

### **3.0 GOALS, POLICIES AND MANAGEMENT STRATEGIES**

The roles of watershed districts have changed since the Lower Minnesota River Watershed District was formed in 1960. These changed roles reflect new public values, which have reordered priorities for addressing issues. The District is affected by these changes. A number of the purposes expressed in the original petition for establishment of the District conflict with the present-day purposes set forth in M.S. 103B.201. Overall, today's District goals are consistent with the purposes stated in recent statutes, recognizing also that the District has to address commercial navigation. The goals, policies, and strategies set forth in this section of the plan reflect the specific characteristics of this District.

The mission and purpose of the District is presented below, followed by the goals, policies, and strategies generated through the planning process with the TAC, CAC, Managers, and staff.

#### **3.1.1 Mission**

The mission of the District is to manage and protect the Minnesota River, lakes, streams, wetlands, and groundwater and to assist and facilitate in providing river navigation by:

- Promoting open communications and partnering with citizens, community organizations, and local, state, and federal agencies.
- Improving and protecting the quality of the Minnesota River and all water bodies in the watershed.
- Minimizing the negative effects of floods and droughts on the Minnesota River and all water bodies in the watershed.
- Collecting and distributing information regarding surface water and groundwater in the watershed to assist in establishing priorities and developing local plans to improve water resources in the watershed.
- Monitoring and understanding the effects of municipal groundwater appropriations and drought on groundwater levels.
- Working with LGUs to enforce the WCA.
- Assisting and facilitating the efforts of state and federal agencies to maintain the navigation channel.
- Educating stakeholders about the impact they have on the water resources in the watershed and motivating them to change behaviors that have a negative impact.

#### **3.1.2 Purpose**

The Metropolitan Surface Water Management Act states that the purposes of the District and other water management programs (quoted from M.S. 103B.201) are as follows:

- Protect, preserve, and use natural surface and groundwater storage and retention systems.
- Minimize public capital expenditures needed to correct flooding and water quality problems.

- Identify and plan for means to effectively protect and improve surface and groundwater quality.
- Establish more uniform local policies and official controls for surface and groundwater management.
- Prevent erosion of soil into surface water systems.
- Promote groundwater recharge.
- Protect and enhance fish and wildlife habitat and water recreational facilities.
- Secure the other benefits associated with the proper management of surface and groundwater.

Unlike other water management programs in the state subject to M.S. 103B, the District has an additional purpose which is to improve navigation. The district’s primary role in improving navigation is serving as the local sponsor for the COE. In that role, the District is responsible for acquiring and managing dredge material sites.

The mission and purpose of the District, together with the issues and management gaps discussed in the previous section, serve as the foundation for the goals, policies, and strategies summarized below. Noteworthy is that this plan seeks to streamline the regulation imposed on LGUs and reduce inconsistencies by incorporating policies and strategies being used by surrounding WDs and WMOs, where appropriate.

**3.1.3 Goal Summary**

**Table 3-1: Summary of District Issues, Goals, and Strategies**

Issues	Goals	Strategies
Issue 1: Unclear Role of the District  Issue 2: Outside Influences	Goal 1: Organizational Management	Strategy 1.1.1: Work cooperatively with local, state, and Federal forms of government; other agencies; and non-government organizations on issues affecting the District’s resources. Strategy 1.2.1: Provide public information services Strategy 1.3.1: Provide strategic resource evaluation and management Strategy 1.3.2: Research the options of expanding, contracting or maintaining the District’s Boundary Strategy 1.3.3: Perform periodic assessments and program reviews Strategy 1.3.4: Use short-term and long-term metrics to measure progress

Issues	Goals	Strategies
Issue 3: Water Quality	Goal 2: Surface Water Management	Strategy 1.3.1: Provide strategic resource evaluation and management Strategy 2.1.1: Lower Minnesota River Watershed District – Water resources classification categories Strategy 2.2.1: Watershed management standards Strategy 2.2.2: Promote disconnected stormwater management and low impact development Strategy 2.2.3: Cost share incentive Program Strategy 2.2.4: Water quality restoration programs Strategy 2.2.5: Dean Lake Feasibility/ Diagnostic Study Strategy 2.3.1: Modify and continue the monitoring program Strategy 2.3.2: Complete detailed assessments of data Strategy 2.3.4: Coordinate with other agencies and water quality programs Strategy 7.2.1: Develop a Vegetation Management Standard/Plan
	Goal 3: Groundwater Management	Strategy 1.3.1: Provide strategic resource evaluation and management Strategy 2.3.1: Modify and continue the monitoring program Strategy 3.1.1: Support wellhead protection efforts Strategy 3.2.1: Adopt infiltration standards Strategy 3.2.2: Promote conservation and wise use of groundwater Strategy 3.3.1: Groundwater monitoring Strategy 3.3.2: Regional modeling
	Goal 4: Unique Natural Resources Management	Strategy 1.3.1: Provide strategic resource evaluation and management Strategy 2.3.1: Modify and continue the monitoring program Strategy 4.2.1: Data acquisition and management Strategy 4.2.2: Provide technical assistance Strategy 4.2.3: Provide educational opportunities Strategy 4.3.1: Develop a mechanism for identifying and acquiring high value conservation easements Strategy 4.4.1: Encourage wildlife connectivity projects which achieve multiple goals, such as water quality improvements, and fen bluff protection Strategy 7.2.1: Develop a Vegetation Management Standard/Plan

Issues	Goals	Strategies
	Goal 5: Wetland Management	Strategy 1.3.1: Provide strategic resource evaluation and management Strategy 4.3.1: Develop a mechanism for identifying and acquiring high value conservation easements Strategy 5.1.1: Delegate Wetland Conservation Act (WCA) to LGU's Strategy 5.1.2: Require LGU's to conduct wetland inventories and complete wetland management plans Strategy 5.1.3: Review WCA notices as received Strategy 5.1.4: Wetland Standard Strategy 7.2.1: Develop a Vegetation Management Standard/Plan
Issue 4: Flooding and Floodplain Management	Goal 2: Surface Water Management	Strategy 2.1.1: Watershed Management Standards
	Goal 6: Floodplain and Flood Management	Strategy 6.1.1: Floodplain and drainage alteration standard Strategy 6.1.2: Adopt infiltration and peak flow standards Strategy 6.1.3: Manage localized flooding
Issue 5: Erosion and Sediment Control	Goal 6: Floodplain and Flood Management	Strategy 6.2.1: Adopt infiltration and peak flow standards
	Goal 7: Erosion and Sediment Control	Strategy 2.2.1: Watershed management standards Strategy 7.1.1: Support the NPDES general permit Strategy 7.1.2: Erosion and Sediment Control Standard Strategy 7.2.1: Develop a Vegetation Management Standard/Plan Strategy 7.3.1: Provide assessment of streambank and mainstem erosion Strategy 7.3.2: Continue work of repairing gully erosion Strategy 7.4.1: Promote and encourage shoreland protection Strategy 7.4.2: Shoreline and streambank standard
Issue 6: Groundwater	Goal 3: Groundwater Management	Strategy 1.3.1: Provide strategic resource evaluation and management Strategy 2.3.1: Modify and continue the monitoring program Strategy 3.1.1: Support wellhead protection efforts Strategy 3.2.1: Stormwater infiltration Criteria Strategy 3.2.2: Promote conservation and wise use of groundwater Strategy 3.3.1: Groundwater monitoring Strategy 3.3.2: Regional modeling

Issues	Goals	Strategies
Issue 7: Commercial and Recreational Navigation	Goal 8: Commercial and Recreational Navigation	Strategy 8.1.1: Promote safety education Strategy 8.2.1: Manage existing dredge sites and investigate and/or acquire additional dredge material sites Strategy 8.2.2: Develop a beneficial use plan for dredge materials Strategy 8.3.1: Develop a funding structure to ensure proper maintenance and improvement occurs along the river
Issue 8: Public Education and Outreach	Goal 9: Public Education and Outreach	Strategy 1.2.1: Provide public information services Strategy 4.2.3: Provide educational opportunities Strategy 8.1.1: Promote safety education Strategy 9.1.1: Maintain the citizen advisory committee (CAC) Strategy 9.1.2: Develop an outreach program Strategy 9.1.3: Engage and utilize volunteers Strategy 9.1.4: Provide opportunity for public input Strategy 9.2.1: Produce scientific studies and work products Strategy 9.2.2: Promote a variety of education programs Strategy 9.2.3: Use multiple outlets to distribute information

### **3.2 GOAL 1: ORGANIZATIONAL MANAGEMENT TO MANAGE THE DIFFERENT ROLES OF THE DISTRICT**

As mentioned, the roles of watershed districts have changed since the District was formed in 1960. These new roles have reordered priorities and the means by which issues are evaluated and addressed. To adequately address assumed roles, the District identified and defined five primary policies which were reaffirmed during the planning process for this plan.

**Policy 1.1: To Serve as a Facilitator**

**Strategy 1.1.1: Work Cooperatively with Local, State, and Federal Forms of Government; Other Agencies; and Non-Government Organizations on Issues Affecting District Resources.**

Under this strategy the District will continue to work collaboratively with other government and non-government organizations (NGOs) to inventory and assess resources, to cost share on projects that protect or enhance these resources, and to lobby the Minnesota State Legislature and the United States Congress to ensure the Minnesota River receives the fiscal resources necessary to fulfill its mission and purpose.

The District will undertake projects that develop, protect, enhance, and/or restore the resources within its jurisdiction (such as erosion control, greenbelts, habitat creation, etc.), either independently or jointly with other LGUs or other organizations, as discussed in future sections, or in response to petitions. The District will place a higher priority on projects identified in this Plan and in future resources/implementation plans. Projects to be considered include, but are not limited to, those that benefit navigation (dredge material disposal sites, bank erosion control, etc.), address erosion and sediment control, and develop public access to, and facilitate public enjoyment of, the resources in the District.

The District will continue its effort at the Minnesota State Legislature to facilitate the formation of a Minnesota River Basin Commission. The commission would have the jurisdiction and authority necessary to manage land use practices and control point and non-point source pollution currently affecting the quality of the Minnesota River.

**Policy 1.2: To Serve as an Educator**

**Strategy 1.2.1: Provide Public Information Services.**

The District will develop a proactive, focused education and information program around the resources in the District and navigation in the lower Minnesota Valley. The program will be created in partnership with the CAC, will emphasize the District's work, and seek to support mutual goals of the District, LGUs, and neighboring WMOs/WDs.

**Policy 1.3: To Serve as a Manager**

**Strategy: 1.3.1: Provide Strategic Resource Evaluation and Management.**

The District will continue initiatives undertaken as part of the previous plan and work proactively with other agencies within the lower Minnesota River Valley to conduct resource assessments, planning, and implementation programs. There are two primary benefits of this effort: it provides information that the District and LGUs can use to develop and implement resource plans and it provides educational materials for the general public. Developing plans for the resources listed below was identified as an implementation activity in the Second Generation Plan.

- Dean Lake
- Assumption Creek
- Courthouse Lake
- Credit River
- Nine Mile Creek
- Purgatory Creek

In 2004, the District adopted the Guidance to Implementation in order to move their implementation agenda forward. As part of the study, a comprehensive survey and review of

ongoing resource management and monitoring efforts in the watershed was performed to assess critical areas. This included a written survey and follow-up discussions with multiple cities, counties, agencies and individuals working on resource management in the watershed.

Implementation strategies in the Second Generation Plan were then reviewed in the context of the resource management assessment. Specific activities in the Second Generation Plan were refined and prioritized, and additional activities were added based on discussions with stakeholders in the watershed. The result was a prioritized Implementation Guidance table, to allow the District to move forward in a proactive, systematic fashion. The strategic resource evaluation and management process will take approximately 1 year and a half to 2 years and will be conducted as follows and serve as an update to the 2004 Guidance to Implementation:

- **Step 1 - Identify and inventory resources.** Known land and water resources within the District have been inventoried as presented in Section 1 of the Plan. As part of this process, TAC members will be asked to provide additional information of undocumented resources. Given the information presented in Section 1, this is not expected to be laborious but necessary to address potential gaps.
- **Step 2 - Assess the condition of resources through inspection and analysis.** Using the information provided in Section 1 of the Plan and additional information from Step 1, TAC members and District staff will assess the condition of the resources in two phases.
  - Phase 1 will be a desktop review of resource trends. If data suggests that a resource is deteriorating and/or consistently exceeding State of Minnesota nutrient standards, the resources will be targeted for additional analysis. Resources that are meeting state nutrient standards for function and use with existing controls will be placed on a 5-year data analysis schedule.
  - Phase 2 will consist of a detailed evaluation of the resources, including a description and definition of the resource at the landscape and watershed level, and identification of stressors (direct or indirect). Depending on the outcome of the evaluation, resource management plans will be developed or a use attainability analysis (UAA) conducted. Resource management plans will identify specific projects focusing on abating or mitigating identified stressors. In the situation where it is determined that a water body's use is not attainable, the regulatory UAA process will be done.
- **Step 3 - Capital Improvement Program Amendment.** In accordance with Section 6 of the Plan, the outcomes of the management plan and UAA process will be incorporated. Specifically, applicable projects will be added to the District's CIP.

The Managers will focus their effort on resources not being addressed in detail by other agencies. In addition, the District will strive to consider and balance interests across all areas expressed in their Mission and Purpose statements.

### **Strategy 1.3.2: Research the Options of Expanding, Contracting, or Maintaining the District's Boundary**

This strategy, recommended by the TAC, consists of the District researching three options for expanding, contracting, or maintaining District boundaries. The District's strategy is to lead three investigatory efforts. The first would look at expanding the District's boundary to create a true watershed boundary by engulfing adjacent WMOs and WDs (Riley Purgatory Bluff Creek WD, Nine Mile Creek WD, Scott WMO, and Carver WMO). The second option would investigate dissolving the District and forming a port authority to address navigation, while at the same time extending the boundaries of neighboring WDs and WMOs to the Minnesota River to address the other items covered in the existing District Mission and Purpose Statements. The third option would compare maintaining the current boundary to either expanding or contracting the District.

### **Strategy 1.3.3: Perform periodic assessments and program reviews.**

This strategy was modeled after the Scott WMO policy for regular assessment of programs and progress. The District will regularly assess and review its programs. These include:

- Annual reports to BWSR
- Annual financial audits
- Annual water quality monitoring reports
- Annual reports or meetings with the LGUs to track and document local water plan (LWP) implementation
- Periodic review of development plans, targeting 10 percent of permits issued and the program's equivalence with this Plan
- A bi-annual program review that benchmarks accomplishments against the strategies and outcome articulated in the Plan

To avoid undue stress on the LGUs, the District will work to have annual reporting coincide with MS4 Permit Program annual reporting. The District intends to address the findings of these reviews, which will be included in its annual report, to improve operations. If reviews identify any needed Plan changes or additions, the District will address them through the Plan amendment process. The District will also use BWSR's Metro Watershed Performance Review and Assistance Program (PRAP) guidance to ensure that its meeting BWSR's required performance standards.

The District does not wish to duplicate existing regulatory authority of other agencies. The Managers believe that regulations are more properly performed at the local level (cities, townships, counties), rather than by the District. If the District finds that an LGU has failed to enforce its standards and policies, then the District will adopt regulations after taking the appropriate statutory steps to enforce its standards and policies.

**Strategy 1.3.4: Use short-term and long-term metrics to measure progress.**

This strategy was also modeled after the Scott WMO policy for regular assessment of programs and progress, strategy 7.6.2. It provides a set of metrics to help the District evaluate both short- and long-term progress. The short term metrics tend to be programmatic and related to the accomplishment of "activities, the number of activities, or the number of participants." Long term metrics generally involve resource based outcomes. Short-term and long-term metrics are presented in Table 3-2.

**Table 3-2: Lower Minnesota River Watershed District Short-term and Long-term Metrics**

Goal	Short-term Metric	Long-term Metric
Goal 1: Organizational Management	Completion of scheduled activities Annual LGU Audits Amount of dollars leveraged for projects from other agencies and property owners	Formation of a Minnesota River Basin Commission
Goal 2: Surface Water Management	Number and types of projects completed as part of the Cost Share Incentive Program and Water Quality Restoration Programs Number of targeted studies and projects completed	Trends in water quality parameters identified for monitoring efforts
Goal 3: Groundwater Management	Number of targeted studies and projects completed	Trends in water quality parameters identified for monitoring efforts
Goal 4: Unique Natural Resources Management	Number of targeted studies and projects completed	Number and acreage of unique natural resources protected, restored or enhanced Acquisition of high valued easements
Goal 5: Wetland Management	Completion of scheduled activities	Number and acreage of wetlands protected, restored or enhanced
Goal 6: Floodplain and Flood Management	Completion of scheduled activities	Number of structures damaged and value of flood damages
Goal 7: Erosion and Sediment Control	Completion of scheduled activities	Trends in water quality
Goal 8: Commercial and Recreational Navigation	Completed of scheduled activities Number of targeted studies and projects completed	Secure regular congressional and state legislative funding for the 9-Foot channel

Goal	Short-term Metric	Long-term Metric
Goal 9: Public Education and Outreach	Number and types of sponsored events Number of participants at events Number of articles, press releases and pamphlets developed Number of articles, press releases and pamphlets printed Number of volunteers	Same as short-term metrics

### 3.3 GOAL 2: SURFACE WATER MANAGEMENT TO PROTECT, IMPROVE, AND RESTORE SURFACE WATER QUALITY

Improved water quality in the Minnesota River is a priority with state and federal policy makers and the District’s Managers, staff, and advisory committees. Impaired or poor quality water resources can unfavorably impact recreational uses, aquatic habitat, wildlife, groundwater quality, and other water use activities.

More than 16,000 square miles of the Minnesota River watershed are beyond the control of the District. Management of in-stream water quality from these tributary areas will be coordinated with other agencies with wider influence and jurisdiction. The District is committed to protecting and improving the quality of water originating within its boundaries and assisting other municipalities and WMOs to reduce point and non-point pollutant discharges to the Minnesota River and other water resources.

The following policies and strategies were identified through the planning process to protect and improve surface water resources to meet targeted state of Minnesota water quality standards, pursuant to MN Rule 7050, within the District.

**Policy 2.1: To Use Classification Categories to Manage Water Resources**

**Strategy 2.1.1: Lower Minnesota River Watershed District - Water Resources Classification Categories**

This strategy consists of managing water resource projects within the District based on classification categories. Classification categories will be used as a means to prioritize future projects and review projects.

Most systems classify water resources based primarily on existing and future use by humans. However, the District system also considers unique environmental characteristics of the water resources in determining their classification. Those include, but are not limited to, floodplain lakes and wetlands, calcareous fens, and trout streams. The four environmental characteristic categories are described below.

### **Minnesota River Category**

The Minnesota River has been assigned a unique category to reflect the special efforts taken throughout the greater Minnesota River watershed to improve the river's water quality. A large amount of the Minnesota River watershed is outside of the District's control. The District will seek to regulate the water quality of the Minnesota River by employing recommendations set forth in the Implementation Plan of the South Metro Mississippi, Lower Minnesota River Dissolved Oxygen and Minnesota River Turbidity TMDLs, and by collaborating with stakeholders and the state Legislature to create a Minnesota River Basin Commission. Until the completion of the South Metro Mississippi and Minnesota River Turbidity TMDL Implementation Plans, the District's management goals for the Minnesota River will require reductions in point and non-point source pollution to the Minnesota River, and enhancement of natural and existing uses (such as fishing, boating, hiking, and biking).

### **Floodplain Category**

This category applies to water resources located within the Minnesota River floodplain, which includes many of the Minnesota Valley National Wildlife Refuge lakes. Minnesota River floodwaters frequently inundate floodplain water resources, greatly impacting those resources. The interactions of some of the floodplain water resources with the Minnesota River are marginally managed. For example, levees were constructed that reduce the frequency of inundation, and outlets were installed to allow manipulation of water levels. Meanwhile, other floodplain water resources are allowed to interact freely with the Minnesota River.

The District will require that water resources in the floodplain category be managed mainly to enhance the natural plant and animal communities, and to preserve existing uses (such as fishing, hiking, biking, swimming, etc.).

### **Upland Category**

This category refers to water resources located outside the Minnesota River floodplain that are not unique resources. Examples include the Credit River, stormwater ponds, and Dean Lake. The District will require that upland water resources be managed for both the natural and human communities that use them. Management goals for these water resources will emphasize enhancing interaction of the human and natural communities, and managing the stormwater and human impacts on the water resources.

### **Unique Natural Resources Category**

Many unique natural resources located within the District, such as calcareous fens and trout waters, warrant special management. These resources will be managed for specific, identified natural biological communities of special importance or significance, in accordance with existing or future official management plans, such as the DNR Savage Fen Resource Plan and the Eagle

Creek Aquatic Management Area Plan. General management goals for these water resources are to understand, preserve, protect, and restore unique natural resources, while evaluating projects which propose to alter wetlands, buffer areas, floodplains, shoreland areas, water crossings, or other unique natural resources. Avoidance of greenways will be considered a primary project goal. If avoidance is not possible, impacts to greenways will be minimized.

**Policy 2.2: To Prevent Further Degradation of Water Quality**

**Strategy 2.2.1: Watershed management standards**

**Stormwater Management Standard**

It is the strategy of the District to:

- Manage new development or redevelopment greater than 1 acre, and drainage alternations, by requiring each development or land disturbing activity to manage its stormwater effectively, either on or off-site.
- Promote and encourage a reduction in runoff rates, to encourage infiltration, and to promote groundwater recharge.
- Maximize groundwater recharge as a means of maintaining drinking water supplies, preserving base flows in streams, and limiting discharges of stormwater to downstream receiving waters.
- Require that property owners control the rate and volume of stormwater runoff originating from their property so that surface water and groundwater quantity and quality is protected or improved, soil erosion is minimized, and flooding potential is reduced.
- Protect and improve natural resources within the watershed to prevent further degradation.

*Regulation*

A. Rate Control

The proposed [development] activity will not increase the peak stormwater runoff rate from the site, under pre-development conditions, for anything less than a 24-hour precipitation event with a return frequency of 1- or 2-, 10- and 100-years. Pre-development is defined as land use on a site immediately prior to the proposed alteration/activity. The Project must comply with the requirements of MPCA's General Permit for Construction Activities.

B. Volume Control

Stormwater runoff volume retention shall be achieved onsite in the amount equivalent to the runoff generated from one-half (0.5) inch of runoff over new impervious surfaces of

the redevelopment or development<sup>2</sup>. To achieve the volume control regulation, infiltration must be used where practicable. Filtration is an acceptable alternative for hydrologic soil group C and D type soils or when infiltration is infeasible per Criteria J. Volume control credits can be used to control up to one-half (0.5) inch of runoff as described in future sections.

### C. Water Quality

Water quality stormwater management must comply with the requirements of MPCA General Permit for Construction Activities and additional guidelines set forth in the UAA, as described in Strategy 1.4.1. Recognizing that enforceability of TMDLs are being covered by the NPDES Permit and should not be duplicated here, as noted by this language from the MPCA General Permit:

If the TMDL identifies specific implementation activities regarding construction stormwater that would apply to the site discharges, the Permittee(s) must include the following in the SWPPP:

- The identity of the receiving water, the areas of the site discharging to it, and the pollutant(s) identified in the TMDL; and
- BMPs identified in the TMDL and any other specific construction stormwater related implementation activities identified in the TMDL.

Facilities regulated by an individual NPDES permit with numerical TSS limits are exempt from complying with the requirements of the MPCA General Permit for Construction Activities and subsequent water quality criteria listed below.

### D. Waste Disposal to Waters

Stormwater management must not result in the discharge of any regulated substance, hazardous or biological waste, or petroleum product, whether treated or untreated, to BMP devices that may have a deleterious effect upon a water of the state (surface and groundwater), unless the discharge is in compliance with federal, state, and local regulations.

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<sup>2</sup> Development and redevelopment refers to changes to existing conditions from impervious and pervious surfaces where the net change increase in impervious surface is 1 acre or more. An impervious surface is defined as a constructed hard surface that either prevents or retards the entry of water into the soil and causes water to run off the surface in greater quantities and at an increased rate of flow than prior to development. Examples include rooftops, sidewalks, patios, driveways, parking lots, storage areas, and concrete asphalt or gravel roads. An impervious surface must be calculated on a site by site basis.

*Criteria*

Stormwater management plans shall comply with the following criteria:

- A. A hydrograph method based on sound and generally accepted hydrologic theory will be used to analyze runoff for the design or analysis of flows and water levels.
- B. Runoff rates for the proposed activities, development, or redevelopment within the watershed shall:
  - a) Not exceed existing runoff rates for the 1- or 2-year, 10-year, and 100-year critical duration storm events;
  - b) Not accelerate on- or off-site watercourse erosion, downstream nuisance, flooding, or damage as demonstrated by the project proposer; and
  - c) Runoff rates may be restricted to less than the existing rates when necessary for the public health, safety, and general welfare of the District water resources. The local water plan authority (LWPA) (and the District, if consulted) will determine whether runoff rates need to be restricted to less than the existing rates on a case-by-case basis.
- C. Stormwater facilities must provide:
  - a) An identified overflow spillway and downstream route sufficiently stabilized to convey a 100-year critical storm event;
  - b) Pond outlets designed to prevent short circuiting of the flow from pond inputs to the outlet;
  - c) A minimum water depth for constructed stormwater ponds with dead storage of 3 feet and conformance to the design specifications of the Stormwater Manual, 2005 and as amended.
  - d) An outlet skimmer to prevent migration of gross pollutants (floatables and oils) for the 2-year event; and
  - e) Dedicated access for future maintenance that is free of plantings and impediments.
- D. Regional ponds and practices can be used to provide for stormwater management based on the following criteria:
  - a) Regional ponds are required to be designed based on ultimate conditions for the contributing subwatershed.
  - b) Regional ponds are required to be constructed and operational prior to constructing impervious surfaces within the contributing drainage area.

- E. Maintenance and Easements: Stormwater management easements shall be provided for (1) access for facility inspections and maintenance and (2) preservation of stormwater runoff conveyance, infiltration, and detention areas and facilities, including the overflow route.
- a) Land used by stormwater management facilities shall be preserved by dedication and/or perpetual easement to the LWPA, when required by the LWPA. These easements shall cover those portions of the property which are adjacent to the facility and which lie below the 100-year flood elevation.
  - b) A maintenance agreement shall be recorded with the county as part of the LWPA development approval process. Minimum requirements for the maintenance agreement include:
    1. A list of the responsible party(s) (LWPA and facility owner/manager)
    2. Contact information
    3. A formalized maintenance schedule, with scheduled activities
    4. A “Failure to Perform” provision laying out remedial actions if the responsible party does not perform as expected
    5. Maintenance debris handling plans
    6. Emergency response (environmental, spill, safety)
  - c) Maintenance is required for all stormwater practices constructed in compliance with these Policies. Each LWPA will conduct periodic inspection of stormwater practices. A minimum of 20 percent of all stormwater facilities shall be inspected annually by the LWPA. LWPAs must provide to the District annual inspection reports detailing inspection activities and proof of maintenance where required. Inspection reports as part of the LWPA’s MS4 Report is an acceptable reporting tool for the District.
  - d) When land used by stormwater management facilities is public land or public ROW, easements under this section will not be required, and a written agreement between the LWPA and applicant may be executed in lieu of the recorded maintenance agreement.
- F. Design of all BMPs will be consistent with the Minnesota Stormwater Manual, November 2005, and as amended, and the MPCA General Permit Authorization to Discharge Stormwater Associated with Construction Activity under the NPDES/State Disposal Permit Program – MN R100001 (NPDES General Permit), issued by MPCA, August 1, 2008, and as amended.

- G. When using infiltration for volume control, infiltration volumes, and facility sizes shall be calculated using the appropriate hydrological soil group classification and infiltration rate, and shall be capable of infiltrating the required volume within 72 hours or as specified in the NPDES General Permit, and as amended.
- H. In evaluating the infiltration capacity of a constructed BMP under post-development conditions, the infiltration rates in the Minnesota Stormwater Manual, November 2005, and as amended, should be used. Select the infiltration design based on the least permeable soil horizon within the first 5 feet below the bottom elevation of the proposed infiltration facility. Site-specific infiltration measurements completed by a licensed professional (as described in the Minnesota Stormwater Manual) may be used in place of the values in the Minnesota Stormwater Manual, and as approved by the District.
- I. All stormwater retention practices designed to meet the volume control regulation must provide pretreatment of stormwater runoff prior to infiltrating into the groundwater system or discharging downstream. Pretreatment methods must comply with the Minnesota Stormwater Manual, November 2005, and as amended, for the proposed practice. All highly recommended and recommended design criteria must be met, unless specifically waived by District staff.
- J. To the maximum extent practicable, volume control shall be fully met onsite. Site conditions may make infiltration undesirable or impossible. The project proposer must make soil corrections and/or investigate other locations on the site for feasible infiltration locations. Infiltration of stormwater should avoid areas of contaminated soil. Infiltration practices are not allowed:
- a) For runoff from fueling and vehicle maintenance areas;
  - b) Within hydrologic soil group C and D type soils;
  - c) Within some wellhead protection areas (review Wellhead Protection Plans for additional guidance);
  - d) Within 50 feet of a septic tank or drain field;
  - e) On areas with less than three (3) feet vertical separation from the bottom of the infiltration system to the elevation of seasonal high groundwater or top of bedrock.
  - f) For facilities that are prohibited from constructing new or expanding existing infiltration practices per NPDES/SDS MNR0500000.

If the proposed project claims that infiltration is not feasible or allowed onsite, supporting documentation must be provided. Filtration technologies may be an acceptable alternative for type C and D soils and other sites where infiltration is infeasible given the criteria above.

Recommended filtration BMPs include:

- Basins or swales with under drain systems.
- Manhole filtration device inserts

The MPCA's 2005 Minnesota Stormwater Manual should be consulted for additional filtration BMP options and design criteria.

### **Construction Erosion Control Standard**

It is the strategy of the District to require the preparation and implementation of erosion and sediment control plans to control runoff and erosion, to retain or control sediment on land during land disturbing activities, and to prevent the degradation of resources and the loss or damage of property due to erosion and sedimentation.

#### *Regulation*

No project shall commence land disturbing activities, unless granted a variance, without first obtaining a permit from an LWPA that incorporates and approves an erosion and sediment control plan for the activity, development, or redevelopment. The proposed activity will be in compliance with the NPDES General Permit, as amended.

#### *Criteria*

Erosion and sediment control plans and the land disturbing activity shall comply with the following criteria:

- a) Erosion and sediment control measures shall meet the standard for the NPDES General Permit, as amended, except where more specific requirements are provided.
- b) The project proposer must ensure final stabilization of the site in accordance with the NPDES General Construction Permit requirements. The site will be considered as having achieved final stabilization following submission of Notice of Termination.
- c) All onsite stormwater conveyance channels shall be designed and constructed to withstand, after construction, the expected velocity of flow from a 10-year frequency storm without erosion.

#### *Exception*

No erosion control plan or permit shall be required for the following land disturbing activities:

- Minor land disturbing activities such as home gardens contained within a residential lot, repairs, and maintenance work.
- Construction, installation, and maintenance of SSTs other than those on steep slopes, on riparian lots within a Shoreland District, or in a bluff impact zone.
- Installation of any fence, sign, telephone or electric poles, or other kinds of posts or poles.

- Emergency activity necessary to protect life or prevent substantial harm to persons or property.
- Minor wetland impacts that have received a “certificate of exemption or no loss” determination by the LGU (municipalities or DOT) administering the WCA.
- All maintenance, repair, resurfacing, and reconditioning activities which do not involve land disturbance.
- All land disturbing activities not required to obtain an NPDES General Permit, or to have an approved erosion and sediment control plan, shall nevertheless be conducted in full compliance with the Construction Erosion Control Standard.

### **Shoreline and Streambank Alteration Standard**

It is the strategy of the District to manage stable, intact, and vegetated shorelines and streambanks that provide valuable functions to the associated water resource including prevention of erosion, reinforcement of soils through root structure, trapping of nutrients and sediments, and provision of fish and wildlife habitat. The District promotes the preservation and enhancement of the ecological integrity and natural appearance of shorelines and streambanks with the intent of preventing erosion. When alteration is necessary, the District encourages bioengineering, landscaping, and preservation of natural vegetation practices.

#### *Regulation*

Shoreline or streambank improvement or alteration partially or wholly below the ordinary high water mark of a lake or wetland, or bankfull height of a stream, shall not result in detrimental effects to the lake, wetland, or stream.

#### *Criteria*

- Bioengineering techniques should be used to the extent possible. The use of bioengineering is encouraged as an alternative to traditional engineered stabilization techniques for its cost advantage, aesthetic superiority, and ecological integrity.
- Retaining walls are to be used only when there is no adequate stabilization alternative and in accordance with MN Rules 6115.0211.

### **Stream and Lake Crossing Standard**

The District discourages the use of beds and banks of streams and lakes for the placement of roads, driveways, and utilities. It is the policy of the District to regulate crossings of watercourses for driveways, roads, and utilities to maintain stream stability, conveyance capacity, and the ability to transport, without adverse effect, the flows and detritus of its watershed.

*Regulation*

The portion of a road, highway, utility, or associated structure that crosses the bed or bank of any waterbody shall not be installed, modified, or replaced without first demonstrating a public benefit and ensuring that the crossing will retain adequate hydraulic capacity and navigational capacity. If applicable, the project should preserve wildlife passage along each bank, not adversely affect water quality, and represent the "minimal impact" solution to a specific need with respect to all other reasonable alternatives. Projects must follow the DNR manual *Best Practices for Meeting DNR General Public Waters Work Permit GP 2004-0001*, when applicable.

*Criteria*

- A. Analysis, by a qualified professional, is required demonstrating the stream's physical characteristics and the effect of the project on hydraulic capacity and water quality.
- B. Construction must be timed to take advantage of seasons with no or low stream flow as appropriate.
- C. Construction must be timed to avoid spawning seasons, if applicable.
- D. Sizing and placement of stream crossings:
  - a) Regardless of the stream's width-to-depth ratio (bankfull width/mean depth), minimum culvert width shall match or exceed stream bankfull width (water surface width at discharge associated with the 1.5-year return period). Combined width of multiple culverts is satisfactory.
  - b) Culvert length shall extend beyond side slope toe.
  - c) Slope of culvert shall match stream thalweg (the deepest continuous line along a watercourse) slope.
  - d) Culverts shall be buried one-sixth of their height.
  - e) When using multiple culverts, offset culvert inverts. Use the fewest and largest multiples possible. A minimum vertical separation of 1 foot is required between the lowest placed culvert and multiples.
  - f) Alignment of culvert shall match stream alignment.
  - g) Additional consultation is required with DNR, the District, and other regulatory agency staff when the stream is a designated trout stream or contains endangered or threatened species.

### **Floodplain and Drainage Alteration Standard**

It is the strategy of the District to regulate alterations within the floodplain and drainageways within the watershed to provide flood protection to natural resources, permanent structures, and private lands, in accordance with M.S. 103F.

#### *Regulation*

Alteration to or filling land below the 100-year flood elevation of any wetland, public water, or landlocked subwatershed shall be subject to the following regulations and shall be completed in accordance with a state-approved floodplain management and shoreland ordinance:

- A. No filling is allowed within the 100-year floodplain which causes a rise in the 100-year flood elevation without providing compensatory floodplain storage equal to or greater than the volume of fill.
- B. The lowest ground level of proposed structures must be a minimum of 2 feet above the 100-year high water level of nearby surface waters or 1 foot above the emergency overflow elevation, whichever is greater, unless they have protection through flood proofing or by another approved construction technique.
- C. No permanent structure, with the exception of drainage conveyance structures and monitoring equipment, may be constructed in the floodway.

#### *Criteria*

- A. Ultimate conditions must be used to determine the flood elevation.
- B. No culvert or other artificial means to remove or drain surface water, and no obstruction to the natural flow of waters, shall be installed without demonstrating that there is no adverse impact on upstream or downstream landowners or water quality, habitat or fisheries.
- C. There is reasonable necessity for such alteration.

### **Water Appropriations Standard**

Groundwater and the surface-groundwater interactions within District boundaries are needed for the effective management of surface water resources and protection of groundwater dependent unique natural resources (such as springs and fens). Definition of the potential scope and effects of water appropriations is necessary to ensure proper stewardship of the system as a whole. It is the District's intent to be informed of proposed appropriation of surface or groundwater in or near unique natural resources. The District will carefully evaluate the potential impacts of public or private infrastructure (including private and municipal groundwater appropriations) on unique natural resources, and the potential impact that interference of flows may have on groundwater recharge, transmission, and discharge.

*Regulation*

- A. In all cases of appropriation of surface or groundwater requiring a DNR appropriation permit in or near the District, a copy of the permit application and information on the location of the discharge/withdrawal must be filed with the District for their review.
- B. The effect of the proposed appropriation must be defined for consideration by the District.
- C. No project shall appropriate water from any public water basin within the watershed without first obtaining approval from DNR.

**Bluff Standard**

It is the strategy of the District to regulate land disturbing activities on bluffs which are adjacent to property, water, and unique natural resources.

*Regulation*

Land disturbing activities on bluffs adjacent to property, waterbodies, and unique natural resources shall incorporate protection from erosion, sedimentation, flooding, and other damage.

*Criteria*

- A. Minimum Bluff Standards: Unless regulated as part of an approved local water plan (LWP), any land disturbing activity, development, or redevelopment of land shall require a topographic survey to determine if a bluff is present. At its discretion, the LGU may waive the topographic survey requirement where a review of the available contour information clearly indicates a bluff is not present. Where bluffs are present, the following Standards shall apply:
  - a) All grading, clear cutting, removal of vegetation, and/or other land disturbing activities are prohibited in the Bluff Impact Zone and/or Bluff Face.
  - b) All new structures shall be set back a minimum 30 feet from the top of bluff.
  - c) All SSTS or community sewage treatment systems (CSTS) shall be set back a minimum of 50 feet from the top of bluff.
  - d) All stormwater ponds, swales, infiltration basins, or other soil saturation-type features shall be set back a minimum of 50 feet from the top of bluff.

- B. Standards under an Approved LWP: An LGU can identify certain bluffs in a mapped designated bluff area/Bluff Overlay District where land disturbing activity, development, or redevelopment of land is allowed under certain conditions. These bluffs shall be identified and mapped in an LWP. In determining what bluffs are suitable for land disturbance activity, the LGU shall reference sources such as: Soil Survey, Minnesota Land Cover Classification System (MLCCS), Minnesota Biological Survey (MBS), etc. The LGU will need to demonstrate to the District in LWP that any bluff identified for land disturbance activity is not an ecologically sensitive resource.
- a) For those bluffs deemed suitable for land disturbance activity in an approved LWP, the following Standards shall apply:
    - i. Grading, clear cutting, removal of vegetation and/or other land disturbing activities may be allowed within the Bluff Impact Zone provided the activity is in compliance with the LWP's minimum performance standards. The LWP shall, at a minimum, require the following:
      - 1. The identification of any Bluff Preservation Areas where disturbance would be prohibited by LGU ordinance,
      - 2. The minimum Erosion and Sediment Control BMPs including site stabilization and slope restoration measures needed to ensure the proposed activity shall not result in:
        - a. Adverse impact to adjacent and/or downstream properties or water bodies,
        - b. Unstable slope conditions, and
        - c. Degradation of water quality due to erosion, sedimentation, flooding and other damage.
      - 3. Prohibition of all activities which would result in disturbances or destabilization of the Bluff Face.
      - 4. Preservation of existing hydrology and drainage patterns. Land disturbing activities shall not result in any new water discharge points along the bluff.
  - b) The following activities shall be permitted within the bluff face, and shall not constitute prohibited activities:
    - i. Maintenance, repair, or replacement of public roads and utility and drainage systems that existed on creation of the Bluff Overlay District,

- ii. Disturbances that are part of an LGU approved plan to repair, grade, or re-slope existing bluff faces that are eroding or unstable, as necessary to establish stable slopes and vegetation,
  - iii. Vertical cuts into the bluff face up to 10 vertical feet, measured from the existing top of bluff, provided that no stormwater is directed over the bluff face and stormwater runoff, including roof drainage, is collected and conveyed to a stable discharge point.
- C. Standards for LGU-sponsored Projects. The LGU must demonstrate that any LGU proposed activity in the bluff does not: 1) impact adjacent properties, 2) result in unstable slope conditions, and 3) result in the degradation of water bodies from erosion, sedimentation, flooding, and other damage.

*Exceptions*

- A. Where the LGU has determined mining is appropriate, mining activities shall be exempt provided that:
  - 1. An extractive-use site development and restoration plan is developed, approved by the local government, and followed over the course of the project,
  - 2. The mining operation is conducted in such a manner as to minimize interference with the surface water drainage outside of the boundaries of the mining operation,
  - 3. Erosion and sediment control is provided in a manner consistent with this plan, and
  - 4. The landowner complies with all other applicable state and local regulations governing mining.
- B. Disturbances, grading, or re-grading of abandoned mine slopes necessary to establish stable slopes and vegetation.
- C. For the purposes of constructing public improvement projects, land disturbances in the Bluff Impact Zone and bluff face may be permitted providing the project proposer demonstrates to the LGU an appropriate need for these activities and that avoidance and minimization sequencing was followed.
- D. Maintenance, repair, or replacement of public roads, and utility and drainage systems that exist in designated bluff areas/Bluff Overlay Districts.
- E. Disturbances that are part of an LGU approved plan to repair, grade, or re-slope existing bluff faces that are eroding or unstable as necessary to establish stable slopes and vegetation.

- F. Plantings that enhance the natural vegetation or the selective clearing of noxious, exotic, or invasive vegetation or the pruning of trees or vegetation that is dead, diseased, or poses similar hazards.

### **Greenways and Open Space Standard**

Greenways and open space preserve hydrologic corridors, provide flood protection, and safeguard groundwater resource areas. The District supports the DNR Metro Greenway Program goals. Greenways and open space protection will be considered when evaluating projects which propose to alter wetlands, buffers, floodplains, shorelands, water crossings, and other unique natural resources.

### **Strategy 2.2.2: Promote disconnected stormwater management and low impact development**

This strategy promotes disconnected stormwater management, de-synchronization of flows, and stormwater volume control practices. The abovementioned standards set the stage for runoff volume control and establish requirements to manage peak runoff rates. These standards also included a number of low impact development (LID) credits that could be used with new or redevelopment as an effective way to design the site and promote LID while satisfying the volume control requirement. This strategy consists of continuing the current standards and incorporating additional LID practices that can be used for credits including:

- Buffer credit
- Forest/prairie restoration credit
- Grassed channel credit
- Green rooftop credit
- Natural area conservation credit
- Non-rooftop disconnection credit
- Permeable paver credit
- Reuse of stormwater credit.
- Rooftop disconnection credit
- Soil amendment credit

To receive credit, project proposers must request the credit(s), and provide calculations and documentation showing that the criteria set forth in the Minnesota Stormwater Manual are met (Minnesota Stormwater Manual 2005).

### **Strategy 2.2.3: Cost Share Incentive Program**

This purpose of this strategy is to provide educational, technical and financial assistance to landowners (residential, commercial, industrial...etc); to implement projects that have water

quality, water quantity, channel maintenance, trout stream, fen or wetland restoration, or aquatic habitat benefit within the District; and to help achieve the goals of this Plan. Additional information about the Cost Share Incentive Program can be found in Appendix L.

**Strategy 2.2.4: Water Quality Restoration Program**

This purpose of this strategy is to provide financial assistance to non-government organizations and LGUs within the District to implement BMPs or carry out studies which will aid in protecting and improving water resources within the District. Additional information about the Cost Share Incentive Program can be found in Appendix L.

**Strategy 2.2.5: Dean Lake Feasibility/Diagnostic Study**

As previously stated, for the period of record, Dean Lake has had poor overall water quality without any upward or downward trends (Table 1-8). The District has decided to conduct a Feasibility/Diagnostic Study of Dean Lake to assess the overall health of the lake and to develop and evaluate relevant information concerning appropriate restoration action for the lake. The Feasibility/Diagnostic Study of Dean Lake, scheduled to be completed within a year after the Plan is approved, would identify and evaluate all appropriate restoration alternatives based on site characterization information and allow for the selection of appropriate remedy (ies) by the District.

**Policy 2.3: Enable Informed Decisions**

The objective here is to collect and analyze data necessary for making informed decisions.

**Strategy 2.3.1: Modify and Continue the Monitoring Program.**

This strategy continues the cooperative relationship with MCES, CAMP, cities, counties, and SWCDs, as described in Section 1.6 (Surface Water Quality and Quantity Monitoring), with some modifications. These modifications initially include:

- Adding the MCES' Quality Assurance (QA) objectives to the monitoring program
- Incorporating regular data analysis to identify trends

The QA objectives consist of the collection of duplicate samples to assess field precision. One duplicate sample will be collected per lake or stream, per year. Given the monthly sampling schedule, this amounts to about 10 percent of samples. The guideline/target for assessing field precision will be the relative difference of less than 30 percent for total phosphorus.

In addition to working toward the goals of the QA objective of field precision, the District will strive to incorporate accuracy and bias, representativeness, completeness, comparability and analytical sensitivity objectives as specified in the MCES QA program<sup>3</sup>.

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<sup>3</sup> (MCES, Environmental Monitoring and Assessment Section Water Resources Assessment Section, 2011)

### **Strategy 2.3.2: Complete Detailed Assessments of Data**

Over the past few years, the District has collected a large quantity of water quality data. The Plan includes a preliminary assessment of lake water quality data. However, the last time a comprehensive evaluation of the data was completed was in 2000. Periodic evaluations of data collected are necessary to convert data into information that decision makers can use. Data collected for each water resource will be evaluated on a 3-year or 5-year cycle. As part of Strategy 1.3.1 and Section 4.3.1 (Strategic Resources Evaluation and Management) all of the water resources within the watershed will be evaluated. An outcome of Strategy 1.3.1 and Section 4.3.1 will be groupings of water resources into High, Medium, Low categories for detailed data assessments and timetables formulated for each.

### **Strategy 2.3.3: Coordinate with Other Agencies and Water Quality Programs**

This strategy consists of the District's coordinating with the MDA, MPCA, and Metropolitan Council to stay informed and to collaborate on changes to state standards and best practices for addressing impairments to water on the 303(d) listings. District staff will maintain communications with the various agencies, invite them to participate on the TAC, and attend agency sponsored meetings and training as time allows.

## **3.4 GOAL 3: GROUNDWATER MANAGEMENT**

### **TO PROTECT AND PROMOTE GROUNDWATER QUALITY AND QUANTITY**

Groundwater quality and quantity are dependent on the infiltration of surface water/rainfall through the soil, which is dependent on soil type, land cover, weather, and other factors. Changes to any of these factors will influence groundwater. While some of the factors are difficult to control, some activities and changes to land cover can be regulated and/or managed. Groundwater is a finite resource with inputs and outputs. The input is generally rainwater and snowmelt that seep into the ground. The outputs can be groundwater that is pumped out for human use, or groundwater that naturally discharges to lakes, wetlands, and streams.

Maintaining clean, safe groundwater supplies is critical to human and environmental health and to the economic and social vitality of our communities. Groundwater can be contaminated by commercial and industrial waste disposal, landfills, leaking petroleum tanks, septic systems, mining operations, feedlots, and fertilizer/pesticide applications. The quantity and quality of groundwater flows have a direct impact on the resources located in the District, such as floodplains, wetlands, calcareous fens, and trout waters. The District intends to play an active role, working with other units of government and groups, to maintain and/or improve the health of these water resources.

### **Policy 3.1: To Support and Assist in Intercommunity Management of Groundwater**

#### **Strategy 3.1.1: Support Wellhead Protection Efforts.**

This strategy consists of supporting wellhead protection planning efforts with District staff time and technical assistance or District consultant when requested by LGUs.

**Policy 3.2: To Promote Groundwater Recharge**

**Strategy 3.2.1: Adopt Infiltration Standards**

See Strategy 2.2.1 – Watershed Management Standards.

This strategy consists of establishing criteria as described previously to protect the quality of groundwater when infiltration practices are used to control stormwater runoff volumes. This might include pretreatment, as necessary, prior to infiltration for some source areas such as those with medium or high groundwater susceptibility, and areas close to wells. It could also include prohibiting infiltration of runoff from certain land uses, or where there is shallow groundwater or poor soils.

**Strategy 3.2.2: Promote Conservation and Wise Use Of Groundwater.**

This strategy consists of incorporating messages of conservation and wise use of groundwater through information sharing and education initiatives.

**Policy 3.3: To Protect and Improve Groundwater Sensitive Water Resources**

**Strategy 3.3.1: Groundwater Monitoring.**

This strategy consists of continuing and improving groundwater monitoring in the District. In 2005, the District developed strategies for a groundwater monitoring plan to provide guidance to the District and to increase information available on groundwater quality. This strategy would implement the recommendations of that report.

**Strategy 3.3.2: Regional Modeling.**

The Metropolitan Council recently completed a model of the MSP metropolitan region, called the Metro Model 2. This strategy consists of working with the Metropolitan Council on uses of the model.

**3.5 GOAL 4: UNIQUE NATURAL RESOURCES MANAGEMENT**

**TO PROTECT AND MANAGE UNIQUE NATURAL RESOURCES**

The lower Minnesota River valley is a unique area which supports the critical needs of many fish and wildlife species, and provides tremendous outdoor recreation and educational opportunities for the population of the MSP metropolitan area. The District’s goal is to maintain or improve the quality and quantity of fish and wildlife habitat, and outdoor recreational opportunities.

**Policy 4.1: To Maintain or Improve the Quality and Quantity of Fish and Wildlife Habitat**

**Strategy 4.1.1: Encourage Protection of Fish and Wildlife Habitat**

This strategy consists of working with the DNR, local governments, and NGOs to implement practices that will protect fish and wildlife habitat. These practices include, but are not limited to, limiting disturbance and soil erosion during construction, modifying zoning and subdivision codes, and establishing stream buffers.

Increases in sediment load decreases oxygen levels in the river which has an adverse affect on the aquatic habitat in both the river and in floodplain lakes within the District. The District will work with regulatory agencies and upstream watershed entities to reduce sediment loads.

**Policy 4.2: Advocate for Protection, Education and Monitoring of Unique Natural Resources**

**Strategy 4.2.1: Data Acquisition and Management**

This strategy consists of providing technical and financial support for data acquisition and management. The District will work with state, federal, and local entities to determine data needs and the best approach to manage the data.

**Strategy 4.2.2: Provide Technical Assistance**

This strategy consists of providing District staff time to assist LGUs, NGOs, and landowners interested in preserving unique natural resources. This assistance includes providing analysis, design, operation, and coordination on projects.

**Strategy 4.2.3: Provide Educational Opportunities**

This strategy consists of providing educational opportunities in resources areas such as signage and kiosks for the public. In addition, the District will develop educational material which can be provided to landowners and metro area tourists.

**Policy 4.3: Coordinate with LGUs to Identify and Develop Critical Trails and Green Space Corridors for Improvement and Protection.**

**Strategy 4.3.1: Develop a Mechanism for Identifying and Acquiring High Value Conservation Easements**

This strategy consists of reviewing studies in an effort to protect, preserve and enhance resource connectivity and identify prime areas for conservation easements. Once the areas have been identified, the District will work collaboratively with the LGUs, USFWS, DNR, and other regulatory agencies to acquire the necessary easements.

**Policy 4.4: Protect, Preserve, and Enhance the Connectivity of Wildlife Habitat**

**Strategy 4.4.1: Encourage Wildlife Connectivity Projects which Achieve Multiple Goals, Such as Water Quality Improvements, and Fen and Bluff Protection**

This strategy consists of promoting projects that incorporates connectivity of wildlife resources. Understanding that water quality and water resources management projects are the primary

focus; the District will also consider, during review of projects, the potential each has to fragment or maintain/preserve/restore resource connectivity.

### **3.6 GOAL 5: WETLAND MANAGEMENT TO PROTECT AND PRESERVE WETLANDS**

Wetlands are an abundant resource within the District, providing value to the community. Wetlands come in many different shapes, sizes, and types and perform a variety of physical, chemical, and ecological functions. A healthy watershed is one in which wetlands are an integral part of the ecosystem.

Wetlands are among the most productive ecosystems in the world. These resources can support an immense variety of species of microbes, plants, insects, amphibians, reptiles, birds, fish, and mammals. Wetlands supply recreational and aesthetic benefits, flood reduction benefits, biodiversity, and low stream-flow augmentation. They enhance property values, serve as sources for groundwater recharge and discharge, and provide nutrient cycling, wildlife habitat, and fishery resources. Well-planned wetland protection and management efforts can have far-reaching benefits within the watershed and beyond. Active wetland management can improve water quality and wildlife habitat as well as provide recreational and educational opportunities for the public. The goal of the District is to protect and preserve these precious resources.

**Policy 5.1: To Preserve Wetlands for Water Retention, Recharge, Soil Conservation, Wildlife Habitat, Aesthetics, and Natural Water Quality Enhancements**

**Strategy 5.1.1: Delegate Wetland Conservation Act (WCA) to LGUs.**

This strategy consists of LGUs continuing, or taking on, the role of local regulatory authority responsible for administering the WCA and MN Rules 8420. Most of the cities, counties, and townships within the District are designated to administer the WCA. DOT also administers WCA along its ROW within the District. The District will act as the regulatory authority only if an LGU refuses to take on their role as the regulatory authority. LGUs must protect wetlands from impacts in the following order: 1) avoid, 2) minimize, and 3) mitigate. In addition, when wetland impacts are unavoidable, wetland mitigation shall be accomplished through restoration, wetland creation or other actions specified in WCA to achieve no net loss of wetlands in the District. LGUs must also evaluate the need to establish a wetland banking system per MN Rule 8410.0080 subpart 8.

**Strategy 5.1.2: Require LGUs to Conduct Wetland Inventories and Complete Wetland Management Plans**

This strategy consists of requiring LGUs to evaluate the function and value of wetlands either through development of a comprehensive wetland management plan or on a case by case basis, in accordance with MN Rules 8410.0060. LGUs shall use, or require the use of, the Minnesota Routine Assessment Methodology version 3.0 (MnRAM 3.0, as amended) or some other approved methodology to assess the function and values of individual wetlands. As part of the annual program audit discussed under Strategy 1.4.3, compliance will be assessed during the annual audit and documented in the District's annual report.

**Strategy 5.1.3: Review WCA Notices As Received**

This strategy consists of the District staff reviewing WCA notices from state and federal agencies regarding regulation changes. These notices will be evaluated and forwarded to the managers; LGUs within the District; and posted on the District's website.

**Strategy 5.1.4: Wetland Standard**

This strategy consist of requiring that LGUs implement the standards and criteria described below to protect wetlands from detrimental effects of erosion, sedimentation, and other non-point source pollutants.

It is the policy of the District to:

- A. Achieve no net loss of wetlands in the District, in conformance with the Minnesota WCA of 1991, as amended, and associated MN Rules 8420.
- B. Encourage wetland avoidance for all new developments and land disturbing activities.
- C. Require mitigation of unavoidable wetland disturbance by replacing the lost wetland function and values in the same major watershed with a wetland of equal or greater value.
- D. Require transportation projects to pursue wetland mitigation projects to the extent practical along the transportation corridor.
- E. Identify and preserve wetlands for water retention, recharge, soil conservation, wildlife habitat, aesthetics, and natural enhancement of water quality.
- F. Manage changes in volume and quality of local stormwater systems to minimize negative impacts to existing wetland function, value, or biological diversity.
- G. Replace affected wetlands where avoidance is not feasible and prudent.

## **Regulation**

- A. No project shall drain, fill, excavate, or otherwise alter a wetland or public waters wetland without first obtaining approval of a wetland replacement plan from the LGU with jurisdiction over the activity.

## **Criteria**

- A. Any drainage, filling, excavation, or other alterations of a public waters wetland or wetland shall be conducted in compliance with M.S., Sec. 103G.245, the WCA, and regulations adopted thereunder.
- B. A public waters wetland or wetland may be used for stormwater storage only if the use will not adversely affect the function and public value of the wetland as determined by the LGU.
- C. Wetland replacement/mitigation siting must follow the priority order below:
  - 1. Mitigation on-site
  - 2. Mitigation within the same subwatershed
  - 3. Mitigation within the District boundary
  - 4. Mitigation within project county
  - 5. Mitigation within the same major watershed
- D. A functional assessment for vegetative diversity will be completed for each wetland and public waters wetland delineated for a project.
- E. For replacement wetlands less than 2 acres in size, a minimum average buffer width of 25 feet shall be established. For all other replacement wetlands, the buffer must be a minimum width of 25 feet and an average width of 50 feet.

The District intends that LGUs administer WCA, unless a particular city, township, or county has elected not to assume that role in its jurisdictional area. In that case, the District will serve as the LGU and administer WCA.

## **3.7 GOAL 6: FLOODPLAIN AND FLOOD MANAGEMENT**

### **TO MANAGE FLOODPLAINS AND MITIGATION FLOODING**

The natural function of river and stream floodplains is to carry or hold excess water during times of flooding. This function can be greatly hindered by channel restrictions and floodplain encroachments, thereby aggravating the tendency of the river to flood and cause damage. The floodplain also provides habitat for many species of plant and animal life. All communities within the District have DNR approved floodplain ordinances. Adoption of these ordinances

makes it their responsibility to regulate floodplain activities, unless the LGUs give the authority to the District. Landowners are required to obtain the necessary approvals from the appropriate LGU before making alterations to floodplains of the Minnesota River, streams, and other water bodies.

**Policy 6.1: To Maintain Natural Water Storage Areas and the Minnesota River Floodway.**

**Strategy 6.1.1: Floodplain and Drainage Alteration Standard**

See Strategy 2.2.1 – Watershed Management Standards.

**Strategy 6.1.2: Adopt Infiltration and Peak Flow Standards**

See Strategy 2.2.1 – Watershed Management Standards.

**Strategy 6.1.3: Manage Localized Flooding**

This strategy consists of requiring LGUs to address mitigation of localized flooding in their LWPs. These areas must include those local flooding areas listed in Table 2-1 and any other areas identified by the LGU.

**3.8 GOAL 7: EROSION AND SEDIMENT CONTROL.**

**TO MANAGE EROSION AND CONTROL SEDIMENT DISCHARGE**

**Policy 7.1: Endorse the NPDES General Permit**

**Strategy 7.1.1: Support the NPDES General Permit**

This strategy consists of formalizing the requirement for LGUs to incorporate the NPDES General Permit requirements in their respective local water plans. The District requires LGUs to regulate land disturbing activities in order to protect against erosion and sedimentation and to limit the quantity of sediment entering water resources as described in Strategy 2.1.1 – Watershed Management Standards. In addition, LGUs are encouraged to enforce the NPDES General Permit.

**Strategy 7.1.2: Erosion and Sediment Control Standard**

See Strategy 2.2.1 – Watershed Management Standards.

**Policy 7.2: Adopt Vegetation Management Standard**

**Strategy 7.2.1: Develop a Vegetation Management Standard/Plan.**

This strategy consists of the District undertaking an effort, in partnership with the DNR, USFWS, BWSR, NRCS, and NGOs (e.g. Great River Greening), to develop a vegetation management standard/plan for unique natural resources within the District. This plan would be functional for all who live in, work in, and invest in the District.

**Policy 7.3: Manage Streambank and Mainstem Erosion**

**Strategy 7.3.1: Continue Work of Addressing Gully Erosion**

This strategy consists of the District continuing the work with local partners on repairing gullies that were identified in the gullies inventory project completed in 2006 (Appendix K). Three identified gully repair projects have been included in the CIP for this Plan (Table 4-4). The District will implement projects with the City of Bloomington to repair the Mound Springs gully in 2013-2014 and to repair the Heritage Hills Park gully in 2015. This District will also implement a project with the City of Chaska to provide ravine stabilization at Seminary Fen in 2012. In addition, other areas of severe gully erosion identified in the gullies inventory project will be reviewed annually with LGUs during the LGU audit identified in Strategy 1.3.3. The District will use funding set aside as part of its Gully Erosion Projects contingency fund to implement projects if the LGUs where the potential repair projects exist have funding or other resources available to work with the District to implement a repair project.

**Policy 7.4: To maintain the Integrity of Shoreland****Strategy 7.4.1: Promote and Encourage Shoreland Protection**

The District requires all government entities within its jurisdiction to identify, rank, and map disturbed shoreland areas. Shoreland areas include streambanks, the banks of the Minnesota River, and lakeshore areas. Along these areas the District will promote and encourage protection of non-disturbed shoreland and restoration of disturbed shorelines and streambanks to their natural state, to the maximum extent practical. In addition, the District will discourage the removal of streambank and lakeshore vegetation during and after construction projects.

**Strategy 7.4.2: Shoreline and Streambank Standard**

See Strategy 2.2.1 – Watershed Management Standards.

**3.9 GOAL 8: COMMERCIAL AND RECREATIONAL NAVIGATION****TO MAINTAIN AND IMPROVE NAVIGATION AND RECREATIONAL USE OF THE LOWER MINNESOTA RIVER**

Since the establishment of the District in 1960, the philosophy of the Managers has been to participate in the construction and maintenance of the navigation channel for the lower Minnesota River as a primary responsibility. The District's goal is to maintain its role as the local sponsor to the COE and to preserve the recreational opportunities for the public.

**Policy 8.1: Promote Co-Existence of Commercial and Recreational Navigation on the Lower Minnesota River****Strategy 8.1.1: Promote Safety Education**

This District will undertake a proactive, focused education and information program in collaboration with the DNR, U.S. Coast Guard, and Coast Guard Auxiliaries regarding best

practices for safe use of the river. In the interim, links to existing safety programs and material will be added to the District website.

**Policy 8.2: Manage Dredge Material**

**Strategy 8.2.1: Manage Existing Dredge Sites and Investigate and/or Acquire Additional Dredge Material Sites**

The District will continue its role as the local sponsor required to acquire and manage dredge material sites. The District will continue to work with the COE on navigation channel maintenance on the lower Minnesota River by following the COE Dredged Material Management Plan for the dredged reaches upstream of the I-35W Bridge. The District will continue to investigate, for the COE, sites for placement of dredged material that are as environmentally safe and economically located as possible, and will facilitate coordination between citizens, LGUs, and the COE. Where appropriate and financially feasible, investigated sites will be acquired. The District will continue to follow a process which fulfills WCA and other legal requirements before a possible dredge material disposal site is used for placement of dredge materials. The District will perform a property survey, locate and delineate wetlands, perform any needed archaeological surveys, negotiate access to the site, and negotiate purchase or lease agreements. The District will try to avoid placement of dredged material in wetlands. If such placement cannot be avoided, then wetland replacement will be accomplished as required by law. In addition, the District will work cooperatively with the COE in developing a comprehensive public/private dredge material management plan for the dredged reaches on the Minnesota River south of the I-35W Bridge. Such a plan might allow private dredging companies to use public sites in exchange for user fees in the form of a lease or some other contractual agreement.

**Strategy 8.2.2: Develop a Beneficial Use Plan for Dredge Materials**

The District has a few dredge materials placement sites. Once material is placed in these areas, movement or use of the material is required to free storage space should the COE need it for additional dredge material. This strategy consists of the District developing a beneficial use plan for dredge material, which would address the use of the material. The following approaches will be considered for the plan:

- Locating sites where aquatic habitat can be created using dredged material/concrete rubble from federal and non-federal projects in an environmentally acceptable manner
- Establishing methods/processes, programs, and authorities that can assist with using and distributing the material
- Investigating funding partners and their respective roles
- Exploring alternative construction materials that can be used for containment structures, such as concrete rubble from demolition projects

- Creating a marketing plan to assist in fostering discussions with potential users.
- Establishing best management practices for dredged material

**Policy 8.3: Provide Funding For Maintenance and Improvements for the 9-Foot Channel**

**Strategy 8.3.1: Develop a Funding Structure to Ensure Proper Maintenance and Improvement Occurs Along the River**

This strategy consists of developing a strategic plan for funding necessary activities along the 9-Foot channel.

**3.10 GOAL 9: PUBLIC EDUCATION AND OUTREACH PROGRAM  
TO INCREASE PUBLIC PARTICIPATION AND AWARENESS OF UNIQUE  
NATURAL RESOURCES AND THE MINNESOTA RIVER**

**Policy 9.1: Encourage Public Participation**

**Strategy 9.1.1: Maintain the Citizen Advisory Committee (CAC).**

This strategy consists of continuing the CAC as an advisory committee to the managers. The CAC will:

- Act as liaison between the District and residents.
- Increase public awareness by educating District residents about actions to protect and improve water resources and habitat within the District.
- Advise the managers and staff on issues important to residents.

They will be responsible for:

1. Brainstorming ways to inform residents about the District and its resources. Examples include:
  - a. Host neighborhood meetings
  - b. Organize and promote community fairs and other events
  - c. Educate landowners on vegetative buffers
  - d. Develop and install educational signs
  - e. Stencil storm sewer catch basins
  - f. Organize and coordinate tours of District projects
2. Partnering with local community groups to use as a platform for education and outreach. Examples include:
  - a. Boy/Girl Scouts

- b. School groups
- c. Senior citizen groups
- d. Veteran's groups
- e. Non-profit environmental groups
3. Developing an education and outreach plan, incorporating information gathered from tasks 1) and 2), and this Plan
4. Developing and implementing habitat improvement projects
5. Collecting water level and water quality data
6. Advising managers on other issues within the District

The managers and the CAC will meet regularly with the adjoining WDs/WMOs to determine how to work cooperatively to manage shared water resources.

**Strategy 9.1.2: Develop an Outreach Program.**

This strategy consists of developing an education outreach program to familiarize the LGUs and the public with District activities. The outreach program will include:

1. District attendance at meetings of city councils, counties, the Minnesota River Joint Powers Board, public interest groups (such as Friends of the Minnesota River Valley), etc.
2. District presentations to schools, conferences, seminars, etc., regarding activities in the District, water resource issues in the District, etc.
3. Conducting public tours of the watershed to targeted groups, such as city engineers, public officials, environmental groups, and members of the citizen and technical advisory committees.
4. Encouraging other LGUs to include information about the District in their water resource-related documents.
5. Sponsorship of and/or participation in grass-roots level environmental initiatives, such as streambank cleanup, storm drain stenciling, etc.
6. Coordination with other groups and LGUs in developing education programs or implementing ongoing education efforts to produce targeted educational materials.

**Strategy 9.1.3: Engage and Utilize Volunteers**

The District will continue to solicit and empower volunteers to help with water quality monitoring. Currently the District solicits volunteers and provides modest funding for the purchase of equipment and analysis of samples in participation with CAMP, and the CSMP.

**Strategy 9.1.4: Provide Opportunity for Public Input**

The District values input from the public regarding operations and design of its programs, and ideas for resource management. This strategy consists of providing opportunities for the public to provide input through open workshops and open house meetings. Particular actions of this strategy include having these types of meeting as part of the design for any new major programmatic effort.

**Policy 9.2: Provide Education and Marketing to Foster Sustainable Behavior and Environmental Stewardship**

**Strategy 9.2.1: Produce Scientific Studies and Work Products**

The District recognizes that scientific studies are technical, and are generally not written for the general public. This strategy consists of collecting and/or creating specific outreach materials written for the general public. The District maintains a library of pamphlets and brochures on water quality, lawn fertilizing, septic system care, etc; but anticipates the need for additional materials to present the results of scientific studies and of water plan initiatives and strategies.

**Strategy 9.2.2: Promote a Variety of Education Programs**

The District recognizes that the public is diverse, that different segments of the public are interested in different topics, and some have preferences for what types of activities they will participate in. The District has therefore chosen to have a variety of education programs. This variety has been on display throughout the discussion of this goal and includes open house meetings, written materials, hands-on stewardship events, workshops, etc. This strategy articulates the District's intent to use a variety of venues for education.

**Strategy 9.2.3: Use Multiple Outlets to Distribute Information**

The District recognizes that various information outlets reach different audiences. This strategy articulates the District's intention of using multiple outlets to distribute information when possible. Various outlets include literature racks at county offices, community newspapers, websites, e-mail distribution lists, etc.