	☐	Adjacent property protected from drainage and sediment.
☐	☐	Stabilized vehicle exit(s) are provided, minimize number.
☐	☐	Silt fences are provided; in concentrated flow areas "high flow, heavy duty" type specified.

Construction Stormwater Inspection Checklist

CITY OF MOUND

Project Information

Project name: _____

Project address: _____ Permit number: _____

City: _____ State: _____ Zip code: _____

Inspection Information

Inspector name: _____ Phone number: _____

Date (mm/dd/yyyy): _____ Time: _____ ☐ am ☐ pm

Is Inspector certified in ESC and is it documented in the Stormwater Pollution Prevention Plan (SWPPP)? ☐ Yes ☐ No

Is this inspection routine or in response to a storm event: _____

Rainfall amount (if applicable): _____

Is the site within one aerial mile of special or impaired water? ☐ Yes ☐ No

If yes, follow Appendix A of the Construction Stormwater General Permit, MN R100001, and other applicable permit requirements.

Note: If NA is selected at any time, specify **why** in the comment area for that section.

Erosion Control Requirement (Part IV.B)

		Yes	No	NA
1.	Have areas not to be disturbed been delineated?	☐	☐	☐
2.	Soil stabilization where no construction activity for 14 days? (7 days were applicable, including stockpiles)	☐	☐	☐
3.	Has the need to disturb steep slopes been minimized?	☐	☐	☐
4.	All ditches stabilized 200' back from point of discharge within 24 hours? (not mulch)	☐	☐	☐
5.	Are there erosion BMP's for onsite stockpiles?	☐	☐	☐
6.	Are appropriate BMP's installed protecting intlets/outlets?	☐	☐	☐
7.	Do pipe outlets have energy dissipation?	☐	☐	☐

Comments:

*S*ediment Control Requirement (Part IV.C.)

		Yes	No	NA
1.	Perimeter control installed on all down gradient perimeters?	☐	☐	☐
2.	Perimeter control trenched in where appropriate?	☐	☐	☐
3.	50 Foot-natural buffer maintained around all surface waters?	☐	☐	☐
	If No, have redundant sediment controls been installed?	☐	☐	☐
4.	Inlet protection on all catch basins and culvert inlets?	☐	☐	☐
5.	Vehicle tracking Best Management Practices (BMPs) at all site exits?	☐	☐	☐
6.	All tracked sediment removed within 24 hours?	☐	☐	☐
7.	Are all infiltration systems staked and marked to avoid compaction?	☐	☐	☐

Pond Inspection Checklist
CITY OF MOUND

Basin Information

Basin ID:		Inspector:	
Type of Basin:		Date:	
Location/Coordinates:		Temperature:	
Owner:		Weather:	
Year Constructed:			
Year Last Dredged:			
Normal Water Level:			
100 Yr High Water Level:			
Drainage Area:			
Surface Area at NWL:			
No. Inlets / Size:			
No. Outlets / Size:			
Design Perm. Pool Volume:			
Current Perm. Pool Volume:			
Design Discharge Rates:			

Maintenance Priority (1=Low 5=High)

Inspection:

Maintenance Item	Satisfactory/Unsatisfactory	Comments
A. Side Slopes (Inspect annually, after major storms)		
1. Vegetation		
a. adequate cover		
b. undesirable species/plants		
2. Erosion		
3. Animal burrows		
4. Unauthorized planting		
5. Cracking, bulging, or sliding of side slopes		
a. upstream slopes		
b. downstream slopes		
6. Seeps/leaks on downstream face		
7. Slope protection or riprap failure		
8. Other (specify)		
B. Principal Spillway (Inspect Annually)		
1. Low flow trash rack		
a. free of debris		
b. corrosion control		
2. Sediment accumulation inside pipe		
3. Condition		
a. cracks or displacement		
b. Minor spalling (<1”)		
c. Major spalling (rebars exposed)		
d. Joint failures		
e. Water tightness		
4. Sediment accumulation in manhole		
5. Sediment accumulation in catch basin		
6. Outfall channel functioning		
7. Outlet channel scouring		
8. Other (specify)		
C. Permanent Pool		
1. Undesirable vegetative growth		
2. Floating or floatable debris removal required		
3. Visible pollution		
4. Shoreline problem		
5. Sedimentation		

Structural Pollution Control Device Inspection Checklist

CITY OF MOUND

SPCD Information

SPCD ID:		Inspector:	
Type of SPCD:		Date:	
Location/Coordinates:		Temperature:	
Owner:		Weather:	
Year Constructed:			
Date Last Cleaned:			
Drainage Area:			
No. Inlets / Size:			
No. Outlets / Size:			
Design Storage Depth:			
Current Storage Depth:			

Maintenance Priority (1=Low 5=High)

Inspection:

Maintenance Item	Satisfactory/Unsatisfactory	Comments
1. Level of sediment in sump		
2. Sediment accumulation inside pipe(s)		
3. Floating Debris		
4. Corrosion		
5. Manhole condition		
a. cracks or displacement		
b. Minor spalling (<1”)		
c. Major spalling (rebars exposed)		
d. Joint failures		
e. Water tightness		
6. Visible pollution / Illicit discharge		
7. Complaints from residents		
8. Public safety hazards (specify)		
9. Other (specify)		

Comments: _____

_____

Outfall Inspection Checklist
CITY OF MOUND

Outfall Information

Outfall ID:		Inspector:	
Outfall Waterbody:		Date:	
Location/Coordinates:		Temperature:	
Year Constructed:		Weather:	
Size:			
Material:			
Date Last Cleaned:			

Maintenance Priority (1=Low 5=High)

Inspection:

Maintenance Item	Satisfactory/Unsatisfactory	Comments
1. Trashguard		
a. Properly attached		
b. Corrosion		
c. Free of debris		
2. Pipe condition		
a. Sediment accumulation in pipe		
b. Cracks or discplacement		
c. Spalling / corrosion		
d. Joint failure / watertightness		
3. Riprap / energy dissipation		
4. Channel scouring downstream		
5. Visible pollution / Illicit discharge		
6. Complaints from residents		
7. Public safety hazards (specify)		
8. Other (specify)		

Comments:

ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
CITY OF MOUND

IDDE Report & Response Form

I. Incident Report

Incident Number:_____

Date/Time: _____AM / PM Received By: _____

Location: _____

Initial Report of Conditions: _____

_____

Reported By: _____ Phone: _____

II. Investigation

Date: _____ By: _____

Location Description/Storm Drain ID/Outfall: _____

Discharge Entered Storm Drain System/Receiving Waters? ___Yes ___No

Material Type

Hazardous	Sediment	Wastewater
Oil/Grease	Other_____	Unknown

Est. Quantity: _____

Additional Information: _____

Sample(s) Collected: ____ Yes _____No Photo(s) Taken: ____ Yes _____No

Observed Land Use

Residential
Commercial/Industrial Stormwater Permit ___Yes ___No ___Unknown
Public

Direct/Constructed Connections Found? ___ Yes ___ No

Source Description: _____

Source/Responsible Party: _____

III. Action and Closure

Referred To: _____ Date: _____

Action Taken: _____

_____

Date Closed: _____

Maintenance Item	Satisfactory/Unsatisfactory	Comments
6. Other (specify)		
D. Condition of Outfalls into Pond		
1. Storm drain pipes		
2. Riprap at outfalls		
3. Headwalls		
4. Other (specify)		
E. Other		
1. Encroachment on pond or easement area		
2. Complaints from residents		
3. Aesthetics		
a. vegetation height		
b. litter/debris		
4. Public safety hazards (specify)		
5. Illicit Discharge		

Comments: _____

_____

8.	Are all infiltration areas protected with a pretreatment device?	☐	☐	☐
9.	Do all stockpiles have perimeter control?	☐	☐	☐

Comments:

Maintenance-Erosion and Sediment Control BMPs (Part IV.E.)

		Yes	No	NA
1.	Are all previously stabilized areas maintaining 90% ground cover?	☐	☐	☐
2.	Any ditch erosion observed?	☐	☐	☐
3.	Perimeter Control – Has sediment reached one half the height of the device?	☐	☐	☐
4.	Are inlet protection devices maintained and functioning properly?	☐	☐	☐

Comments:

Other

		Yes	No	NA
1.	Are all materials that can leach pollutants under cover?	☐	☐	☐
2.	Has access been restricted to onsite hazardous materials?	☐	☐	☐
3.	Does on-site fueling only occur in a contained area?	☐	☐	☐
4.	Are all solid wastes being properly disposed of?	☐	☐	☐
5.	Is the concrete washout area completely contained?	☐	☐	☐
6.	Is the concrete washout area marked with a sign?	☐	☐	☐

Comments:

7. Were any discharges seen during this inspection, sediment, water, or otherwise? ☐ Yes ☐ No
   If yes, state the exact location of all points of discharge. Photograph the discharge and describe the discharge (color, odor, foam, oil sheen, etc). How will it be removed? How did the discharge happen? How much was discharged? How will it be stopped, and how long will it take to stop? Is the discharge going into an adjacent site? Was the discharge a sediment delta? If yes, will the delta be recovered within 7 days?

8. Will a permanent stormwater management system be utilized in this project as required and in accordance with Part III.D of the permit? Describe:

9. Is any dewatering occurring on site? ☐ Yes ☐ No
   If yes, where? What BMP is being used? How much water is being dewatered? Is the water clear? Where is the water being discharged to?

10. Is a copy of the SWPPP located on the construction site? ☐ Yes ☐ No

11. Has the SWPPP been followed and implemented on site? ☐ Yes ☐ No

12. Is a sedimentation basin required for this project as specified in the permit? ☐ Yes ☐ No
    If yes, are they maintained as specified in the permit? ☐ Yes ☐ No

13. Is the topsoil on this project being preserved? ☐ Yes ☐ No
    If yes, explain how the topsoil is being preserved. If not, explain why it was infeasible.

14. Are all infiltration systems marked to avoid compaction? ☐ Yes ☐ No
    Do all infiltration areas have pretreatment devices? ☐ Yes ☐ No

15. Description of areas of non-compliance noted during the inspection, required corrective actions, and recommended date of completion of corrective actions:

16. Proposed amendments to the SWPPP:

17. Potential areas of future concern:

18. Additional comments:

Disclosures:

- After discovery, the Construction Stormwater General Permit, MN R100001, requires many of the deficiencies that may be found in this checklist be corrected within a specified period of time. See the permit for more details.
- This inspection checklist is an option for small construction sites. Large construction sites and linear projects require more extensive/more location specific inspection requirements.
- The Permittee(s) is/are responsible for the inspection and maintenance of temporary and permanent water quality management BMP's as well as erosion prevention and sediment control BMPs until another Permittee has obtained coverage under the Construction Stormwater General Permit, MN R100001, according to Part II.B.5., or the project has undergone Final Stabilization and a Notice of Termination has been submitted to the MPCA.

☐	☐	All storm sewer inlets, existing and proposed have inlet protection/temporary sediment control that remains until up-slope areas are stabilized.
☐	☐	Maximum unbroken 3:1 or steeper slope of 75 feet horIz.
☐	☐	Control elevations for drainage ways are provided.
☐	☐	Minimum slope of small drainage swales is 2%.
☐	☐	Drainage easements for flow from more than I acre or 4 lots are seeded and protected with erosion control blankets or sodded. Blanket category specified per Mn/DOT 3885.2. Plan depicts required blanket locations.
☐	☐	Temporary stockpiles include additional sediment control and temporary cover after 14 days.
☐	☐	Percent of slope is shown for streets and drainage swales.
☐	☐	Fill & cut property line setbacks are >2' for cut slope ht. >10' or fill slope ht.>4' and setback is dimensioned on the plans.
☐	☐	All proposed lot corner elevations are shown.
☐	☐	Proposed elevations of garage and lowest floor, ground at front and rear of building, along with the structure type are indicated on the plan.
☐	☐	Top of foundation is minimum 6" above the ground.
☐	☐	Grade 1' below top of foundation is 10' from building.
☐	☐	Free board to structures, floor elevation or the grade adjacent to the building is at least 1' above any overflow elevation, and at least 2' above any 100-year water level, whichever is greater and min. 1' above FEMA flood elev.
☐	☐	Drainage flows away from structures at min. 2%.
☐	☐	Temporary or permanent diversion swales, stabilized with turf mat, pipe, riprap, are used at the top of slopes exceeding 4:1, when applicable.
☐	☐	Minimum lot slopes for vegetated areas are 2% minimum.
☐	☐	All exposed soil stabilized in 14 days.
☐	☐	Soil within 1 mile of special & impaired waters – stabilized within 7 days.
☐	☐	Temporary or permanent cover is indicated for all disturbed areas. Temporary seeding specifies seed mix including disk anchored mulch on all slopes> 200' or >5%.
☐	☐	Permanent cover specifies 4" min. topsoil, seed mix and disk anchored mulch, or 4" min. topsoil and sod.
☐	☐	Slopes steeper than 4: 1 and 4: 1 slopes longer than 30' are seeded and protected with erosion control blankets or sodded and staked. Blanket category specified per Mn/DOT 3885.2. Plan depicts required blanket locations.
☐	☐	Statement that slopes steeper than 4: 1 are stable from land-sliding and surface erosion. Geotechnical report for slopes >3:1.
☐	☐	For sites where temporary or permanent cover will not be complete by November 15; plan indicates adequate measures to control spring erosion & sedimentation.

Comments: _____

Drainage Swales & Easements

Yes	N/A	
☐	☐	Drainage and Utility easements are shown and labeled on the plan.
☐	☐	Drainage easements are provided where concentrated flow is received from more than 1 adjacent lot and also where concentrated flow is received from more than 1 acre of adjacent property.
☐	☐	100-year flow is contained in an easement.
☐	☐	Minimum drainage easements for flows from 1 acre or less or 4 lots or less are a minimum 20' wide. Ditch is a minimum of 2' deep with a 4' bottom and 4:1 slopes up to the easement line. 100-year runoff contained in easement.
☐	☐	Stormwater management areas are platted as outlots. A facility that will serve only the lot on which it is located may be in a drainage easement on that lot.
☐	☐	Emergency overflow with the high point elevation and direction of overflow are clearly marked on plans.
☐	☐	Emergency overflow swale meets minimum drainage easement standards noted above.
☐	☐	Easement documents are signed and submitted with recording fee or included in plat.

Comments: _____

Outlets & Energy Dissipation

Yes	N/A	
☐	☐	Velocity computations are provided for drainage easements where concentrated flow from more than 2 acres or 8 lots is directed.
☐	☐	Where 10-year velocities exceed 5 ft/sec. permanent turf reinforcement mats are installed. Mats per Mn/DOT 3888.2 or manufacturer and product is specified. Plan depicts blanket locations and cross sections.

☐ ☐ Ditches within 200' of surface water or Property line stabilized in 24 hrs after connection.
☐ ☐ Discharge direction of flow generally 45 degrees or less to the flow direction of receiving ditch or stream.
☐ ☐ Discharges to rear property lines shall generally be piped to at least the rear property line.
☐ ☐ Where discharge pipe velocities are > 10 fps, or less, riprap and filter volumes are indicated in accordance with MnDOT Standard Plates.
☐ ☐ Where discharge pipe velocities are > 10 fps, energy dissipater is provided along with riprap and filter.
☐ ☐ Discharges on slopes steeper than 10% shall not be allowed unless discharge is into existing drainage ditch.
☐ ☐ Evaluation of downstream adequacy provided (capacity and stability).

Comments: _____

_____

Temporary Sediment Basins

Yes N/A

☐ ☐ Principal and emergency spillway designed per BMP storm frequency standards.
☐ ☐ Fenced if slopes exceed 4:1.
☐ ☐ Plan requires any permanent or temporary sediment ponds to be constructed before other construction starts.

For areas draining less than 10 acres alternative sediment control (5 acres within 1 mile of impaired waters).

☐ ☐ Multiple lines of silt fence.
☐ ☐ Small basins.
☐ ☐ Vegetative strips (full permanent vegetation before upslope excavation).

Comments: _____

_____

Permanent Wet Retention Ponds

Yes N/A

☐ ☐ Entire drainage/service area shown (in drainage report).
☐ ☐ 50 scale or larger grading plan with pond cross-section.
☐ ☐ Where possible, provide a forebay at the inlet; locate inlet and outlet at opposite ends of pond; and provide length to width ratio >3.
☐ ☐ Inlets are at or below normal water level.
☐ ☐ 10:1 bench is provided for first 1’ of depth below the normal water elevation.
☐ ☐ 3:1 max slope from normal water elevation to 100-year water elevation.
☐ ☐ 3:1 max slope below normal water elevation.
☐ ☐ Normal Water Elevation is shown.
☐ ☐ 100-year high water elevation is shown.
☐ ☐ Energy dissipation at outlet piping.
☐ ☐ Emergency overflow spillway is provided to accommodate 100-yr event. High point elevation and direction of overflow are marked on plans.
☐ ☐ Emergency overflow spillway is located to protect adjacent property and large fill sections.
☐ ☐ 100-yr runoff which is designed to flow to the pond does not bypass the pond; unmodeled 100-yr flow does not enter the pond.
☐ ☐ Minimum 10’ width at bottom of spillway.
☐ ☐ Minimum 8’ wide maintenance access and turn-around for maintenance vehicles is shown on a slope ≤ 15%, cross slope ≤ 6%.
☐ ☐ Seed mix Mn/DOT 33-261 or 33-361 for a 10’ wide perimeter around the pond. Seed mix Mn/DOT 35-241 for the remainder of the pond outlot
☐ ☐ DNR dam safety permit obtained if dam height is > 6’ and storage to top of dam is > 15 acre-ft.

Areas less than 1 acre not draining to a pond managed by:

☐ ☐ Grassed swales
☐ ☐ Small ponds
☐ ☐ Grit chambers
☐ ☐ Other_____

Comments: _____

_____

Volume Reduction / Water Quality BMPs

Yes	N/A	
Type(s) used:		
☐	☐	Sump manholes
☐	☐	SAFL / Preserver Baffles
☐	☐	Hydrodynamic Separators (HDS)
☐	☐	WQ Treatment Devices
☐	☐	Infiltration basins
☐	☐	Infiltration trenches
☐	☐	Bioretention basins
☐	☐	Iron Enhanced Sand Filters (IESFs)
☐	☐	Underground infiltration/filtration
☐	☐	Stormwater Reuse
☐	☐	Permeable Pavement
☐	☐	Rain Guardians
☐	☐	Other:_____
☐	☐	Pre-treatment provided prior to infiltration / filtration systems.
☐	☐	Site sensitivity analysis included.
☐	☐	Evaluation of hydrologic impact included.
☐	☐	Infiltration / filtration systems scheduled after full site development and stabilization
☐	☐	Runoff routed away from infiltration / filtration systems during construction
☐	☐	Infiltration / filtration sites controlled to minimize soil compaction.
☐	☐	Infiltration / filtration systems designed for 1" of runoff from total impervious surface areas for ultimate development, drains within 48 hours.
☐	☐	Emergency overflow provided to bypass flows from larger events.
☐	☐	Minimum vertical separation of 3' between seasonally saturated soils (or bedrock) and bottom of infiltration system.
☐	☐	Soil test results, system capacity calculations, and computer modeling results included.
☐	☐	Minimum 8' width maintenance access provided.
☐	☐	Infiltration / filtration system locations not permitted for vehicle fueling or service areas.

Comments: _____

_____

☐ ☐ Locations of potential pollutant-generating activities.
☐ ☐ Locations of areas not to be disturbed (buffer zones).
☐ ☐ Tabulated quantities of all erosion prevention and sediment control BMPs.
☐ ☐ Location of areas where construction will be phased to minimize duration of exposed soil areas.
☐ ☐ Areas of steep (3:1 or greater slope).
☐ ☐ Locations of all wetlands, surface waters, and storm ponds that will receive pre- or post-construction site runoff. (If they do not fit on the plan sheets, use an arrow to note the direction and distance).

Comments: _____

_____

Standard plates or specifications:

Yes	N/A	
☐	☐	Are standard plates or specifications included where appropriate?

Part III - Stormwater Discharge Design Requirements

Yes	N/A	
☐	☐	For any stormwater flow that will be channelized at the site, the stormwater controls must be designed to control both peak flowrates and total stormwater volume to minimize erosion at outlets and to minimize downstream channel and streambank erosion.
☐	☐	Are **Temporary Sediment Basins** required on site? (10 acres draining to common location or 5 acres App. A)

If Yes, are they:

Yes	N/A	
☐	☐	Adequately sized – 2-year, 24-hour storm, minimum 1,800 feet^3/acre; **or** no calculative minimum 3,600ft^3/acre?
☐	☐	Designed to prevent short circuiting?
☐	☐	Are outlets designed to remove floating debris?
☐	☐	Are outlets designed to allow complete drawdown?
☐	☐	Are outlets designed to withdraw water from the surface?
☐	☐	Do outlets have energy dissipation?
☐	☐	Have a stabilized emergency spillway?
☐	☐	Sediment Basins must be situated outside of surface waters and any natural buffers.
☐	☐	If compliant temporary sediment basin is not feasible due to site limitations, equivalent sediment controls described.

Comments: _____

_____

Yes	N/A	
☐	☐	**Permanent Stormwater Management System**

Yes	N/A	
☐	☐	Is calculation of new impervious surface included in SWPPP?
☐	☐	Is the project located in and complying with Municipal Separate Storm Sewer Systems (MS4) Permit permanent treatment in lieu of the permanent treatment requirements of this permit?
☐	☐	Are calculations for permanent stormwater management system included (water quality volume of one inch of runoff to be retained on site)?
☐	☐	If infiltration is prohibited, other methods of volume reduction are considered.
☐	☐	If infiltration is prohibited, the remainder of the water quality volume is treated by a wet sedimentation basin, filtration system, regional ponding or equivalent methods prior to the discharge of stormwater to surface waters.
☐	☐	Does the proximity to bedrock preclude the installation of any of the permanent stormwater management practices?

If yes, has effort been made to provide some treatment using alternatives?

Yes	N/A	
☐	☐	Grassed swales
☐	☐	Filtration systems
☐	☐	Smaller ponds
☐	☐	Grit chambers

Which method of permanent stormwater treatment has been selected?

Yes	N/A	
☐	☐	Infiltration or filtration (infiltration basins, infiltration trenches, rainwater gardens, sand filters, organic filters, bioretention areas, and enhanced swales, dry storage ponds with underdrain discharge, off-line retention areas, and natural depressions).

Yes	N/A	
☐	☐	Is infiltration/filtration appropriate to the site and land uses?
☐	☐	Has the system been designed to maintain pre-existing conditions (e.g., do not breach a perched water table that is supporting a wetland)?
☐	☐	Requirements to avoid excavation of the infiltration system until drainage area constructed and stabilized?
☐	☐	Are rigorous sediment and erosion controls planned to keep sediment and runoff away from the system?
☐	☐	Is a pretreatment device planned?
☐	☐	Is the filtration system designed to remove at least 80% of total suspended solids?
☐	☐	Is the system sufficient to infiltrate or filter the appropriate water quality volume of one inch?
☐	☐	Can water quality volume be discharged through the infiltration/filtration system in 48 hours or less?
		☐ Additional flows must bypass and be routed through stabilized discharge point.
☐	☐	Is there a way to visually verify the system is operating as designed?
☐	☐	Has appropriate testing been conducted to ensure a minimum of three feet of separation to the seasonal water table and/or bedrock?
☐	☐	Are calculations/computer model results included to demonstrate the design and adequacy of the infiltration or filtration system?
☐	☐	Is adequate maintenance access provided?
☐	☐	Is there a maintenance plan that identifies who will perform future maintenance?
☐	☐	Infiltration is prohibited when the infiltration system will receive discharges from or be constructed in:

- ☐ Areas where vehicle fueling and maintenance occur.
- ☐ Areas with less than three (3) feet of separation distance from the bottom of the infiltration system to the elevation of the seasonally saturated soils or the top of bedrock.
- ☐ Areas where industrial facilities are not authorized to infiltrate industrial stormwater under an National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Industrial Stormwater Permit issued by the MPCA.
- ☐ Areas where high levels of contaminants in soil or groundwater will be mobilized by the infiltrating stormwater.
- ☐ Areas of predominately Hydrological Soil Group D (clay) soils unless allowed by a local unit of government with a current MS4 Permit.
- ☐ Areas within 1,000 feet up-gradient, or 100 feet down-gradient of active karst features unless allowed by a local unit of government with a current MS4 permit.
- ☐ Areas within a Drinking Water Supply Management Area (DWSMA) as defined in Minn. R. 4720.5100, subp. 13., unless allowed by a local unit of government with a current MS4 Permit.
- ☐ Areas where soil infiltration rates are more than 8.3 inches per hour unless soils are amended to slow the infiltration rate below 8.3 inches per hour or as allowed by a local unit of government with a current MS4 Permit.

Comments: _____

Yes	N/A	
☐	☐	**Wet sedimentation basin:**

Yes	N/A	
☐	☐	Permanent volume of 1800 feet below outlet pipe for each acre draining.
☐	☐	Minimum depth of 3 feet; maximum depth of 10 feet.
☐	☐	Configured so scour or resuspension is minimized.
☐	☐	Water quality volume is one inch (or remainder of volume not reduced) of runoff from new impervious surfaces.
☐	☐	Basin outlets designed to discharge at less than 5.66 cubic feet per second (cfs) per acre of pond.
☐	☐	Basin outlets designed to prevent short circuiting.
☐	☐	Basin outlets designed to prevent discharge of floatables.
☐	☐	Stabilized emergency overflow.
☐	☐	Is adequate maintenance access provided?
☐	☐	Located outside of surface waters and any permanent natural buffers established under App. A.C.3.
☐	☐	Designed to avoid draining water from wetlands (unless the impact to the wetland is in compliance with the requirements of Appendix A.D).

Yes N/A

☐ ☐ **Regional ponds:**

Yes N/A

☐ ☐ Is written authorization from owner of regional pond included in SWPPP?

☐ ☐ Is there no significant degradation of waterways between project and regional pond?

☐ ☐ Does regional pond design conform to the permit requirements for wet sedimentation basin?

Record Retention Requirements must be addresses in the SWPPP:

☐ ☐ The SWPPP including, all changes to it, and inspections and maintenance records must be kept at the site during construction by the Permittee(s) who has operational control of that portion of the site.

Comments: _____

_____

Part IV – Construction Activity Requirements

Yes N/A

☐ ☐ **Addresses erosion prevention measures:**

Yes N/A

☐ ☐ Areas delineated on plans that are not to be disturbed or are areas where disturbance will be minimized.

☐ ☐ Areas of steep slopes will minimize disturbance or other techniques to minimize destabilization of steep slopes.

☐ ☐ Has appropriate construction phasing been implemented?

☐ ☐ Do exposed soils have erosion protection/cover initiated immediately and finished within 14 days (or 7 days Appendix A)?

☐ ☐ For DNR Public waters with "work in water restrictions" during specified fish spawning time frames, all exposed soil areas that are adjacent to and drain to these waters must complete the stabilization activities within 24 hours during the restriction period.

☐ ☐ Design includes stormwater conveyance channels to route water around unstabilized areas on the site and to reduce erosion, unless infeasible?

☐ ☐ Are wetted perimeters of ditches stabilized within 200 feet of surface water within 24 hours?

☐ ☐ Temporary or permanent ditches or swales that are being used as a sediment containment system during construction must be stabilized within 24 hours after no longer being used as a sediment containment system.

☐ ☐ Do pipe outlets have energy dissipation within 24 hours of connecting?

☐ ☐ Discharges from stormwater controls are directed to vegetated areas of the site (including any natural buffers) unless infeasible.

Comments: _____

_____

Yes N/A

☐ ☐ **Addresses sediment control measures:**

Yes N/A

☐ ☐ Are sediment control practices established on down gradient perimeters and upgradient of any buffer zones?

☐ ☐ Are all inlets protected?

☐ ☐ Do stockpiles have sediment control and directed to be placed in areas away from surface waters or natural buffers?

☐ ☐ Do construction site entrances minimize street tracking?

☐ ☐ Plans to minimize soil compaction and, unless infeasible to preserve topsoil.

☐ ☐ 50 foot natural buffers preserved or (if not feasible) provide redundant sediment controls when a surface water is located within 50 feet of the project's earth disturbances and drains to the surface water.

Comments: _____

_____

Yes N/A

☐ ☐ Addresses **dewatering and basin draining**:

Yes N/A

☐ ☐ Is there a plan in place for dewatering to prevent nuisance conditions, erosion, or inundation of wetlands?

☐ ☐ If using filters with backwash water, either haul the backwash water away for disposal, return the backwash water to the beginning of the treatment process, or incorporate the backwash water into the site in a manner that does not erode into runoff.

Yes N/A

☐ ☐ **Addresses inspections and maintenance:**

Yes N/A

☐ ☐ Identifies the person who will oversee the BMP inspection and maintenance?
☐ ☐ Inspections performed once every 7 days.
☐ ☐ Inspections performed within 24 hours of a rain event greater than 0.5 in/24 hours.
☐ ☐ Inspection and Maintenance records include:

Yes N/A

☐ ☐ Date and time of inspection.
☐ ☐ Name of person(s) conducting inspections.
☐ ☐ Finding of inspections, including the specific location where corrective actions are needed.
☐ ☐ Corrective actions taken (including dates, times, and party completing maintenance activities).
☐ ☐ Date and amount of rainfall events greater than 0.5 in/24 hours.
☐ ☐ Rainfall amounts must be obtained by a properly maintained rain gauge installed onsite, or by a weather station that is within one mile or by a weather reporting system.
☐ ☐ Requirements to observe, describe, and photograph any discharge that may be occurring during the inspection.

Yes N/A

☐ ☐ **Maintenance performed**

Yes N/A

☐ ☐ All discovered nonfunctional BMPs must be repaired, replaced, or supplemented with functional BMPs within 24 hours after discovery, or as soon as field conditions allow.
☐ ☐ Silt fence repaired/replaced/supplemented when nonfunctional, or one-half full; within 24 hours.
☐ ☐ Sediment basins drained and sediment removed when reaches one-half storage volume; within 72 hours.
☐ ☐ Sediment removed from surface waters within seven days.
☐ ☐ Construction site exits inspected, tracked sediment removed within 24 hours.
☐ ☐ All infiltration areas must be inspected for sediment from ongoing construction activity and that equipment is not being driven across the infiltration area.

Comments: _____

_____

Yes N/A

☐ ☐ **Addresses pollution prevention management measures:**

Yes N/A

☐ ☐ Storage, handling, and disposal of construction products, materials, and wastes.
☐ ☐ Fueling and maintenance of equipment or vehicles; spill prevention and response.
☐ ☐ Vehicle and equipment washing.
☐ ☐ No engine degreasing allowed on site.
☐ ☐ Containment of Concrete and other washout waste.
☐ ☐ Portable toilets are positioned so that they are secure.

Comments: _____

_____

Yes N/A

☐ ☐ **Addresses final stabilization:**

Yes N/A

☐ ☐ Stabilization by uniform perennial vegetative cover (70% density of its expected final growth).
☐ ☐ The permanent stormwater management system is constructed, meets all requirements, and is operating.
☐ ☐ Drainage ditches stabilized.
☐ ☐ All temporary synthetic and structural BMPs removed.
☐ ☐ Clean out sediment from conveyances and sedimentation basins (return to design capacity).
☐ ☐ If residential – temporary erosion protection and down gradient perimeter control has been completed and distribute homeowner factsheet.
☐ ☐ Submit Notice of Termination (NOT) to the MPCA.

Comments: _____

_____

Requirements of Appendix A

Yes N/A

☐ ☐ Does this site drain to a discharge point on the project that is within one mile of a Special or Impaired Water?

Yes	N/A	Which type of special water?	BMP category
☐	☐	Wilderness Areas	C.1, C.2, C.3
☐	☐	Mississippi River	C.1, C.2, C.3
☐	☐	Scenic or Recreational river	C.1, C.2, C.3
☐	☐	Lake Superior	C.1, C.2, C.3
☐	☐	Lake Trout Lakes	C.1, C.2, C.3
☐	☐	Trout Lakes	C.1, C.2, C.3
☐	☐	Scientific and Natural areas	C.1, C.2, C.3
☐	☐	Trout Streams	C.1, C.2, C.3,C.4
☐	☐	Calcareous fens	C.1, C.2

Yes	N/A	Impaired water	BMP category
☐	☐	TMDL and/or WLA not yet approved	C.1, C.2
☐	☐	Approved TMDL and WLA	BMPs in TMDL

TMDL = Total Maximum Daily Loads
WLA = Waste Load Allocations

BMP category Yes	BMP category N/A		Requirement
☐	☐	C.1	Stabilization initiated immediately and all soils protected in seven days/provide temp basin for five acres draining to common location.
☐	☐	C.2	Treat water quality volume of one inch of runoff by retaining on site unless not feasible due to site conditions (See Part III.D.1. design requirements).
☐	☐	C.3	Maintain buffer zone of 100 linear feet from Special Water.
☐	☐	C.4	Temperature controls.

Comments: _____

_____

☐ ☐ Does this site have a discharge with the potential for adverse impact to wetlands:

Yes N/A

☐ ☐ Has the wetland mitigation sequence (avoid, minimize, mitigate) been followed/satisfied by?

- ☐ Impact activity is permitted by either the Wetlands Conservation Act, DNR, or U.S. Army Corps of Engineers.
- ☐ Compliance with 7050.0186 is documented to the MPCA and approved.

Comments: _____

_____

4	Utilization of other entities and partnerships as appropriate to implement a stormwater educational program.	☐	☐	☐	☐
5	Annual evaluation of education program measurable goals reviewed for adequacy and updated as necessary.	☐	☐	☐	☐

Comments:

Recommended Actions:

4. MCM 2 – Public Participation and Involvement (Part III.D.2)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	**S**	**M**	**U**	**NA**
1	Procedures to solicit public input and opinion annually on the adequacy of the SWPPP.	☐	☐	☐	☐
2	Consider oral statements and written comments by the public regarding the SWPPP.	☐	☐	☐	☐
3	Provide access to the SWPPP Document, Annual Reports and other documentation for public review upon request.	☐	☐	☐	☐
4	Process to consider input and make appropriate modifications to the SWPPP.	☐	☐	☐	☐
5	Documentation of all relevant written input received regarding the SWPPP and all responses from the permittee regarding input received on the SWPPP.	☐	☐	☐	☐
6	Documentation of date(s) and location(s) of events to meet requirements of MCM 2 and documentation of notices provided to the public regarding events scheduled to meet these requirements.	☐	☐	☐	☐

Comments:

Recommended Actions:

5. MCM 3 – Illicit Discharge Detection and Elimination (Part III.D.3)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	**S**	**M**	**U**	**NA**
1	Completed storm sewer system map updates showing the location of items in Part III.C.1.a. – d.	☐	☐	☐	☐
2	Ordinance or other regulatory mechanism in place that prohibits illicit discharges into MS4 conveyances and establishes appropriate enforcement procedures and actions.	☐	☐	☐	☐
3	Incorporation of illicit discharge detection into all maintenance and inspection activities.	☐	☐	☐	☐
4	Provides Illicit Discharge, Detection, and Elimination training for all field staff.	☐	☐	☐	☐
5	Identified priority areas likely to have illicit discharges and information used to guide subsequent inspections.	☐	☐	☐	☐
6	Developed and utilizes Enforcement Response Procedures (ERPs) for investigating, locating, and eliminating the source of illicit discharges and spills.	☐	☐	☐	☐
7	Informs businesses and the general public about illicit discharges/illegal dumping.	☐	☐	☐	☐
8	Evaluated non-stormwater discharges as described in Part I.A.2.	☐	☐	☐	☐
9	Maintains adequate documentation of illicit discharge reports, tracking, and elimination procedures as required in Part III.D.3.h.	☐	☐	☐	☐

Comments:

Recommended Actions:

6. MCM 4 – Construction Site Stormwater Runoff Control (Part III.D.4)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	S	M	U	NA
1	Ordinance or other regulatory mechanism in place that establishes erosion and sediment controls as stringent as the MPCA National Pollutant Discharge Elimination System/State Disposal System, Construction Stormwater General Permit.	☐	☐	☐	☐
2	Requirements for construction site operators to implement waste controls and erosion and sediment control BMPs.	☐	☐	☐	☐
3	Requirements for construction site operators to develop site plans prior to the start of construction activity for review and approval.	☐	☐	☐	☐
4	Written procedures for site plan review to ensure compliance with the requirements of the regulatory mechanism or ordinance.	☐	☐	☐	☐
5	Written procedures for site inspections to determine compliance with the requirements of the regulatory mechanism or ordinance.	☐	☐	☐	☐
6	Utilization of ERPs to ensure compliance with the regulatory mechanism or ordinance.	☐	☐	☐	☐
7	Written procedures for receipt and consideration of reports of noncompliance or other information.	☐	☐	☐	☐
8	Documentation of site plan review information for the proposed construction activity and documentation of site inspections of the active construction site.	☐	☐	☐	☐

Comments:

Recommended Actions:

7. MCM 5 – Post Construction Stormwater Management (Part III.D.5)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	S	M	U	NA
1	Ordinance or other regulatory mechanism to address post-construction stormwater runoff from new development and redevelopment meeting requirements for Part III.D.5.a.	☐	☐	☐	☐
2	Strategies for implementing structural stormwater BMPs for post-construction stormwater management.	☐	☐	☐	☐
3	Written procedures for site plan reviews prior to the start of construction activity to ensure compliance with requirements of the regulatory mechanism or ordinance.	☐	☐	☐	☐
4	Stormwater management limitations for infiltration techniques constructed in areas of contaminated soils, high groundwater, clayey soils, and soils with high infiltration rates.	☐	☐	☐	☐
5	Mitigation strategies when stormwater management for Total Suspended Solids (TSS) and/or Total Phosphorus (TP) cannot be achieved on the site of the original construction activity.	☐	☐	☐	☐
6	Documentation of site plan reviews, mitigation projects, legal mechanisms for long term maintenance of structural stormwater BMPs	☐	☐	☐	☐

Comments:

Recommended Actions:

8. MCM 5 – Pollution Prevention/Good Housekeeping for Municipal Operations (Part III.D.6)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	S	M	U	NA
1	Operation and Maintenance Program to prevent or reduce pollutant runoff from municipal operations.	☐	☐	☐	☐
2	Facilities inventory of permittee owned/operated facilities that contribute pollutants to stormwater discharges.	☐	☐	☐	☐
3	Development and implementation of BMPs for inventoried facilities and municipal operations, such as those described in Part III.D.6.b.(2).(a). – (l).	☐	☐	☐	☐
4	Development and implementation of BMPs for stormwater discharges that may affect Source Water Protection Areas.	☐	☐	☐	☐
5	Procedures and a schedule for determining TSS and TP treatment effectiveness of all permittee owned/operated stormwater ponds	☐	☐	☐	☐
6	Annual inspections of all structural stormwater BMPs.	☐	☐	☐	☐
7	At least one inspection of all outfalls and ponds prior to the expiration of the Permit.	☐	☐	☐	☐
8	Quarterly inspections of all stockpiles, storage, and material handling areas.	☐	☐	☐	☐
9	Repairs, replacement, or maintenance activities for structural stormwater BMPs based on inspection findings.	☐	☐	☐	☐
10	Employee training program commensurate with employee's job duties and addresses the importance of protecting water quality.	☐	☐	☐	☐
11	Documentation of maintenance activities, maintenance schedules, BMP inspections, and employee training.	☐	☐	☐	☐

Comments:

Recommended Actions:

7. Documentation

7a. Employee Training Documentation

Employee Training Documentation

CITY OF MOUND

Employee	Job Title	Date	Topic	Presenter	Initial/Recurring
Robert Bean	MS4 Consultant	9/25/15	IDDE	BMI	Initial
		1/14/16	SWPPP Install	UofM	Recurring
		4/12/16	SWPPP Design	UofM	Recurring

7b. SWPPP Comments

7c. IDDE Reports

7d. Inspections

7e. Maintenance Activities

7f. Pond Assessment Data

7g. MS4 Annual Assessments

Appendix

Appendix A: Annual MS4 Reports

Appendix B: MS4 Pond, Wetland, and Lake Inventory

City of Mound

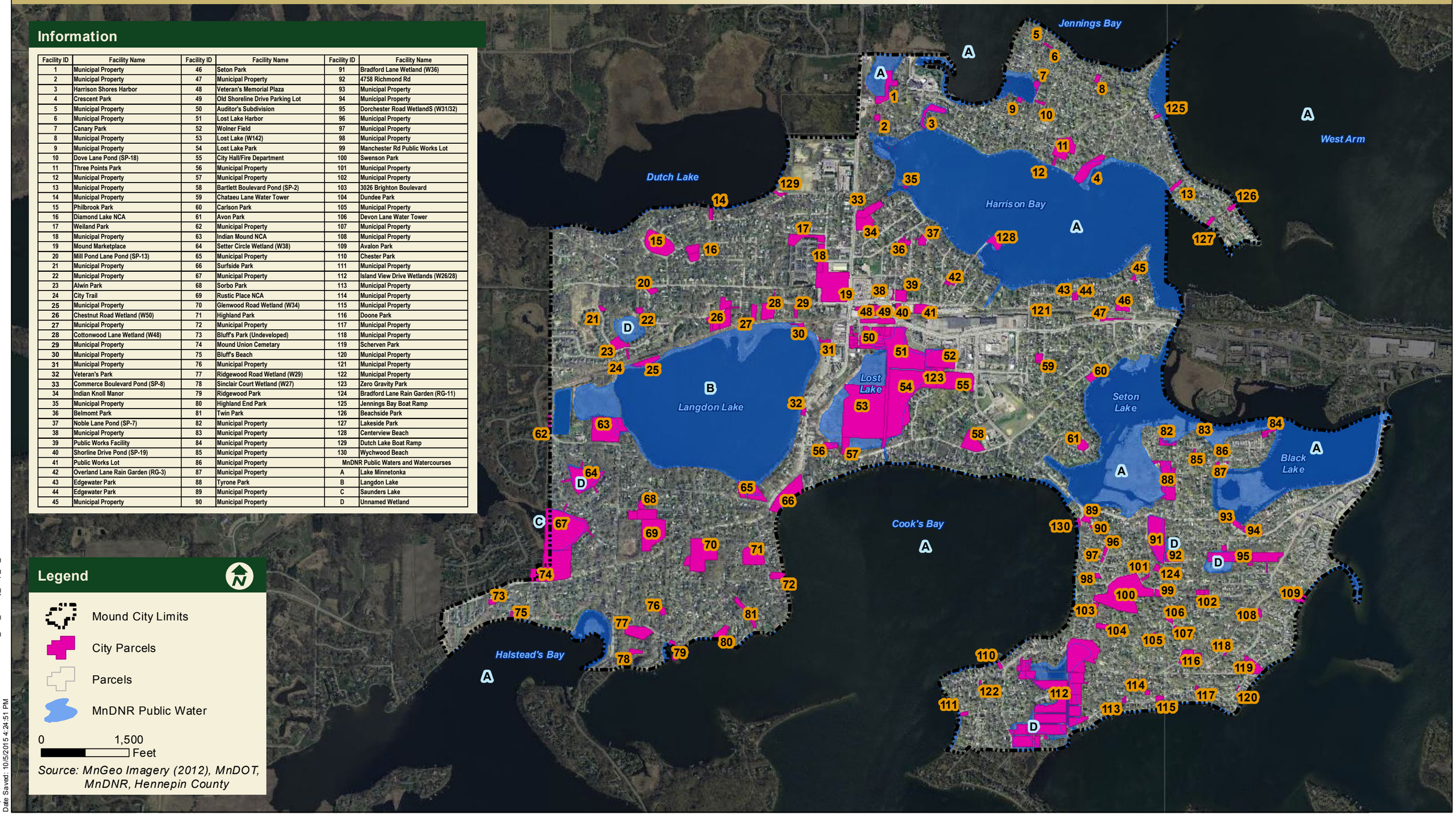
October, 2015

Municipal Facility Inventory Map

BOLTON & MENK Engineers & Surveyors

Information

Facility ID	Facility Name	Facility ID	Facility Name	Facility ID	Facility Name
1	Municipal Property	46	Seton Park	91	Bradford Lane Wetland (W36)
2	Municipal Property	47	Municipal Property	92	4758 Richmond Rd
3	Harrison Shores Harbor	48	Veteran's Memorial Plaza	93	Municipal Property
4	Crescent Park	49	Old Shoreline Drive Parking Lot	94	Municipal Property
5	Municipal Property	50	Auditor's Subdivision	95	Dorchester Road WetlandS (W31/32)
6	Municipal Property	51	Lost Lake Harbor	96	Municipal Property
7	Canary Park	52	Wolner Field	97	Municipal Property
8	Municipal Property	53	Lost Lake (W142)	98	Municipal Property
9	Municipal Property	54	Lost Lake Park	99	Manchester Rd Public Works Lot
10	Dove Lane Pond (SP-18)	55	City Hall/Fire Department	100	Swenson Park
11	Three Points Park	56	Municipal Property	101	Municipal Property
12	Municipal Property	57	Municipal Property	102	Municipal Property
13	Municipal Property	58	Bartlett Boulevard Pond (SP-2)	103	3026 Brighton Boulevard
14	Municipal Property	59	Chataeu Lane Water Tower	104	Dundee Park
15	Philbrook Park	60	Carlson Park	105	Municipal Property
16	Diamond Lake NCA	61	Avon Park	106	Devon Lane Water Tower
17	Weiland Park	62	Municipal Property	107	Municipal Property
18	Municipal Property	63	Indian Mound NCA	108	Municipal Property
19	Mound Marketplace	64	Setter Circle Wetland (W38)	109	Avalon Park
20	Mill Pond Lane Pond (SP-13)	65	Municipal Property	110	Chester Park
21	Municipal Property	66	Surfside Park	111	Municipal Property
22	Municipal Property	67	Municipal Property	112	Island View Drive Wetlands (W26/28)
23	Alwin Park	68	Sorbo Park	113	Municipal Property
24	City Trail	69	Rustic Place NCA	114	Municipal Property
25	Municipal Property	70	Glenwood Road Wetland (W34)	115	Municipal Property
26	Chestnut Road Wetland (W50)	71	Highland Park	116	Doone Park
27	Municipal Property	72	Municipal Property	117	Municipal Property
28	Cottonwood Lane Wetland (W48)	73	Bluff's Park (Undeveloped)	118	Municipal Property
29	Municipal Property	74	Mound Union Cemetary	119	Scherven Park
30	Municipal Property	75	Bluff's Beach	120	Municipal Property
31	Municipal Property	76	Municipal Property	121	Municipal Property
32	Veteran's Park	77	Ridgewood Road Wetland (W29)	122	Municipal Property
33	Commerce Boulevard Pond (SP-8)	78	Sinclair Court Wetland (W27)	123	Zero Gravity Park
34	Indian Knoll Manor	79	Ridgewood Park	124	Bradford Lane Rain Garden (RG-11)
35	Municipal Property	80	Highland End Park	125	Jennings Bay Boat Ramp
36	Belmomt Park	81	Twin Park	126	Beachside Park
37	Noble Lane Pond (SP-7)	82	Municipal Property	127	Lakeside Park
38	Municipal Property	83	Municipal Property	128	Centerview Beach
39	Public Works Facility	84	Municipal Property	129	Dutch Lake Boat Ramp
40	Shorline Drive Pond (SP-19)	85	Municipal Property	130	Wychwood Beach
41	Public Works Lot	86	Municipal Property	MnDNR Public Waters and Watercourses	
42	Overland Lane Rain Garden (RG-3)	87	Municipal Property	A	Lake Minnetonka
43	Edgewater Park	88	Tyrone Park	B	Langdon Lake
44	Edgewater Park	89	Municipal Property	C	Saunders Lake
45	Municipal Property	90	Municipal Property	D	Unnamed Wetland



Legend

- Mound City Limits
- City Parcels
- Parcels
- MnDNR Public Water

0 1,500 Feet

Source: MnGeo Imagery (2012), MnDOT, MnDNR, Hennepin County

Map Document: H:\MOUN\C123286\ARCView\39286_Site_Facility_Map_11_17.mxd
Date Saved: 10/5/2015 4:24:51 PM

Stormwater Pond Inventory

City of Mound, MN

April 3, 2019

ID	Y Coord. *	X Coord. *
PD1	153044.5092	422272.0956
PD2	152839.6238	422486.7024
PD3	152900.6688	421765.2577
PD4	152672.8877	421694.7269
PD5	152932.0685	423528.9650
PD6	153362.2232	424314.5677
PD7	149668.4439	434665.2194
PD8	149781.1498	434725.4567
PD9	146835.3855	430072.6338
PD10	151666.5828	427765.0216
PD11	151239.4446	428812.3166
PD12	147516.2455	429690.2909
PD13	154705.0230	427950.0944
PD14	155235.0584	426921.2322
PD15	157839.8096	427644.6475
PD16	153997.6263	425870.7694
PD17	153833.3466	423316.3844
PD18	153453.4575	427370.1589
PD19	153004.8538	423588.4823

*UTM Coordinate System

Treatment Devices Inventory

City of Mound, MN

April 3, 2019

ID	Type	Y Coord. *	X Coord. *
TD-1	HDS Unit	148439.1243	424942.8734
TD-2	HDS Unit	146926.9859	432120.7166
TD-3	Pervious Pavement	152802.0710	428469.0874
TD-4	WQ Unit	153189.2113	427267.1436
TD-6	Pervious Pavement	153444.6343	427118.6722
TD-7	HDS Unit	156528.0580	426896.8731
TD-8	HDS Unit	149009.7367	425570.1766
TD-5	Sediment Storage Vault	153462.8505	427168.7383
TD-9	HDS Unit	148387.3705	423074.8587
TD-10	HDS Unit	148362.6776	431562.9599
TD-11	SAFL Baffle	146619.5220	428700.7080

*UTM Coordinate System

Sump Manhole Inventory

City of Mound, MN

April 3, 2019

ID	Y Coord. *	X Coord. *
MH77	151053.4216	430086.6433
MH127	155118.4259	432932.4880
MH141	153530.4061	431815.9823
MH20	154575.3771	422789.9065
MH226	147230.8380	428776.5809
MH65	146646.8979	428918.4340
MH242	150745.9373	432282.0778
MH264	156847.8828	429198.0679
MH232	147714.3879	432590.9640
MH234	147715.0982	432583.8738
MH240	148777.0200	431145.6999
MH273	150080.3208	434561.4079
MH131	158034.0871	429806.9722
MH124	156166.3986	430239.7702
MH291	153466.7137	427166.6373
MH53	149840.0959	430660.8947

*UTM Coordinate System

Sump Catchbasin Inventory

City of Mound, MN

April 3, 2019

ID	Y Coord. *	X Coord. *
CB198	149121.9448	432279.7645
CB981	149605.9730	431779.4046
CB982	149790.8519	431772.1924
CB984	149867.0290	431802.7566
CB1008	149589.4390	433082.8768
CB1011	149421.5341	432806.5676
CB1013	149672.2380	433955.9387
CB1018	149004.3762	433416.5844
CB1039	153529.1086	422056.4854
CB1051	149391.4456	430829.8130
CB1052	149420.3907	430784.4119
CB1073	149953.2647	433786.9859
CB1090	151166.1589	432817.7457
CB1108	148337.2216	430829.1664
CB1115	153213.5403	427346.2934
CB1120	146185.6511	429487.6251
CB1129	147603.6499	429651.4601
CB1133	147585.3590	429648.1760
CB1136	147860.9089	430539.6381
CB1142	155466.3376	425570.3406
CB1150	157045.7600	427182.0270
CB1154	157121.1109	428389.5663
CB1173	157437.7963	431696.8907
CB1175	157704.3053	431822.4019
CB1190	152501.6995	430879.0288
CB1195	152693.3960	431126.9552
CB382	151228.8061	422285.0959
CB1045	148664.1400	430763.8000
CB912	146484.7605	430642.2573
CB1064	150733.1670	432286.6671
CB478	158075.0575	430027.9367
CB443	157074.2678	430047.9114
CB472	156244.7495	429989.3285
CB468	156240.9181	430269.4562
CB450	156226.0267	431079.3650
CB298	151692.8606	430538.1401
CB297	151682.8508	430514.4492
CB1303	153468.5385	427173.0923
CB1304	153468.0851	427152.8079

CB1305	153468.4433	427148.6705
CB1306	153468.0037	427138.2958
CB1118	149013.0713	425559.2160
CB322	150681.5063	424209.3689
CB376	148915.0243	423994.4753
CB378	149180.6681	423777.3639
CB338	149370.3351	423412.2219
CB407	149510.3420	422161.8022
CB409	149788.5458	422422.6471
CB403	150110.4481	422199.5265
CB413	150268.6577	421712.5485
CB760	150793.8644	423131.3228
CB1067	153453.1540	424836.1111
CB143	150166.1225	434090.9276

*UTM Coordinate System

Appendix C: MCWD Memorandum of Understanding

MEMORANDUM of UNDERSTANDING
Local Water Planning and Regulation

Minnehaha Creek Watershed District and the City of Mound

This Memorandum of Understanding (MOU) is made by and between the Minnehaha Creek Watershed District, a watershed district with purposes and powers as set forth at Minnesota Statutes Chapters 103B and 103D (MCWD), and the City of Mound, a body corporate and politic and a statutory city in the State of Minnesota.

Recitals and Statement of Purpose

WHEREAS in 2007 the MCWD revised its watershed management plan (WMP) under Minnesota Statutes §103B.231, which details the existing physical environment, land use and development in the watershed and establishes a plan to regulate water resource use and management to protect water resources, improve water quality, prevent flooding and otherwise achieve the goals of Minnesota Statutes Chapters 103B and 103D;

WHEREAS the WMP incorporates the Rules adopted by the MCWD to protect water resources, improve water quality, prevent flooding and otherwise achieve the goals of Minnesota Statutes Chapters 103B and 103D;

WHEREAS Mound has developed a local water management plan under Minnesota Statutes §103B.235 that describes the existing and proposed physical environment and land use within Mound and sets forth a regional subwatershed based capital improvement implementation plan for bringing local water management into conformance with the WMP;

WHEREAS on June 18, 2009, the MCWD Board of Managers approved Mound's local water management plan by adoption of Resolution 09-062, attached and incorporated herein and that requires, as a precondition of approval, that Mound and the MCWD enter into this MOU to memorialize their respective roles as to water resource protection and management within city boundaries;

WHEREAS Mound currently exercises sole regulatory authority within city boundaries with respect to matters now subject to regulation under MCWD Rules B

(erosion control), C (floodplain alteration), D (wetland protection), and N (stormwater management) and wishes to continue to exercise sole authority;

WHEREAS MCWD approval of a local plan requires a finding that municipal ordinances are at least as protective of water resources as the MCWD Rules;

WHEREAS the finding by the MCWD Board of Managers that Mound's municipal ordinances meet this criterion rests on Mound's commitment to adopt ordinances that are materially equivalent to MCWD Rules B (erosion control), C (floodplain alteration), D (wetland protection), and N (stormwater management);

NOW THEREFORE it is mutually agreed by and between the parties that they enter into this MOU in order to document the understanding of the parties as to the roles and responsibilities of each.

1.0 Responsibilities of Mound

1.1 Mound retains and may exercise all municipal authority to issue permits for and regulate activities within its boundaries that affect water resources.

1.2 Within 180 days of June 18, 2009, Mound will adopt an ordinance or ordinances meeting the terms of this MOU, with the written determination of MCWD staff that the ordinance(s) is or are materially equivalent to MCWD Rule B, C, D, or N. If this requirement is not met, the MCWD will reassert its regulatory authority under Rules B, C, D, and N for activities that have not received all required approvals under Mound's water resource ordinances as of that date.

1.3 In accordance with Minnesota Statutes §103B.211, subdivision 1(a)(3)(ii), the MCWD must approve the granting of any variance under a Mound ordinance for which the MCWD has ceased to exercise regulatory authority.

1.4 Within 180 days of written MCWD notice that it has revised a rule for which Mound exercises sole authority pursuant to paragraph 1.2, Mound must revise its ordinance(s) to maintain material equivalence and obtain MCWD concurrence in the revision. MCWD will provide the City of Mound with Rule language as part of this notification. Alternatively, Mound may ask the MCWD to reassert its own regulatory authority as to that rule.

1.5 Mound will designate a staff member as the official point of contact for regulatory matters under this MOU. Mound will:

a. Maintain a log of permits issued or considered under its water resource ordinance(s), and include in the log the permit site location, the date the application was received and /or issued, and a brief description of the project. This log will be forwarded to the District annually and made available upon request.

b. Notify the MCWD of work by Mound subject to the ordinances governed by this MOU prior to initiation of work.

c. Include the MCWD as a recipient of any public notices as provided in the ordinances governed by this MOU for MCWD staff to review and forward comments on the project.

d. Provide available project plans and specifications to the MCWD on request.

Mound and the MCWD will meet by March 1st annually to review Mound's regulatory activity under this MOU.

1.6 Annually, by the date specified for Mound's submittal of its annual report under its NPDES municipal stormwater permit, Mound will submit to the MCWD a concise but specific report describing:

a. Progress on the local water management plan implementation program.

b. Progress on meeting phosphorus load reduction requirements of the WMP.

c. Any adjustments to the implementation and/or capital improvement program in the local water management plan.

d. The permit log described in paragraph 1.5, above.

e. A listing, with further specific available information as the MCWD may request, of grading and structural alterations approved or occurring within city boundaries since the last annual report (both private and public alterations) that could measurably affect hydraulic and hydrologic model outcomes.

Mound may incorporate its annual report into its NPDES MS4 annual report, provided it addresses the above items with specificity.

2.0 Responsibilities of the MCWD

2.1 The MCWD will continue to apply and enforce its Rules, as they may be amended from time to time, to activity within Mound, except as provided under paragraph 1.2, above. Specifically, but not exclusively, the MCWD will continue to apply its rules: (a) other than those regarding erosion control, floodplain alteration, wetland protection, and stormwater management; and (b) to actions by parties to whom Mound's ordinances do not apply. The MCWD will continue to perform NPDES compliance monitoring pursuant to its joint powers agreement with the Minnesota Pollution Control Agency and may perform similar regulatory activities by agreement with other public bodies.

2.2 Mound and the MCWD will meet at least annually to review Mound's regulatory activity under this MOU.

2.3 The MCWD retains all authority that it may possess under Minnesota Statutes Chapters 103B and 103D and any other provision of law, except as explicitly withdrawn under this MOU, including but not limited to authority set forth at Minnesota Statutes §§103B.211, subdivision 1(a); 103D.335 and 103D.341. The MCWD may use its authority under Minnesota Statutes §103D.335, subdivision 14, to inspect work subject to Mound permits whether or not the work is subject to an MCWD permit.

3.0 General

3.1 If the MCWD has reason to believe that Mound is not adequately implementing its regulatory program as approved, it may engage Mound in a review of its concerns. If the MCWD Board of Managers, after engagement with Mound and a public hearing, finds that Mound is not adequately implementing its regulatory program, it may by resolution reassert MCWD regulatory authority as to all actions that have not yet received all required approvals under Mound water resource ordinances. The Board may consider whether: (a) ordinances have been adopted and conform to standards approved by the MCWD; (b) ordinances have been applied as written and MCWD approval of variances has been sought per §103B.211; (c) technical expertise and

program resources as described in the local plan have been maintained; and (d) compliance has been reasonably monitored and enforced.

3.2 The MOU is effective on the date that it has been executed by both parties, will remain in effect for five years, and will be extended automatically for five-year terms unless terminated by agreement of the parties. Notwithstanding, Mound will continue to be subject to applicable statutes and rules requiring that it revise its local water management plan in response to MCWD revisions of the WMP.

3.3 At any time, the City of Mound may, with 60 days written notice, authorize MCWD to reassert its authority for any rule reposed solely to Mound under this MOU. However, if such notification results from an amendment to any such rule, the notice period will be the lesser of 60 days, or the effective date of the amendment. MCWD agrees that it is obligated to accept such reassertion of authority. Upon return of said authority to MCWD, Mound shall no longer be bound by the requirements of this Memorandum under sections 1.2, 1.3, 1.4, 1.5, 1.6 d and 3.1 as they relate to that rule, except for permits issued prior to the date on which the MCWD reassumed authority which shall remain under Mound's WMP permitting authority. Mound shall remain as permitting authority for any and/or all remaining rules as authorized by the City and MCWD in this MOU.

3.4 This MOU shall not be deemed to confer upon Mound any authority or obligation with respect to any present or future MCWD Rule other than those specifically mentioned herein.

3.5 This MOU may be amended only by a writing signed by both parties.

IN WITNESS WHEREOF, the parties hereto have executed this Memorandum of Understanding.

CITY OF Mound

By _____
Mayor

Date:

By _____
City Manager

Date:

MINNEHAHA CREEK WATERSHED DISTRICT

By _____
President, Board of Managers

Date: 9-17-09

APPROVED AS TO FORM AND EXECUTION

By _____
Its Attorney

Minnehaha Creek Watershed District — *REQUEST FOR BOARD ACTION*

TITLE: City of Mound Local Water Management Plan – Approval **Date: 6/18/09**

ITEM TYPE: ☒Action ☐Consent ☐Discussion ☐Information

PREPARED BY: Nathaniel Kale
TELEPHONE: 952-471-0590 x 229
E-MAIL: nkale@minnehahacreek.org

REVIEWED BY:
☐ Administrator ☐ Board Committee
☒ Counsel ☐ District Engineer
☐ Consulting Engineer ☐ District Technician
☒ Planner/Program Mgr ☐ Communications
☐ Other

Fiscal/FTE Impact:
☒ None
☐ Amount included in current budget
☐ Budget amendment requested
☐ Project/program adjustment needed for FTE
☐ FTE included in current complement
☐ New FTE(s) requested
☐ Other (include explanation in text).

PURPOSE or ACTION REQUESTED:
Conditional approval of the City of Mound Local Water Management Plan

SUMMARY:
The City of Mound has submitted a Local Water Management Plan for MCWD review and approval. The historic timeline of the review is as follows:

- April 17, 2008: City of Mound submits Local Water Management Plan (LWMP) to MCWD for review
- April 25, 2008: MCWD administratively denies Mound LWMP
- May 5, 2008: MCWD staff discusses Mound LWMP with Metropolitan Council
- September 4, 2008: City of Mound submits revised LWMP
- October 22, 2008: Second administrative denial of LWMP
- November 12, 2008: City of Mound submits second revision of LWMP
- December 2008 – April 2009: Staff discussions regarding Lake Minnetonka floodplain elevation

The City of Mound has updated the draft plan to reference information consistent with State Rules Chapter 8410 and Minnesota Statute 103B.235 and also reference the policies identified in the 2007 MCWD Comprehensive Water Resources Management Plan. The City has proposed to retain implementation authority for MCWD Rules B, C, D, and N; implementation for other MCWD Rules will remain with the MCWD. The City has proposed to retain Minnesota Wetland Conservation Act Local Government Unit status. MCWD staff has verified that the Local Water Management Plan is generally consistent with the goals and policies of the Watershed District. The following items are included for review in this packet:

- Plan Summary
- MCWD official denial letter, October 2008
- District Engineer review, October 2008
- Minnetonka Floodplain Memo, December 2008

STAFF RECOMMENDATION:
Staff recommends the Board approve the City of Mound's Local Water Management Plan effective on the execution by MCWD and the City of Mound of a Memorandum of Understanding materially equivalent to the Memorandum included in this packet as resolution 09-063 within 60 days of the passage of this resolution.

EXPLANATION OF FISCAL/FTE IMPACT:
Local water resource management plans reviews are budgeted for 2009.

RESOLUTION

RESOLUTION NUMBER: 09-062

TITLE: City of Mound Local Water Resources Management Plan - Approval

WHEREAS, on July 5, 2007, the MCWD adopted amendments to its comprehensive watershed management plan under Minnesota Statutes § 103B.231, which, as amended, details the existing physical environment, land use and development in the watershed and established a plan to manage water resources and regulate water resource use to improve water quality, prevent flooding and otherwise achieve the goals of Minnesota Statutes Chapters 103B and 103D; and

WHEREAS, the MCWD Comprehensive Water Resources Management Plan, as amended incorporates the Rules adopted by the MCWD to protect water resources, improve water quality, prevent flooding and otherwise achieve the goals of Minnesota Statutes Chapters 103B and 103D; and

WHEREAS, the City of Mound completed a draft Local Water Management Plan and submitted it to the MCWD for review and approval in 2008; and

WHEREAS, MCWD reviewed the draft Plan and provided detailed review comments to the City for consideration and incorporation into the Plan; and

WHEREAS, the City subsequently prepared and submitted revisions to the Local Water Management Plan for MCWD to review; and

WHEREAS, MCWD reviewed the revised plan and provided further comments to the City for consideration and incorporation into the Plan; and

WHEREAS, the City of Mound prepared and submitted final revisions for the Local Water Management Plan to MCWD which incorporated MCWD review comments; and

WHEREAS, the MCWD has determined that the final revised Plan, on occurrence of the conditions stated below, will be consistent with the MCWD Water Resources Management Plan; and

WHEREAS, the Metropolitan Council has received the Local Water Management Plan and has provided its written to the MCWD and the District has fully considered the comments; and

WHEREAS the MCWD has determined that the Plan generally meets the requirements for local plan approval set forth in the MCWD's watershed management plan; and

WHEREAS the City wishes to continue to exercise authority as the Local Government Unit for the Minnesota Wetland Conservation Act; and

WHEREAS the City presently exercises, and wishes to continue to exercise, sole regulatory authority for activities subject to MCWD Rules B, C, D, and N; and

WHEREAS the MCWD's ability to approve the Plan rests on the City's agreement to continue to enforce ordinances that implement all of the requirements in MCWD Rules B, D, and N within those parts of the City where the MCWD has jurisdiction, as well as the City's agreement to update said ordinances within 180 days of the revision and adoption of Rules B, C, D, or N by MCWD;

NOW, THEREFORE, BE IT RESOLVED, that the MCWD hereby approves the City of Mound Local Water Management Plan, effective on the fulfillment of the following conditions:

a. MCWD and the City of Mound execute the Memorandum of Understanding included as Resolution 09-063 in this Packet or a substantially equivalent Memorandum within 60 days of the passage of this resolution, establishing implementation and annual reporting responsibilities between the MCWD and the City.

Resolution Number 09-063 was moved by Manager _____ seconded by Manager _____.
Motion to adopt the resolution _____ ayes, _____ nays, _____ abstentions. Date: _____.

_____ Date: _____

Lee Keeley, Secretary

CITY OF MOUND

5341 MAYWOOD ROAD
MOUND, MN 55364-1687
PH: (952) 472-0600
FAX: (952) 472-0620
WEB: www.cityofmound.com

August 24, 2011

Minnehaha Creek Watershed District (MCWD) Board of Managers
Attn: Eric Evenson, Executive Director
18202 Minnetonka Boulevard
Deephaven, MN 55391

Re: City of Mound Rules Authority and Permitting

On September 1, 2010, the Minnehaha Creek Watershed District adopted new rules related to wetlands, floodplain, shoreline and streambank stabilization, waterbody and crossings and erosion control. Additionally, the MCWD adopted new stormwater rules on June 1, 2011. Municipalities were given a 1-year deadline by the MCWD to update their ordinances, that being September 1, 2011.

The City of Mound currently has permitting responsibility for Rule B (erosion control), Rule C (floodplain control), Rule D (wetland protection and Rule N (stormwater management). Details regarding the City's current permitting authority are outlined in the current *Memorandum of Understanding* between the City of Mound and the MCWD. Specifically, Sections 1.4 and 3.3 outline the City's requirement to maintain local management and permitting of the rules *(or portions thereof)* as well as the process to maintain or turnback these responsibilities.

In accordance with Sections 1.4 and 3.3 of the *Memorandum of Understanding*, you are hereby advised that the Mound City Council, at its July 20, 2011 special meeting, voted to approve turning back local management and permitting of the new rules, which go into effect on September 1, 2011, to the MCWD. Additionally, at its August 23, 2011 meeting, the City Council considered and took action on Resolution No. 11-56 to officially turn back regulatory and permitting responsibilities.

On behalf of the City of Mound, it is respectfully requested, that you please confirm, in writing, no later than five (5) days from the date of this letter that any and/or all land use or related project or permit approvals, whether constructed or not, that were approved and authorized by the City of Mound during the time it had permitting authority for the aforementioned rules from August 2002 until the effective date of the new rules, which is September 1, 2011, shall remain under Mound's management and permitting authority in the future and are subject to the rules in effect at the time the City's approvals were granted. If you have any questions regarding this letter or require any additional information, please feel free to contact me at 952.472.0636.

Sincerely,

Carlton Moore

Carlton Moore
Public Works Director

CITY OF MOUND
RESOLUTION NO. 11-56

RESOLUTION RETURNING EXCLUSIVE REGULATORY AUTHORITY UNDER MINNEHAHA CREEK WATERSHED DISTRICT RULES B, C, D AND N TO THE MINNEHAHA CREEK WATERSHED DISTRICT

WHEREAS, pursuant to Minnehaha Creek Watershed District ("MCWD") Resolution 09-062 the City of Mound and the MCWD did, on or about September 17, 2009 enter into a Memorandum of Understanding which transferred to Mound the exclusive regulatory authority, including the right to issue permits, over MCWD Rules B, C, D and N, all as provided in and subject to the provisions to said Memorandum of Understanding; and

WHEREAS, the City of Mound has determined that it no longer wishes to retain the regulatory authority granted to it by MCWD Resolution 09-062 and the Memorandum of Understanding, and wishes to cede such authority to the MCWD.

NOW THEREFORE, BE IT RESOLVED by the City Council of the City of Mound, Minnesota as follows:

1. Except as provided in section 3.3 of the Memorandum of Understanding, regarding previously issued permits, the City of Mound hereby cedes the regulatory authority granted to it in the Memorandum of Understanding to the MCWD and hereby authorizes the MCWD to reassume all such regulatory authority in lieu of the City of Mound.

2. The action described in paragraph 1 above shall be effective as of September 1, 2011.

3. A copy of this Resolution will be promptly transmitted to the MCWD along with a letter to be signed by the Mound Public Works Director further describing the action.

4. The Mayor and City Manager are directed to take all steps necessary to carry out the intentions of this Resolution.

Adopted by the City Council of the City of Mound, Minnesota this 23rd day of August 2011.

Mayor Mark Hanus

Attest: Bonnie Ritter, City Clerk