

***City of the Village of Minnetonka Beach***

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**An Amendment to the Comprehensive Plan**

**Water Quality Management Plan  
Storm Water Pollution Prevention Program**

**City Council Approved  
March 5, 2007  
Land Use Map Amendment  
September 10, 2007**

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## **Executive Summary**

This plan was prepared as a requirement of both federal and state statutes in the format required by law for the following Agencies:

- Minnesota Pollution Control Agency(MPCA),
- Metropolitan Council, and
- Minnehaha Creek Watershed District (MCWD).

The Plan consists of background information concerning Minnetonka Beach, the stormwater system in Minnetonka Beach and the receiving water, Lake Minnetonka Crystal and Lafayette Bay and the north end of the Lower Lake (Exhibit A).

In general, the City is fully developed and is not expected to grow from its present population of 614 people. The Major construction activity in the City is remodeling and redevelopment of existing homes. The building trend is to create larger homes on the existing lots. The County Park District is planning a major improvement in the community in 2007-2008. The City has scheduled a major water improvement for 2009.

The City's primary land use is residential. A large golf course and a church are the other private land uses. Public land uses consist of Hennepin County property and City property.

The City has a limited staff, limited budget and limited bonding capacity to implement this plan. As such, it is planning to work with the MCWD to assist the City in implementation.

The problem identified by the MCWD is the amount of phosphorous discharging into Lake Minnetonka. The City is required by MCWD to reduce phosphorous discharge by 13 pounds per year. The City staff has identified a number of flooding problem that this plan corrects and the MPCA has designate Lake Minnetonka as impaired water because of mercury pollution. The Lake is under a fish advisory.

The plan meets the requirements of the law and the three agencies requiring the plan. The plan provides for eight minimum control measures to correct existing assessed problems or to meet the requirement of the MPCA and the MCWD.

These minimum control measures include:

1. Establishes an education program to prevent storm water pollution. This program will be implemented in conjunction with the MCWD;
2. Establishes a number of required ordinance amendments to reduce erosion;
3. Establishes a schedule to hold an annual meeting concerning storm water pollution and to submit detailed annual reports to the MPCA and MCWD on the progress toward implementing the plan;

4. Establishes a schedule for the City to adopt construction and post construction requirements by establishing a new post construction ordinance that requires filtering and abstraction for private sites one or more acres in sized and requires abstraction and filtration for public improvements of one acre or more in size including formalizing the site plan review process and site inspection process. The abstraction and filtration ordinance will be prepared by the MCWD for Minnetonka Beach's modifications;
5. Establishes a schedule to prepare a detail storm sewer plan and monitor for illicit discharges into the storm sewer system and the Lake;
6. Develops a housekeeping schedule for street and storm water maintenance to reduce polluted discharges to the Lake and to implement those measures;
7. Establishes a schedule for the City to make improvements to the existing storm water system to reduce the amount of phosphorous being discharged to the Lake by 13 pounds per year. The plan also establishes a schedule for a new system to prevent flooding;
8. Establishes a well head protection area and establishes a schedule to make amendments to City's water plan to bring it into conformance with the Safe Drinking Water Act.

## **Introduction:**

Authority and Requirements to Plan and Implement Water Quality Management: Minnesota Statute 462 enables Minnetonka Beach to plan for improved surface water quality and to implement that plan through ordinances and capital improvements.

Minnetonka Beach is required to plan for surface water quality and to implement the plan by three separate statutes, rules and agencies. These include:

1. The Minnesota Pollution Control Agency acting under the 1972 Clean Waters Act and Minnesota Rules;
2. The Metropolitan Council acting under the Minnesota Land Planning Act and its Surface Water Management Plan; and
3. The Minnehaha Watershed District acting under Minnesota Statute Chapter 103B.235, Minnesota Rules.

The following is a summary of these requirements by each of the agencies. Requirements that are more detailed can be found in Exhibit B:

### ***Minnesota Pollution Control Agency Clean Waters Act, Phase II, NPDES<sup>1</sup>, MS4 Permit:***

This Water Quality Management Plan plans for Minnetonka Beach's Storm Water System (MBSWS). The MBSWS is a conveyance or system of conveyances including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, fabricated channels, or storm drains. This system is owned by the City, which is responsible for its operation and maintenance. The ditches and catch basins along Shoreline Drive (County Road 15) and the stormwater facilities on the Lafayette Club's property shown in this Plan are not part of the MBSWS.

The Clean Water Act of 1972 and the Minnesota Pollution Control Agency's Rule (Minn. Rule Chapter 7090) require the City of the Village of Minnetonka Beach to obtain a permit from the Minnesota Pollution Control Agency to operate (MBSWS). This permit, which is renewed annually, is the subject of this Water Quality Management Plan.

### ***Metropolitan Council Surface Water Management Plan:***

The Twin Cities Metropolitan Council requires<sup>2</sup> that Minnetonka Beach amend its Water Quality Management section in its Comprehensive Plan. To meet its surface water management goal, the Council has made a policy decision that ties together the control of pollution from point and non-point sources. Minnetonka Beach has a Surface Water Quality Management Plan and erosion control ordinance contained in its zoning

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<sup>1</sup> National Pollution Discharge Elimination System

<sup>2</sup> Metropolitan Land Planning Act.

ordinance. The plan and ordinance do not meet MPCA requirements for stormwater ordinances Best Management Practices (BMP). As such, the comprehensive plan will be determined to be more likely than not to have an impact to the Metropolitan System, thus requiring a plan modification for the Metropolitan Council. This finding requires that the Comprehensive Plan and City Ordinances be modified. The premise behind this requirement is that the Metropolitan Council will not be able to obtain permits from the MPCA for Metropolitan projects if these items are not satisfactorily completed.

***Minnehaha Creek Local Water Management Plan:***

Local water management plans are required to conform to Minnesota Statutes Chapter 103B.235, Minnesota Rules 8410, and the Minnehaha Creek Watershed District Surface Water Management Plan. Minnesota Rule 8410.0160 establishes the structure the local water management plan must follow.

**Problem Assessment**

Based on the self-assessment process required by MPCA, Minnetonka Beach considered the following factors in order to meet the maximum extent practicable standard, set forth in the MPCA, MS4 permit:

- Sources of pollutants
- Potential polluting activities being conducted in the watershed
- Sensitivity of the receiving waters
- Uses of receiving waters
- Specific local concerns
- The size of Minnetonka Beach
- Climate, including precipitation
- Implementation schedules
- Current ability to finance storm water programs
- Hydrology
- Geology
- Capacity to perform operations and maintenance
- Local land uses
- Rate and type of development
- Characteristics of Minnetonka Beach
- Organizational characteristics of Minnetonka Beach

In addition to the self-assessment and the assessment by the Minnehaha Creek Watershed District, Minnetonka Beach has also considered the following non-storm water discharges to determine whether they should be identified as significant contributors of pollution from Minnetonka Beach's storm water system.

- Water line flushing and swimming pool flushing
- Landscape irrigation and lawn watering

- Diverted stream flows
- Rising ground water
- Uncontaminated ground water infiltration
- Uncontaminated pumped ground water
- Discharges from potable water sources
- Foundation drains
- Air conditioning condensation
- Irrigation water
- Springs
- Water from crawl space pumps
- Footing drains
- Individual and residential car washing
- Flows from riparian habitat and wetlands
- Street wash water
- Discharge of flows from fire fighting activity.

See Exhibit A for a detail discussion of the above factors considered by Minnetonka Beach.

**Minnehaha Creek Watershed District Assessment and Performance Standard for Minnetonka Beach**

The City of Minnetonka Beach is located in the Lake Minnetonka subwatershed. In addition to the general requirements for Local Management Plans the following items must be addressed in the city’s Water Quality Management Plan.



***Phosphorus Load Reduction***

The City’s Plan must include strategies and specific steps for the achievement of the following load reductions assigned to the City of the Village of Minnetonka Beach. These strategies may include operational, land use, capital

improvements implemented since 2000, and those planned. The Plan must also include a provision for annually reporting progress towards this goal.

**Table 1. Required Annual Phosphorus Load Reductions, City of Minnetonka Beach (in pounds).**

Subwatershed	Receiving Waters	Annual Reduction
Lake Minnetonka	Crystal, Lafayette, North Lower	13
	<b>Total</b>	<b>13</b>

***Landlocked Basins***

The HHPLS<sup>3</sup> identified no landlocked subwatershed units in the city, although there may be small sub-drainage areas that do not outlet except during infrequent events. The City’s Plan must identify any significant, non-outletting areas; discuss and incorporate strategies to minimize new volumes; and address any flooding issues.

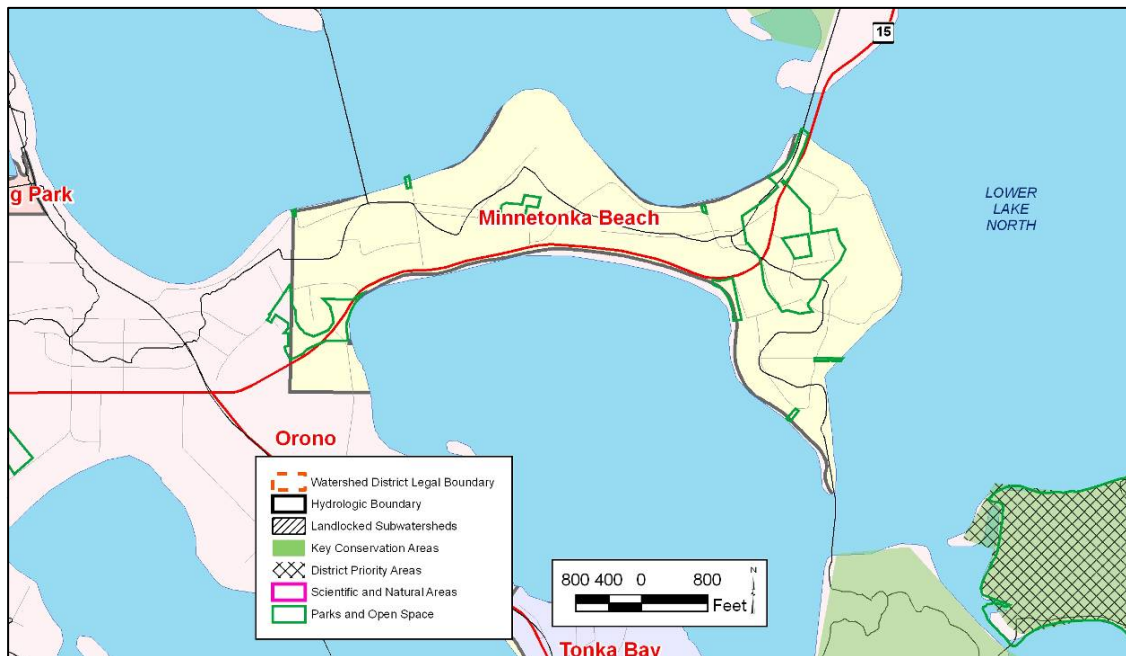
***Flooding or Modeled High Water Locations***

The HHPLS identified no specific locations in Minnetonka Beach where there are known or modeled flooding issues (see Figure 1). The City’s Plan must identify any known flooding areas; evaluate the associated risks to public health, safety, and property; assess whether the risk of occasional flooding is acceptable; and set forth a plan to address the flooding issues.

***Flow Velocity and Erosion***

The HHPLS identified no specific locations where the model indicates existing and future high pipe peak flow velocities may require erosion control measures or energy dissipaters at inlets and outlets (see Figure 1). The City’s Plan must assess the need for erosion control at any locations where excessive velocities may be contributing to localized erosion.

***Land Conservation***





No key conservation areas have been identified within Minnetonka Beach. The local plan must identify the strategies the city will use to protect and conserve the hydrologic and ecologic values of the natural areas in the city.

***Operations and Maintenance: Previous Projects***

There are no ongoing maintenance obligations for previous District projects.

***Potential Capital Projects***

No potential District capital projects have been proposed in Minnetonka Beach.

***Other Issues***

Cities must prepare and submit annually to the District, in a format approved by the MPCA and District, a report detailing actions taken in the previous year to implement the requirements of the WRMP<sup>4</sup>

**Minnetonka Beach's Assessment of Existing or Potential Problems**

*Landlocked Basins<sup>5</sup>:*

There are four landlocked basins within Minnetonka Beach that have been considered for outlet drainage projects. The following basins are all on private property except the Lafayette Park basin:

- A sump catch basin was installed at the Huntington Point East and Huntington Point West intersection to abstract sediments and other pollutants from the storm water draining from this land locked basin. Should this landlocked basin be filled, its abstraction quality will be diminished. This basin should be included in the flood prone areas of the flood plain ordinance to prevent filling.
- The two other private property basins are included in the flood prone areas to prevent them from being filled. A new outlet was constructed from the basin on Lafayette Road. This outlet was connected to a sump catch basin to abstract pollutants from the over flow storm water before it reaches the lake.
- The Lafayette Park basin provides both a meadow filtering system and abstraction. The properties of this basin should not be diminished without providing compensating storm water systems that will abstract and filter.

*Flooding:*

The risk of occasional flooding is not acceptable. The zoning ordinance was updated to eliminate local flooding in the flood prone area adjacent to Brooks Lane and west of Lafayette Road.

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<sup>5</sup> Landlocked basin are storm water holding areas without an over land outlet or a device that will mimic an overland outlet.

- Brooks Lane flood prone area. Four adjacent homes are prone to be flooded. Flooding also occurs to one home due to underground water running to the wetland area. The subwatershed for this very small flood prone area does not have an operating outlet. When the home south of the area is redeveloped an operating outlet with abstraction device or method should be constructed to intersect the County System adjacent to County Road 15.
- Lafayette Road flood prone area. This subwatershed and small basin floods occasionally. A second system was installed to elevate some of the problem and to abstract pollutants (sump catch basin) before they reach the lake. The second existing private system that should be increased in size and updated with an abstraction device.

The minimal (two-foot) free board risk is not acceptable in the following areas:

- The area behind the homes at 2438 and 2442 Lafayette Road: The homes are prone to flooding in this small subwatershed. Although improvements have been made, the current private storm sewer is not designed to prevent flooding nor is there an over land outlet to drain the storm water off in low probability event;
- The area adjacent to Huntington Point Road West at 2325 Huntington Point Road West: This accumulation area (ponding area) is more of a private nuisance than a public hazard. The accumulation area is located on private property. The existing storm system is not designed for a low probability event. The subwatershed is small;
- The area adjacent to Brooks Lane that is adjacent to 3017 Brooks Lane, 3103 Brooks Lane and 3120 Brooks Lane: This area provides potential flooding to elevation 946 feet above mean sea level (MSL). The basin has no public outlet.
- The area at the intersection of Brooks Lane and the Private Road: This area floods periodically and then over flows through a private garage to the above Brooks Lane flood prone area.
- Potential basement flooding in selected area where the lake level is near the level of the highest buildable point on the lot: The potential for basement flooding and damage to basements from hydrologic pressure exists. These areas are limited to areas along Beach Road, Old Beach Road and a small part of Huntington Point Road East. The problem is that the ground water in these areas is high. Basements that are built below this 931.5 MSL are subject to damage and flooding from the ground water. Even if the homeowner does not experience damage or flooding, the accumulated displacement of water in these and other areas raises the potential for flooding down stream.

### *Erosion:*

- The steep bank lakeshore is subject to erosion. This lakeshore is stabilized by vegetation. There is a need to be certain that vegetation ground cover of deep root plants is maintained along the lakeshore.
- Erosion from wave action and boat wakes creates erosion on all of the lakeshore. This is particularly true in Crystal Bay where boat traffic is very heavy and in the Lower Lake near Huntington Point where boat traffic is very heavy. Three problems have been observed relative to boat traffic: 1.) the increased number of high displacement boats, 2.) boat speeds in the more restrictive areas and 3.) the number of boats. The lake is a recreational development lake that is used by the public for a variety of recreational purposes. Shoreline erosion from the lake has been an on going, and in some cases, a natural problem. The relatively new problem has been the introduction to the lake of high displacement boats that operate at the same speeds as the smaller boats.
- Eroding shorelines contribute to the degradation of water quality. Native vegetation can effectively stabilize these areas, filter runoff for sediment and other pollutants, and provide habitat.
- Erosion during construction is increasing because the amount of construction is increasing. Large excavations and large stockpiles of disturbed soil, if not controlled, could wash into the adjoining property and into the lake.

### *Pollutants:*

- Pollutants are carried by snowmelt and rainwater run off in the public and private storm water systems. Twenty public storm water systems enter the lake. Of these, 17 are maintained by the City and three are maintained by Hennepin County. These systems drain public and private streets and water run off from adjoining lots. At least three private storm water systems enter the lake. The public and private storm water system, depending on the size of their drainage area and the filtering process that may occur, is one source of non-point pollution of Minnetonka Beach to the lake.
- Pollutants from County Road 15 are unique to this area and a small area in Orono. The extreme closeness of the road to the lake, the high volume of traffic on the county road, the winter maintenance methods and the crown design of the county road contribute to the non-point source of pollution along Lafayette Bay. Rainwater runoff and stored snow melt on the county road run directly into Lafayette Bay without treatment. The width of this road also contributes to the impervious surface that drains to the lake.
- Pollutants from the proposed regional trail although less than the street system need to be addressed in the trail's design.
- Pollutants that drain into the lake and wetlands from residential and Club yards. The use of phosphorous fertilizer is a source of non-point pollution from the land adjacent to the lake and wetlands. Compost, leaves and grass clippings also add to the phosphorous going to the lake and wetlands.
- About 70% of current mercury pollutant deposited in Minnesota is a result of anthropogenic emissions. The MPCA has attributed mercury pollution

atmospheric sources to Minnesota as follows: 30% natural from outside the state (e.g., volcanoes), 30% global pollution, and 40% regional pollution (Engstrom and Swain 1997). Significant mercury emissions sources remain within Minnesota and contribute to mercury deposition in the state. Jackson *et al.* (2000) estimated that one-quarter of the 40% regional pollution, or 10% of total deposition within Minnesota, is because of emissions from within the state. The balance of the regional sources was attributed to the rest of the United States

- Chlorophyll-a: pollution from the algae in the lake. The higher the algae bloom the greater the Chlorophyll-a will be resulting from the algae bloom. Phosphorous, a non-point pollution source enhances the algae bloom.

*The Target Phosphorous Concentrations are:*

- Crystal Bay 25- 30 grams per liter(g/L)
- Lafayette Bay 50 g/L
- Smiths Bay 50 g/L
- Lower Lake 30 g/L

*Wetland Protection and Preservation:*

- The assessed wetlands provide wildlife habitat, fisheries and floodwater storage, downstream water quality among other functions<sup>6</sup>. Filling of these wetlands would result in a loss of both. Although there are a number of state and local regulations in place, enforcement is not coordinated.
- Direct storm water drainage into the wetlands along County Road 15, Old Beach Road, and from Lafayette Ridge presents a potential problem to the quality of the wetlands.

*Scenic Lakeshore Preservation:*

- Many of the homes along the lake were built before the state shoreland standard for a general development lake were promulgated and adopted by the City. A number of homes are made non-conforming by these regulations. Better standards that do not render homes non-conforming and preserve the lakeshore are needed in this fully developed community.
- The area along County Road 15 is one of the only areas along the lake where the lake is visible to the public. The County should enhance this area by designating this area as a scenic area and maintain the road with the scenic by way standards.

### **Storm Water Pollution Preventions Program and Water Quality Management Plan Policies and Strategies:**

This stormwater Pollution Prevention Program provides the Best Management Practices (BMP) chosen by Minnetonka Beach to meet the standards of the

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<sup>6</sup> See functional assessment Minnehaha Creek Watershed District January 2003

Minnesota Pollution Control Agency (MPCA), Metropolitan Council, and the Minnehaha Creek Watershed District (MCWD). The plan categorizes each BMP into one or more minimum control measures to meet the “maximum extent practicable” standard set in the MPCA permit requirements.

The plan also uses BMP to reduce phosphorous loads being generated by Minnetonka Beach by 13 pounds per year as required by MCWD.

### **Minimum Control Measure One: Public Education and Outreach**

It is the policy of Minnetonka Beach to conduct an active and strategic education and communication program to provide general information citywide, and to various stakeholder groups in accordance with its five-year strategic education and outreach plan. Targeted information will be necessary to educate these stakeholders as to Minnetonka Beach’s specific storm water goals, the actions Minnetonka Beach plans to take, and their role in conserving water resources. The specific targeted messages in Minnetonka Beach will emphasize shoreline management as well as storm water volume management, pollution removal and erosion control.

**Policy:** Enhance public participation and knowledge regarding pollution control activities and provide informational and educational material and classes to the Lafayette Club and St. Martins Church, community groups, contractors and other building professionals and individuals.

### **Strategies:**

#### **1-a-1 Distribute Educational Materials.**

*Educational Strategic Goal:* To make residents and employees aware of storm water pollution and to provide written material on what they can do to reduce pollution carried by air and storm water.

#### *Activities to Reach the Goal:*

- Provide a distribution display rack and keep it stocked with educational materials supplied by MCWD in City Hall, and in the Post Office;
- Provide a link from Minnetonka Beach’s web site to the appropriate MCWD site, DNR site and the appropriate MPCA site;
- Request the Lafayette Club to provide a link from their web site to the Minnetonka Beach web site;
- Establish a monthly section called “Save the Lake Program” in the City newsletter, “The Beachcomber” , for pollution prevention articles or handouts from MCWD. The “Beachcomber” is mailed to each Minnetonka Beach household once per month;
- Publish in Beachcomber educational opportunities of MCWD programs that residents, institutional members and City employees may participate in<sup>7</sup>.

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<sup>7</sup> This years MCWD education program is provided in Appendix E

*Audience:* city residents and employees

*Responsible Person:* The Mayor or the Mayor's designated representative

*Coordination with:* MCWD

*Schedule:* All material ready for distribution and the web site changes by June 2007

*Performance Measure:* Accomplish all of the above activities on an ongoing basis.

### 1b1 Implement an Education Program

*Education Strategic Goal:* Develop a written education program

*Activities to Reach the Goal:*

- Work with the MCWD to develop a program for Minnetonka Beach target audiences (residents, employees, contractors)
- With MCWD develop a written education program containing all the education elements of this plan
- Establish and work with a Minnetonka Beach Lake Preservation Steering Committee (Utilities Commission) to review the plan and make changes, as required
- Present the program to the City Council for approval
- City Council approves educational program

*Audience:* Steering Committee and City Council

*Responsible Person:* The Mayor or the Mayor's designated representative

*Coordination with:* MCWD

*Schedule:* Completion June 2008

*Performance Measure:* Education Program adopted

### 1-c-1 Public Education and Outreach

*Educational Strategic Goal for each Audience:*

- Residents and institutions in Minnetonka Beach:
  - The need to improve the water quality of Lake Minnetonka and methods to improve Lake Minnetonka
  - Specific methods that property owners can use to protect the Lake and prevent illicit discharge to the storm water system
- City Employees:
  - The need to improve the water quality of Lake Minnetonka and methods to improve Lake Minnetonka

- Methods and means to maintain the storm water system
- Illicit discharge inspection and recognition
- Reports and recordkeeping
- Contractors, Architects Surveyors and Engineers:
  - Understanding MCWD and Minnetonka Beach regulations
  - Using BMP in erosion control
  - Using abstraction and filtration to improve storm water quality

*Activities to reach the goals:*

- Organize seminars on bio retention gardening and lake shore preservation
- Provide web site links to this information
- Briefing at pre-construction meetings for contractor and other building professionals
- Monthly articles in the Beachcomber on a water quality issue
- Formal training for public works personnel, city clerk and city administrator

*Activity Implementation Plan:*

- Arrange seminars with MCWD
- Arrange time and place of seminars
- Investigate formal training activity and require staff to attend at least one activity per year
- Develop a pre-construction briefing check list and review it with each contractor, architect and surveyor working in the community

*Responsible Person:* The Mayor or the Mayor's designated representative

*Schedule:* June 2008

*Performance Measure:*

- Certification for city employee training attendance
- Certification for architects and surveyors of briefing
- Attendance at resident seminars

1-c-2 Public participation:

*Educational Strategic Goal:* To involve residents, employees, and local institutions in storm water pollution prevention, organizing, and monitoring the educational outreach program.

*Activities to Reach the Goal:*

- Create a Lake Preservation Steering Committee (Utilities Commission) to review materials, monitor the education program, organize education programs, help Civic Committee organize social water quality events and, with the Public Works director and city engineer, develop a maintenance program

- Publish an article in the City newsletter, “The Beachcomber” for pollution prevention. The “Beachcomber” is mailed to each Minnetonka Beach household once per month
- Hold an annual education program in the community on ways to prevent lake pollution

*Audience:* general public, city residents, local institutions and employees

*Responsible Person:* The Mayor or the Mayor’s designated representative

*Coordination with:* MCWD, Save the Lake Task Force and Civic Committee;

*Schedule:* Full Program in place and operating by June 2008;

*Performance Measure:* Accomplish all of the above activities

1-c-3 Education: Illicit discharge detection and elimination<sup>8</sup>

*Educational Strategic Goal:* Create awareness amongst City employees, residents, Lafayette Club employees, St. Martins Church employees, garbage haulers and contractors of what illicit discharge is, how to detect it and what measures to take to eliminate illicit discharge.

*Activities to Reach the Goal:*

- Work with MCWD and MPCA to prepare educational material on illicit discharge identification and measures to eliminate illicit material
- Provide education material, and brief each contractor at the pre-construction meeting
- Provide educational briefings for City employees, Lafayette Club management and St. Martin Church management

*Audience:* city residents, local institutions, city employees, contactors

*Responsible Person:* The Mayor or the Mayor’s designated representative

*Coordination with:* MCWD, MPCA

*Schedule:* Full Program in place and operating by June 2008;

*Performance Measure:* Accomplish all of the above activities

1-c-4 Education: Construction site storm water runoff control

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<sup>8</sup> (2) *Illicit discharge* means any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from fire fighting activities.



*Educational Strategic Goal:* Create awareness for Contractors and property owners of the City's and MCWD erosion control requirements.

*Activities to Reach the Goal:*

- Using MCWD requirements provide written material supplied by MCWD to each contractor in land development or building permit packet to be provided to the contractor and to the property owner before building or site plans are created
- Brief each contractor at the pre-construction meeting
- Provide the information to surveyors, civil engineers and architects doing business in the community

*Audience:* city residents, contractors, surveyors, civil engineers, architects and other building professionals

*Responsible Person:* The Mayor or the Mayor's designated representative

*Coordination with:* MCWD and the Planning and Zoning Administrator;

*Schedule:* Full Program in place and operating by June 2008;

*Performance Measure:* Accomplish all of the above activities

1-c-5 Education: Post-construction storm water management in new development and redevelopment

*Educational Strategic Goal:* To make contractors, property owners, architects and other building professionals aware of post construction BMPs

*Activities to Reach the Goal:*

- Using MCWD requirements provide written material supplied by MCWD in each contractor land development or building permit packet
- Brief each contractor at the pre-construction meeting
- Provide the information to surveyors, civil engineers and architects doing business in the community

*Audience:* city residents, contractors, surveyors, civil engineers, architects and other building professionals

*Responsible Person:* The Mayor or the Mayor's designated representative

*Coordination with:* MCWD and the Planning and Zoning Administrator;

*Schedule:* Full program in place and operating by December 2007;

*Performance Measure:* Accomplish all of the above activities

1-c-6 Education: Pollution prevention/good housekeeping for municipal operations

*Educational Strategic Goal:* To make city employees aware of pollution prevention and good housekeeping BMP for municipal operations.

*Activities to Reach the Goal:*

- Require training public works employees on the pollution control and preventions methods from MPCA or MCWD once per year.
- Make training available to city administrator from MPCA or MCWD on pollution control and prevention methods in municipal operations once per year

*Audience:* City Employees

*Responsible Person:* City The Mayor or the Mayor's designated representative

*Coordination with:* MCWD, MPCA, NEMO (Non-point Education for Municipal Officials);

*Schedule:* Full Education *Program* in place and operating by June 2008;

*Performance Measure:* once per year training

1-d-1 Education Coordination

*Strategic Goal:* to provide effective material and training without duplication

*Activities to Reach the Goal:*

Although there are a number of sources that Minnetonka Beach can avail itself to coordinate its education efforts with others in our area, we are relying on MCWD as our primary source of the education material and to conduct any necessary classes described above. We will also publish in the Beachcomber any classes offered in our area by the following organizations: GTS, MPCA, DNR and MCWD. Each of these organizations will be linked to our web site.

*Responsible Person:* The Mayor or the Mayor's designated representative

*Coordination with:* MCWD, MPCA, GTS, NEMO (Nonpoint Education for Municipal Officials)

*Schedule:* by June 2008;

*Performance Measure:* Hits on the Minnetonka Beach web site for Pollution Prevention information, number of classes published on website

#### 1-e-1 Annual Public Meeting

*Strategic Goal:* to solicit public input on the effectiveness of the stormwater management program at annual meeting.

*Activities to reach the goal:*

- Provide 30 day notice of the purpose of the meeting, its location and its time published in the newspaper of record, the community newsletter, on the City web site and posted at three public locations in the community;
- Prepare a notice with the following characteristics:
  - The notice must contain a reference to the Storm Water Pollution Prevention Program, the date, time, and location of the public informational meeting
  - The notice must contain a concise description of the manner in which the public informational meeting will be conducted; and
  - The notice shall indicate the location where a copy of the Storm Water Pollution Prevention Program is available for public review
  - Copies of the notice shall be emailed to the DNR Metro Region Waters, MPCA and MCWD as well as any one else requesting a notice be emailed to them
- Hold the public meeting at City Hall in June of each year so that the maximum number of people can attend
- The Mayor will conduct the public meeting at a regular meeting of the City Council
- Along with the public, the Planning Commission, Parks Commission, and Utility Commission will be invited to the annual public meeting as well as the city staff

*Responsible Person:* The Mayor or the Mayor's designated representative

*Coordination with:* City Clerk, City Council

*Schedule:* by June 2007 and each year thereafter

*Performance Measure:* Public input at the annual meeting to be included in the annual report

#### **Minimum Control Measure Two: Public Participation and Involvement**

It is the policy of Minnetonka Beach to create and maintain several citizen advisory committees to obtain regular public input on issues of concern to the City and its citizens. As Minnetonka Beach implements the actions identified in

this plan, including the education actions described above, it will be important to obtain direct input from its residents and other water resource users, such as The Lake Minnetonka Conservation District, County and the DNR.

**Policy:** Solicit input from the public with the intent that policies, projects and programs will address community values and goals as well as protect historic and cultural values regarding water resources; strive to manage expectations; base decisions on an educated public; foster an educated and informed public within the community.

#### 2-a-1 Comply with Public Notice Requirements

*Strategic Goal:* To inform the public of the annual meeting and their opportunity to provide comment on the plans effectiveness

##### *Activities to Reach the Goal:*

- Provide 30 day notice of the purpose of the meeting, its location and its time published in the newspaper of record, the community news letter on the City web site and posted at three public locations in the community;
- Prepare a notice with the following characteristics:
  - The notice must contain a reference to the Storm Water Pollution Prevention Program, the date, time, and location of the public informational meeting;
  - The notice must contain a concise description of the manner in which the public informational meeting will be conducted; and
  - The notice shall indicate the location where a copy of the Storm Water Pollution Prevention Program is available for public review
  - Copies of the notice shall be e-mailed to the DNR Metro Region Waters, MPCA and MCWD as well as anyone else requesting a notice be e-mailed to them

*Responsible Person:* The Mayor or the Mayor's designated representative

*Coordination with:* City Clerk

*Schedule:* 30 days prior to the annual meeting

*Performance Measure:* written public notices to be included in the annual report

#### 2-a-1 Solicit Public Input and Opinion on the Adequacy of the Storm Water Pollution Prevention Program and Water Quality Management Program

*Strategic Goal:* To provide the opportunity for the public to study the programs, its effectiveness and to provide written or oral input

*Activities to Reach the Goal:*

- At least 30 days before the annual meeting email the annual report and meeting notice to MCWD, Lake Preservation Steering Committee, Civic Committee, Parks Commission, Planning Commission, Utility Commission and City Council for review and comment.
- Post the SWPPP and Annual Report on the web site inviting comment
- Post an article in the Beachcomber inviting comment on the SWPPP and Annual Report

*Responsible Person:* The Mayor or the Mayor's designated representative

*Coordination with:* MCWD, City Committees and Commissions

*Schedule:* At least 30 days prior to the annual meeting

2-c-1 Annual Public Meeting Consider Public Input

*Strategic Goal:* to solicit and consider public input on the effectiveness of the stormwater management program

*Activities to reach the goal:*

- Hold the public meeting at City Hall in June of each year so that the maximum number of people can attend;
- The Mayor will conduct the public meeting at a regular meeting of the City Council;
- Along with the public, Lake Preservation Steering Committee, the Civic Committee, the Planning Commission, Parks Commission, and Utility Commission will be invited to the annual public meeting as well as city staff.
- At least 30 days before the annual meeting the city clerk will post on the Minnetonka Beach web site and send to any party requesting a copy, the annual report as prescribed in this plan and any amendments being proposed to this plan;
- The annual meeting will be conducted in the following manner:
  - The Mayor will give a report as to the measurable results of the BMP. This report will outline the goal and the measuring or monitoring achieved in the scheduled time
  - The City Council and others in attendance will be given an opportunity to ask questions concerning the report
  - Public input and opinions will be solicited on the adequacy of the Storm Water Pollution Prevention Program
  - Interested persons will be afforded reasonable opportunity to make oral or written statements concerning the Storm Water Pollution Prevention Program including any written material that they may wish to enter into the record

- Any relevant written material submitted prior to the annual meeting by interested persons will be noted for the record and copies made available to the City Council and included in the annual report amendment
- The City Council will consider the information obtained at the annual meeting and will refer any proposed amendments to this plan as well as the written and oral information obtained at the annual meeting to the Planning Commission for its consideration and recommendation to the City Council as to an amendment to this plan. Upon receiving a recommendation from the Planning Commission, as prescribed by Minnesota Statutes, the City Council shall take action on any amendments to this plan and refer the Council approved plan to the MPCA, MCWD and Metropolitan Council for approval. Upon approval by the MPCA, MCWD and Metropolitan Council the City Council will take final action on the amendments to this plan.

*Responsible Person:* The Mayor or the Mayor’s designated representative

*Coordination with:* Planning Commission, MCWD, MPCA

*Schedule:* by June 30 each year with final action on amendments by September 30 each year

**Minimum Control Measure Three: Illicit Discharge Detection and Elimination**

An understanding the nature of illicit discharges in Minnetonka Beach is essential to find, fix and prevent them. This measure presents the regulatory context for controlling illicit discharges and provides a plan for detecting and eliminating them.

***Policy:*** To prevent the discharge of pollutants into Lake Minnetonka.

**3-b-1 Legal Authority**

*Strategic Goal:* develop, implement, and enforce a program to detect and eliminate illicit discharges

*Activities to reach the goal:*

- Develop and adopt an ordinance with the following minimum requirements:
  - Audits existing resources and programs
  - Establishes responsibility, authority and tracking
  - Assesses illicit discharge potential
  - Select appropriate MPCA approved BMP as standards of discharge
  - Prohibit non storm water discharge into storm water system

*Responsible Person:* Planning and Zoning Administrator

*Coordination with:* MPCA, City Attorney

*Schedule:* by June 2008

*Performance Measure:* City Council adopts the ordinance

### 3-a-1 Develop a storm sewer system map

*Strategic Goal:* Inventory the existing system and document the location of various elements

*Activities to reach the Goal:*

- Using GPS and existing data locate all parts of the existing system including:
  - Ponds, streams, lakes, wetlands
  - Structural pollution control devices
  - Pipes, drainage swales and culverts
  - Discharge points into waters or wetlands including:
    - Structures
    - Overland discharge point
    - All other discharges outlets from the storm water system except diffused areas.
  - Points of Inlets to the system
  - Show all sizes and condition of the storm water system

*Responsible Person:* Public Works Director

*Coordination with:* City Engineer

*Schedule:* by June 2008

*Performance Measure:* Published detailed map

### 3-c-1 Develop and Implement a Program to Detect and Address Non-storm Water Discharges

*Strategic Goal:* identify non-storm water discharges and correct the discharge

*Activities to reach the Goal*

- Develop program goals and implementation strategies addressing the following categories if they are identified to be pollutant contributors to the Minnetonka Beach storm water system:
  - water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration (as defined at 40 CFR § 35.2005(b)(20)),

- uncontaminated pumped ground water,
- discharges from:
  - potable water sources
  - foundation drains
  - air conditioning condensation
  - irrigation water
  - springs
  - water from crawl space pumps
  - footing drains
  - lawn watering
  - individual residential car washing
  - flows from riparian habitats and Wetlands
  - dechlorinated swimming pool discharges
  - street wash water, discharges or flows, and
  - water from fire fighting activities
- Search for illicit discharge problems in the field
- Isolate and fix individual discharges

*Responsible Person:* The Mayor or the Mayor's designated representative

*Coordination with:* City Engineer, Public Works Director

*Schedule:* by June 2010

*Performance Measure:* fixed illicit discharges

3-d-1 Inform city employees, Lafayette Club, St Martin's Church, and the public in Minnetonka Beach of hazards associated with illegal discharges and improper disposal of waste.

*Strategic Goal:* Solicit the public and business help to eliminate illicit discharges

*Activities to reach the Goal*

- See education programs in this plan
- Publish an article in the Beachcomber and provide email address and a telephone number where illicit discharge can be reported.

*Responsible Person:* The Mayor or the Mayor's designated representative

*Coordination with:* MCWD and MPCA

*Schedule:* by June 2009

*Performance Measure:* reduction in illicit discharges

**Minimum Control Measure Four: Erosion Control**



**Policy:** Control temporary sources of sediment resulting from land disturbance and identify, minimize and correct the effects of sedimentation from erosion-prone and sediment source areas.

Erosion within Minnetonka Beach can result in sediment being transported to Lake Minnetonka, wetlands, and the city's storm water system, where it can degrade water quality, cause additional municipal costs and degrade habitat. Sediment accumulating in Minnetonka Beach's storm water system can reduce the storm water systems ability to convey storm water, while erosion can undermine its stability. Shoreline erosion on Lake Minnetonka is of special concern.

The key areas identified in this plan for conservation activities include construction sites, buffer zones adjacent to the storm water system including wetlands, erosion due to lake use and the steep bluff adjacent to Shoreline Drive (County Road 15) and adjacent to parts of the lakeshore.

In some cases, these buffer zones are riparian or flow-through wetlands, and those wetlands have been identified as key conservation areas. Where streams and channels flow through upland areas, conservation of native vegetation within these zones would also increase or maintain infiltration rates; decrease or maintain runoff rates and pollutant conveyance to water resources; and help minimize erosion. Restoration of lakeshore would have the same benefits. Identifying, addressing, and preventing erosion is necessary to meet MCWD goals as well as to meet state and federal non-degradation, water quality and biological integrity requirement.

Requiring new development and redevelopment to infiltrate some of the new storm water generated would reduce post-development volumes downstream and help reduce future erosion in streams and channels; minimize new pollutant loading that would have been conveyed by that storm water; and help maintain groundwater levels, preserving wetlands.

Limiting discharges from sub watersheds and basins that are currently landlocked is necessary to prevent further degradation of downstream water quality as well as to limit new volumes discharged to channels that are already experiencing erosion.

Strategies will focus on promoting shoreline restoration with native vegetation and identifying erosion problems on an ongoing basis.

#### 4-a-1 Construction site storm water runoff control ordinance.

*Strategic Goal:* Eliminate pollution from construction sites

*Activities to reach the Goal*

- The City enforces the existing Erosion Control Ordinance(Exhibit F) meeting the minimum control measure requirements including:
  - An ordinance to require erosion and sediment controls, as well as sanctions to ensure compliance, to the extent allowable under law
  - Requirements for construction site operators to implement appropriate erosion and sediment control Best Management Practices
  - Requirements for construction site operators to control waste, such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality
  - Procedures for site plan review which incorporate consideration of potential water quality impacts
  - Procedures for receipt and consideration of reports of noncompliance or other information on construction related issues submitted by the public; and
  - Procedures for site inspection and enforcement of control measures.
  
- Create drawings showing allowed BMP for construction site storm water run off control for contractors, engineers, surveyors and architects doing business in Minnetonka Beach.

*Responsible Person:* Planning and Zoning Administrator

*Schedule:* by June 2007

*Performance Measure:* Completed drawings, ordinance enforced

#### 4-b1 Construction site Implementation of Erosion and Sediment Control

*Strategic Goal:* Enforcement of the Erosion Control Ordinance

*Activities to Achieve the Goal:*

- Require a pre-construction meeting for all building permits where land disturbance is a possibility;
- Provide BMP briefings to each contractor with required BMP criteria for erosion control tailored to the site;
- Require BMPs be in place before construction or demolition occurs;

*Responsible Person:* Planning and Zoning Administrator

*Schedule:* by June 2007

*Performance Measure:* All steps above have been carried out and documented.

#### 4-c-1 Waste Controls for Construction Site Operators

*Strategic Goal:* Enforce existing City's nuisance ordinance requiring waste control

*Activities to reach the Goal:*

- Require a pre-construction meeting for all building permits;
- Provide BMP briefings to each contractor with required BMP criteria for Waste control tailored to the site;
- Require BMPs be in place before construction or demolition occurs;

*Responsible Person:* Planning and Zoning Administrator

*Schedule:* by June 2007

*Performance Measure:* All steps above have been carried out and documented.

#### 4-d-1 Procedure for Site Plan Review

*Strategic Goal:* To provide that all required site plans show the appropriate BMP on the plan and are made part of the building permit approval.

*Activities to reach the Goal:*

- Publish existing site plan review procedure including the requirement for erosion control and waste controls BMP;
- Distribute site plan review procedures to contractors and other building professionals;
- Post site plan review procedures on the city web site;
- Require that four site plans copies be included with each land development and building permit application;
- Accept site plans for review only if they contain all appropriate BMP, grading plan and impervious surface calculations;
- Notify applicant within 15 days if the site plan is complete or if incomplete, provide a written record of the reasons that it is incomplete
- Review all site plans within 30 day once they are complete;
- Approved or reject each site plan in writing;
- Review the site plan and the BMP at the required pre-construction meeting.
- Make the site plan a part of the building permit and, if applicable, part of the performance agreement required by the City.

*Responsible Person:* Planning and Zoning Administrator

*In coordination with:* City Administrator

*Schedule:* by June 2007

*Performance Measure:* All steps above have been carried out and documented.

#### 4-e-1 Procedures for the Receipt and Consideration of Reports of Storm Water Noncompliance

*Strategic Goal:* Erosion control ordinance enforcement

*Activities to reach the Goal:*

- Publish noncompliance procedures
- Distribute noncompliance procedures to contractors and other building professionals
- Post site noncompliance procedures on the city web site
- If a noncompliance is reported or is discovered at an inspection, notify the contractor, property owner and MCWD verbally or by email
- If the noncompliance is not corrected within one day, issue a letter of non compliance and a notification of default as required by the performance agreement if applicable
- Send letters by certified mail and by regular mail and circulated to the property owner and MCWD
- If the noncompliance constitutes an emergency compliance is required immediately
- If the noncompliance is not an emergency five business days will be allowed for the noncompliance to be resolved
- If the noncompliance is not resolved in the allotted time, stop all construction work on the site until the noncompliance is corrected
- If the noncompliance is not corrected with in ten business days, enter the site and make the correction(s) charging all costs to the property owner and contractor

*Responsible Person:* Planning and Zoning Administrator

*In coordination with:* private contractor for city corrections

*Schedule:* by June 2007, on going

*Performance Measure:* All steps above have been carried out and documented.

#### 4-f-1 Procedures for Site Inspection

*Strategic Goal:* Erosion control ordinance enforcement

*Activities to reach the Goal:*

- Publish site inspection procedures
- Distribute site inspection procedures to contractors and other building professionals
- Post site inspection procedures on the city web site
- Review inspection procedures at the preconstruction meeting

- Inspect each site for the proper installation of the required BMP
- Inspect the site at least monthly to confirm that the BMP remain in place and have not been altered
- Prepare inspection reports to distribute to MCWD, property owner and contractor for inclusion in the annual report

*Responsible Person:* Planning and Zoning Administrator

*Schedule:* by June 2007, on going

*Performance Measure:* All steps above have been carried out and documented.

### Lake Shore Erosion

*Strategic Goal:* Reduce erosion of the lakeshore by wake action from boat use.

*Activities to reach the Goal:*

- Amend the current erosion control ordinance requiring rip rap on all shorelines
- Preserve the natural appearance of shoreline areas and minimize degradation of surface water quality that can result from dredging operations

*Responsible Person:* Planning and Zoning Administrator

*Schedule:* by June 2008

*Performance Measure:* Amended Erosion Control Ordinance, Enforce existing tree and shrub preservation ordinance (Exhibit F)

### Lake and Wetland Buffering

*Strategic Goal:* Increase or maintain infiltration rates; decrease or maintain runoff rates and pollutant conveyance to Lake Minnetonka

*Activities to reach the Goal:*

- With MCWD, create an educational program for lakeshore owners stressing the importance of creating a vegetation buffer along the lake shore.
- Include the Lakeshore Education program in Minimum Control Measure number One above.
- Create an ordinance requiring filtering type vegetative buffering along the lakeshore for all new construction.

*Responsible Person:* The Mayor or the Mayor's designated representative,  
Planning and Zoning Administrator

*Schedule:* June 2009

*Performance Measure:* Education program and new ordinance

#### Bluff and Steep Bank Erosion

*Strategic Goal:* Prevent erosion on bluffs and step banks<sup>9</sup> to protect property and to prevent pollutant conveyance to Lake Minnetonka

*Activities to reach the Goal:*

- Enforce current ordinances that maintains vegetation on the existing bluffs and banks(Exhibit F)

*Responsible Person:* Planning and Zoning Administrator

*Schedule:* June 2007, on going

*Performance Measure:* Vegetated bluffs and banks

#### **Minimum Control Measure Five: Post-construction Storm Water management in New Development and Redevelopment**

This minimum control measure applies to post-construction sites including public sites that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale that discharge into Minnetonka Beach's storm water system or Lake Minnetonka.

Development and the associated creation of new impervious surface increase the volume of storm water runoff. The new runoff volume can convey more pollutants to receiving waters and may increase erosion and sediment transport, negatively affecting water quality. Development also decreases the amount of storm water that naturally percolates into the soil to recharge groundwater, thus reducing base flow in streams, changing hydrology in groundwater fed wetlands, and decreasing water availability in drinking water aquifers.

**Policy:** Minimize amount of storm water that leaves a site after construction while filtering pollutants from the storm water.

#### **5-a-1 Abstraction/Filtration (Structural and non-Structural BMP).**

*Strategic Goal:* Require abstraction and filtration of surface water from new development or redevelopment, including public improvement projects by the City or any other governmental agency working in the City, for the purposes of improving water quality and increasing groundwater recharge in the community.

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<sup>9</sup> Step banks are slopes of 12% or greater

*Activities to reach the Goal:*

- Develop a program of storm water abstraction of storm water (retained on site through infiltration, evapotranspiration, or capture and reuse) to reduce the amount of runoff from the site conveying pollutants. The most common type of abstraction, infiltration, reduces runoff, which helps recharge groundwater.
- Develop a program of filtration that offers an opportunity to use soil to naturally cleanse storm water prior to discharge. Increased infiltration and filtration in the Lake Minnetonka subwatershed is desirable for three primary reasons: 1) to recharge groundwater inputs and reduce pollutant loading into Lake Minnetonka; 2) to help prevent localized flooding in landlocked basins with no natural outlet; and 3) to protect the hydrology of the large discharge (groundwater-fed) wetlands in the subwatershed. Many of those wetlands are key resources with high ecological values that are dependant on groundwater to maintain those functions and values.
- Develop the abstraction and filtration program with a volume management standard for new development and redevelopment that requires the abstraction of one inch of rainfall.
- Adopt model ordinance provided by MCWD on abstraction and filtration
- Develop a program for adequate long-term operation and maintenance of BMPs installed as a result of these requirements.

*Responsible Person:* Planning and Zoning Administrator

*Schedule:* June 2007

*Performance Measure:* Written Abstraction and Filtration program and adopted ordinance

5-b-1 Regulatory Method for Post Construction Run Off (Abstraction and Filtration)

*Strategic Goal:* To prevent post construction run off from polluting Lake Minnetonka, damaging the city storm water system or damaging adjoining property.

*Activities to reach the Goal:*

- Review model ordinance to be prepared by MCWD
- Make modifications to make it applicable to Minnetonka Beach
- Adopt an abstraction and filtration (post construction runoff) ordinance for public improvement projects, new development and redevelopment of one or more acres in area for review by MCWD.

*Responsible Person:* Planning and Zoning Administrator

*Schedule:* June 2007

*Performance Measure:* Written abstraction and filtration program and adopted ordinance

#### 5-c-1 Long Term Operation and Maintenance

*Strategic Goal:* To insure the proper operation and maintenance of abstraction and filtration BMP devices on private property.

*Activities to reach the Goal:*

- Obtain public easements over the required abstraction or filtration BMP devices including access easement to the BMP devices from a public road
- As part of the performance agreement require annual inspections for 5 years by a certified professional of the BMP devices and a report as to its operation and maintenance submitted to the city administrator
- As part of the performance agreement after the first 5 years, require 5 year reports by a certified professional of the BMP devices and a report as to its operation and maintenance submitted to the city administrator
- If the report indicates that the BMP abstraction or filtration device needs repair or is not performing as per the published performance standard for an abstraction or filtration device notify the property owner of a noncompliance and follow the noncompliance procedure weather permitting.

*Responsible Person:* Planning and Zoning Administrator

*Schedule:* June 2009

*Performance Measure:* Written abstraction and filtration maintenance program and adopted ordinance

#### Soil Stabilization and Ground Cover

*Strategic Goal:* Stabilize all soil before the removal of erosion control devices

*Activities to reach the Goal:*

- Amend the erosion control ordinance to requires, seeding with one inch of growth, ground mats or sod be installed before the erosion control devices are removed.

*Responsible Person:* Planning and Zoning Administrator

*Schedule:* June 2007

*Performance Measure:* Erosion control ordinance amendment



**Minimum Control Measure Six: Pollution prevention/good housekeeping for municipal operations**

**Policy:** To operate the storm water system in such away as to reduce pollutant discharges to Lake Minnetonka.

**6-a-1 Prepare an Operations Program**

*Strategic Goal:* To prevent or reduce pollutant runoff from the storm water system operations.

*Activities to reach the Goal:*

- Develop a written maintenance program that includes:
  - Employee training to prevent and reduce storm water pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance
  - Uses approved BMP that will reduce the discharge of pollutants to the maximum extent practicable
  - Provide a schedule of annual pollution control device inspections
  - Develop a process for annual funding of maintenance and repair needs before December of each year. Repairs not made need to be included in the annual report.
  - Develop an inspection report form and keep records of all inspections

*Responsible Person:* The Mayor or the Mayor's designated representative and Save the Lake Task Force

*Consultation:* Public Works Director

*Schedule:* June 2008

*Performance Measure:* Operations Plan

**6-a-2 Street Sweeping**

*Strategic Goal:* Reduce pollution entering the city storm water system

*Activities to reach the goal:*

- Street sweep once per year in the spring and continue the City leaf and brush pick up twice each year;
- Prepare an annual report as to street sweeping dates and the amount of material removed;
- Make the street sweeping report part of the annual report.

*Responsible Person:* Public Works Director

*Schedule:* June 2007

*Performance Measure:* written report to be included in the annual report

Operate and maintain Storm Water system in a manner so as to reduce the discharge of pollutants to the maximum extent practicable.

*Strategic Goal:* to reduce pollution to Lake Minnetonka

*Activity to reach the Goal:*

Operate and maintain the system as provided in the operations and maintenance plan

*Responsible Person:* Public Works Director

*Schedule:* On going

*Performance Measure:* Reduction of pollutants to Lake Minnetonka as part of the performance standard required by MCWD

6-b-2 Inspect annually all structural pollution control devices, such as trap manholes, sumps, floatable skimmers and traps, separators, ponds, bio retention basins and other small settling or filtering devices.

*Strategic Goal:* to reduce pollution to Lake Minnetonka

*Activities to reach the Goal:*

- Inspect all devices annually
- Provide a written inspection report on each device
- Summarize the results of all inspections in the annual report.
- Keep records on the dates of inspection and responses to the inspections, including the date of completion of repairs and major additional protection measures.

*Responsible Person:* Public Works Director

*Schedule:* June 2008, on going

*Performance Measure:* Reduction of pollutants to Lake Minnetonka as part of the performance standard required by MCWD

6-b-4 Inspect all exposed stockpile, compost piles, storage and material handling areas

*Strategic Goal:* to reduce pollution to Lake Minnetonka

*Activities to reach the Goal:*

- Inspect all stockpiles, compost piles, storage and material handling areas annually
- Provide a written inspection report on each
- Keep records on the dates of inspection and responses to the inspections, including the date of completion of repairs and major additional protection measures
- Make the report part of the annual report

*Responsible Person:* Public Works Director

*Schedule:* June 2008, on going

*Performance Measure:* Reduction of pollutants to Lake Minnetonka as part of the performance standard required by MCWD

6-b-5 Based on the inspection, determine if repair, replacement, or maintenance measures are necessary for proper operation, and to prevent environmental impacts such as erosion or runoff of pollutant from the stock and compost piles and from the storage and material handling areas .

*Strategic Goal:* to reduce pollution to Lake Minnetonka

*Activities to reach the Goal:*

- Provide a written repair and maintenance report on each device
- The necessary measures shall be completed as soon as possible, usually during the same year as the inspection. When this is not practicable, the reasons and a schedule for completion shall be submitted in the annual report.
- Make the report part of the annual report

*Responsible Person:* Public Works Director

*Schedule:* June 2008, on going

*Performance Measure:* Reduction of pollutants to Lake Minnetonka as part of the performance standard required by MCWD

6-b-6 Keep records of inspection results,

*Strategic Goal:* to reduce pollution to Lake Minnetonka

*Activities to reach the Goal:*

- Records shall include weather conditions, sediment storage and capacity remaining, and any maintenance performed or recommended,
- If maintenance or sediment removal is required as a result of each of the first two annual inspections, the frequency of inspection shall be increased to at least two (2) times annually, or more frequently as needed to prevent carryover or washout of pollutants from the structures and maximize pollutant removal. If maintenance or sediment removal is not required as a result of both of the first two (2) annual inspections, the frequency may be reduced to once every two (2) years.

*Responsible Person:* Public Works Director

*Schedule:* June 2007, on going

*Performance Measure:* Reduction of pollutants to Lake Minnetonka as part of the performance standard required by MCWD

#### 6-b-7 Evaluation of Inspection Frequency and Effectiveness

*Strategic Goal:* monitor the City's storm water system as to its effectiveness in removing pollutants

*Activities to reach the Goal:*

- Establish an agreement with MCWD to monitor out flows from the City's storm water system;
- Work with MCWD to evaluate inspection effectiveness;
- Make correction as recommended by MCWD.

*Responsible Person:* The Mayor or the Mayor's designated representative

*Schedule:* First monitoring in 2010 and every 5 years thereafter

*Performance Measure:* Reduction of pollutants to Lake Minnetonka as part of the performance standard required by MCWD

#### **Minimum Control Measure Seven: Improvements to the Existing Storm Water System**

**Policy:** To reduce pollutants being carried by the existing storm water system to Lake Minnetonka.

#### Abstraction/Filtration.

*Strategic Goals:*

- To remove 13 pounds of phosphorous per year from the City's storm water discharge.
- Promote abstraction and filtration of surface water from existing storm water system for the purposes of improving water quality and increasing groundwater recharge in the community.

*Activities to reach the Goal:*

- Continue filtration program begun in 2003
- Work to date includes the installation of “sump catch basins” close to the discharge point on three city storm sewer lines:
  - Cross Point Road Fire Lane ,
  - Lake Road Fire Lane and
  - Huntington Point Road West Fire Lane
- Create Best Management Practices (BMP)<sup>10</sup> abstraction and filtration devices at the following discharge points to Lake Minnetonka:
  - Four (4) BMP Abstraction and filtration devices adjacent to Northview Road between Cottage Lane and the west city limits in conjunction with the construction of regional trail as a requirement imposed on the Three Rivers Park District, Trail Developer, by the City (estimated time frame by 2008);
  - Three (3) BMP Abstraction and filtration devices adjacent Arcola Lane between the private road and County Road 15 in conjunction with the construction of regional trail as a requirement imposed on the Three Rivers Park District, Trail Developer, by the city (estimated time frame by 2008);
  - Three (3) BMP Abstraction and filtration devices adjacent to County Road 15 in conjunction with the maintenance of County Road 15 as a requirement imposed on the County, by the city (estimated time frame by 2010);
  - Three (3) BMP Abstraction and filtration devices in the Beach Park along with park improvements(estimated time frame by 2009);
  - One BMP Abstraction and filtration device in Arcola Woods,
  - One BMP Abstraction and Filtration device in Lafayette Park
  - One Abstraction and Filtration device in Ray Peters Park in conjunction with park improvements(estimated time frame 2011);
  - Three (3) BMP Abstraction and filtration devices in conjunction with water improvements along Lafayette Road (estimated time frame 2009);
  - One BMP Abstraction and filtration devices at the discharge point from Lafayette Ridge Road to the wetland (no time frame)

*Responsible Person:* The Mayor or the Mayor’s designated representative

*In Consultation with:* Public Works Director, City Engineer, Hennepin County, Three Rivers Park District

*Performance Measure:* Construction of BMP devices and removal of 13 pounds of phosphorous per year as required by MCWD

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<sup>10</sup> See Exhibit G for a list of the filtration and absorption BMPs

Replacement existing or non functional storm water systems

*Strategic Goal:* To prevent flooding and to filter pollutants.

The following activities may be financed by private individuals with the improvements turned over to the City, may be special assessed to the benefited property or may be financed by the City at the City Council discretion

*Activities to reach the Goal:*

- In conjunction with new development design a new storm water system in the vicinity of Brooks lane to drain the existing flood prone basin
- Required construction of new storm water system including a filtering and volume control system Brooks Lane to the County System in County Road 15
- In conjunction with new development or rehabilitation of the existing residence, replace the existing private storm water system on Lafayette Road with a new system having filtering and volume control

*Responsible Person:* Planning and Zoning Administrator

*Consulting with:* Public Works Director and City Engineer

*Estimated Schedule:* September 2011

*Performance Measure:* New systems installed

Additions to the existing Storm Water System - New Systems

*Strategic Goal:* To prevent flooding and to filter pollutants.

The following activities may be financed by private individuals with the improvements turned over to the City, may be special assessed to the benefited property or may be financed by the City at the City Council discretion

*Activities to reach the Goal:*

- Design a new storm water system in the vicinity of Brooks lane
- Construct new storm water system including a filtering and volume control system Brooks Lane to the County System in County Road 15

*Responsible Person:* Mayor or Mayor's designate

*Consulting with:* Public Works Director, City Engineer

*Schedule:* September 2011

*Performance Measure:* New systems installed

**Minimum Control Measure Eight: Other Requirements - Safe Drinking Water and Well Head Protection**

**Policy:** To meet the requirements of the MCWD and Metropolitan Council relative to the Safe Drinking Act and Well Head Protection

**Strategic Goal:** To fulfill Minnesota statute Section 473.859 Subd. 3, which require cities with municipal water supply system to develop a water supply emergency and conservation plan.

*Activities to Reach the Goal:*

- Use the 2004 Emergency Plan, which provides actions to be taken, and responsibilities should the municipal water system not function or the system becomes contaminated.
- Use the 2004 Water Conservation Plan which:
  - Is intended to reduce the demand for water
  - Is intended to improve the efficiency of water use and reduce the loss and waste of water through short and long term conservation measures,
  - Allows for maintenance and repair of the water system as required. (See Exhibit H for Water Use Tables and Emergency Statement)
- Prepare a well head protection Plan as required by the Minnesota Department of Health.
  - Adopt State required well head protection measures including:
    - Require that abandoned wells be capped
    - Specify of the role of the well head protection manager
    - Define the hydro geological parameters of the well head protection area which is 200 feet from each well
    - Delineate the area that contributes water to the wells and encourage the jurisdiction to take measures to protect the community water supply
    - Identify potential and existing sources of contamination and remove them as appropriate
    - Develop management approaches that focus on top priority sources of potential contamination and develop ways to effectively control their spread or prevent their impact
    - Make contingency Plans identifying actions to be taken should an emergency threaten the water supply
- To maintain water pressure, maintain tanks at acceptable minimum levels, good ending levels and proper operating times, and avoid excessive head losses.
- To provide adequate water design flows to all parts of the community.
  - Make water main improvements as per the 1997 Distribution Plan as modified including:
    - Water main replacement on the west side to replace pipe that is failing. Total replacement should occur when streets are reconstructed.

- Water main replacement and new mains on the east side to improve design flows
- A 10 inch main to Lafayette Club to improve fire protection and design flows
- Looping water mains to improve reliability, water quality, and enhance fire protection. These improvements should be accomplished as streets are redone.
- Replace existing 4 inch pipe with at least 6 inch pipe.
- Evaluate annual residential per person water supply demand as a basis for lowering water use through a conservation program.
- Track unaccounted for water volume usage

*Responsible Person:* Public Works Director

*Consulting with:* City Engineer

*Schedule:* June 2009

Preliminary Plat referral to MCWD

*Strategic Goal:* Minnetonka Beach will refer all preliminary plats and applications for variances, building permits and conditional use permits to the MCWD as LGU for Minnetonka Beach.

*Activities to reach the Goal:*

- Prepare an amendment to the Subdivision ordinance requiring that all preliminary plats and final plats be submitted to the MCWD as required
- Planning Commission recommendation on the ordinance amendment
- City Council adoption of the ordinance amendment
- Continue to make variance, conditional use permit and building permit referrals to MCWD

*Responsible Person:* Planning and Zoning Administrator

*Schedule:* June 2007

**Evaluating, Recordkeeping and Reporting**

**Policy:** It is the policy of Minnetonka Beach to fulfill the MPCA and MCWD reporting requirements

Evaluation and Assessment

The Annual Report will be submitted to the MPCA and MCWD by June 30 of each year. The Annual report will contain:

- An evaluation of program compliance
- the appropriateness of Minnetonka Beach's identified Best Management Practices, and progress towards achieving Minnetonka Beach's identified measurable goals
- Maintenance and Inspection reports as required by this plan



- Assessment based on results of information collected and analyzed, including monitoring, if any, inspection findings, and public input received during the reporting period
- The storm water activities planned during the next reporting cycle
- A change in any identified Best Management Practices or measurable goals for any of the minimum control measures
- A statement that Minnetonka Beach is relying on another entity to satisfy some of Minnetonka Beach’s permit obligations (if applicable), and what agreements Minnetonka Beach has entered into in support of this effort

Recordkeeping

- Minnetonka Beach will keep records required by the NPDES MS4 permit for at least three (3) years beyond the term of the permit and will submit the records to the MPCA Commissioner only if specifically asked to do so.
- Minnetonka Beach will submit the annual report to the MPCA and MCWD annually.

Public Availability

Minnetonka Beach will make all records, including your Storm Water Pollution Prevention Program, available to the public at reasonable times during regular business hours and assessing a reasonable charge for copying.

Reporting Submittals

The applications, annual reports, Storm Water Pollution Prevention Program, and other submittals required by this permit shall be submitted to:

Storm Water Management Unit  
 Storm Water Section  
 Municipal Division  
 Minnesota Pollution Control Agency  
 520 Lafayette Road North  
 St. Paul, MN 55155-4194

Water Quality Management Plan Reports are to be submitted annually to:  
 Minnehaha Creek Watershed District  
 18202 Minnetonka Blvd. Deephaven, MN 55391

**Exhibit A Background**

**Size, Characteristics, Organizational Characteristic and Land Use of Minnetonka Beach**

The Metropolitan Council has classified Minnetonka Beach as a “Developed Community”. The Community has a population of 614 people with 215 households.<sup>11</sup> As a developed community, the primary type of building activity has been redevelopment and remodeling of existing homes, additions to the Lafayette Club, Club House and additions to St. Martins Church. Although the number of dwelling units is not increasing, the size of the homes is increasing.

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<sup>11</sup> 2000 Census

Along with part of Orono and Spring Park, Minnetonka Beach occupies the largest island in Lake Minnetonka. Minnetonka Beach's dominant feature is Lake Minnetonka. Six hundred and eighty-six acres of this large lake are in the City's limits. The lake surrounds the community on three sides and the majority of homes have public or private access to the lake.

As it is for most communities, Minnetonka Beach's dominant land use is residential. Residential land uses occupy 60% of the city's land area. There is no commercial or industrial land use in the city. However, there is a neighborhood shopping center near the edge of the community in the Navarre area of Orono. This full line neighborhood shopping area provides convenient goods and services to the area. Although there are no employment areas in Minnetonka Beach, several employment centers are located nearby in Mound, Spring Park, Chanhassen, Minnetonka, Plymouth and Wayzata<sup>12</sup>. These communities provide access to a number of job opportunities. The policy of the community is to allow "cottage occupations" in the single family homes as long as they do not detract but enhance the residential environment.

The large private use is the Lafayette Country Club. This historic club occupies about 22 percent of the land area. The rest of the land area is made up of St. Martins Church, public facilities, parks, roads and a railway right -of-way.

The community contains a number of unique public facilities including a City Hall with historical characteristics, a US Post Office and a Library. The city operates the Library and Post Office. Along with the physical environment and an active Civic Committee these public places help create a strong sense of community.

As a Charter City (1889), a Mayor and four City Council members govern the Community. The Council hires a City Administrator, Clerk, Postal Clerk and Public Works Director as well as a number of seasonal employees. The City Attorney, Planning and Zoning Administrator, Auditor, and Prosecuting Attorney are consultants hired by the City Council. Municipalities are contracted to provide public safety services. The LGU<sup>13</sup> functions are carried out by MCWD.

The Council appoints several advisory boards including a planning commission, parks commission, long range planning commission, and utility commission. The Council provides liaison to each of these commissions as well as to the civic committee that functions as a social event organizer for the numerous community social events.

### **Existing and Projected Land Uses**

The following table shows the city's existing land use. Single-family residential land use occupies 19% of the city's land area. The current pattern is the result of

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<sup>12</sup> The Lafayette Country Club employs 180 people. St. Martins Church employs 6 people.

<sup>13</sup> LGU Local Governmental Unit is a term used in the Minnesota Wetland Conservation Act

its historic development as a lakeshore community that was once a resort destination, with narrow street right of ways, and 30 acres of wetlands and parks.

LAND USE	Existing Acres	%	2020 Acres	%
<b>Total Land within Urban Service Area</b>				
Single-Family Residential within MUSA	195	19%	202	19%
Multiple-family Residential within MUSA	0	0%	0	0%
Golf Course and Club	63	6%	63	6%
Commercial	0	0%	0	0%
Industrial	0	0%	0	0%
Open Water	686	68%	686	68%
Parks and Recreation	20	2%	20	2%
<b>Subtotal – Developed</b>	<b>964</b>	<b>96%</b>	<b>971</b>	<b>96%</b>
<b>Vacant Land within Urban Service Area</b>				
Vacant Single-Family Residential within MUSA	7	1%	0	1%
Vacant Multiple-family Residential within MUSA	0	0%	0	0%
<b>Subtotal – Vacant</b>	<b>7</b>	<b>1%</b>	<b>0</b>	<b>1%</b>
<b>Restricted Land within Urban Service Area</b>				
Environmental Protection Wetlands	10	1%	10	1%
Public/semi public use: (right of ways, utility easements etc.)	20	2%	20	2%
Historic Preservation/Church	11	1%	11	1%
<b>Subtotal – Restricted Land</b>	<b>42</b>	<b>4%</b>	<b>42</b>	<b>4%</b>
Total Land	1,013		1,013	





### **Current ability to finance storm water programs**

The city has the ability to issue general obligation bonds, special assessment bonds and use its general tax levy to finance storm water programs. It can also obtain grants from the MPCA, BWSR and MCWD for storm water improvements. It is negotiating a joint agreement with MCWD to implement the educational and monitoring portions of this plan. The City has a general obligation bond capacity of about \$2.9 million. The City has used \$1.4 Million of that capacity and has plans to use about \$1.0 million for needed water improvements. For this reason, the use of general obligation bonds for storm water improvements is limited.

### **Capacity to perform operations and maintenance**

The public works department has one full time employee and two seasonal employees. The department is responsible for all municipal infrastructure as well as the public parks.

### **Water Quality Context**

Recognizing that the lake and its tributaries are the key natural resource in the City, the purpose of the Water Quality Management Plan is to improve the quality of Lake Minnetonka and to sustain the wetlands in the community.

### **Water Resource Management Related Agreements**

There are no joint power agreements between the City and any other unit of local government concerning water resource management. The City is in the Minnehaha Creek Watershed District (MCWD) and the Lake Minnetonka Conservation District. The MCWD is the LGU for the City.

### **Inventory of Water and Land Resources**

#### Climate:

The climate is predominately continental. Sitting close to the middle of North America, the weather in Minnetonka Beach can vary widely and rapidly. Both temperature and precipitation can change abruptly. Minnetonka Beach's climate is shaped by two well-defined systems. Strong southerly winds from the Gulf of Mexico are the main source of moisture. A diffuse secondary system from the Pacific Ocean also adds to annual rain and snowfall. Air masses carrying the moisture that eventually falls in the community may travel nearly 1,500 miles. A minor change in the wind system can result in the community getting well above or below normal annual amounts of rain or snow.

Minnetonka Beach's seasons generally vary along continental patterns. Spring, summer and fall are normally very pleasant (see table below for historic temperature data). The community's sub-humid summers have ample rain for garden and farm crops. Long spells of hot and humid weather do not visit the area very often. The area's 160-day growing season allows most Zone 4 or better crops to mature before the autumn freeze.

The following table provides an indication of the temperature ranges in degrees of Fahrenheit.

**Minneapolis/St. Paul**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Maximum	21.9	28.4	40.6	57.0	70.1	79.0	83.3	80.4	71.1	58.4	40.1	26.4	54.7
Minimum	4.3	11.8	23.5	36.2	48.5	57.8	63.0	60.8	50.8	38.9	24.8	10.9	35.9
Mean	13.1	20.1	32.1	46.6	59.3	68.4	73.2	70.6	61.0	48.7	32.5	18.7	45.

Precipitation:

The following is the precipitation measured at the Crystal Bay Station from 1996 to 2006.<sup>14</sup>

Year	Total Perception in Inches	Year	Total Perception in Inches
1996	27.61	2002	34.02
1997	28.57	2003	21.41
1998	27.82	2004	29.0
1999	32.08	2005	37.66
2001	34.33	9Yr. Average	30.28

The average annual precipitation for the nine years is 30.28 inches.

The annual lake evaporation is 30.5 inches. This exceeds the average annual precipitation by .22 inches.<sup>15</sup>

Geologic, Soil and Topographic data:

The community is under laid with Glacial Drift from about 600 feet MSL<sup>16</sup> to the about 960 feet MSL. Below the glacial drift is a shallow layer of Shakopee Oneota Dolomite and below the Dolomite is a shallow layer of Jordan Sandstone. The City's two wells draw water from the Jordan Sand Stone Aquifer. The Community is on the outer edge of the Twin City Artesian Basin.<sup>17</sup>

The glacial drift consists of Lonsdale-Lerdal Glacial till. This till pattern exhibits level top hills with smooth side slopes averaging 2 and 3 percent. Water tables are generally 2 to 12 feet of the surface. The top soils in the area are Loamy over Loam well drained light colored soils.<sup>18</sup> Most of the soils exhibit moderate infiltration characteristics. However,

<sup>14</sup> University of Minnesota Web Page [www.climate.umn.edu/hidradius/radius.asp](http://www.climate.umn.edu/hidradius/radius.asp),

<sup>15</sup> Water Resource Management Plan 1997 MCWD (Table II-3 and Page 16)

<sup>16</sup> Mean Sea Level

<sup>17</sup> The artisan basin consists of a number of aquifers depressed in a basin towards the Mississippi River Valley. Most of the communities in the Twin Cities area draw water from the basin

<sup>18</sup> Loamy Soils in this group are moderately susceptible to erosion

limited areas of soils in the eastern part of the community have a high infiltration characteristic (See maps Appendix D).

USGS<sup>19</sup> indicates that the highest elevation is about 960 feet MSL with the lowest elevation being the OHWL<sup>20</sup> 929.4 feet MSL. The community's gently rolling hills are interrupted by a valley in the eastern part of the City and by lakeshore steep bluffs adjacent to part of Lafayette Bay, part of the Lower Lake and part of Crystal Bay.

Sub watersheds and Wetlands:

The community is within the MCWD Lake Minnetonka Sub watershed. The watersheds within the community include the Lafayette Bay Sub watershed, the Crystal Bay Sub watershed and the Lower Lake- Smiths Bay Sub watershed. The Wetland designated by the Department of Natural Resources is 912W. This is also the only wetland that shows on the "National Inventory". This wetland is located in the western part of the City. There is a non-designated wet area near Brooks Lane. This area was classified by MCWD as an "incidental wetland". A subwatershed map is included in Appendix D.

The Comprehensive Plan's, Land Use Plan shows the public waters including the wetlands. There are 686 acres of Lake Minnetonka and 3.5 acres of protected wetlands within the City's Limits. It is the City Policy to sustain each of the wetlands in the community equally so an inventory of functional value is not necessary at this time. There are no dams or control structures in the community.

Lake Minnetonka Major Hydrological Characteristics:

The major hydrological characteristics of the Lake within the City Limits are<sup>21</sup>:

Use of the resource

Type of Lake (DNR)	- Fishing
Other uses	- swimming, boating, and irrigation
Ecological Classification	- Centrarchid-Walleye
Management Classification	- Centrarchid-Walleye
Shoreline Management	- General Development (DNR 133-P)
Size	- 686 Acres
Maximum Depth	- 60 ft Crystal Bay, Lower Lake 113 ft, Lafayette Bay 50 ft <sup>22</sup>
Median Depth	- 30 feet
Shoreline Length	- NA
Inlets	- None
Outlets	- None
Outlet Structures	- None
OHWL	- 929.4
Water Quality Lower Lake <sup>23</sup>	- 1999 A- and 1998 A
Water Quality Crystal Bay	- 2000 A-, 1999 C+ and 1998 B+
Water Quality Lafayette Bay	-1999 A- and 1998 A-

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<sup>19</sup> United State Geological Survey, Excelsior Quadrangle

<sup>20</sup> Ordinary High Water Level is the Lake level established by the Minnesota Department of Natural Resources for Lake Minnetonka.

<sup>21</sup> Water Resource Management Plan 1997, MCWD; Annual Water Quality Tests, MCWD

<sup>22</sup> MCWD, Depths are within City Limits. Lower Lake is 100 feet near Brackets Point

<sup>23</sup> MCWD, Reports are attached to this document

### **Public Waters**

The State has classified Lake Minnetonka and Wetland E001 912W) as public waters. Besides the Watershed District, the use of these waters is regulated by the Minnesota Department of Natural Resources, the United States Army Corps of Engineers and, except for the wetland, the Lake Minnetonka Conservation District.

### **Storm Sewer System:**

The Minnetonka Beach storm water system is defined as drainage areas and the volumes, rates, and paths of storm water runoff, are shown on the attached map. This storm water system map that shows ponds, streams, lakes and wetlands that structural pollution control devices, pipes and pipe sizes and other conveyances system, outfalls and all other points of discharge.

There are six natural storm water basins in Minnetonka Beach. These are:

- The flood prone area adjacent to Brooks Lane
- The Wetlands adjacent to County Road 15 and adjacent Old Beach Road
- Lafayette Park
- The flood prone area behind the homes at 2438 and 2442 Lafayette Road
- The area adjacent to Huntington Point Road West at 2325 Huntington Point Road West

There are also some basins created by the railroad grade adjacent to Northview Road. There is not any available data on the peak discharges from any of these basins or the other storm water discharge points. Included below along with the storm water system map is a description of the existing system in this fully developed community.

<b>Basins:</b>	<b>Outlet Pipe Size to Lake Minnetonka</b>
Two private ponds on the Lafayette Golf Course	Information is not available
The basin adjacent to Brooks Lane	No outlet. Previous private out let is not functional.
The Wetlands adjacent to County Road 15 and adjacent Old Beach Road	16 inch
Lafayette Park System	18 inch
The area behind the homes at 2438 and 2442 Lafayette Road	2 -8 inch Private Strom Sewers; one 8 inch pipe leads to a public sump CB with a public sewer to the lake. The other is private to the Lake.
The area adjacent to Huntington Point Road West at 2325 Huntington Pint Road West	8 inch



Direct Storm Water Discharge Points into Lake Minnetonka and wetland 912W, City of Minnetonka Beach System:

Location	Outlet Pipe Size to Lake
Lafayette Ridge Road	12 inches
Northview Rd. West	8 inches
Northview Rd. East	8 inches
Westwood Rd at Cty Rd. 15	8 inches
Woodbridge	8 inches
Lafayette Rd. North	8 inches
Lafayette Rd. East	6 inches
Lafayette Rd. South	8 inches
Cross Point Road	8 inches
Swimming Beach South	8 inches
Swimming Beach West	8 inches
Swimming Beach North	8 inches
Huntington Point Road East	2 -8 inch
Swimming Beach North	8 inches

Direct Storm Water Discharge Points to Lake Minnetonka, Hennepin County System:

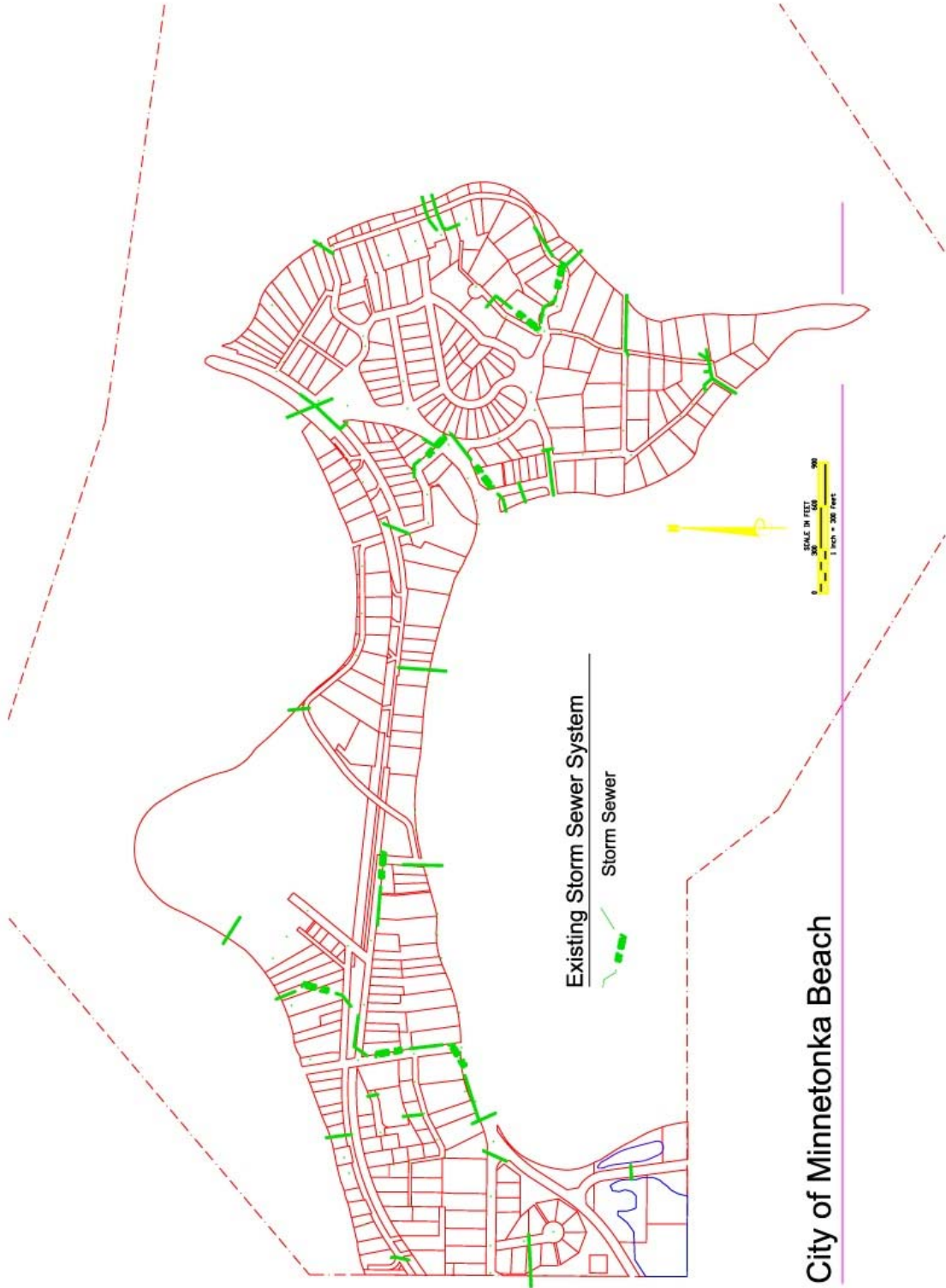
Location	Outlet Pipe Size to Lake
Cty Rd. 15 @ Old County Rd. East	10 inches
Cty Rd. 15 @ Old Country Rd. South	10 inches
Cty Rd. 15 @ Old Country Rd. West	10 inches

### Water Quality Improvements Structures

The City has or has caused to be added the following water quality structures to the storm water system:

- Bio retention basin adjacent to the St. Martin’s parking lot
- A bio retention basin at the on private property at the intersection of Huntington Point Road West and Huntington Point Road East
- A private sump catch basin between St. Martin’s parking lot and Westwood Road.
- A public sump catch basin in the Cross Point Road fire lane<sup>24</sup>
- A public sump catch basin in the Lake Road fire lane, and
- A public sump catch basin at the intersection of Hunting Point Road East and Huntington Point Road West.
- A public sump catch basin at the outlet to a private basin on Lafayette Road

<sup>24</sup> At fire lane is public unimproved right-of-way leading from an improved road to the lake. They are used for, among other things pedestrian access to the lake and the location of non-riparian docks



### Flooding:

There are no known flooding areas or areas identified in the HHPLS<sup>25</sup> where modeling predicts that public roads, private roads, or private drives might overtop during infrequent events. There are areas where the minimal two-foot freeboard above the flood level is not available. These areas are shown on the attached map and in the assessment section of the plan.

The 100-year flood<sup>26</sup> elevation of Lake Minnetonka is 931.5 feet MSL. All of the “inland” basins have a higher 100-year flood elevation. The basin at Brooks Lane has a flood elevation of 946 feet above MSL. However, there is not any existing data that indicates the flood elevation of the other existing basins.

The City does not allow development near these landlocked basins without a flood elevation study and then requires that the lowest level of the habitable structure be 2 feet above the 100-year flood and that the flood capacity volume is not decreased in the basin. During the 1987, 100 years plus event, flooding was reported in the following areas:

- The three flood prone areas adjacent to Brooks Lane
- The Wetlands adjacent to County Road 15 and adjacent Old Beach Road
- Lafayette Park
- The area behind the homes at 2438 and 2442 Lafayette Road
- The area adjacent to Huntington Point Road West at 2325 Huntington Point Road West.

Periodic flooding occurs in Layette Park, which has a slow outlet, 2325 Huntington Point Road, and the flood prone area at Brooks Lane, which does not have an outlet. Several improvements were made to the Brooks Lane flood prone area that have increased the no outlet holding capacity and have prepared the area with a new catch basin for eventual connection to Lake Minnetonka.

The FEMA<sup>27</sup> flood insurance maps do not have any flood plain areas located in the community except those associated with edge of Lake Minnetonka. Areas prone to flooding are indicated on the attached map. The City has adopted a flood hazard ordinance, which was approved by the Minnesota Department of Natural Resources.

The FEMA has done extensive 100 year flood elevation modeling. This modeling can be used when designing storm water retention basins in the community.<sup>28</sup> FEMA Lake Minnetonka Regional Flood elevation is 931.5 MSL.

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<sup>25</sup> Hydraulic, Hydrologic, and Pollutant Loading Study prepared by MCWD

<sup>26</sup> 100-year flood means a one in 100-occurrence probability. The 1997 summer storm produced a 1 in 200-occurrence probability storm. Storm water pipes and catch basins are designed to 1 in 5 or 1 in 10 probability, storm water retention ponds are usually designed to a 1 in 100-probability storm.

<sup>27</sup> Federal Emergency Management Administration see Appendix D for FEMA Flood Maps.

<sup>28</sup> MCWD 1997 Plan Tables

Water Quality:

Although water quality in Crystal Bay showed marked improvement in 2000, water quality is generally better in the Lower Lake and in Lafayette Bay than in Crystal Bay. The water quality in Crystal Bay is probably diminished because of the flows from West Arm, North Arm and the Orono inlet from French Marsh. Each of these areas has lower water quality ratings<sup>29</sup>.

The Following Table indicates the phosphorous in each of the bays sounding Minnetonka Beach.

Bay	1997 Total Phosphorous Goal (_g/L)	HHPLS Total Phosphorous Goal (_g/L)	1997-2004 Average Total Phosphorous (_g/L)	Total Phosphorous (_g/L)	Chlorophyll-a (_g/L)	Secchi Disk (m)	Thropic State Index
Crystal	30	25-30	28	26	9	3.0	49
Lafayette	50	50	23	NA	NA	NA	NA
Smith	50	50	NA	NA	NA	NA	NA

Source MCWD Plan Feb 2007 secchi disk is a clarity measure

The lake is classified as a mesotrophic-eutrophic lake by the DNR. The water quality of the lake has generally improved. Improvements in water quality can be directly related to the discontinuation of municipal wastewater discharge into the lake.<sup>30</sup>

Although point source phosphorus loading<sup>31</sup> has decreased because of the discontinuance of municipal waste discharge into the lake,<sup>32</sup> non-point<sup>33</sup> phosphorous loading and export of it in the Lake has increase since 1970. Lake Minnetonka's total phosphorus loading is estimated at roughly 20,000 lbs per year. This is estimated to be 3 to 4 times the loading under natural conditions. A return to natural loading levels is unrealistic, but limitations of the future non-point source load increases and some reduction of current loadings are certainly possible.<sup>34</sup> The MCWD requires Minnetonka Beach to decrease its phosphorous load by 13 pounds annually.<sup>35</sup>

<sup>29</sup> MCWD Lake Grades Reports

<sup>30</sup> MCWD Water Resource Management Plan 1997Pages 75 to 100. "Data from the six monitoring station in Lake Minnetonka indicate that the Lake falls into the mesotrophic-eutrophic range of Trophic State Lake Classification. Eutrophic lakes characteristically have low transparency and high chlorophyll-a and phosphorus concentrations. At the other extreme lakes with the best overall water quality are the so, called oligotrophic lakes. Mesotrophic lakes are middle quality".

<sup>31</sup> Loading is the amount of a chemical or other substance entering a body of water over a period of time

<sup>32</sup> An estimated decrease of 50,000 lbs./yr. Page 82 MCWD Plan.

<sup>33</sup> Non-point is a term used to indicate that the source of pollution is general and not from a single source. Example of non-point would be polluted storm water run off. The pollution comes from leaves, road salt and sand, vehicle spills and lawn fertilizers just to name a few.

<sup>34</sup> MCWD 1997 Plan Pages 81, 82

<sup>35</sup> MCWD Feb 2007 Plan

### Impaired Waters

The federal Clean Water Act requires states to adopt water quality standards to protect the nation's waters. These standards define how much of a pollutant can be in a surface and/or ground water while still allowing it to meet its designated uses, such as for drinking water, fishing, swimming, irrigation or industrial purposes. The Clean Water Act requires states to publish, every two years, an updated list of streams and lakes that are not meeting their designated uses because of excess pollutants. The list, known as the 303(d) list or the list of Impaired Waters, is based on known violations of water quality standards. Lake Minnetonka is classified an impaired water because of the pollution due to mercury<sup>36</sup>. The source of pollutants is acid rain.

### Shoreland Ordinance:

Part of the State's shore land requirements were incorporated into the City Zoning Code in the early 1990's. These included: lake set backs, lot sizes and lot frontage, work within the setbacks, uses in the setbacks and within the shore land and the more stringent vegetation removal requirement. The DNR and the LMCD approved these changes.

### DNR Water Appropriation Permits are:

- 2 for the City of Minnetonka Beach from the Jordan Aquifer at a total 1,000 GPM
- 1 for the Lafayette Club from Lake Minnetonka at 500GMP

### Discharges to Waters with Prohibited Discharges, Discharges to Waters with Restricted Discharges and Discharges to Trout Waters

The storm water discharge is to Lake Minnetonka. The lake is a receiving water without prohibited or restricted discharge requirements. The lake is not a trout resource.

### Fish, Wildlife Habitat Endangered Species:

Three areas within the community provide exceptional wildlife habitat. These are wetland 912W located in the western part of the community. Arcola Woods located in the eastern part of the community and the Lafayette/Ray Peters Parks area located in the eastern part of the community. Both Arcola Woods and part of Lafayette Park exhibit original stands of Maple and are part of the "Big Woods"<sup>37</sup> that originally covered the entire community. Arcola Woods is losing stands of Maple including mature maples each year. This is thought to be due to the use of the woods for storage. This community asset may be endangered.

The Minnesota Natural Heritage Information System lists several rare natural features in the Lake Minnetonka subwatershed. These include the state-listed threatened species trumpeter swan and Blanding's turtle; and the state species

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<sup>36</sup> MPCA

<sup>37</sup> The Big Woods covered a large part of this area before European and eastern American migration into the area.

of special concern: cerulean warbler, red-shouldered hawk, Acadian flycatcher, pugnose shiner, least darter, and American ginseng. An additional species that is currently not on those protected lists, but being assessed for inclusion, the fox snake, has also been documented in this subwatershed.

Rare and endangered species have been observed in the shore areas of Lake Minnetonka including American Bald Eagle, and Red-Shouldered Hawk. These species do not appear to be nesting in the area but are migratory.

The Lake Minnetonka Conservation District regularly harvests the Eurasian water milfoil that grows densely in several bays and channels and inhibits boat traffic. No comprehensive aquatic vegetation survey data is available for Lake Minnetonka or the other lakes in the subwatershed.

Lake Minnetonka is under a Fish Consumption Advisory for mercury, and was added to the state's list of Impaired Waters in 1998 for that reason. The Minnesota Department of Health, Minnesota Pollution Control Agency (MPCA), and the DNR have collaborated to monitor fish for contaminants at over 1,000 sites in Minnesota. Fish from popular lakes and streams and those from known or suspected polluted sites are routinely collected and tested for mercury, which is found in most fish tested in Minnesota lakes, and PCB contamination. These test results are used to monitor pollution and to provide more specific fish consumption advisories beyond the general advisories for Minnesota. More detailed fish consumption advice that is similar to or slightly more restrictive than the general advice has been prepared for Lake Minnetonka.

#### Unique features, Historic Areas, Scenic Areas and Recreation Areas:

The Shoreline of Lake Minnetonka offers several unique and recreational features and scenic areas:

- The area along County Road 15 is unique in its views of the lake. Along with a portion adjacent to Smith's Bay in Orono, it is the only area where an arterial road is adjacent to Lake Minnetonka offering long scenic views of the lake. The Comprehensive Plan indicates that this uniqueness should be enhanced by the creation of a scenic by-way in this area.
- The Community Beach on Lafayette Bay offers community recreation area including swimming, volley ball and other beach type games
- Ray Peters Park with its warming house skating rinks and summer ball field is the primary community recreation area. This park is nestled into a natural setting.

There are a number of historic structures that exist in the area adjacent to the lake. A list of historic structures is included in the Comprehensive Plan Historic Preservation Element. Only one of these structures is on the National Register of Historic Sites.

High quality natural areas include Arcola Woods, a pre-settlement stand of Maple, Ray Peters Park providing habitat for a variety of birds and animals. All of these areas are owned by the City.

Pollutant Sources:

There are no direct source pollutants in the community<sup>38</sup>. Non-point sources of pollutants include untreated storm water run off from roads and parking lots and phosphorous loading from lawn fertilizer<sup>39</sup>.

Phosphorus is a naturally occurring element in the community’s soils that is enhanced by decaying organic material. Phosphorous was also an element in lawn fertilizers. Soils can hold only an amount of phosphorous. Excess amounts are carried by storm water into the lake and wetlands. Fifty percent of the phosphorous in storm water came from residential lawn fertilizers. Phosphorous is a nutrient that can have a negative effect on water quality. One pound of phosphorous produces 300 to 500 pounds of algae. The cost to remove one pound of phosphorus from storm systems and lakes ranges between \$200 and \$500.<sup>40</sup> Mercury is the cause of the fish alert. It comes from atmospheric pollution of which 10% originates in Minnesota<sup>41</sup>.

Wetland Assessment:

The Minnehaha Creek Watershed District has prepared functional assessment of wetlands. The following wetlands with the total size, type and management classification exist in the community:

Wetland ID	Type	Size (acres)	Management Classification	Location
D-117-23-16-007(D 007)	Type 4	0.07		Sedimentation Pond Lafayette Club
D-117-23-16-008(D 008)	Type 4	0.09		Sedimentation Pond Lafayette Club
E-117-23-16-001(E 001)	Type 4	16.43	Preserve	South of CSAH 15 west of Old Beach Rd.
E-117-23-17-004(E-002)	Type 3	1.27	Manage 2	North of CSAH 15 West of Lafayette Ridge
E-117-23-004(E004)	Type 4	6.87	Manage 3	
E-117-23-17-005(E-005)	Type 3	1.03	Preserve	North of CSAH 15 West of Lafayette Ridge

Wetlands that were evaluated as Exceptional or High on certain ecological or hydrologic values were assigned to the Preserve category. The balance of evaluated wetlands were assigned to a category based on this assessment of

<sup>38</sup> MCWD 1997 Plan Figure II-11

<sup>39</sup> Minnesota Statute Prohibit the use of phosphorous in residential lawn fertilize. Agricultural uses and golf courses are exempt from the law.

<sup>40</sup> LMC Policy Statement

<sup>41</sup> MPCA

current functions and values, with Manage 1 wetlands exhibiting higher values and Manage 2 and 3 moderate or lower values.

Information on each of the above wetlands can be found in the MCWD Functional Assessment completed in 2003. There are three small basins in the community. Two basins have not been assessed and one has been assessed since the functional assessment was completed. The small basin south of Westwood Road and west of Lake Road was assessed as an “incidental wetland” in the summer of 2003.

#### Impervious Surface:

City ordinance limits the amount of impervious surface on any residential lot, St. Martins Church and the Lafayette Country Club to 30% of the land area. Most residential lots in the Community are less than 30% impervious surface. St. Martins Church is 54% impervious surface and the Lafayette Club is less than 10% impervious surface.

General public road widths are 20 feet bituminous. Private bituminous roads are generally 14 to 16 feet in width. County Road 15 has an average width of 26 feet. The proposed recreational trail through the community is proposed to have a bituminous width of 12 feet. There are 5.5 miles of public and private streets in Minnetonka Beach. The total hard surface in streets is estimated to be about 523,000 square feet.

#### Safe Drinking Act and Other Well Head Protection Plans:

The City has a Water System Plan that was adopted in 1996 as well as an Emergency Preparedness Plan and Conservation Plan adopted in 2004. The City is currently being fined by the DNR for the difference in the amount of water pumped and the amount of water used.

#### Easements for Water Quality Improvements

Except as provide in the plan, the City does not require easements for water quality improvements.

#### Water Resources and Land Acquisition

The City is not requiring any additional land for park or recreation use.

#### Zoning Code, Subdivision Regulations and Storm Water

The local development code does not require storm water facilities in one acre or large developments and redevelopments. This plan provides that storm water facilities be added to the zoning code for each new or redeveloped property one acre or more in area.

Although all preliminary plats have been submitted to the MCWD as well as all development plans where plating is not required, it is not a requirement of the subdivision or zoning ordinance. This requirement has been added to this plan.



### Key Conservation Areas

Key Conservation areas in the community have been identified as:

Ray Peters Park

Lafayette Park

Arcola Woods

All of the areas are owned by the City. However, except for Ray Peters Park, Lafayette Park and Arcola Woods where the Council has adopted a Park Plan including a preservation plan, there are not any policies or regulations that are in place to conserve the hydrologic and ecologic values of the resources in these areas.

### Adequacy of the regulations

The Community requires a 25-foot buffer between improvements and any designated wetland. The regulations do not allow any wetland fill or alteration of any wetland. The community regulatory system is stricter than the management system proposed by MCWD. The City has short fall as defined by MPCA in its erosion control ordinance and does not have a post construction filtration and abstraction ordinance.

### Street Sweeping and Infrastructure Maintenance

The Public Works Department provides the following maintenance related to water quality and discharge:

- Eight fire hydrants are flushed between April 15 and October 15 every 50 days. The flush water enters the storm water system and Lake Minnetonka;
- All streets including the two private streets are sweep once per year in the spring;
- Storm sewers are cleaned as needed and inspected once per year;
- The City picks up leaves twice per year.

## Exhibit B

### National Pollution Discharge Elimination System (NPDES) Phase II Summary, Minnesota Rules, Metropolitan Council Policies, Minnehaha Creek 103b Requirements

#### Summary of NPDES Phase II Requirements

The Phase II Final Rule, published in the Federal Register regulates MS4s (Minnetonka Beach) that meets both of the following criteria:

Storm sewer systems that are not a medium or large MS4 covered by Phase I of the NPDES Program Storm sewer systems that are located in an Urbanized Area (UA) as defined by the Bureau of the Census, or storm sewer systems located outside of a UA that are designated by NPDES permitting authorities because of one of the following reasons:

- The MS4's discharges cause, or have the potential to cause, an adverse impact on water quality
- The MS4 contributes substantially to the pollutant loadings of a physically interconnected MS4 regulated by the NPDES storm water program

MS4s that meet the above criteria are referred to as regulated small MS4s. Each regulated small MS4 must satisfy six minimum control measures:

- 1 Public education and outreach
- 2 Public participation/involvement
- 3 Illicit discharge detection and elimination
- 4 Construction site runoff control
- 5 Post-construction runoff control
- 6 Pollution prevention/Good housekeeping

Under the third minimum measure, an illicit discharge is defined as any discharge to an MS4 that is not composed entirely of storm water, except allowable discharges pursuant to an NPDES permit, including those resulting from fire fighting activities (40 CFR 122.26(b)(2)). To satisfy this minimum measure, the regulated small MS4 must include the following five components:

1. Develop a storm sewer system map that shows the location of all outfalls and the names and locations of all waters of the United States that receive discharges from those outfalls
2. Prohibit, through ordinance or other regulatory mechanism, non-storm water discharges into the storm sewer system and implement appropriate enforcement procedures and actions
3. Develop and implement a plan to detect and address illicit discharges to the MS4

4. Educate public employees, businesses, and the general public of hazards associated with illicit discharges and improper disposal of waste
5. Identify the appropriate best management practices and measurable goals for this minimum measure

## Minnesota MPCA Rules:

### **7090.1000 MUNICIPAL SEPARATE STORM SEWER SYSTEM PROGRAM.**

Parts 7090.1000 to [7090.1040](#) state the requirements for municipal separate storm sewer systems (MS4s) that are regulated in accordance with Code of Federal Regulations, title 40, section 122.26(a)(1)(iii) and (iv), and (a)(9)(i)(A), section 123.35(b), and Minnesota Statutes, section [115.03](#).

**7090.1010 MS4 PERMIT REQUIREMENTS.** Subpart 1. **Permits required.** An NPDES/SDS storm water permit is required for MS4s identified in items A to C. An owner or operator of an MS4 must submit a complete permit application requesting a permit. Once an MS4 is required to obtain a permit, the requirement remains in effect until the requirement is removed pursuant to subpart 4, item B.

A. MS4s located in an urbanized area in whole or in part, that are regulated in accordance with Code of Federal Regulations, title 40, section 122.26(a)(1)(iii) and (iv), and (a)(9)(i)(A), including any publicly owned entity, such as a military base, hospital, prison or correctional facility, college, or university, with a potential resident capacity, bed count occupancy, or average daily user population of 1,000 or more.

B. MS4s that meet the following criteria must submit a complete application for a permit within 18 months of meeting the criteria:

(1) the entire jurisdiction of a city or township that is partially regulated in accordance with Code of Federal Regulations, title 40, section 122.26(a)(9)(i)(A);

(2) the MS4 is owned or operated by a municipality with a population of 10,000 or more based on the most recent decennial census or approved municipal boundary adjustment under the provisions of Minnesota Statutes, chapter 414; or

(3) the MS4 is owned or operated by a municipality with a population of at least 5,000 based on the most recent decennial census or approved municipal boundary adjustment under the provisions of Minnesota Statutes, chapter 414, and:

(a) discharges or has the potential to discharge storm water into an outstanding resource value water as identified in part [7050.0180](#), subparts 3 and 6; or

(b) discharges or has the potential to discharge storm water into a trout lake or trout stream as identified in part [6264.0050](#), subparts 2 and 4; or

I discharges or has the potential to discharge to a water listed as impaired under section 303(d) of the Clean Water Act, United States Code, title 33, section 1313, except those waters listed as impaired solely for mercury (Hg) or polychlorinated biphenyls (PCBs).

C. MS4s designated by the commissioner in accordance with subparts 2 and 3 must submit a complete application for a permit within 18 months of designation.

Subp. 2. **Designation criteria.** For purposes of this part, "designation" means a determination by the commissioner that an MS4 is subject to the permit requirements of this part. The commissioner may designate an MS4 based on the following criteria:

A. the MS4 contributes substantially to the pollutant loadings of a physically interconnected MS4 that is regulated by the NPDES storm water program in accordance with Code of Federal Regulations, title 40, section 123.35(b)(4); or

B. the MS4 is determined to be a significant contributor of pollutants to waters of the state or to have an adverse impact on water quality based on any of the following factors:

(1) high growth or growth potential;

(2) high population density;

(3) high seasonal population;

(4) impervious land cover;

(5) contiguity to an urbanized area as designated

by the United States Census Bureau;

(6) ineffective protection of water quality by other programs;

(7) an approved or established total maximum daily load that requires reduction of a pollutant associated with storm water beyond what can be achieved with existing programs; or

(8) proximity to a high quality water such as an outstanding resource value water as identified in part [7050.0180](#), subparts 3 and 6, or trout stream as identified in part [6264.0050](#), subpart 4.

Subp. 3. **Designation process.**

A. The commissioner shall issue a public notice identifying MS4s that meet the designation criteria in subpart 2 and the commissioner's preliminary determination that the designation should be granted.

B. The public notice must include, at a minimum:

(1) the address and telephone number of the main agency office and the applicable agency regional office and a statement that additional information may be obtained at these offices;

(2) the name and address of the MS4, and if different, of the facility or activity that is the subject of the draft designation;

(3) a concise description of the facility or activity that is the subject of the draft designation;

(4) the criteria under which the MS4 is proposed for designation and the basis for designation;

(5) a statement that during the public comment period a person may submit comments to the agency on the draft designation or on the preliminary determination, and a statement of the dates on which the comment period begins and ends. The public comment period is 30 days unless a different public comment period is specifically established by another agency rule; and

(6) a brief description of the procedures for reaching a final decision on the designation, including procedures for requesting a public information meeting or a contested case hearing and the nature of the two types of proceedings; and any other procedures by which the public may participate in the agency's consideration of the designation.

C. The commissioner shall distribute the public notice in accordance with part [7001.0100](#), subpart 5.

D. A person may request a contested case hearing or public information meeting regarding the designation determination in accordance with part [7001.0130](#). If a contested case hearing is held, the commissioner shall comply with the procedures in part [7000.2000](#) before making a final determination.

E. The commissioner may make a final determination designating an MS4 by finding that the MS4 meets the criteria set forth in subpart 2.

**Subp. 4. Petition process.**

A. Any person may petition the commissioner for the designation of an MS4. Upon receiving a signed written petition for designation, the commissioner shall evaluate the petition and determine if designation is appropriate under subpart 2. If the commissioner determines that the designation should be granted, the process for designation shall be followed in accordance with subpart 3.

B. Any person may petition the commissioner to reevaluate the designation of an MS4 for a determination that the MS4 does not meet the criteria in subparts 1 and 2 and does not need a permit. Upon receiving a signed written petition for the reevaluation of a designation, the commissioner shall evaluate the petition and determine if the MS4 no longer meets the requirements for a permit under this part.

**7090.1040 MS4 MINIMUM REQUIREMENTS.**

Subpart 1. **Storm water pollution prevention program required.** Owners or operators of permitted MS4s must have a storm water pollution prevention program to address environmental concerns related to storm water discharge. The program must address the following minimum measures in accordance with Code of Federal Regulations, title 40, section 122.34(b):

- A. public education and outreach;
- B. public participation/involvement;
- C. illicit discharge detection and elimination;
- D. construction site runoff control;
- E. post construction runoff control; and
- F. pollution prevention/good housekeeping.

Subp. 2. **Record keeping.** Owners or operators required to have a storm water pollution prevention program under subpart 1 must maintain a copy of the program and make it available to the agency upon request.

**Metropolitan Council Surface Water Management Plan Required**

“The water quality leaving the metropolitan area is as good as the water quality entering the metropolitan area, and in compliance with federal and state regulations.”

***–2030 Regional Development Framework***

Metropolitan Council (the Council) surface water management programs deal with broad land runoff (“nonpoint” source) and specific wastewater (“point” source) pollution. Point source pollution includes the discharge of treated wastewater effluent through a pipe. Nonpoint sources of pollution result from many of the everyday activities and actions of people (Figure 7). These include applying fertilizer to lawns in an amount that exceeds what the grass can use, plowing an agricultural field such that erosion results, blowing grass clippings into the street, or driving a car that exhausts improperly burned hydrocarbons or leaks oil. All these add up to major nonpoint source pollution loading of our receiving waters. Nonpoint source pollution begins with the alteration of the landscape caused by agricultural production and urban development (Figure 8).

The natural vegetative and drainage systems provide a low-impact course for water to follow. Alteration of these systems increases both the volume and rate of water runoff, and introduces polluting materials that can be transported by the runoff into receiving water bodies. This makes it harder to clearly identify the pollution source and effectively manage it.

### **Point vs. Nonpoint Source Pollution**

Protecting the quality of the region's water resources cannot be achieved in a cost effective manner without addressing point *and* nonpoint sources of pollution. The region has spent several decades and made great strides in improving water quality by reducing point sources of pollution. The region has begun to make progress in improving water quality by reducing nonpoint sources of pollution as well, but it is apparent that nonpoint sources of pollution far exceed point sources of pollution to the region's and state's water resources.

To continue our success and to minimize impacts to the wastewater system from increased regulatory requirements to reduce pollution, the Council needs to encourage a combination of point and nonpoint source pollution strategies. Local governmental units also have a role. They need to address the impacts from increased storm water runoff as a result of increased imperviousness related to additional growth. Without local actions, projects and permits for future wastewater treatment plant expansions may be required to meet higher standards, making them more expensive.

### **Assessing and Protecting Regional Water Resources**

Progress toward achieving any water quality goal cannot be assessed without a good database that measures change. The Council has a water quality monitoring program that measures the quality of effluent leaving metropolitan wastewater treatment facilities, ambient water quality conditions in rivers and lakes, and the quality of water leaving tributary watersheds. The ambient river water quality monitoring program helps the Council evaluate the condition of river water quality across the region, assess whether or not water quality standards are being met, and define where attention is needed. The Council also helps communities identify appropriate point and nonpoint source pollution abatement measures.

The Council's watershed outlet monitoring program collects data about base flow and runoff (snowmelt and rainfall) events. The data provide an accurate depiction of the water quality for the entire volume of water leaving the watershed. Monitoring sites are located and sampled by the Council and its partners across the metropolitan area. Where monitoring sites exist, data is available for local partners, watershed organizations, state agencies and others to use to help them assess the condition of streams in their area. The Council's lake monitoring program has allowed the Council and its partners to collect data on over 150 of the region's 950 lakes. The lake data not only show current conditions in the lakes, but they help to assess the general condition of metropolitan area lakes

and to see how lake conditions are changing over time. All of the Council's lake water quality data is available to the Council's partners to assess their lakes and to determine when management efforts are needed to improve water quality. The Council has also used the lake data in conjunction with geographic information system data to complete an aquatic resources assessment. The aquatic resource assessment was one piece developed as part of the Council's Natural Resources Inventory and Assessment, completed in 2003.

The Council uses the priority lake list to focus its limited resources. This list is also used in the environmental review process to determine which lakes need to have a nutrient budget analysis completed if they are impacted by a proposed project. The Council conducts special studies that look at specific aspects of water quality management. For example, the Council has collected mercury data throughout the region to characterize how it occurs and behaves. Much of the built-up inner cities and first and second ring suburbs developed with no runoff management practices whatsoever. If anything, water was routed away fast to get rid of it. Redevelopment in these areas presents an excellent opportunity to expose runoff to infiltration, vegetative uptake, and settling through a number of successful "best management practices" (BMPs). The Council's *Minnesota Urban Small Sites BMP Manual* includes management practices for small development sites.

## **POLICY**

The Council will provide technical assistance and resource assessment information to assist others in their efforts to implement practices that will protect water resources (wetlands, lakes, streams, rivers, and natural drainage courses). Best management practices help to maintain and improve water quality, control runoff rates and volumes to reduce stream bank erosion and flooding, and preserve designated beneficial uses.

## **IMPLEMENTATION STRATEGIES**

- *The Council will continue to monitor and assess lakes, streams, and rivers to measure the progress in achieving the goal of no adverse impact on water resources in the region.*
- *The Council will work with watershed organizations, local units of government, state and federal agencies, and other stakeholders to promote the protection of area lakes, wetlands, streams, and rivers with a special emphasis on priority lakes to achieve the goal of no adverse impact on water quality in the region.*
- *The Council will encourage and support the use of the most effective nonpoint source pollution reduction technologies. These include low impact development practices and best management practices aimed at protecting water quality and maintaining storm water runoff rates and volumes at or below predevelopment conditions.*



### **Promoting Surface Water Management:**

Collectively, nonpoint and point source programs form the policy basis for achieving the no-adverse-impact goal: “The quality of water leaving the metropolitan area is as good as the water quality entering the metropolitan area, and in compliance with federal and state regulations.” To meet this goal, the Council has made a policy decision that ties together the control of pollution from point and nonpoint sources. If a community does not have a local surface water management plan and a storm water/erosion and sediment control ordinance as part of their comprehensive plan, the Council will determine that the plan is incomplete for review. If they have a plan and ordinance and the plan or ordinance does not meet MPCA requirements for storm water ordinances, or Council requirements for local surface water management plans, the comprehensive plan will be determined to be more likely than not to have an impact to our system, thus requiring a plan modification. Such a finding would require that the local plan be modified. The premise behind this requirement is that the Council will not be able to obtain permits from the MPCA for our projects if these items are not satisfactorily completed. Nonpoint source pollution management begins with the surface water management process in place within the region. Some form of watershed management organization (WMO) covers the entire region under state law, WMOs are charged with the preparation of a plan to manage surface water. Watershed programs are intended to: effectively protect and improve surface and groundwater quality; establish uniform local policies and official controls for surface and groundwater management; prevent the erosion of soil into surface waters; promote groundwater recharge; and minimize public capital expenditures needed to correct flooding and water quality problems.

Once WMO plans are prepared, local governments must prepare local surface water plans that meet the standards and requirements of the applicable WMO plans. Local surface water management plans are required under state law and as part of the Metropolitan local surface water management plans. Most local units of government and WMOs have criteria that must be met for activities that would generate nonpoint source pollution. For example, erosion and sediment control ordinances require developers to use various best management practices to control erosion from construction sites.

In addition to WMO and local programs to reduce nonpoint source pollution and improve water quality, several state programs are designed to improve water quality. Pollutant discharge levels from point sources of pollution are designed to meet these in-stream standards. Reaches of stream where water quality levels are not maintained, either from point or nonpoint source inputs, are identified by the Minnesota Pollution Control Agency (MPCA) and put on an “impaired waters” list for attention. The “Section 303(d)” (of the Clean Water Act) listing sets the stage for determination of a Total Maximum Daily Load (TMDL), which is a calculation determining the allowable pollution load that can be discharged into

the impaired water such that the water is impaired. Information on the MPCA's TMDL program can be found at their web site, located at [www.pca.state.mn](http://www.pca.state.mn).

In recent years, some overlap between nonpoint and point source pollution occurred when the U.S. Environmental Protection Agency (EPA) began a program of permitting certain nonpoint source activities. The current National Pollutant Discharge Elimination System (NPDES) Phase I nonpoint source program, implemented in Minnesota through the MPCA, issues permits for certain activities that generate pollution, such as construction on sites greater than five acres, uncovered storage of chemicals, and unprotected industrial equipment that could contribute toxic material when exposed to precipitation. Phase I applied to cities with large populations, including the Cities of Minneapolis and St. Paul.

Phase II of this program increases coverage to essentially all of the urbanized and urbanizing parts the metropolitan area, and will cover construction activity that disturbs an area equal to or greater than one acre. Operators of "municipal separate storm sewers systems" and small construction activity are required to apply for NPDES permit coverage and to implement best management practices for storm water. NPDES Phase II permit coverage began in 2003.

In 1990, the Minnesota Legislature charged the Metropolitan Council (Minn. Stat. 473.157) with the preparation of "target pollution loads for watersheds in the Metropolitan area". Target pollution loads will be used by the Council to identify current water quality of the subwatershed outlets to the Mississippi, Minnesota and St. Croix rivers, and to set goals for future water quality that are aimed at having no adverse impact on the rivers as water passes through the metropolitan area. The Council's target pollution loads will be available to the MPCA to aid in their efforts and development of Total Maximum Daily Load (TMDL) for metropolitan area water bodies and the NPDES Phase II permit program for nonpoint sources of pollution.

## **POLICY**

The Council will review local comprehensive plans, watershed management plans, local surface water management plans, local storm water ordinances, environmental permits and other environmental documents to ensure that the local units of government are fulfilling their nonpoint source reduction requirements and therefore not impacting the metropolitan disposal system.

## **IMPLEMENTATION STRATEGIES**

- *The Council will review environmental documents to ensure that actions of others are not causing a wastewater system impact.*
- *The Council will develop target pollution loads for the major watershed basins by 2008 and work in conjunction with the MPCA in the development of Total Maximum Daily Loads (TMDLs) to reduce the effects of nonpoint source pollution on the region's wetlands, lakes, streams and rivers.*

## **Minnehaha Creek Watershed District**

The Minnehaha Creek Watershed District requires that local water quality management plans have the following content:

Local water management plans are required to conform to Minnesota Statutes Chapter 103B.235, Minnesota Rules 8410, and this Plan. Minnesota Rules 8410.0160 establishes the structure the LWMP must follow; Section 8410.0170, not reproduced here, describes the required sections in more detail.

**8410.0160 GENERAL STRUCTURE.** Each local plan must, at a minimum, meet the requirements for local plans in Minnesota Statutes, section 103B.235, except as provided by the watershed management organization plan under part 8410.0110, subpart 3. Each local plan must include sections containing a table of contents; purpose; water resource related agreements; executive summary; land and water resource inventory; establishment of goals and policies; relation of goals and policies to local, regional, state, and federal plans, goals, and programs; assessment of problems; corrective actions; financial considerations; implementation priorities; amendment procedures; implementation program; and an appendix. Each community should consider including its local plan as a chapter of its local comprehensive plan.

The policies and goals established by the local water management plan must be consistent with the MCWD Plan. The local water management plan must include in its assessment of problems those problems identified in this Plan that affect the community, as well as any problems identified in the HHPLS and not incorporated here. Each city participated in the development of the HHPLS and was provided a copy of the HHPLS findings. A copy of the study is available from the District. The assessment must also include an analysis of the maintenance and management issues identified in Minnesota Rules 8410.0100.

The general standards for local water management plan content incorporating the requirements of Minnesota Statutes 103B.235, subdivision 2, and this Plan, are as follows:

1. Describe the existing and proposed physical environment and land use.
2. Define drainage areas and the volumes, rates, and paths of storm water runoff, including a map of the storm water system. Include a storm water system map that shows ponds, streams, lakes and wetlands that are part of your system; structural pollution control devices (grit chambers, separators, etc.) that are part of your system; pipes and pipe sizes and other conveyances in your system; and outfalls and all other points of discharge from your system that are outlets.
3. Identify areas and elevations for storm water storage adequate to meet performance standards established in the subwatershed plans.

4. Identify areas of known flooding and areas identified in the HHPLS where modeling predicts that public roads, private roads, or private drives might overtop during infrequent events or there may be minimal freeboard above the flood level. Local plans must assess whether the risk of occasional flooding is acceptable or should be addressed, and set forth a plan for making improvements as necessary.
5. Identify land-locked subwatershed units and basins and strategies to manage water volumes in those land-locked areas to minimize flooding.
6. Assess the condition of locations identified in the HHPLS where modeling predicts that under existing or future development conditions higher velocities than desired may result in erosion at outlets or culverts, potentially warranting erosion control or energy dissipation. The local plan must assess the need for such measures, and set forth a plan for making improvements as necessary to correct existing or prevent future erosion.
8. Define water quality and water quality protection methods adequate to meet performance standards established in the watershed plan.
9. Identify specific steps the LGU will take to achieve the annual phosphorus load reductions it is assigned in the subwatershed plans affecting their community.
10. Identify regulated areas, such as Outstanding Resource Value Waters.
11. Identify Key Conservation Areas in this Plan in their community, and assess the adequacy of local policies and regulatory controls in place to conserve hydrologic and ecologic values of the resources within those Areas. The plan must set forth a plan and schedule for the amendment of those policies and controls as necessary to meet performance standards established in the subwatershed plans.
12. Assess the consistency of the LGU's wetland regulation, including any wetland classification system and specific wetland classifications, with the management classifications, classification system and proposed regulation set forth in this Plan.
13. Set forth an implementation program, including a description of official controls and, as appropriate, a capital improvement program.
14. Describe the LGU's permitting process for land and wetland alteration work, including an assessment of the adequacy of current official controls and a plan and schedule for the amendment of those controls as necessary.
15. Describe the LGU's conformance with NPDES requirements for MS4s including TMDL and Nondegradation requirements. The local plan must include

the LGU's Storm water Pollution Prevent Plan (SWPPP) or a summary of its contents.

### **Use of Local Land Use and Land Acquisition Authorities**

Regulation of land use through zoning and subdivision codes traditionally has been the dominion of cities, towns and counties. Although watershed districts within the metropolitan area are authorized to "regulate the use and development of land," the District has deferred to the local land use authority to regulate the uses to which land is put and how those uses are sited. The focus of the District rules is not on how the land is used, but on ensuring that however it is used, water resources are protected from the impacts of that use. There is overlap in District and local land use regulation in areas such as erosion control requirements during construction; limiting storm water pollution or flow increases from development; floodplain protection; and wetland setbacks or vegetated buffers. But there is a growing recognition that the most effective and least costly way to protect water resources is during land use planning and siting. This recognition can create a tendency for watershed districts to extend regulatory authority further into the land use realm. Rather than doing so, the District prefers to work with, and provide technical resources to, traditional land use authorities to assist in their integrating water resource considerations prominently into land use planning activities and development codes.

Under the Metropolitan Land Planning Act (MLPA), land use authorities within the watershed are required by December 31, 2008 to complete revisions of their local land use comprehensive plans. The law requires that once a comprehensive plan is approved by the Metropolitan Council and adopted by a land use authority, the land use authority must amend its development code to be consistent with its plan. Further, the MLPA requires that in order for the Metropolitan Council to approve a local comprehensive land use plan for a land use authority wholly or partly within the Minnehaha Creek watershed, the land use plan must contain a local water plan approved by the District.

Accordingly, it is very timely for local government units (LGU's) within the watershed to carefully examine how water resource management and protection can be integrated into their land use planning and development functions. As a part of local water plan development, LGU's should engage in review of their land use activities from a water resource perspective and identify opportunities to enhance water resource protection without compromising other local development goals. The District will look for each local plan to do the following:

1. Examine city- or township-wide land use needs, both within the planning period and beyond, in the context of resource maps and inventories; and describe how land use and regional water resource needs are being reconciled to secure the greatest degree of long-term water resource protection.
2. Describe efforts to integrate Safe Drinking Water Act and other wellhead protection plans, as well as the protection of sensitive surface- and groundwater resources, into the local zoning code.

3. Describe how water resource protection priorities have been integrated into local parks, open space, recreation and land acquisition plans;
4. Describe how local authority to require land or easement dedication or protective covenants as a part of subdivision regulation is being used for water resource protection purposes;
5. Consult with District staff on approaches to low-impact site design that preserve natural hydrological systems and capability to assimilate development impacts; examine how those approaches can be integrated into local land use regulations; describe constraints or competing concerns that prevent further integration; and describe how the LGU will integrate such approaches into its development code;
6. Identify how conflicts between (i) development code setbacks and (ii) water resource requirements in local ordinances or District rules will be reconciled to give due weight to water resource protection goals;
7. Show that the local development code requires storm water facilities and wetlands in residential subdivisions that are subject to future maintenance obligations under local ordinance or District rule to be located entirely on out lots, and justify exceptions to this requirement; and
8. State that the local subdivision ordinance requires, or within 180 days will be amended to require, that a copy of each proposed preliminary plat, and iterations thereof, be provided to the District for informational purposes at the time it is submitted to the locality.

### **Minnehaha Creek Watershed District Housekeeping Requirements**

The land management and housekeeping practices of the LGU include activities such as street sweeping, snow plowing, salt and snow storage, road and utility right-of-way maintenance, storm water management facility maintenance, and public land and park maintenance.

Unlike the District's preceding plan, this Plan does not obligate LGU's to specific land management and housekeeping practices. Rather, an LGU is to consider changes in these practices as one set of tools to achieve the water resource performance goals established in this Plan and the local plan. The District will seek to assist LGU's by providing technical guidance on land management and housekeeping practices that are beneficial for water quality and other water resource performance objectives. The local plan should:

1. Describe current practices;
2. Examine potential improvements in these practices;
3. Identify any barriers to implementing these improvements;
4. Indicate what changes the LGU will make; and
5. Describe, with appropriate quantification, the impact these changes are expected to have toward achieving water quality and other water resource goals.

### **Minnehaha Creek Watershed District required annual report**

Minnesota Statutes §103B.235, subdivision 4, states that once the District approves a local plan, the LGU must adopt and implement it within 120 days, and

must accomplish any amendment of ordinances required by the local plan within 180 days. Thereafter, the LGU must annually report to the District activities it has undertaken in the previous year in implementing its plan and in progress toward meeting water quantity, water quality, and ecological integrity goals. This reporting may be incorporated into the LGU's NPDES annual report.

The District's ability to implement the policies, programs, and projects of this Plan depends also on the LGUs' implementation of local plans that are consistent with these policies, programs, and projects. The District's approval of a local plan will be conditioned on the LGU's reasonable and continuing efforts to implement its plan. If the District has concerns as to whether an LGU is implementing its plan, it will communicate those concerns to the LGU and pursue a collaborative effort to understand and assess the LGU's implementation efforts. The District will use the process set forth in Minnesota Rule 8410.0180 as appropriate to resolve any ongoing issues concerning LGU and District Plan implementation, and will take other appropriate steps to minimize the impact of LGU non-implementation on achieving the goals of the District Plan.

It is anticipated that all LGUs will be required to update their Local Water Management Plans to bring them into conformance with this Plan Revision. Some of the implementation program elements reflect the goals, policies, and requirements of State and regional government agencies that local government units are required to address. Many of the local requirements of this Plan are consistent with the requirements of the State of Minnesota's NPDES General Permit for MS4s. Many of the LGUs already have ordinances in place that address many of this Plan's requirements, including ordinances that address shorelands, floodplains, wetland protection, storm water management, erosion control and storm water management. Some ordinance revision may be required as a result of this Plan.

The overall goals of restoring impaired water resources and protecting water resources from further degradation require an active partnership between the District and LGUs. Through active engagement with LGUs through the development of the subwatershed plans and the other elements of this Plan, the District and the LGUs have arrived at a balanced approach that allocates responsibility to both LGUs and the District for pollutant load reduction and water resource protection. The performance standards set forth in the subwatershed plans may require LGUs to expend funds to construct capital improvement projects or change maintenance practices. For example, where a lake does not meet water quality goals, a phosphorus load reduction plan sets forth specific load reductions to be achieved by LGUs to reduce phosphorus load from existing land uses; the reduction plan does not specify how the LGU must achieve those reductions. The requirement is a 15 percent reduction in loading from existing residential land use and 10 percent from other developed land use. This reduction can be accomplished through: application of BMPs such as additional street sweeping, local water quality ponds, rain gardens and infiltration swales that reduce erosion or treat runoff; prevention of future load increases through

the conservation of lands previously identified for development; or achieving load removals in excess of the minimum required. The LGUs must identify in their local water management plans specific steps to accomplish these minimum reductions. The LGUs must also annually report to the District their progress toward accomplishing this requirement. The District will provide the LGUs with the flexibility to determine the more efficient and cost-effective means of achieving the reduction. The District will provide funding and other technical assistance to assure that LGUs may reasonably implement the performance.



**Exhibit C:  
LIMITATIONS ON COVERAGE**

The MPCA permit requires that this appendix be read and understood by Minnetonka Beach. This appendix is applicable to special requirements for eight different categories of discharges to waters.

**Contents of Exhibit C:**

*A. Discharges to Waters With Prohibited Discharges*

*B. Discharges to Waters With Restricted Discharges*

*C. Discharges to Trout Waters*

*D. Discharges to Wetlands*

*E. Discharges Requiring Environmental Review*

*F. Discharges Affecting Threatened or Endangered Species or Their Habitat*

*G. Discharges Affecting Historic or Archeological Sites*

*H. Discharges Affecting Source Water Protection Areas*

This part describes more stringent requirements for discharges that meet the following specified criteria, A through H. Whenever two or more requirements, restrictions, or prohibitions apply, both or all must be met. Whenever two or more requirements, restrictions or prohibitions conflict, the more restrictive conditions must be met. First, these particular discharges are not authorized under this permit unless you are in compliance with the permit. The comments cut short the context of the permit, “this discharge is not authorized unless the requirements of ....appendix C or D are ...complied with”... Compliance with the permit includes a schedule of compliance described in the permit. Compliance with the permit requirements for submittal and review, even before extension of coverage, means that the application is in good faith and therefore the discharge is authorized. Your application stating your intention to comply with the permit, including its schedules, covers you regarding your requirements under the permit.

Generally, the permit cannot authorize the discharge unless the applicable actions have been accomplished in compliance with the applicable sections of the permit. It is true that there are other programs and enforcement actions that can be taken but this does not negate the need for the permit to address these discharges.

The permit defines the extent to which you are responsible. For example, for illicit discharges, you are not responsible for all illicit discharges (except your own discharges), but you are responsible for inspections and ordinances or other measures. You are not responsible for designation of source water protection areas under this permit, but rather for meeting the basic requirement of the permit to avoid harmful discharges of storm water that can affect these areas. The obligation imposed by the permit is not to usurp other agencies’ authorities but to minimize the potential significant impacts to the environment from your MS4 system.

The permit requires that the discharge be authorized. Without authorization under the permit the discharge is not allowed. It is true that there are other measures and enforcement actions that have been taken by the state to regulate these discharges; but this does not address the basic premise of the permit; that you are responsible for discharges from your system. The permit defines the extent to which you are responsible. For example, you are not responsible for defining Endangered Species or their habitat,

but you are responsible for coordination and other measures. For example, you are not responsible for Heritage Act designation, but you need to avoid harmful discharges of storm water that can affect these areas. The obligation imposed by the permit is not to police other agencies but to minimize the potential impact to the environment from your MS4 system.

While MS4 regulation of these discharges is encouraged, it is not required. What is required is that appropriate measures including referrals and inquiries are made with appropriate agencies for all activities that you conduct or regulate through other programs.

### **Changes in the Requirements**

We have changed the permit to clarify the MPCA intent with regard to other agencies programs and rules. The intent is that permittees be in compliance with water quality and other requirements. In addition, we still intend that you will establish administrative procedures or other measures to assure that any project will be in compliance with each of the programs described. While MPCA does not intend to enforce laws outside of MPCA's jurisdiction, the permit also does not excuse compliance with any such other laws. The permit addresses not other laws, but rather the storm water discharge from the regulated MS4s. The permit does not intend to impose requirements on discharges not regulated under the permit. This permit regulates point source discharges of storm water from a regulated MS4; no other discharges are allowed or regulated under the permit. Permittees should not misconstrue the permit to require regulation based on other programs. It is true that permittees do not have jurisdiction over programs assigned to other units of government. The MPCA cannot and will not delegate any regulations under the Safe Drinking Water Act, Minnesota Environmental Policy Act, Section 404 of the CWA, or other regulations as contended in the comments. Permittees should be developing procedures so that when they discharge storm water, the discharge of storm water does not violate water quality standards or the regulations of the other agencies.

### **New or Expanded Discharges**

We have limited the use of the term "new or expanded discharge" to programs that have used the term in rule or previous permits. Where used, we intend the term to have as close to the definition required in the rules as possible.

In Parts II and IX, the term "new or expanded discharge" applies only to discharges to waters with Prohibited Discharges and Restricted Discharges. These programs have used the term new or expanded since rules were enacted by the MPCA. The MPCA continues to use the term as applied to Trout Waters in the original (2003) permit.

The requirements are very explicit on this point, see Minn. R. 7050.0185 provided below.

### **7050.0185 NONDEGRADATION FOR ALL WATERS.**

*Subp. 2. Definitions. For the purpose of this part, the following terms have the meanings given them:*

*A. "New discharge" means a discharge that was not in existence before January 1, 1988.*

*B. "Expanded discharge" means a discharge that changes in volume, quality, location, or any other manner after January 1, 1988, such that an increased loading of one or more pollutants results. In determining whether an increased loading of one or more pollutants would result from the proposed change in discharge, the agency shall compare the loading that would result from the proposed discharge with the loading*

*allowed by the agency on January 1, 1988.*

### **Why are some “new or expanded” discharges prohibited or required to do more than other discharges?**

Certain discharges require additional measures to be authorized under State or federal laws. Your discharge will be authorized if you comply with those requirements. However, if you do not comply with those requirements, this permit does not provide protection for you and your discharge may be considered unauthorized. This issue is discussed here and in Part IX (Appendix C) of the permit. Your permit covers all authorized discharges, as well as most system additions and expansions, on the date coverage is extended to your MS4. You must also comply with Appendices D and E if applicable. Baseline for all new and expanded discharges regulated under this section is defined as 1988 or for ORVWs the year in which an ORVW is designated. Generally the MPCA will look to the 1988 date to compare levels for avoidance, feasible, prudent or reasonable measures that the MPCA may impose.

### **Requirement for a Process**

In Part IX (Appendix C) of the draft proposed permit, the language requiring “administrative procedures” was deleted and the permit was revised to clarify the requirements.

It was our intent that each affected MS4 should establish procedures to address the requirements of these sections. The MPCA would then review the procedures to determine whether they are acceptable. It was never our intention to be involved in every decision except as specifically stated in the permit. For example the permit still clearly requires the approval of a plan for each of the affected ORVWs. But we would not be involved in the development of a process or review of projects for trout waters unless the SWPPP is determined to be not sufficient or it was not implemented as written. It is fully expected that MS4s will develop a process for avoiding impacts to the waters listed in Appendix C, even though the specific requirement has been deleted.

### **Nondegradation for Outstanding Resource Value Waters (ORVW)**

Waters designated as ORVWs are unique to the state in that they are “exceptional recreational, cultural, aesthetic or scientific resources.” Minn. R. 7050.0180, subp. 2, item A. There are two kinds of ORVWs, waters with Prohibited Discharge (Prohibited Waters) and waters with Restricted Discharge (Restricted Waters).

For **Prohibited or Restricted Waters** under this permit, the first step to consider is whether your discharge or activity is governed by **MPCA nondegradation** ~~ondegradation~~le has been written to apply to only “new” or “expanded” discharges of pollution. A new discharge is defined as a discharge “...not in existence prior to the designation date of the ORVW.” An expanded discharge is defined as “a discharge that changes in volume, quality, location, or any other manner after the effective date (of the rule) such that an increased loading of one or more pollutants results.” In effect, existing discharges are “grandfathered” in at the loading rates contained in their permits as of the dates the

waters were designated ORVWs.

If you discharge to **Prohibited or Restricted Waters**, the MPCA assumes that any discharge of storm water is existing, but that the discharge has been changed, since the date of designation, by new impervious surfaces, pipes, gutters and other appurtenances so that it is an expanded discharge. The MPCA also assumes that the discharge has the potential for an increased loading of one or more pollutants.

Permittees may refute this position by demonstrating that a discharge is not new or expanded discharge, nor does it increase loading. The Commissioner shall provide notice and an opportunity for a public hearing, in accordance with the requirements in Minn. R. ch. 7001, before denying or establishing additional control requirements for a new or expanded discharge.

If an existing permitted discharger has experienced increased impervious surfaces or other growth since ORVW designation or anticipates growth that is likely to increase the mass loading rates during the period of this permit, the permittee can expect to be identified as an expanded discharger. As such, the permittee will be subject to review under the nondegradation ondegradation applicable rules.

For **Prohibited or Restricted Waters**, the rule is Minn. R. 7050.0180. Unless the permittee finds an alternative to the discharge or can show that the discharge does not increase the loading of one or more pollutants, the permittee may be denied a permit to discharge or will be assigned appropriate BMPs or control requirements by the MPCA that restrict the discharge to the extent necessary to preserve the wilderness, scientific, recreational, or other special characteristics that make the water an ORVW. (Minn. R. 7050.0180, subp. 5)

For **Restricted Waters**, permittees must find “feasible and prudent” alternatives to the discharge, or if there are no feasible and prudent alternatives, the MPCA must either prohibit the discharge or require additional measures (BMPs) which protect the characteristics of the waters for which they were designated an ORVW (Minn. R. 7050.0180).

The MPCA under Minn. R. 7050.0180 “Nondegradation for Outstanding Resource Value Waters (ORVWs),” recognizes that the maintenance of existing high quality in some waters of outstanding resource value to the state is essential to their function as exceptional recreational, cultural, aesthetic or scientific resources. To preserve the value of these special waters, the MPCA prohibits or stringently controls new or expanded discharges from all sources to outstanding resource value waters.

ORVWs are generally defined in Minn. R. 7050.0180, subp. 2, as “waters within the Boundary Waters Canoe Area Wilderness, Voyageur’s National Park, and Department of Natural Resources (DNR) designated scientific and natural areas, wild, scenic, and recreational river segments, Lake Superior, those portions of the Mississippi River from Lake Itasca to the southerly boundary of Morrison County that are included in the Mississippi Headwaters Board comprehensive plan dated February 12, 1981, and other

waters of the state with high water quality, wilderness characteristics, unique scientific or ecological significance, exceptional recreational value, or other special qualities which warrant stringent protection from pollution.”

**A. Discharges to Waters with Prohibited Discharges** (*Minn. R. 7050.0180, subp. 3, 4 and 5*). This permit does not authorize **New or Expanded Discharges** to waters, or discharges adversely impacting waters, where the applicable water quality standards prohibit **New or Expanded Discharges** as described in Minn. R. 7050.0180, subp. 3, 4, and 5 unless the following requirements are met:

1. **List.** **You** must identify as part of your application for permit the Waters with Prohibited Discharges to which your **MS4** discharges. The list must be included with your application, to be submitted within 90 days after the permit effective date on page 1 of this permit or for **Designated MS4s** in accordance with Part IV.B.

2. **Map.** **You** must mark on U.S.G.S. watershed or topographic maps of 1:24,000 scale or better at minimum the DNR minor subwatersheds in your jurisdiction that discharge in whole or in part to Waters with Prohibited Discharges. **You** must provide a narrative estimate of the percent impervious surface based on current land use, the percent Expected future impervious surface based on zoning or comprehensive plans, and other information that may significantly affect your runoff to the listed waters. The map must be included with your application, to be submitted within 90 days after the permit effective date on page 1 of this permit or for **Designated MS4s** in accordance with Part IV.B.

3. **Assessment.** **You** must then assess how your **Storm Water Pollution Prevention Program** can be reasonably modified to eliminate **New or Expanded Discharges** to Waters with Prohibited Discharges. This assessment must be developed for **New or Expanded Discharges** created from 1988 until the year 2020. **You** must present this assessment, together with your proposed changes to your **Storm Water Pollution Prevention Program**, for public comment during the annual public comment period required in the permit, prior to your first annual report (see Part VI.D) or prior to the schedule in Appendix E for **Selected MS4s**.

4. **Assessment Submittal.** **You** must submit the assessment from Part IX.A.3 above, including your response to any public comments and proposed changes to your **Storm Water Pollution Prevention Program**, (a) with your first annual report, (b) on another later date if established for your **MS4** by the **Commissioner**, or (c) in accordance with the schedule in Appendix E for **Selected MS4s**. The assessment will be reviewed by the **Commissioner**, who will provide opportunity for public input and hearing prior to denial or approval of your proposed **Storm Water Pollution Prevention Program**. The **MPCA** reserves the right to incorporate as much available information as possible in the decision making process, including the right to independently develop and evaluate potential alternatives to the discharge.

5. **Implementation.** **You** must implement your approved plan, including all approved **BMPs**, in accordance with the schedule in the approved **Storm**

### **Water Pollution Prevention Program.**

We have limited the use of the terms “new or expanded discharge” to programs that have used the term in rule or previous permit. Where used, we intend the term to have as close to the definition required in the rules as possible.

### **Prohibited Waters**

In order to protect the quality of ORVWs, the MPCA has divided these waters into two groups. The first group (Prohibited Waters) consists of water within the Boundary Waters Canoe Area Wilderness (BWCAW), Voyageurs National Park, scientific and natural areas designated by the Minnesota Department of Natural Resources (MDNR) and federal or state wild rivers. For this group, the MPCA has adopted a nondegradation standard that prohibits any new or expanded discharges of sewage, industrial or other

wastes, including storm water. Minn. R. 7050.0180, subp. 3, 4 and 5.

As previously stated, storm water is almost never a new discharge. In fact, some waters, such as wetlands, require a storm water runoff component for their existence. Therefore, for storm water, the nondegradation standard relates to the discharge of pollutants, or

pollution. The MPCA must determine if there is an alteration made or induced by human activity of the chemical, physical, biological, or radiological integrity of waters of the state (Minn. Stat. § 115.01 subd. 13). In some cases, this may include situations where the alteration has increased or decreased flow to the point of affecting the integrity of the waters. If the integrity of the waters could be affected, the MPCA will prohibit such alterations or discharges.

This part of the rule does not consider prudent and feasible alternatives to the discharge nor does it consider a significance level when considering whether to allow a new or expanded discharge. These are considerations for restricted waters described below, but not for prohibited waters. However, the concept of a decision that considers prudent and feasible alternatives and a discharge that is significant remains viable. The MPCA does not intend to create a more adverse impact on the integrity of the waters that could result from a rejected proposal. An example could be a diversion of flow away from a prohibited water. While a permittee could avoid the discharge by diversion, if the diversion would dry up the ORVW, that could create a significant impact. As a result, the MPCA may make a decision to treat the discharge or to divert only part of the flow, depending on the nature of the receiving water and the available options. Therefore, while not directly applicable, a permittee with a prohibited discharge may find it informative to read the guidance on restricted waters to get some ideas on the concepts of prudent and feasible alternative and significant discharge.

### **List of Prohibited Waters**

#### **7050.0180 NONDEGRADATION FOR OUTSTANDING RESOURCE VALUE WATERS.**

*Subp. 3. Prohibited discharges. No person may cause or allow a new or expanded discharge of any sewage, industrial waste, or other waste to waters within the Boundary Waters Canoe Area Wilderness; those portions of Lake Superior north of latitude 47 degrees, 57 minutes, 13 seconds, east of Hat Point, south of the Minnesota-Ontario*

boundary, and west of the Minnesota-Michigan boundary; Voyageur's National Pa'k; or Department of Natural Resources designated scientific and natural areas; or to federal or state wild river segments.

*Subp. 4. DNR designated scientific and natural areas. Department of Natural Resources designated scientific and natural areas include but are not limited to:*

**DNR Designated Scientific and Natural Areas**

**County ORVW Township Range Section**

Anoka County Boot Lake  
Becker County Green Water Lake  
Beltrami County Pennington Bog  
Clearwater County Itasca Wilderness Sanctuary  
Clearwater County Iron Springs Bog  
Dakota County Blackdog Preserve  
Hennepin County; Wolsfeld Woods  
Jackson County; Prairie Bush Clover  
Pine County Kettle River 41 N 20 15, 22, 23,  
Pine County; Black Lake Bog  
Polk County Pembina Trail Preserve  
Saint Louis County Purvis Lake-Ober Foundation  
Washington County Falls Creek

**State Designated Wild River Segments**

**7050.0180 NONDEGRADATION FOR OUTSTANDING RESOURCE VALUE WATERS**

*Subp. 5. State designated wild river segments. State designated wild river segments include but are not limited to:*

- A. Kettle River from the site of the former dam at Sandstone to its confluence with the Saint Croix River; and*
- B. Rum River from Ogechie Lake spillway to the northernmost confluence with Lake Onamia.*

**B. Discharges to Waters with Restricted Discharges** (*Minn. R. 7050.0180, subp.6, 6a, and 6b*). This permit does not authorize **New or Expanded Discharges** to waters where the applicable water quality standards restrict **New or Expanded Discharges**, unless such discharges are in accordance with Minn. R. 7050.0180, subpart 6, 6a, and 6b, and other applicable rules, and the following requirements. For **MS4s** that have discharges to outstanding resource value waters listed in Minn. R. 7050.0180, subp. 6, 6a or 6b (listed waters, or Waters with Restricted Discharges), the **MPCA** makes a **Rebuttable Presumption** that those **MS4s** have or will create a **New or Expanded Discharge** to a listed water. The following requirements create a schedule to bring discharges to listed waters into compliance:

1. In order to allow a **New or Expanded Discharge** to Waters with Restricted Discharges, the **MPCA** must determine that there are no prudent and feasible alternatives to the **New or Expanded Discharge**. The determination will be based on your demonstration. This demonstration

should include, but is not limited to developing a plan to address prudent and feasible alternatives to the discharge. If **You** intend to argue that there are no prudent and feasible alternatives to the discharge to these waters, **You** must develop a plan to restrict the discharge to the extent necessary to preserve the existing high quality, or to preserve the wilderness, scientific, recreational, or other special characteristics that make the listed water an outstanding resource value water.

2. Here are the specific actions **You** must take:

a. **List.** **You** must identify as part of your application for permit the waters with restricted discharges to which your **MS4** discharges. The list must be included with your application, to be submitted within 90 days after the permit effective date on page 1 of this permit or for **Designated MS4s** in accordance with Part IV.B.

b. **Map.** **You** must mark on U.S.G.S. watershed or topographic maps of 1:24,000 scale or better at minimum the DNR minor subwatersheds in your jurisdiction that discharge in whole or in part to waters with restricted discharges. **You** must provide a narrative estimate of the percent impervious surface based on current land use, the percent of future expected impervious surface based on zoning or comprehensive plans, and other information that may significantly affect your runoff to the listed waters. **You** must submit this map with your application within 90 days after the permit effective date on page 1 of this permit or other later date if established by the **Commissioner**.

c. **Assessment.** **You** must then assess how your **Storm Water Pollution Prevention Program** can be reasonably altered to eliminate **New or Expanded Discharges** to waters with restricted discharges. This assessment must be developed for **New or Expanded Discharges** produced from 1988 until the year 2020. Where **You** intend to argue that there are no prudent and feasible alternatives to **New or Expanded Discharges** to these waters, **You** must propose measures **You** will implement to restrict the discharge to the extent necessary to preserve the existing high quality, or to preserve the wilderness, scientific, recreational, or other special characteristics that make the listed waters outstanding resource value waters. Measures that can be proposed include ordinances and zoning changes or other **BMPs**. **You** must present this assessment, together with your proposed changes to your **Storm Water Pollution Prevention Program**, for public comment during the annual public comment period required in the permit, prior to your first annual report (see Part VI.D) or prior to the schedule in Appendix E for **Selected MS4s**.

d. **Assessment Submittal.** **You** must submit the assessment from Part IX.B.2.c above, and your response to any public comments, with your plan and proposed changes to your **Storm Water Pollution Prevention Program** and submit it with your first annual report, or on another later date if established for your **MS4** by the **Commissioner**, or according to the schedule in Appendix E for **Selected MS4s**. The plan and proposed



changes to the **Storm Water Pollution Prevention Program** will be reviewed by the **Commissioner**, who will provide opportunity for public input and hearing pursuant to Minn. R. ch. 7001 prior to denial or approval of your proposed **Storm Water Pollution Prevention Program** modifications. The **MPCA** reserves the right to incorporate as much available information as possible in the decision making process, including the right to independently develop and evaluate potential prudent and feasible alternatives to the discharge.

e. **Implementation.** You must implement your approved **Storm Water Pollution Prevention Program**, including all **BMPs** in accordance with the schedule described in the approved **Storm Water Pollution Prevention Program**.

#### **Restricted Waters**

The regulation of ORVWs called Restricted Waters is characterized by two steps in the consideration to allow discharges:

- First, discharges are not allowed to be initiated or increase their loading rate unless the **MPCA** determines that there is no prudent and feasible alternative to the new or expanded discharge.
- Second, if the discharge is permitted, it must be restricted “to the extent necessary to preserve the existing high quality, or to preserve the wilderness, scientific, recreational, or other special characteristics that make the water an ORVW.”

Minn. R. 7050.0180, subp.6.

#### **Prudent and Feasible Standard**

This part of the guidance is provided to illustrate how a developer might demonstrate to the **MPCA** that there is no prudent and feasible alternative to a discharge. The guidance will discuss the technical, economic and environmental analyses considered necessary for the **MPCA** staff so that the **MPCA** may render a decision on this issue.

From a legal perspective, the permittee has the formidable task of proving a negative, that is that there are no prudent and feasible alternatives to the discharge. Carrying such a burden is obviously difficult, but not insurmountable.

The burden of proof has been placed upon the permittees since they are in the position to know the relative costs and other feasibility of various **BMP** alternatives. Furthermore, it is appropriate to place the burden on the party seeking to discharge to a public water body. The capacity of a water body to assimilate certain pollutants is a limited public resource subject to allocation by the **MPCA**.

In the past, many people have suggested that the prudent and feasible standard is vague and that the **MPCA** should describe the procedures, criteria, and the time frames associated with meeting this standard. Because of these comments, the **MPCA** has provided guidance information to explain the rule, and considerable legal history has been developed since passage of the rule.

While the phrase “prudent and feasible” is not familiar or highly descriptive to the layperson, it is a well-known and reasonably well defined term of art in environmental statutes and case law. For example, the phrase appears in both the Minnesota Environmental Rights Act, Minn. Stat. § 116B.09, subd. 2 (1986), and in the Minnesota Environmental Policy Act, Minn. Stat. § 116D.04, subd. 6 (1986). The U.S. Supreme Court interpreted the term in *Citizens to Preserve Overton Park v. Volpe*, 401 U.S. 402

(1971), and the Minnesota Supreme Court specifically adopted the federal court's interpretation in *County of Freeborn v. Bryson*, 243 N.W.2d. 316 (1976).

As interpreted by Minnesota Courts, the phrase requires an examination of whether there are unusual or extraordinary reasons why an alternative to a discharge should not be required. "Economic considerations alone will not justify [pollution, impairment or destruction of the State's natural resources.]" Minn. Stat. §§ 116D.04, subd. 6 and 116B.09, subd. 2 (1986).

While it is emphasized that a prudent and feasible standard is more rigorous than the conventional cost-benefit test, a permittee may find the conventional benefit-cost approach very useful and persuasive in demonstrating his or her point of view. This approach may be particularly useful and appropriate in assessing the environmental costs and benefits associated with each BMP alternative. Irrespective of the method used, it is strongly recommended that the prudent and feasible assessment identify positive and negative environmental impacts associated with each BMP alternative.

#### **Analysis of Each Alternative**

The permittee has the responsibility of considering alternatives and proposing which of those alternatives are prudent and feasible subject to MPCA review and approval. The role of the MPCA during the application and review process will generally be limited to reviewing the information presented by the developer, or comments made by others during the review process. However, the MPCA reserves the right to independently develop and evaluate potential prudent and feasible alternatives.

Once the alternatives have been identified, the permittee must analyze the cost and environmental considerations associated with each alternative. The MPCA is entitled to know this information since it must determine to whom and to what extent a person may be granted a portion of a limited public resource.

#### **Environmental Considerations**

The MPCA regulates pollution which is broadly defined. This broad definition means that the MPCA has authority to regulate any man made changes that alter the chemical, physical, biological, or radiological integrity of waters of the state. (Minn. Stat. § 115.01 subd. 13). In some cases this may include situations where the change in discharge has decreased flow to the point of affecting the integrity of the waters. For any discharge or change in discharge, if the integrity of the waters could be affected, the MPCA will prohibit such alterations or discharges.

#### **Cost**

All storm water BMP alternatives entail a capital expenditure along with operational and maintenance (O&M) costs. Cost estimates for both expenditures should be presented. Planning level estimates are sufficient, although engineering estimates may be developed. It is also very helpful if the annual equivalent cost or the present worth of each alternative is documented. This information is generally developed for any well-planned development and, therefore, the MPCA does not believe that presenting this information places an unreasonable hardship upon persons petitioning to discharge pollutants into waters of the state.

It is not meant to suggest that the permittee must prepare a comprehensive document satisfying the requirements of either an environmental impact statement (EIS) or an environmental assessment worksheet (EAW). However, the portion of an EIS or EAW that assess the alternatives to a discharge generally should satisfy the information needed

to resolve the nondegradation ondegradation serve as a good model for the permittee seeking to convince the MPCA staff, and administrative law judge, or the MPCA Board that a discharge to an ORVW is essential.

It is intended that permittees use existing plans, studies, modeling and other documents as available to support their cases.

#### **Agency Staff Review and Preliminary Determination for ORVW waters**

Minn. R. 7001.0090 through 7001.0150 outlines the general procedure for obtaining a permit to discharge. Upon reviewing the permit application and the proposed nondegradation plan, MPCA staff may solicit additional information or set up meetings with the permittees to discuss outstanding issues. When MPCA staff determine that all necessary information has been provided, the Commissioner will make a preliminary determination as to whether the permit coverage should be issued or denied. Minn. R. 7001.0100, subp.1 (1987).

If satisfied that the permittee has demonstrated for ORVWs that there is no prudent and feasible alternative but to discharge, MPCA staff will recommend that the permit coverage be issued with appropriate measures in the SWPPP to restrict the discharge “to the extent necessary to preserve the existing high quality, or to preserve the wilderness, scientific, recreational, or other special characteristics that make the water an ORVW”.

For any permitted discharge to other waters, the test is what additional control measures in the SWPPP would be reasonable to reduce the impact on the receiving water in light of the relative importance of the economic and social impacts.

Before the MPCA proposes to issue or deny a permit, the staff and permittee will attempt to address any comments or requests for hearing and to reach agreement on proposed pollution control requirements all parties feel are appropriate for the SWPPP. The Commissioner will then propose a preliminary determination.

The MPCA will prepare and issue a public notice of a completed application and the Commissioner’s preliminary determination. If the preliminary determination is to deny the permit, the staff will prepare a notice of intent to deny the permit. If the preliminary determination is to issue the permit, the staff will prepare a notice of intent to issue the permit. Minn. R. 7001.0100, subp. 4, identifies the information that must be included in the public notice, and subpart 5 indicates to whom and in what manner the notice must be given.

Any person including the applicant may comment on the Commissioner’s determination and may request a public informational meeting or a contested case hearing on the application or the preliminary determination. Comments or requests will be turned back to the city for resolution. If unresolved issues remain, the Commissioner or the MPCA Board may authorize a public informational meeting or a contested case hearing to help clarify or resolve the issues. In order for a contested case hearing to be held, however, the MPCA Board must find: 1) there has been raised a material issue of fact or of the application of facts to the law, 2) the agency has jurisdiction to determine the issue, and 3) there is a reasonable basis to believe the holding of a contested case hearing would aid the agency in making a final determination on the permit application. Minn. R. 7001.0130, subp. 1 (1987). The opportunity for hearing provided by the permit rule satisfies subpart 8 of Minn. R. 7050.0180.

#### **Restricted Discharges Listing**

Restricted discharges as defined in Minn. R. 7050.0180:

**7050.0180 NONDEGRADATION FOR OUTSTANDING RESOURCE VALUE WATERS.**

*Subp. 6. **Restricted discharges.** No person may cause or allow a new or expanded discharge of any sewage, industrial waste, or other waste to any of the following waters unless there is not a prudent and feasible alternative to the discharge:*

*A. Lake Superior, except those portions identified in subp. 3 as a prohibited discharges zone;*

*B. those portions of the Mississippi River from Lake Itasca to the southerly boundary of Morrison County that are included in the Mississippi Headwaters Board comprehensive plan dated February 12, 1981;*

*C. lake trout lakes, both existing and potential, as determined by the MPCA in conjunction with the Minnesota DNR, outside the boundaries of the Boundary Waters Canoe Area Wilderness and Voyageurs National Park and identified in parts 7050. 0460 to 7050. 0470;*

**Parts 7050.0460 to 7050.0470**

**County and ID Number Lake and ID Number**

Atkin County (1) Blue (181)  
Cass County (11) Roosevelt (43)  
Cook County (16) West Bearskin (228)  
Cook County (16) Birch (247)  
Cook County (16) Devilfish (29)  
Cook County (16) Esther (23)  
Cook County (16) Greenwood (77)  
Cook County (16) Gunflint (356)  
Cook County (16) Hungry Jack (227)  
Cook County (16) Jim or Jerry (135)  
Cook County (16) Kemo (188)  
Cook County (16) Loon (27)  
Cook County (16) Magnetic (463)  
Cook County (16) Mayhew (337)  
Cook County (16) Moss (234)  
Cook County (16) Musquash (104)  
Cook County (16) North (331)  
Cook County (16) Trout (49)  
Crow Wing County (18) Big Trout (315)  
Hubbard County (29) Blue (184)  
Hubbard County (29) Kabekona (75)  
Itasca County (31) Bluewater (395)  
Itasca County (31) Caribou (620)  
Itasca County (31) Big Trout (410)  
Itasca County (31) Larson (317)  
Itasca County (31) Little Trout (394)  
Itasca County (31) Pokegama (532)

Itasca County (31) Trout (216)  
Lake County (38) Echo (28)  
Lake County (38) Ojibway or Upper Twin (640)  
Lake County (38) Upper Twin or Bear (408)  
Pine County (58) Grindstone (123)  
St. Louis County (69) Burntside (118)  
St. Louis County (69) Johnson (691)  
St. Louis County (69) Spring (761)

*D. federal or state designated scenic or recreational river segments; and  
E. calcareous fens identified in Minn. R. 7050.0180 subp. 6b.*

**Federal or State Designated Scenic or Recreational River Segments**

Federal or state designated scenic or recreational river segments as identified in Minn. R. 7050.0180:

**7050.0180 NONDEGRADATION FOR OUTSTANDING RESOURCE VALUE WATERS.**

*Subp. 6a. Federal or state designated scenic or recreational river segments. Waters with a federal or state scenic or recreational designation include but are not limited to:*

- A. Saint Croix River, entire length;*
- B. Cannon River from northern city limits of Faribault to its confluence with the Mississippi River;*
- C. North Fork of the Crow River from Lake Koronis outlet to the Meeker-Wright county line;*
- D. Kettle River from north Pine County line to the site of the former dam at Sandstone;*
- E. Minnesota River from Lac qui Parle dam to Redwood County state aid highway 11;*
- F. Mississippi River from county state aid highway 7 bridge in Saint Cloud to northwestern city limits of Anoka; and*
- G. Rum River from state highway 27 bridge in Onamia to Madison and Rice Streets in Anoka.*

**Calcareous Fens**

Calcareous fens as identified in Minn. R 7050.0180:

**7050.0180 NONDEGRADATION FOR OUTSTANDING RESOURCE VALUE WATERS.**

*Subp. 6b. Calcareous fens. The following calcareous fens are designated outstanding resource value waters:*

**County Location Township Range Section**

Becker County Spring Creek WMA NHR fen, 34 142 42 13  
Carver County Seminary fen, 75 116 23 35  
Clay County Barnesville Moraine fen, 44 137 44 18  
Clay County Barnesville WMA fen, 10 137 45 1  
Clay County Barnesville WMA fen, 43 137 44 18  
Clay County Felton Prairie fen, 28 142 46 36  
Clay County Felton Prairie fen, 36 141 46 13

Clay County Felton Prairie fen, 48 142 45 31  
 Clay County Felton Prairie fen, 53 141 46 24  
 Clay County Haugtvedt WPA North Unit fen, 54 137 44 28, 29  
 Clay County Spring Prairie fen, 37 140 46 11  
 Clearwater County Clearbrook fen, 61 149 37 17  
 Dakota County Black Dog Preserve fen, 63 27 24 34  
 Dakota County Fort Snelling State Park fen, 25 27 23 4  
 Dakota County Nicols Meadow fen, 24 27 23 18  
 Goodhue County Holden 1 West fen, 3 110 18 1  
 Goodhue County Perched Valley Wetlands fen, 2 112 13 8  
 Goodhue County Red Wing fen, 72 113 15 21  
 Houston County Houston fen, 62 104 6 26  
 Jackson County Heron Lake fen, 45 103 36 29  
 Jackson County Thompson Prairie fen, 20 103 35 7  
 Le Sueur County Ottawa Bluff fen, 56 110 26 3  
 Le Sueur County Ottawa WMA fen, 7 110 26 11  
 Le Sueur County Ottawa WMA fen, 60 110 26 14  
 Lincoln County Hole-in-the-Mountain Prairie fen, 6;  
 See also Pipestone County  
 108 46 1  
 Mahnomen County Waubun WMA fen, 11 143 42 25  
 Marshall County Tamarac River fen, 71 157 46 2  
 Marshall County Viking fen, 68 155 45 18  
 Marshall County Viking fen, 70 155 45 20  
 Marshall County Viking Strip fen, 69 154 45 4  
 Martin County Perch Creek WMA fen, 33 104 30 7  
 Murray County Lost Timber Prairie fen, 13 105 43 2  
 Nicollet County Fort Ridgely fen, 21 111 32 6  
 Nicollet County Le Sueur fen, 32 111 26 16  
 Nobles County Westside fen, 59 102 43 11  
 Norman County Agassiz-Olson WMA fen, 17 146 45 22  
 Norman County Faith Prairie fen, 15 144 43 26  
 Norman County Faith Prairie fen, 16 144 43 35  
 Norman County Faith Prairie fen, 27 144 43 25  
 Norman County Green Meadow fen, 14 145 45 35, 36  
 Olmsted County High Forest fen, 12 105 14 14, 15  
 Olmsted County Nelson WMA fen, 5 105 15 16  
 Pennington County Sanders East fen, 65 153 44 7  
 Pennington County Sanders East fen, 74 153 44 7  
 Pennington County Sanders fen, 64 153 44 18, 19  
 Pipestone County Burke WMA fen, 57 106 44 28  
 Pipestone County Hole-in-the-Mountain Prairie fen, 6;  
 See also Lincoln County  
 109 45 31  
 Polk County Chicog Prairie fen, 39 148 45 28  
 Polk County Chicog Prairie fen, 40 148 45 33

Polk County Chicog Prairie fen, 41 148 45 20, 29  
 Polk County Chicog Prairie fen, 42 148 45 33  
 Polk County Kittleson Creek Mire fen, 55 147 44 6, 7  
 Polk County Tympanuchus Prairie fen, 26 149 45 17  
 Polk County Tympanuchus Prairie fen, 38 149 45 16  
 Pope County Blue Mounds fen 124 39 14, 15  
 Pope County Lake Johanna fen, 4 123 36 29  
 Pope County Ordway Prairie fen, 35 123 36 30  
 Redwood County Swedes Forest fen, 8 114 37 19, 20  
 Redwood County Swedes Forest fen, 9 114 37 22, 27  
 Rice County Cannon River Wilderness Area fen, 18 111 20 34  
 Rice County Cannon River Wilderness Area fen, 73 111 20 22  
 Scott County Savage fen, 22 115 21 17  
 Scott County Savage fen, 66 115 21 16  
 Scott County Savage fen, 67 115 21 17  
 Wilkin County Anna Gronseth Prairie fen, 47 134 45 15  
 Wilkin County Anna Gronseth Prairie fen, 49 134 45 10  
 Wilkin County Anna Gronseth Prairie fen, 52 134 45 4  
 Wilkin County Rothsay Prairie fen, 46 136 45 33  
 Wilkin County Rothsay Prairie fen, 50 135 45 15, 16  
 Wilkin County Rothsay Prairie fen, 51 135 45 9  
 Winona County Wiscoy fen, 58 105 7 15  
 Yellow Medicine County Sioux Nation WMA NHR fen, 29 114 46 17  
 Yellow Medicine County Yellow Medicine fen, 30 115 46 18

**C. Discharges Adversely Impacting Trout Waters** (*Minn. R. 6264.0050 subp. 2 and 4*). The following requirements apply to Trout Waters listed in Minn. R. 6264.0050, subp. 2 and 4:

1. This permit does not authorize **New or Expanded Discharges** adversely impacting Trout Waters unless, at minimum, **You** establish administrative procedures or other measures to assure that **You** make the following determinations and document the basis for your decision:
  - a. That there is no feasible and prudent alternative to the proposed discharge; and
  - b. All prudent and feasible measures needed to avoid or **Reduce** impacts to Trout Waters, and to preserve the existing high quality of the water will be implemented (see Part IX.C.2 below).
2. If the discharge cannot be avoided, **You** must consider measures to protect water quality and prevent temperature increases. Acceptable measures include reduce the impervious surfaces, diversion away from the stream and use of filter strips, infiltration, biofiltration, or enhanced grass swales to treat runoff before discharge to the Trout Water. Innovative alternatives to ponds are specifically encouraged for Trout Water discharges if they provide equivalent treatment.

The primary requirement of this part of the permit is that you develop a plan or procedure to address trout waters in the manner described in the permit. The classes of trout waters

of concern in this part are:

- Trout Lakes
- Trout Streams
- Lake trout lakes (Heritage lakes) that are not ORVWs

Trout lakes identified in Minn. R. 6264.0050, subp. 2, as amended, are classified as trout waters and are listed under part Minn. R. 7050.0470. Trout streams and their tributaries within the sections specified that are identified in part Minn. R. 6264.0050, subp. 4, as amended, are classified as trout waters.

Listing of **designated trout lakes** Minn. R. 6264.0050, subp 2.

*See attachment to this document.*

Listing of **designated trout streams** Minn. R. 6264.0050, subp 4.

*See attachment to this document.*

Trout waters are given special protection under MPCA water quality standards because they are sensitive to environmental changes of all sorts.

We are especially concerned with temperature changes for trout streams but we are also very sensitive to flow changes that affect turbidity, suspended solids and many chemical pollutant parameters.

We are also concerned with nutrients in trout lakes, and aware that lake trout can be affected by turbidity, suspended solids, and many chemical pollutant parameters as well as other changes to their environment.

Trout waters are a valuable resource that you will want to protect. The best ways to protect these waters will often be complex and require site specific determinations on appropriate measures. The basic concept of the permit is that you consider all feasible and prudent alternatives to discharges that affect the waters. We expect that you will consult with MnDNR fisheries biologist or other experts when you make these determinations.

**D. Discharges to Wetlands** (*Minn. R. 7050.0130, subp. F; also 7050.0186*). This permit does not authorize **Physical Alterations to Wetlands**, or other discharge adversely affecting **Wetlands**, if the alteration will have a significant adverse impact to the designated uses of a **Wetland**. Any **Physical Alterations to Wetlands** that will cause a potential for a significant adverse impact to a designated use must be implemented in accordance with the avoidance, minimization and mitigation requirements of Minn. R. 7050.0186 and other applicable rules.

**Existing Local Wetland Planning and Permit Requirements**

Wetlands regulated by MPCA permits are required to comply with MPCA rules. The potential for duplication of wetland impact adequacy determinations regarding the sequence mitigation requirements between the permittee and the MPCA should be minimal. The MPCA does not anticipate that it will review and make a separate determination (a duplicate effort) regarding the evaluation of the sequence mitigation requirements when that determination has been conducted by the permittee. MPCA enforcement of the NPDES permit requirements of Minn. R. 7050.0186 regarding wetland impacts associated with a component of the storm water system should only be necessary if the LGU does not apply the permit requirements to their determinations. A separate determination by the permittee under the NPDES requirements that a wetland alteration activity satisfy Minn. R. 7050.0186 sequencing is only initiated when the WCA



requirements exempt or consider the wetland or the activity non jurisdictional or if the local wetland plan designation of the wetland does not require full sequence evaluation for impacts of a wetland alteration.

It should be noted the WCA also recognizes that there may be other agencies or programs that have regulatory jurisdiction regarding wetland impacting activities. The WCA rules contained in 8420.0105 SCOPE B state that WCA rule is in addition to other regulations including those of the United States Army Corps of Engineers, United States Department of Agriculture, Minnesota state agencies, watershed districts, and local governments. Also, specifically the WCA requires that the person conducting an activity in a wetland under an exemption ensure the activity is conducted in compliance with all other applicable federal, state, and local requirements (Minn. R. 8420.0115).

### **Designated Uses**

The permit uses terms such as “designated uses” and/or “functions and values” which may not be clear to some permittees. These terms come from MPCA rules and have the meaning described therein. The terms “designated uses” of the permit relate to MPCA rules and requirements. Designated uses are set by MPCA through notice and comment rulemaking under state law and any changes to designated uses would have to be made through notice and comment rulemaking.

While there is considerable history and legal precedent related to these rules, not all permittees will be aware of the legal implications. We have included, in this guidance, the pertinent parts of those rules to help describe the context of these terms. The permit and rules are under MPCA authority. The permit implements the rules. The permit does not change the rules, definitions in the rules, or requirements under the rules.

### **Significant Adverse Impact**

The term “significant adverse impact” in this part of the permit based on the existing water quality standards and applicable rules. The term implies “significant adverse impact to a designated use” of the water, as defined in water quality standards. We do not feel the term is quantifiable in this sense. For example, in discharge to a wetland, fill, inundation or toxics all could result in significant adverse impacts, all of which would need to be quantified. We feel it is best to refer to the water quality standards rather than define them in the permit.

### **Wetland Rules**

The following rules apply to wetlands.

#### **7050.0130 DEFINITIONS.**

*D. “Physical alteration” means the dredging, filling, draining or permanent inundating of a wetland. Restoring a degraded wetland by reestablishing its hydrology is not a physical alteration.*

*F. “Wetlands” are those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas. Constructed wetlands designed for wastewater treatment are not waters of the state. Wetlands must have the following attributes:*

*(1) a predominance of hydric soils;*

*(2) inundated or saturated by surface water or groundwater at a frequency*

*and duration sufficient to support a prevalence of hydrophytic vegetation typically adapted for life in a saturated soil condition; and*  
*(3) under normal circumstances support a prevalence of such vegetation.*

### **Wetland Mitigation**

The following rules apply to wetland mitigation.

#### **7050.0186 WETLAND MITIGATION.**

*Subp. 1. **Policy.** It is the policy of the state to protect wetlands from significant adverse impacts on wetland designated uses. Wetland mitigation maintains nondegradation of wetland designated uses.*

*Subp. 2. **Wetland mitigation principles.** The wetland mitigative sequence incorporates the following principles in descending order of priority:*

*A. avoid the impact altogether by not taking a certain action or parts of an action;*

*B. minimize the impact by limiting the degree or magnitude of the action and its implementation, and by taking affirmative actions to rectify the impact and reduce or eliminate the impact over time; and*

*C. mitigate the unavoidable impact to the designated uses of a wetland by compensation. Compensatory mitigation shall be accomplished in the following descending order of priority of replacement:*

*(1) restoration of a previously diminished wetland; and*

*(2) creation of a wetland.*

*Subp. 3. **Determination of wetland dependency.** A project is wetland dependent if wetland designated uses are essential to fulfill the basic purpose of the project. A wetland dependent project is exempt from subp. 4, but will follow the remainder of the mitigation sequence. Where the proposed project is not wetland dependent, the wetland mitigation sequence in subp. 2 must be followed.*

*Subp. 4. **Impact avoidance.** No person may cause or allow a physical alteration which has the potential for a significant adverse impact on one or more designated uses of a wetland, unless there is not a prudent and feasible alternative that would avoid impacts to the designated uses of the wetland.*

*A. Prudent and feasible alternatives that do not involve wetlands are presumed to be available unless clearly demonstrated otherwise by the permit or certification applicant.*

*B. If no prudent and feasible alternative is available for avoidance, potential significant adverse impacts to the designated uses of the wetland shall be minimized in compliance with subp. 5.*

*Subp. 5. **Impact minimization.***

*A. The permit or certification applicant shall implement actions to minimize potential significant adverse impacts of the physical alteration.*

*B. In evaluating the applicant's actions to minimize impacts, the MPCA shall consider:*

*(1) the spatial requirements of the project;*

*(2) the location of existing structural or natural features that may dictate the placement or configuration of the project;*

*(3) the purpose of the project and how the purpose relates to placement, configuration, or density;*

*(4) the sensitivity of the site design to the natural features of the site, including*

*topography, hydrology, and existing vegetation;*  
*(5) the designated uses and spatial distribution of the wetlands on the site;*  
*(6) individual and cumulative impacts; and*  
*(7) the applicable minimization activities identified in Code of Federal Regulations, title 40, section 230, subpart H, as amended.*

*C. If the potential for significant adverse impacts on designated uses remains after all actions to minimize the impacts have been incorporated into the proposed project, unavoidable impacts shall be compensated for in compliance with subp. 6.*

*Subp. 6. **Impact compensation.** The permit or certification applicant shall provide compensatory mitigation for unavoidable impacts on the designated uses of the wetland in accordance with this subpart.*

*A. Compensatory mitigation must be sufficient to ensure replacement of the diminished or lost designated uses of the wetland that was physically altered.*

*B. Compensatory mitigation shall be accomplished in the following descending order of priority of replacement:*

*(1) restoration of a previously diminished wetland; and*  
*(2) creation of a wetland.*

*C. If compensatory mitigation is accomplished by restoration or creation, the replacement wetland shall be of the same type and in the same watershed as the impacted wetland, to the extent prudent and feasible.*

*D. Compensatory mitigation shall be completed before or concurrent with the actual physical alteration of the wetland affected by the proposed project to the extent prudent and feasible.*

#### **7050.0185 NONDEGRADATION FOR ALL WATERS.**

*Subp. 9. **Physical alterations of wetlands.** The permit or certification applicant shall comply with part 7050.0186 if there is a proposed physical alteration that has the potential for a significant adverse impact to a designated use of a wetland and that is associated with a project that requires a National Pollutant Discharge Elimination System (NPDES) permit, a 401 certification under parts 7001.1400 to 7001.1470, or a state disposal system permit.*

**E. Discharges Requiring Environmental Review** (*Minn. Stat. ch. 116D, and 42 U.S.C. §§ 4321 – 4370 f*). This permit does not replace or satisfy any environmental review requirements, including those under the Minnesota Environmental Policy Act (Minn. Stat. ch. 116D), the National Environmental Policy Act (42 U.S.C. §§ 4321 – 4370 f), and rules implementing those laws. Any environmental review required of **You** by law, including preparation of environmental review documents such as environmental assessment worksheets, environmental impact statements, or environmental assessments, must be completed in accordance with those requirements.

Minnesota's environmental review regulations can be found in Minn. R. 4410.1000.

**F. Discharges Affecting Threatened or Endangered Species.** This permit does not replace or satisfy any review requirements for Threatened or Endangered Species, from discharges whose direct, indirect, interrelated, interconnected, or independent

impacts would jeopardize a listed Threatened or Endangered Species or adversely modify a designated critical habitat. For any project resulting in a discharge having the potential to adversely impact Threatened or Endangered species, or their critical habitat, **You** must conduct your required review and coordination with appropriate agencies in accordance with those requirements. Endangered or threatened species regulations can be found in Minn. R. ch. 6134 and federal rules.

**G. Discharges Affecting Historic or Archeological Sites.** This permit does not replace or satisfy any review requirements for Historic or Archeological Sites from discharges which adversely affect properties listed or eligible for listing in the National Register of Historic Places or adversely affecting known or discovered archeological sites. For any project resulting in a discharge having the potential to adversely impact Historic or Archeological Sites, including significant anthropological sites and any burial sites, **You** must conduct your required review and coordination with the Minnesota State Historic Preservation Officer or other appropriate agencies in accordance with those requirements.

#### **Preservation Legislation**

The most comprehensive federal law pertaining to the protection of cultural resources is the **National Historic Preservation Act of 1966**, as amended, which created State Historic Preservation Offices in each state, established the National Register of Historic Places and created a federal-state-tribal-local partnership:

- **Section 106** requires federal agencies to consider the effect of their activities on historic properties and to afford the Advisory Council on Historic Preservation the opportunity to comment on those activities. In practice, this provision is administered under the regulations in 36 CFR 800, which require that federal agencies consult with the State Historic Preservation Office regarding all undertakings. Certain projects with effects on historic properties also are referred to the Advisory Council.
- **Section 110** defines the broad requirements for preservation programs in federal agencies.
- **Revisions enacted in 1992** provide expanded participation for Indian tribes in the national preservation program, including a provision for the creation of Tribal Historic Preservation Offices that are able to assume State Historic Preservation Office responsibilities within reservation boundaries.

Other federal laws relating to protection of cultural resources include the **Abandoned Shipwrecks Act of 1987**, the **Archaeological and Historic Preservation Act of 1974**, the **American Indian Religious Freedom Act of 1978**, the **Archeological Resources Protection Act of 1979**, the **American Graves Protection and Repatriation Act of 1990**, and the **National Environmental Policy Act of 1969**.

**Minnesota Statutes, Chapter 138** designates the director of the Minnesota Historical Society as the State Historic Preservation Officer (MS 138.081) and places responsibility for Minnesota's historic preservation program firmly with the Minnesota Historical Society. Chapter 138 contains several additional sections pertaining to historic and archaeological resources:

The **Minnesota Field Archaeology Act** (MS 138.31–138.42) establishes the office of the State Archaeologist; requires licenses to engage in archaeology on public land;

establishes ownership, custody and use of objects and data recovered during survey; and requires state agencies to submit development plans to the State Archaeologist, the Minnesota Historical Society and the Minnesota Indian Affairs Council for review when there are known or suspected sites in the area.

The **Minnesota Historic Sites Act** (MS 138.661–138.669) establishes the State Historic Sites Network and the State Register of Historic Places, and requires that state agencies consult with the Minnesota Historical Society before undertaking or licensing projects that may affect properties on the Network or on the State or National Registers of Historic Places.

The **Minnesota Historic Districts Act** (MS 138.71–138.63) designates certain historic districts and enables local governing bodies to create commissions to provide architectural control in these areas.

A portion of the **Minnesota Private Cemeteries Act** (MS 307.08) protects all human burials or skeletal remains on public or private land. Other state laws and rules that pertain to protection of cultural resources are the **Minnesota Environmental Rights Act** (MS Chapter 116B.02), the rules of the Minnesota Environmental Quality Board concerning state Environmental Assessment Worksheets and Environmental Impact Statements, and the Wetland Conservation Act Rules.

**Minnesota Statutes 471.193**, is the legislation that enables local units of government to establish heritage preservation commissions and promote historic resources. This legislation provides perhaps the most comprehensive protection of historic properties because it is at the local government level where most decisions about land and buildings are made.

**H. Discharges Affecting Source Water Protection Areas** (*Minn. R. 4720.5100 – 4720.5590*). **You** shall incorporate **BMPs** into your **Storm Water Pollution**

**Prevention Program** to protect any of the following drinking water sources that your **MS4** discharge may affect, and **You** shall include the map of these sources with the **Storm Water Pollution Prevention Program** if they have been mapped:

1. Wells and source waters for drinking water supply management areas identified as vulnerable under Minn. R. 4720.5205, 4720.5210, and 4720.5330, and
2. Source water protection areas for surface intakes identified in the source water assessments conducted by or for the Minnesota Department of Health under the federal Safe Drinking Water Act, U.S.C. §§ 300j – 13.

The specific requirements of the permit are intended to complement not contradict other programs such as the MDH mapping programs. As a permittee you are not responsible under this permit for the planning, schedules and programs under the MDH programs.

What permittees will be responsible under this permit for are the discharges of their own storm water. You will be responsible for defining the measures that reduce the threat to drinking water to the maximum extent practicable. We interpret this to mean implementing reasonable measures for your location, nature of your discharge, threat to drinking water, and other considerations, in a manner similar to other BMPs in your SWPPP. As with all aspects of the permit the MPCA and EPA consider the requirements to be iterative and future requirements could be more specific to address drinking water in future permits.

It is the MPCA's responsibility to protect all surface and ground water, public or private, and to preserve their quality and designated uses, including drinking water. The MPCA has the authority and responsibility to regulate discharges to waters, and has established water quality standards with a high degree of protection for some waters, such as drinking water. The MPCA does not put requirements into the permit for which it does not have authority. We require that permittees address potential impacts from their storm water when discharged to these special waters and under specific circumstances.

### **Drinking Water Standards**

#### **7050.0221 SPECIFIC STANDARDS OF QUALITY AND PURITY FOR CLASS 1 WATERS OF THE STATE; DOMESTIC CONSUMPTION.**

*Subp. 6. Additional standards. In addition to the standards in subparts 2 to 5, no sewage, industrial waste, or other wastes from point or nonpoint sources, treated or untreated, shall be discharged into or permitted by any person to gain access to any waters of the state classified for domestic consumption so as to cause any material undesirable increase in the taste, hardness, temperature, chronic toxicity, corrosiveness, or nutrient content, or in any other manner to impair the natural quality or value of the waters for use as a source of drinking water.*

#### **7060.0200 Underground Waters POLICY.**

*It is the policy of the agency to consider the actual or potential use of the underground waters for potable water supply as constituting the highest priority use and as such to provide maximum protection to all underground waters. The ready availability nearly statewide of underground water constitutes a natural resource of immeasurable value which must be protected as nearly as possible in its natural condition. For the conservation of underground water supplies for present and future generations and prevention of possible health hazards, it is necessary and proper that the agency employ a nondegradation ondegradationvent pollution of the underground waters of the state.*

#### **7060.0500 NONDEGRADATION POLICY.**

*It is the policy of the agency that the disposal of sewage, industrial waste, and other wastes shall be controlled as may be necessary to ensure that to the maximum practicable extent the underground waters of the state are maintained at their natural quality unless a determination is made by the agency that a change is justifiable by reason of necessary economic or social development and will not preclude appropriate beneficial present and future uses of the waters.*

#### **Addressing Activities of Others**

Permittees must address their own activities, but to some extent, but they must also consider activities in their community by others. While they are not required to take on new authority, you must address the activities you control or regulate. Violations of other agencies' rules may not be enforceable under this permit (of course they could be enforced by other agencies if applicable), however, failure to implement the SWPPP would be enforceable under the permit.

As an example, these requirements are similar in nature to the requirements for illicit discharge inspection and restrictions. Permittees would not be held liable for illicit

discharge under the storm water permit, but would be responsible for implementing and follow up on illicit discharge requirements of the permit and SWPPP

Examples of how this could be implemented range from developing a process for denial of your local permits or approvals until the appropriate procedures or coordination has been conducted, to simply informing parties of the need to conduct the appropriate procedures or coordination. For permittees under this permit, it would not be a violation if another party ignored warnings and did not conduct the appropriate procedures or coordination. But it could be considered a violation of the storm water MS4 permit if permittees flagrantly ignored the requirements of the permit and procedures that they had adopted in the SWPPP.

## **Exhibit D**

### **MCWD Education Resources Add Value to City Programs**

Need help fulfilling permit requirements for educating your citizens and local officials about storm water? Want to do a better job with outreach? Looking for something specific? MCWD is here to help. We offer a variety of educational programs and tools that can add value to your efforts.

Want more information? Go to [www.minnehahacreek.org/education](http://www.minnehahacreek.org/education). Have an idea for something you don't see listed? Contact Julie Westerlund, MCWD Education and Communications Coordinator at 952-471-0590.

#### **For All Audiences**

[www.minnehahacreek.org](http://www.minnehahacreek.org) is your one stop shop for all things MCWD. Watch for an overhaul of the site later this year.

#### **For Local Officials and City Staff**

NEMO (Nonpoint Education for Municipal Officials) is an educational program for members of city councils, planning/park commissioners, other local officials, and city staff that addresses the relationship between land use decisions and water quality. We can come to city hall with workshops on:

- Linking Land Use to Water Quality (basics of storm water)
- Linking Land Use to Lake Quality (lakeshore development)
- Natural Resource Based Planning/Open Space
- Low Impact Development
- Reducing Impervious Surfaces
- Local Ordinances for Water Quality
- Managing Storm water in Urban Areas (redevelopment issues)

Water Pro Our Quarterly Newsletter for folks like you. 'Nuff Said. Contact us to get on our mailing list.

Workshops We can put on a variety of regional educational workshops suited to your needs. For example, last year we sponsored "The Latest in Low Impact Development: Engineering and Landscape Design" featuring a nationally known expert on the topic. Let us know what you have in mind.

#### **For The General Public**

Newsletter Articles NEW in 2007! MCWD will be offering short newsletter articles for placement in city newsletters. Use what we've written as is, or adapt it for your own purposes. Send us your ideas for water related articles, and we'll write them up!

Press Releases and Newspaper Columns Local papers carry news about the MCWD, and the MCWD Board President pens a watershed-related column in the local Sun-Sailor newspapers every other month.



Interactive Displays and Exhibits We have a number of displays and exhibits available for events or simply to have on display at city hall or your local library.

- The *Enviroscape* interactive watershed model allows you to sprinkle 'pollution' (colored powder) and then see what happens when it 'rains' (spray bottle) on the watershed.
- The *Your Street Connects to Lakes and Rivers* interactive display has a pipe where users can drop balls of 'storm water' in at the storm drain and see them come out at the local swimming hole.
- The *Watershed Interactive Kiosk* is an electronic interactive tool where users can learn about storm water from an urban frog singing a storm water rap, a raindrop who journeys through the storm water system, and other characters. Comes with a sound dome to keep the noise factor to a minimum.
- 40<sup>th</sup> Anniversary Traveling Display MCWD is turning 40 in 2007! This spring, we'll have a display that interprets the history of the area, featuring 'Tools of Change' – historical artifacts. We'd love to put it in your city hall, local library, or community center.

Festivals and Events Contact us and we'll do our best to attend your community festival or event. We'll bring along our displays and exhibits, as well as giveaways, goodies, and a person to answer watershed questions.

Printed Materials Looking for a brochure or booklet? We've got a couple to offer and are open to working with you on your special needs.

### **For Youth and Schools**

See interactive displays and exhibits, above

Digital Watershed Atlas is a 4-CD set rich with current and historical maps, aerial photos, and narrative about the watershed. Has content that can be used with a number of existing school curricula.

Children's Water Festival The MCWD is a partner in the metro-wide Children's Water Festival for 5<sup>th</sup> graders. Contact us to find out how to get into the lottery to secure a spot for your class.

Cynthia Krieg Watershed Stewardship Fund Many schools have received grants from MCWD's stewardship fund, allowing them to hold water festivals of their own, create outdoor classrooms and play areas, build rain gardens, and more. See the web for more information.

### **For Citizen Groups**

Cynthia Krieg Watershed Stewardship Fund The fund is also available to nonprofit citizen groups and other organizations to fund water related educational programs and projects, as well as innovative water quality improvement and storm water management projects.

Watershed Association Initiative NEW in 2007! MCWD is assisting the formation of new grass-roots citizen groups like lake associations and 'friends of' creeks or wetlands. Special Funding is available. Contact us for more information.

Wetland Buffer Presentations Many newer developments have legally defined wetland buffers with special rules. We'll give short, informal presentations for neighborhood groups and homeowners associations to help them understand what's involved.

### **For Realtors and other Businesses**

Lake Minnetonka Yesterday and Today Promote your business with a beautiful, full color map of Lake Minnetonka, featuring water quality information and a narrative of the history of the Lake Area. We'll work with you to customize the map with an imprint of your corporate logo and information. See the web for details.

Buying and Selling Lakeshore Property Workshops MCWD sponsored two half-day continuing education workshops for Realtors in 2006, and we'll sponsor more if we get enough requests.

### **For Builders and Contractors**

Training Workshops and Seminars MCWD's permitting staff are always available to help you navigate the permitting process and to make sure your site is in compliance. We occasionally offer workshops on topics like erosion and sediment control or shoreline rip-rap.

## **Exhibit E**

### **Typical Types of Illicit Discharge Found in Residential Communities**

Groundwater seepage into the storm drainpipe: Seepage frequently occurs in storm drains after long periods of above average rainfall. Seepage discharges can be either continuous or intermittent, depending on the depth of the water table and the season. Groundwater seepage usually consists of relatively clean water that is not an illicit discharge by itself, but can mask other illicit discharges. If storm drains are located close to sanitary sewers, groundwater seepage may intermingle with diluted sewage.

Spills that enter the storm drain system at an inlet: These transitory discharges occur when a spill travels across an impervious surface and enters a storm drain inlet. Spills can occur at many industrial, commercial and transport-related sites. A very common example is an oil or gas spill from an accident that then travels across the road and into the storm drain system (Figure 4).

Dumping a liquid into a storm drain inlet:

This type of transitory discharge is created when liquid wastes such as oil, grease, paint, solvents, and various automotive fluids are dumped into the storm drain (Figure 5). Liquid dumping occurs intermittently at sites that improperly dispose of rinse water and wash water during maintenance and cleanup operations. A common example is cleaning deep fryers in the parking lot of fast food operations.

Outdoor washing activities that create flow to a storm drain inlet: Outdoor washing may or may not be an illicit discharge, depending on the nature of the generating site that produces the wash water. For example, hosing off individual sidewalks and driveways may not generate significant flows or pollutant loads. On the other hand, routine washing of fueling areas, outdoor storage areas, and parking lots (power washing), and construction equipment cleanouts may result in unacceptable pollutant loads (Figure 6).

Non-target irrigation from landscaping or lawns that reaches the storm drain system: Irrigation can produce intermittent discharges from over-watering or misdirected sprinklers that send tap water over impervious areas (Figure 7). In some instances, non-target irrigation can produce unacceptable loads of nutrients, organic matter or pesticides. The most common example is a discharge from commercial landscaping areas adjacent to parking lots connected to the storm drain system. However, illicit discharge can come from the following also:

- Swimming pool discharges are common in some residential areas.
- Public Works Yards

- Yard Waste Disposal Sites

In the regulation, EPA recommends that the plan to detect and address illicit discharges include procedures for: Locating priority areas likely to have illicit discharges (which may include visually screening outfalls during dry weather and conducting field tests of selected pollutants)

Tracing the source of an illicit discharge  
 Removing the source of the discharge  
 Program evaluation and assessment

### **Experience Gained in Phase I**

The Center for Watershed Protection conducted a series of surveys and interviews with Phase I communities to determine the current state of the practices utilized in local IDDE programs, and to identify the most practical, low-cost, and effective techniques to find, fix and prevent discharges. The detailed survey included 24 communities from various geographic and climatic regions in the United States. Some of the key findings of the survey are presented below

(CWP, 2002)<sup>4</sup> Survey results are based on responses from 24 jurisdictions from 16 states. Surveys were supplemented by on-site interviews of staff of eight IDDE programs: Baltimore City, MD; Baltimore County, MD; Boston Water and Sewer Commission (BWSC), MA; Cambridge, MA; Dayton, OH; Raleigh, NC; Wayne County, MI; and Fort Worth, TX. Jurisdictions selected for the survey and interviews represent a variety of geographic and climatic regions. The EPA storm water coordinators for each region of the country were contacted for recommendations on jurisdictions to include in the survey. Also, a variety of jurisdiction sizes in terms of population, IDDE program service area, and land use was targeted.<sup>4</sup>

- Lack of staff significantly hindered implementation of a successful IDDE program. Phase I communities rely heavily on the expertise of their field staff—practical expertise that has been acquired over many years as programs gradually developed. Methods or approaches recommended for Phase II communities should be less dependent on professional judgment. Clear and effective ordinance language should be adopted by Phase II communities to ensure that all potential sources of illicit discharges are prohibited, and that the community has sufficient legal authority to inspect private properties and enforce corrections. Many communities lacked up-to-date mapping resources, and found that mapping layers such as storm sewers, open drainage channels, waters of the U.S., outfalls, and land use were particularly useful to conduct and prioritize effective field investigations. Outfall screening required the greatest staff and equipment resources, and did not always find problem outfalls. Communities recommended a fast and efficient sampling approach that utilizes a limited number of indicator parameters at each outfall to find problem outfalls. When purchasing equipment, Phase II programs should communicate with other jurisdictions to consider sharing field equipment and laboratory costs. Use of some discharge tracers has proven challenging and sometimes fruitless, because of false or ambiguous results and complex or

hazardous analytical methods. Accurate, cost-effective, and safe monitoring methods are needed to effectively use tracers.

Municipal IDDE programs worked best when they integrated illicit discharge control in the wider context of urban watershed restoration. Table 3 provides some examples of how greater interagency cooperation can be achieved by linking restoration program areas.

In summary, survey communities expressed a strong need for relatively simple guidance to perform illicit discharge investigations. To address this need, the Manual has been designed to make simple program and technical recommendations for Phase II communities to develop cost-effective IDDE programs.

Watershed-Related Program	How Program Relates to IDDE Program Needs
Subwatershed Mapping and Analysis	<ul style="list-style-type: none"> <li>• Mapping and aerial photography are critical tools needed for illicit connection detection surveys. GIS tax map layers are often useful to identify property ownership.</li> </ul>
Rapid Assessment of Stream Corridors	<ul style="list-style-type: none"> <li>• Observations from physical stream assessments are often useful in identifying problem areas, including dry weather flow outfalls, illegal dumping, and failing infrastructure locations.</li> </ul>
Watershed Monitoring and Reporting	<ul style="list-style-type: none"> <li>• Compiled water quality and other indicator data can be useful in targeting problem areas.</li> </ul>
Stream Restoration Opportunities	<ul style="list-style-type: none"> <li>• Stream restoration opportunities can often be coordinated with sewer infrastructure upgrades and maintenance.</li> </ul>
Watershed Education	<ul style="list-style-type: none"> <li>• Educating the public about unwanted discharges can save programs money by generating volunteer networks to report and locate problem areas. Better awareness by the public can also reduce the likelihood of unintentional cross-connections.</li> </ul>
Pollution Prevention for Generating Sites	<ul style="list-style-type: none"> <li>• Providing incentives to businesses to inspect and correct connections can save programs money.</li> </ul>

### Components of an Effective IDDE Program

The prospect of developing and administering an IDDE program can be daunting, complex and challenging in many communities. This Chapter organizes and simplifies the basic tasks needed to build a program. In general, a community should consider eight basic program components, as follows:

**Audit Existing Resources and Programs** - The first program component reviews existing local resources, regulations, and responsibilities that bear on illicit

discharge control in the community. A systematic audit defines local needs and capabilities, and provides the foundation for developing the initial IDDE program plan over the first permit cycle.

**Establish Responsibility, Authority and Tracking** – This component finds the right “home” for the IDDE program within existing local departments and agencies. It also establishes the local legal authority to regulate illicit discharges, either by amending an existing ordinance, or crafting a new illicit discharge ordinance. This program component also involves creation of a tracking system to report illicit discharges, suspect outfalls, and citizen complaints, and to document local management response and enforcement efforts.

**Complete a Desktop Assessment of Illicit Discharge Potential** – Illicit discharges are not uniformly distributed across a community, but tend to be clustered within certain land uses, subwatersheds, and sewage infrastructure eras. This program component helps narrow your search for the most severe illicit discharge problems, through rapid analysis of existing mapping and water quality monitoring data.

- **Develop Program Goals and Implementation Strategies** – This program component integrates information developed from the first three program components to establish measurable goals for the overall IDDE program during the first permit cycle. Based on these goals, managers develop specific implementation strategies to improve water quality and measure program success.
- **Search for Illicit Discharge Problems in the Field** – This component involves rapid outfall screening to find problem outfalls within priority subwatersheds. Results of outfall surveys are then used to design a more sophisticated outfall monitoring system to identify flow types and trace discharge sources. Many different monitoring options exist, depending on local needs and discharge conditions.
- **Isolate and Fix Individual Discharges** – Once illicit discharge problems are found, the next step is to trace them back up the pipe to isolate the specific source or improper connection that generates them. Thus, this program component improves local capacity to locate specific discharges, make needed corrections, and take any enforcement actions.
- **Prevent Illicit Discharges** – Many transitory and intermittent discharges are produced by careless practices at the home or workplace. This important program component uses a combination of education and enforcement to promote better pollution prevention practices. A series of carrots and sticks is used to reach out to targeted individuals to prevent illegal or unintentional illicit discharges. Evaluate the Program – The last component addresses the ongoing management of the IDDE program. The measurable goals set for the IDDE program are periodically reviewed and revisited to determine if progress is being made, or implementation strategies need to be adjusted. Within each

program component, a community has many options to choose, based on its size, capability and the severity of its illicit discharge problems. Chapters 3 through 10 address each IDDE program component in more detail, and summarize its purpose, methods, desired product or outcome, and budget implications. The remainder of each chapter provides program managers with detailed guidance to choose the best options to implement the program component in their community.

- Scheduling of the eight IDDE program components is not always sequential and may overlap in some cases. In general, the first four program components should be scheduled for completion within the first year of the permit cycle in order to develop an effective program for the remaining years of the permit. Table 4 summarizes the specific tasks and products associated with each IDDE program component. The scheduling, costs and expertise needed for each IDDE program component are compared in Table 5.

Program Component	Key Tasks	Products
1. Audit existing programs	• Infrastructure Profile • Existing Legal Authority • Available Mapping • Experienced Field Crews • Access to Lab Services • Education and Outreach Outlets • Discharge Removal Capability • Program Budget and Financing	• Agreement on Lead Agency • 5 year Program Development Plan • First Year Budget and Scope of Work
2. Establish responsibility and authority	• Review Existing Ordinances • Define “Illicit” • Provisions for Access/Inspections • Select Enforcement Tools • Design Tracking System	• Adopt or Amend Ordinance • Implement Tracking System
3. Desktop assessment of illicit discharge potential	• Delineate Subwatersheds • Compile Mapping Layers/Data • Define Discharge Screening Factors • Screen Subwatersheds for Illicit Discharge Potential • Generate Maps for Field Screening	• Prioritize Subwatersheds for Field Screening
4. Develop program goals and strategies	• Community Analysis of Illicit Discharge • Public Involvement	• Measurable Program Goals • Implementation Strategies

## **Management Tips To Develop an Effective IDDE Program**

Every community will develop a unique IDDE program that reflects its size, development history, land use, and infrastructure. Still, some common threads run through effective and well-managed local IDDE programs. Below are some tips on building an effective local.

Go after continuous sewage discharges first. Effective programs place a premium on keeping sewage out of the storm drain system. Continuous sewage discharges pose the greatest threat to water quality and public health, produce large pollutant loads, and can generally be permanently corrected when the offending connection is finally found. Intermittent or indirect discharges are harder to detect, and more difficult to fix.

Put together an interdisciplinary and interagency IDDE development team. A broad range of local expertise needs to be coordinated to develop the initial IDDE plan, as indicated in Table 5. Effective programs assemble an interagency program development team that possesses the diverse skills and knowledge needed for the program, ranging from legal analysis, GIS, monitoring, stakeholder management and pipe repairs.

Educate everybody about illicit discharges. Illicit discharge control is a new and somewhat confusing program to the public, elected officials, and many local agencies. Effective programs devote considerable resources to educate all three groups about the water quality impacts of illicit discharges.

Understand your infrastructure. Finding illicit discharges is like finding a needle in a haystack on a shoestring budget. Many indirect or transitory discharges are extremely difficult to catch through outfall screening. Therefore, effective programs seek to understand the history and condition of their storm water and sewer infrastructure to find the combinations that create the greatest risk for illicit discharge. Effective programs also screen land uses to locate generating sites within targeted subwatersheds. For example, knowing the proximity of the infrastructure to the groundwater table or knowing that the sewer collection system has a long transit time can influence the indicator parameters and associated thresholds that a community chooses to target.

Walk all of your streams in the first permit cycle. Perform a rapid Outfall Reconnaissance Inventory (ORI) on every mile of stream or channel in the community, starting with the subwatersheds deemed to have the greatest risk.



The ORI allows you to rapidly develop an accurate outfall map and quantify the severity of your discharge problems. ORI data and field photos are extremely effective in documenting local problems. Stream walks and the ORI should be conducted regularly as part of an IDDE program. In many areas, it may require as many as three stream walks to identify all outfall locations.

Use GPS to create your outfall map. In most communities, the storm water system and sewer pipe networks are poorly mapped, and consist of a confusing blend of pipes and structures that were constructed in many different eras. Effective programs perform a field reconnaissance to ground truth the precise locations of all outfalls using GPS technologies. Effective programs have learned to quickly evaluate outfalls of all sizes, and not just major ones (>36 inches in diameter).

Understand your discharges before developing a monitoring plan. Monitoring is usually the most expensive component of any local IDDE program, so it is extremely important to understand your discharges before committing to a particular monitoring method or tracer. Compiling a simple discharge “fingerprint” library that characterizes the chemistry of major flow types in the community (e.g., sewage, seepage, wash-water, groundwater, tap water, or non-target irrigation water) is recommended. This library can distinguish flow types and adjust monitoring benchmarks.

Consider establishing an ambient (in-stream) chemical and/or biological monitoring program. Prioritizing outfall screening and investigation can save time in the field. An ambient chemical or biological monitoring program can provide supplemental information to help prioritize sites and can be used to document long-term success.

Utilize a simple outfall tracking system to organize all your IDDE program data. Illicit discharges are hard enough to find if an organized system to track individual outfalls is lacking. Effective programs develop a unified geospatial tracking system to locate each outfall, and store information on its address, characteristics, photos, complaints and monitoring data. The tracking system should be developed early in the permit cycle so that program managers can utilize it as an evaluation and reporting tool.

Outsource some IDDE functions to local watershed groups. Staffing is the greatest single line item expense associated with a local IDDE program, although staffing needs are often temporary or seasonal in nature. Some effective programs have addressed this staffing imbalance by contracting with watershed groups to screen outfalls, monitor stream quality, and handle storm water education. This strategy reduces overall program costs, and increases local watershed awareness and stewardship.

Utilize a hotline as an education and detection tool. Citizen hotlines are a low-cost strategy to engage the public in illicit discharge surveillance, and are

probably the only effective way to pick up intermittent and transitory discharges that escape outfall screening. When advertised properly, hotlines are also an effective tool to increase awareness of illicit discharges and dumping. Effective programs typically respond to citizen reports within 24 hours, acknowledge their help, and send them storm water education materials. When citizens play a stronger role in reporting illicit discharge problems, local staff can focus their efforts on tracing the problem to its source and fixing it.

Cross-train all local inspectors to recognize discharges and report them for enforcement. Effective programs make sure that fire, building, plumbing, health, safety, erosion control and other local inspectors understand illicit discharges and know whom to contact locally for enforcement.

Target your precious storm water education dollars. Most programs never have enough resources to perform the amount of storm water education needed to reduce indirect and transitory discharges in their community. Consequently, effective programs target their discharges of concern, and spend their scarce dollars in the subwatersheds, neighborhoods or business sectors most likely to generate them.

Stress public health and safety benefits of sewage-free streams. Effective programs publicize the danger of sewage discharges, and notify the public and elected officials about the discharges that need to be prevented or corrected.

Calibrate your program resources to the magnitude of the illicit discharge problem.

After a few years of analysis and surveys, communities get a good handle on the actual severity of their illicit discharge problems. In some communities, storm drains will be relatively clean, whereas others may have persistent problems. Effective programs are flexible and adaptive, and shift program resources to the management measure that will reduce the greatest amount of pollution.

Think of discharge prevention as a tool of watershed restoration. Discharge prevention is considered one of the seven primary practices used to restore urban watersheds (Schueler, 2004). Effective programs integrate illicit discharge control as a part of a comprehensive effort to restore local watersheds.

## Exhibit F Existing Vegetation Grading and Erosion Control Ordinance

### Vegetation Removal; Grading; Filling;.

(1) Vegetation.

(A) Preservation. The purpose of this Section {1} is to comply with legally required “*Statewide Standards for Management of Shoreland Areas*” applicable to removal or alteration of vegetation within shore and bluff impact zones {“Regulated Zones”}; provided that no area more than seventy-five (75) feet inland from the ordinary high water level shall be included in a Regulated Zone as part of a shore impact zone. Terms used herein shall have the definitions given them in such Standards.

(A) Removal of Vegetation.

(i) Trees. Trees other than Buckthorn which are greater than six (6) inches in diameter measured two (2) feet above the ground within the Regulated Zones{“Protected Trees”}may not be removed or intentionally killed by the property owner or their agent without a permit issued by the Council, which shall be issued only if consistent with Section 211 (1)(A).

(ii) Protected Trees which have the status of dead, diseased, insect-infested, rotted, or so damaged by natural events as to be hazardous, may be removed with out a permit issued by the Council if the property owner obtains, prior to removal, either a written opinion of a licensed arborist that such removal is advisable or written approval of City Staff, such opinion or approval to be based only on status the of the Protected Tree as aforesaid.

(ii) Intensive Vegetation Clearing. Intensive vegetation clearing of a contiguous area exceeding one hundred {100} square feet within Regulated Zones, except as necessary for the construction of structures or other permitted uses in the Regulated Zone and Essential Services under validly issued permits, is prohibited

with out a permit from the Council to remove vegetation.

- (C) **Violation; Restoration.** The City may require a property owner who has removed trees and/or shrubs in violation of Section 211{1}{B} to replace them as follows:
- i) Replacements shall be species except buckthorn that are considered hardy in this area;
- (A) Replacements shall be placed in close proximity to the trees or shrubs {as the case may be} being removed. The replacement location to be as approved by City Staff;
- (iii) Replacement trees shall be at least two {2} inches in diameter measured two {2} feet above the ground, shall be of a type with a growth habit similar to the removed tree, and shall have a cumulative such measurement at least equal to that of the removed tree{s}; and
  - (iv) Replacement shrubs shall be at least ten {10} inch potted shrubs.
- (2) **Grading and Filling.** Any grading or filling of the natural topography of a lot in excess of that normally required for the construction of a structure or for normal yard maintenance shall be subject to all applicable state laws, the provisions for conditionally permitted activities and in addition:
- (A) **Permit and Plan.** The application for a permit shall include a detailed plan and schedule of the earth-moving activities.
  - (B) **Approval.** Approval of the plan shall be conditioned upon the following:
    - (A) No filling or grading shall be allowed on slopes greater than twelve percent (12%).
    - (A) Temporary ground cover, such as mulch, shall be used and permanent ground cover, such as sod shall be planted as soon as possible.

- (iii) Diversions, silting basins, terraces and other methods to trap sediments shall be used where deemed necessary.
- (iv) Fill shall be stabilized according to accepted engineering standards.
- (v) A site inspection by the Planning and Zoning Administrator shall be made prior to issuance of a permit and after completion of grading or filling activities.

**234 Grading and Erosion Control**

**(1) Grading and Erosion Permit and Plan Required**

**(A)** The purpose of this section is to require preparation and implementation of a grading and erosion control plan for land disturbing activity. This section implements the following policies of the City contained in the City's Comprehensive Plan<sup>42</sup>

- (1) prevent sediment deposits on public and private roads,
- (2) prevent disruption or damage to public waters including Lake Minnetonka and protected wetlands,
- (3) prevent disruption or damage to public and private storm water systems,
- (4) prevent adverse impacts to neighboring property,
- (5) prevent damage to natural resources in the Shoreland Impact Zone and Bluff Impact Zone that are intended to be preserved, and
- (6) maintain stable topographic slopes.

**(B)** An erosions control permit is required from the Minnehaha Creek Watershed District for the following activities:

**(A)** excavating, grading, filling or other change in the earth's topography resulting in the movement of more than 50 cubic yards of material or

**(2)** excavating, grading, filling or other changes to the earth's topography resulting in the movement of material in an

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<sup>42</sup> Erosion control is required by the Metropolitan Council as a condition to the City's Comprehensive Plan approval

area or areas on the same or adjoining lots encompassing more than 5,000 square feet<sup>43</sup>

- (C) An erosion control permit is required from the Minnesota Pollution Control Agency when construction activities disturb 1 or more acres of land
- (D) A grading and erosion control plan is required when one or more of the following occur:
  - (1) as part of an application for a grading and erosion control permit required by the Minnehaha Creek Watershed District or the Minnesota Pollution Control Agency
  - (2) as part of a required building permit for an addition to the existing land use where the earth is to be altered by new construction, if the land to be altered is adjacent to the public street, neighboring property, Lake Minnetonka or a protected wetland, flood plain or flood prone area, and the existing or proposed slopes on the land to be altered exceed 1.5%
- (E) Where an erosion control permit is required by Laws and Rules of the State of Minnesota or a grading and erosion control plan is required as part of a building permit, no person may undertake, authorize or permit any excavating, grading, filling or other change in the earth's topography that violates or is not in compliance with an approved grading and erosion control plan or a required erosion control permit issued by the Minnehaha Creek Watershed District or the Minnesota Pollution Control Agency.

**(2) Grading and Erosion Control Plan and Implementation.**

- (A) As Part of the building permit, a grading and erosion control plan and erosion control measures must comply with the following:
  - (1) The grading and erosion control plan must use those appropriate measures and performance standards as specified in Minnesota Pollution Control Agency's

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<sup>43</sup> Erosion Control Plans are required by both Federal and State when more than one acres of land is disturbed



**Exhibit G**  
**Best Management practices for Filtration and Abstraction**

**“Best Management Practices”** are practices, techniques, and measures that prevent or reduce water pollution from nonpoint sources by using the most effective and practicable means of achieving water quality goals. Best management practices include, but are not limited to, official controls, structural and nonstructural controls, and operation and maintenance procedures.

The following are recommended alternative best management practices (BMP) for storm water filtration and volume extraction:

- Storm water Detention Ponds
- Catch Basin Sumps
- Grit Chambers
- Storm water conveyance channels
- Diversion Structures
- Flow Control Spreaders
- Vegetated Swales
- Infiltration basins
- Bio Retention Basins
- Infiltration Trenches.



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