
4. Guidance of Future Activities

4.1 Principles, Goals, and Policies

4.1.1 Guiding Principles

The SHRWD Mission Statement is:

To serve the residents of the District by wisely and judiciously managing the water resources in a manner which sustains and enhances the social, economic and natural resources of the District.

The SHRWD has also developed several principles intended to communicate how the District chooses to interface with the constituents and government units within the District on key issues. The principles are fundamental beliefs that guide the District's actions. The principles below express the District's current position for managing activities, efforts, and programs in the District and may be changed at the discretion of the Board of Managers in response to local watershed needs.

For each of the planning regions, the goals and actions have been refined for the individual planning regions as shown in **Appendices A** through **D**.

4.1.1.1 Consistency within the Red River Basin

The SHRWD believes consistency in programs, approaches, and policies for watershed districts located within the Red River Basin is important. Therefore, this WMP has been developed in a manner consistent with the Flood Damage Reduction Mediation Agreement and the operations of the RRWMB. The SHRWD actively supports the work of the Red River Basin Commission (RRBC) and the International Water Institute (IWI).

4.1.1.2 Need for Permitting

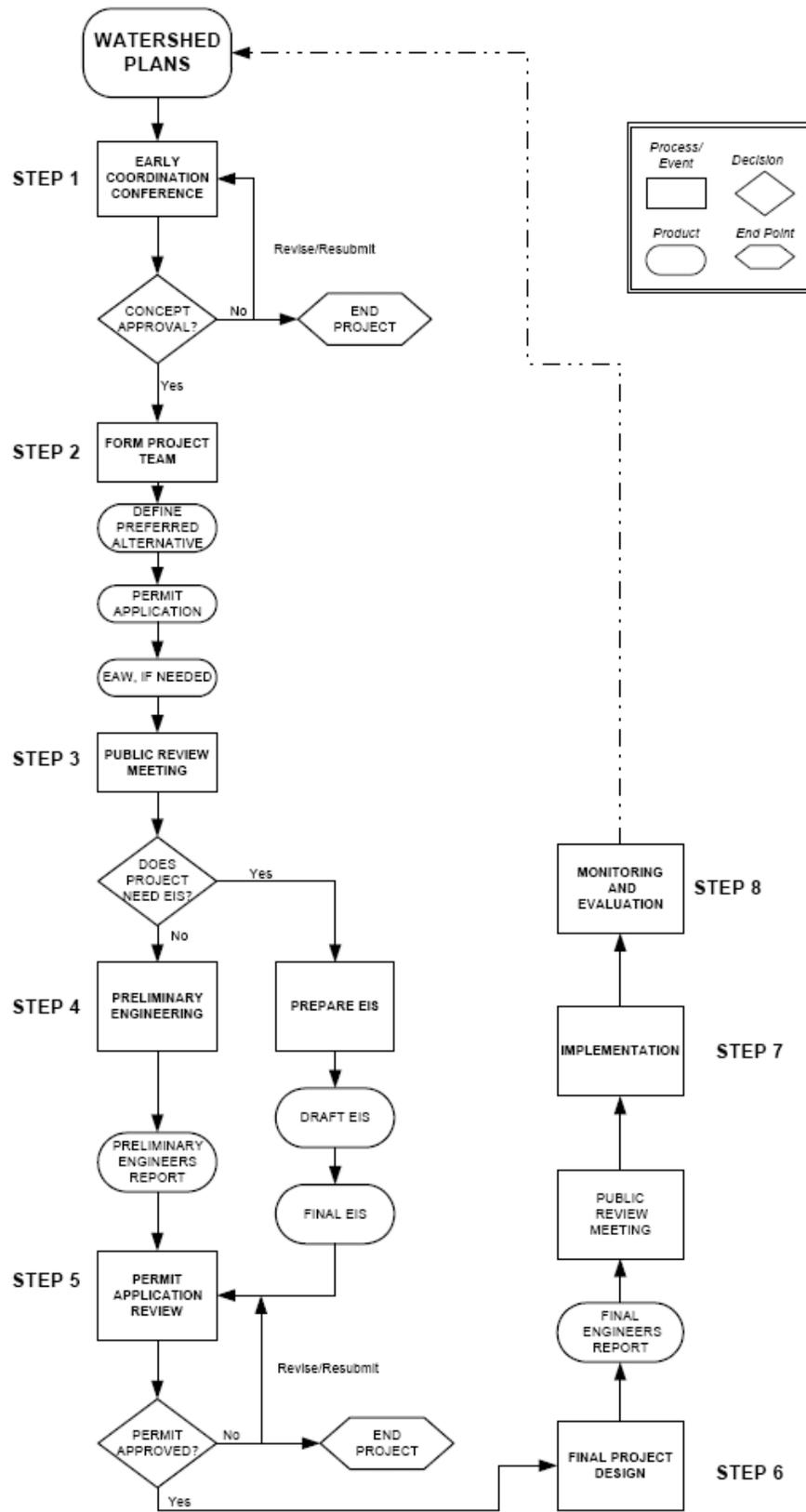
The SHRWD believes that a permit program is an important component of the District's operation. The District plans to continue to use a permitting program through the promulgation of rules to manage resources within the SHRWD. The SHRWD anticipates being a technical

resource to the communities within the District relative to storm water permitting issues within cities.

4.1.1.3 An Integrated Resource Management Approach

Integrated Resource Management can be defined as a way of using and managing the environment and natural resources to achieve sustainable solutions. Integrated Resource Management is based on cooperation, communication, coordination, consideration of values, and involvement of those potentially affected before action is taken. The SHRWD believes an integrated approach to resource management is essential. It is anticipated that most District projects would follow the Project Review and Permitting Process as laid out in the Flood Damage Reduction Mediation Agreement dated 1998. The Mediation Agreement is provided in its entirety in **Appendix G**. A flow chart of this project process follows:

PROJECT REVIEW AND PERMITTING PROCESS

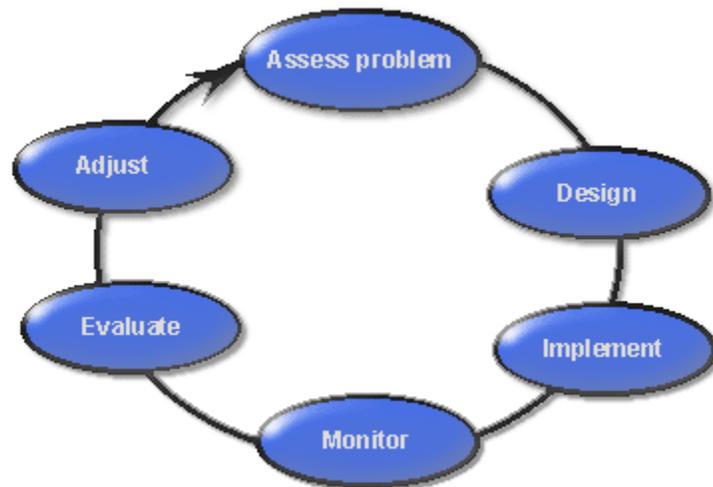


4.1.1.4 An Adaptive Management Approach

The SHRWD recognizes the need for an adaptive management approach for guiding District activities, including the development of new programs and the implementation and operation of projects. Adaptive management has been defined in various ways (see <http://www.for.gov.bc.ca/hfp/amhome/Amdefs.htm>) since its development in the early 1970s. Different people and organizations continue to have somewhat differing views of the best definition of adaptive management. The SHRWD defines adaptive management as:

An approach that uses credible, technical information to help formulate strategies, approaches, and policies in order to learn so that subsequent improvements can be made when implementing strategies and formulating successful policies and approaches and strategies.

The adaptive management process is often portrayed as a six-step cycle. Successful adaptive management requires completion of each of the six steps:



Some of the differentiating characteristics of adaptive management are:

- Acknowledgement of uncertainty about what policy or practice is "best" for the particular management issue;
- Thoughtful selection of the policies or practices to be applied (the assessment and design stages of the cycle);

- Careful implementation of a plan of action designed to reveal the critical knowledge that is currently lacking;
- Monitoring of key response indicators;
- Analysis of the management outcomes in consideration of the original objectives; and
- Incorporation of the results into future decisions.

4.1.1.5 Land Use Management

The SHRWD recognizes that the primary control and determination of appropriate land uses is the responsibility of the counties and municipalities in some areas. The SHRWD is responsible for land use determinations only on parcels acquired and owned by the District to benefit water and related resources. The District anticipates providing technical data to the Counties for use in reaching land use decisions specific to surface waters and flooding issues as well as priority lakes within the SHRWD.

4.1.1.6 Balanced Approach

The SHRWD believes in taking a balanced approach to managing resources, resolving issues, and implementing solutions. The District seeks the best outcome considering the resources within the entire watershed resources and the stakeholders involved.

4.1.1.7 Cooperation and Leveraging Resources

The SHRWD believes cooperation is essential to effectively manage the resources of the District. Projects, proposals, concepts, and ideas presented by others to the SHRWD will be cooperatively pursued only if they are consistent with this WMP. The intent is to leverage technical and financial resources to the maximum extent possible when pursuing cooperative efforts.

4.1.1.8 Regional Assessment Locations and Desired Future Conditions

The SHRWD has established locations within the District called *regional assessment locations*. Regional assessment locations are intended to represent real locations within the SHRWD for establishing quantifiable goals representing some desired future condition. Regional assessment locations are also expected to be used to measure progress toward accomplishing quantifiable goals.

4.1.2 Goals and Policies

The SHRWD goals, policies, and action items are presented here as a means of establishing the future direction of the District. The goals, policies and action items are intended to address the specific issues and problems outlined in **Section 3** (Assessment of Existing and Emerging Resource Management Issues) and provide an indication of how projects, problems, and issues will be approached and resolved. The SHRWD rules embody these goals and policies by creating enforceable requirements to achieve successful implementation.

The goals are organized broadly by management area. Management areas are numbered for clarity only, not to indicate any order of importance. However, the District recognizes that often one issue can affect several management areas. In the context of this Plan, goals, policies and actions are defined as follows:

Goal: Statement of what the District wants to accomplish. Goals are strategic in that they reflect District-wide initiatives. Goals must be clear and achievable.

Policy: Describes how the District intends to carry out its goal. Policies are focused objectives for the District and form the basis for specific actions to be implemented by the District.

Actions: Specific, tactical steps needed to implement District policies, and ultimately the identified goal.

(1) Floodplain Management

Goal: Opportunistically manage floodplains for multiple, non-development use.

Policy FM-1: Maintain established (adopted) requirements for floodplain management (including floodplain alterations, development within floodplains, minimum building elevations) implemented through zoning and land use controls at the local level.

Action: Recommend development in floodplain areas meet the current floodproofing requirements. **Status: Ongoing.**

Policy FM-2: Manage floodplains in a manner that reflects the rate and volume of runoff from ultimate development.

Action: Develop information about peak discharges and runoff volumes reflective of existing development using the District's hydrologic model in support of those responsible for implementing the floodplain management program at the local level. **Status: Completed in 2009.**

Action: Assist in the development of peak discharges and runoff volumes reflective of ultimate development in support of those responsible for implementing the floodplain management program at the local level. **Status: Ongoing, as needed.**

Policy FM-3: Incorporate appropriate opportunities for multiple floodplain uses (e.g., green space, recreation, and ecological enhancement) on District projects.

Action: Maintain the most recent FEMA floodplain boundaries on the District web site. **Target Date for Completion: 2011.**

Action: Use mapping resources of the District to identify floodplain areas along drainage and natural waterway systems, in need of restoration / maintenance as riparian corridors. Note: some of these areas may not be within FEMA floodplain boundaries. **Target Date for Completion: 2015.**

Policy FM-4: Educate public officials and the citizens of the SHRWD on the importance floodplain management and flood proofing measures.

Action: Provide information and guidance to public officials and citizens to ensure sound floodplain management. **Status: Ongoing.**

Policy FM-5: The District will assist in using the latest technology (i.e., LiDAR topography) in establishing flood plain delineations and elevations. **Status: Ongoing.**

(2) Flood Damage Reduction, Rate of Runoff, Volume of Runoff

Goal: Minimize existing and future potential damages to property, public safety, and water resources due to flood events in urban and agricultural areas.

Policy FDR-1: Attempt to maintain the post-development 2-year, 10-year and 100-year peak rate of runoff at or below the pre-development level for the critical duration precipitation event, both on-site and at key regional locations identified by the District and within incorporated cities.

Action: Develop a culvert inventory of culverts on all natural and artificial (including legal drainage ditches) for the entire watershed district. The inventory will include culvert/bridge standard sizes, dimensions and waterway areas, invert elevations (flow line elevations referenced to 1988 USGS Datum MSL). The District will finance this data collection effort with grants or other means. **Target Date for Completion: 2015.**

Action: Use (at a minimum) the most downstream locations within the regional planning units as the key regional locations. **Status: Completed with the Establishment of Regional Assessment Locations (RAL).**

Action: Compensate impacted landowners for damage if peak reduction actions cannot be done (mitigation). **Status: Ongoing, as needed.**

Action: Provide technical assistance to cities needing information about peak discharge and runoff volumes or other hydrology related information. **Status: Ongoing, as needed.**

Policy FDR-2: Use consistent design standards, evaluation tools, and performance measures for managing urban stormwater runoff.

Action: Size stormwater conveyance and detention facilities in accordance with the need to protect infrastructure such as roads and utilities, and maximize safety. **Status: Ongoing.**

Policy FDR-3: Reduce the likelihood of exacerbating downstream flood damages by controlling, where feasible, the peak discharges and runoff volumes for areas subject to frequent flooding within the District.

Action: Map areas within the District subject to frequent flooding and identify the recurrence interval, duration and severity of flooding. **Status: Ongoing, As Needed.**

Action: Identify the hydrologic conditions (e.g., peak flow rates, subwatersheds contributing the greatest proportion of the peak discharge) for the areas mapped. **Status: Ongoing.**

Action: Complete hydrologic and hydraulic modeling to assess the relationship between peak discharges, runoff volumes, and areas subject to flooding. **Status: Ongoing.**

Action: Establish desired future conditions for peak flows and runoff volumes, as goals for reducing the size of areas subject to flooding at RALs and additional locations as determined necessary in the future. **Target Date for Completion for RALs in 2011.**

Action: Complete hydrologic and hydraulic modeling to assess flows at critical regional crossings and locations. **Status: Ongoing.**

Action: Identify and preserve critical areas necessary for the temporary storage of runoff. **Target Date for Completion: 2020.**

Action: Identify and preserve critical areas necessary for the conveyance of stormwater runoff. **Status: Ongoing.**

Policy FDR-4: Protect waterways from channel instability induced by runoff, especially when used as an outlet for urban or agricultural drainage systems.

Action: Identify priority areas for protection and restoration of waterways within the District. **Target Date for Completion: 2020.**

Policy FDR-5: Adopt the flood damage reduction goals established by the Flood Damage Reduction Mediation Agreement into District planning, programs and the development of projects. **Status: Completed.**

Policy FDR-6: Plan, design, and construct projects for local flood damage reduction benefits, while considering and targeting an optimum portion of the Red River mainstem contribution to flooding and flood damages from the District. (The Red River Basin Commission's (RRBC) MIKE 11 model provides some indication of the Sand Hill River's "fair share" portion of the Red River mainstem contribution to flooding).

Action: Complete hydrologic modeling to establish target peak discharges for the contribution of the SHRWD to the Red River Mainstem. **Status: Completed in 2009.**

Action: Use the target peak discharges as an evaluation criteria when planning, developing, and designing projects and implementing programs. **Status: Ongoing.**

Action: Use the technical tools developed by the RRWMB, FDRWG TSAC Technical Papers, and IWI to evaluate the mainstem value of flood damage reduction projects. **Status: Ongoing.**

Policy FDR-7: Plan, design, and construct projects for a minimum 35% reduction in flood discharges during the 100-year flood event at the outlet of the Sand Hill River. **Status: Ongoing.**

Action: Develop projects that contribute to runoff reduction goals. **Status: Ongoing.**

Action: Complete hydrologic modeling to determine estimated project FDR benefits. **Status: Ongoing as projects develop.**

Action: Monitor to determine whether FDR activities are having benefit of reducing peak discharges at RAL locations. **Status: Ongoing.**

Action: Establish Water Management Districts or other funding alternatives to assist in financing Flood Damage Reduction Projects. **Status: Ongoing, as needed.**

(3) Legal Drainage Systems

Goal: Manage legal drainage systems in accordance with MSA 103E, while recognizing the need for agricultural drainage and sensitivity to environmental concerns

Policy LDS-1: Maintain or reduce the 2-year and the 10-year peak rates of runoff at Regional Assessment locations in Planning Regions 2, 3 and 4, at pre-improvement levels for the critical duration precipitation events when improving and establishing legal drainage systems.

Policy LDS-2: Use consistent technical standards, evaluation tools and performance measures for designing and evaluating the effects of agricultural drainage systems, including the adequacy of the outlet.

Action: Establish design standards for the repair, maintenance, improvement, and establishment of agricultural drainage systems within the District. **Target Date for Completion: 2015.**

Action: Follow design standards for conservation drainage determined as “best management practices” (BMPs) by the NRCS and BWSR.

Action: Determine specific technical criteria to be used in quantifying the adequacy of an outlet when improving or designing public and private drainage systems. **Target Date for Completion: 2015.**

Action: Identify legal drainage systems not in compliance with buffer strip requirements and work toward moving these systems into compliance in accordance with M.S.A. 103E.021

Status: Ongoing.

Policy LDS-3: Ensure lands deriving benefit from legal drainage systems are included within the benefited area of the legal drainage system and are fairly assessed relative to all properties within the benefited area.

Action: Map legal drainage systems including their benefited areas. **Status: Completed.**

Action: Periodically compare maps of the benefited areas for legal drainage systems and parcel data to the detailed hydrologic (drainage) boundaries maintained by the District. **Status: Ongoing.**

Action: Complete redetermination of benefits where needed in accordance with M.S.A. 103E.351. **Status: Ongoing.**

Policy LDS-4: Pursue outside funding and modernize historic drainage system records in accordance with BWSR standards.

Action: Modernize drainage records to a digital format. **Status: Ongoing.**

Action: Pursue outside funding for drainage record modernization. **Status: Completed.**

Policy LDS-5: Complete inspections of existing legal ditch systems as necessary.

Action: Complete the annual buffer strip report as required by MSA 103E.067. **Status: Completed Annually.**

(4) *Water Quality*

Goal: Maintain and, where practical, improve the water quality of rivers, stream, lakes, and groundwater resources within the District.

Policy WQ-1: Manage lake water quality expectations consistent with present and reasonably foreseeable landscape conditions.

Action: Establish programs and activities for addressing lake water quality issues within the District, complimentary and consistent with, but not duplicative of, existing programs, including, monitoring and use of MPCA's Citizen Lake-Monitoring Program (see <http://www.pca.state.mn.us/water/clmp.html>).

Action: Use a classification method to identify "priority" lakes within the District as a method to focus the expenditure of District resources. **Status: Ongoing.**

Action: Utilize monitoring data to establish an attainable range for lake water quality in District lakes. **Status: To be determined through TMDL Study process.**

Action: Establish numeric lake water quality goals and nutrient loading rates consistent with these goals. **Status: To be determined by TMDL Studies.**

Action: Prepare lake-specific management plans as a tool for managing lakes working with PCA, DNR, and local lake management organizations. **Status: Ongoing, as needed.**

Policy WQ-2: Lead the development of portions or all of the TMDLs needed for waters listed as impaired within the SHRWD, provided the financial burden is fairly shared between the State of Minnesota and the District.

Action: Cooperate with the MPCA as the leader of TMDL efforts in the District.

Status: Ongoing.

Action: Use resources to assist with and confirm listed waters within the SHRWD. **Status: Ongoing.**

Action: Develop a Water Quality Monitoring Program plan. **Status: Ongoing.**

Action: Evaluate MPCA priorities for TMDL completion to ensure consistency with District priorities. **Target Date for Completion: 2014.**

Action: Determine financial considerations for TMDL completion. **Status: Ongoing.**

Action: Investigate the potential of having the MPCA add sites within the bounds of the District for monitoring long-term water quality trends (RALs). **Status: Completed.**

Policy WQ-3: Use design criteria and performance standards to ensure appropriate BMPs for mitigating landuse impacts to surface and groundwater resources.

Action: Reduce erosion and sedimentation in water courses and wetlands.

Status: Ongoing.

Action: Reduce wind erosion. **Status: Ongoing.**

Action: Establish additional measures necessary to protect unique or high quality water resources within the District. **Status: Ongoing, as needed.**

Policy WQ-4: Use innovative methods and techniques to maintain and improve water quality when appropriate.

Action: Develop a cost-sharing program to encourage the use of innovative or demonstration technologies. **Target Date for Completion: 2020.**

Action: Develop and implement water management districts as a finance mechanism for water quality programs. **Status: Implement, as needed.**

Action: Develop a water quality monitoring program cost sharing document to aid in improving consistency of monitoring efforts and target monitoring efforts towards generating data that will aid in investigating issues in the District.

Target Date for Completion: 2013.

Policy WQ-5: Recognize the inherent variability in water quality concentrations and loads when managing surface and groundwater resources.

Action: Use monitoring data to aid in establishing subwatershed annual load values reflective of variability in climate and land use. **Status: Anticipated to be developed through TMDL process.**

Policy WQ-6: Promote the use of BMPs in areas of agricultural land use, especially in those areas with sensitive ground water and surface water resources.

Action: Obtain the technical information needed to further identify these areas and map them. **Target Date for Completion: 2015.**

Action: Develop a cost-sharing program, which may supplement existing programs, for the implementation of agricultural conservation practices to protect these areas. **Status: Implement, if needed.**

Action: Review, participate, and apply MN DNR Shoreland Rules, including Minnesota Rules 6120.3300, Subd. 7, Agricultural Use Standards, where applicable and necessary. **Status: Ongoing.**

Action: Establish Water Management Districts or other funding alternatives to assist in financing water quality improvement projects or implementation plans resulting from the TMDL process. **Status: Implement, as needed.**

(5) Wetlands

Goal: Manage the quantity and quality of wetlands within the watershed for their best function in a rapidly changing landscape.

Policy WT-1: Encourage the use of a functional assessment approach to define a wetlands best value allowing for multiple or singular use.

Action: Assist the local wetland LGUs in developing a weighting system reflective of importance, based on the values of the District, for the management of water. **Status: Ongoing, as needed.**

Policy WT-2: Maximize the preservation and restoration of wetlands providing critical flood control function.

Action: Identify those wetlands providing important peak flow reduction and needing preservation to maintain flood damage reduction function. **Target Date for Completion: 2015.**

Policy WT-3: Preserve high priority wetlands.

Action: Assist the LGU with identification of a Wetland Preservation Area within the SHRWD. **Target Date for Completion: 2015.**

Action: Identify, protect, and preserve high priority wetlands, as they pertain to the District's water management goals. **Status: Ongoing.**

(6) Natural Resources and Recreation

Goal: Participate in the restoration, conservation, and protection of key areas providing unique ecological values and recreational opportunities.

Policy NRR-1: Adopt the natural resource enhancement goals established by the Flood Damage Reduction Mediation Agreement into District planning, programs and the development of projects.

Policy NRR-2: Promote and pursue land acquisition, easements, or other mechanisms to establish priority riparian corridors along waterways within the District.

Action: Define thresholds and boundaries for the District's role in establishing priority riparian corridors. **Status: Ongoing.**

Action: Support county and state shoreland regulations that conserve existing shoreland resources. **Status: Ongoing.**

Action: Identify the priority riparian corridors. **Target Date for Completion: 2015.**

Action: Identify lands that would be included in the priority riparian corridors. **Target Date for Completion: 2015.**

Action: Require cooperation from all local, state, and federal agencies to establish priority riparian corridors. **Status: Ongoing.**

Policy NRR-3: Identify, restore, and protect key natural areas with multiple benefits, including groundwater recharge.

Action: Work with Resource agencies to protect and/or restore key natural areas identified as priority areas within this plan. **Status: Ongoing.**

Action: Quantify and adopt goals for acres of grassland habitat by planning region, with input from local, state and federal agencies. **Status: Ongoing.**

Action: Define thresholds and boundaries for the District's role in identifying, restoring, and protecting natural areas. **Status: Ongoing.**

Action: Identify the priority natural areas. **Target Date for Completion: 2015.**

Action: Identify lands that would be included in the priority natural areas.

Target Date for Completion: 2015.

Action: Integrate key natural areas into local plans for recreation or habitat improvement. **Status: Ongoing, as needed.**

Action: Where possible, maintain wetland connections with adjacent undisturbed areas to promote connectivity and linear corridors. **Target Date for Completion: 2015**

Action: Quantify a goal for acres of wetland restoration by planning region, with input from local, state and federal agencies. **Status: Completed.**

Action: Establish a wetland bank(s) for the benefit of District residents. **Target Date for Completion: 2020**

Policy NRR-4: Promote opportunities for recreational activities through District programs, activities, and projects.

Action: Provide support to Natural Resource Projects. **Status: Ongoing.**

Action: Support activities of others for establishment of canoe routes and fishing access. **Status: Ongoing.**

Policy NRR-5: Identify and restore river reaches where natural resource values can be enhanced.

Action: Identify restorable waterway reaches. **Target Date for Completion: 2015.**

Action: Work with resource agencies to develop restoration plans. **Status: Ongoing, as needed.**

Action: Remove obstructions and other barriers to fish migration with the cooperation and assistance of the USACE and the MnDNR. **Status: Ongoing, as needed.**

Action: Implement SHRWD Fish Passage Master Plan in Planning Regions 1 and 2. **Status: Ongoing as funding allows.**

(7) Groundwater

Goal: Pursue a sustainable balance between surface water management, land use activities, and groundwater integrity.

Policy GW-1: Manage groundwater resources using a regional and local cooperative approach.

Action: Assess the extent that groundwater and surface water resources are connected within the SHRWD. **Status: Ongoing, as needed.**

Action: Generally protect groundwater recharge areas within the District. Map these areas. **Status: Completed**

Action: Monitor groundwater quality and condition in cooperation with others for potential impacts from stormwater runoff, agricultural practices, and other land use activities. **Status: Ongoing.**

Action: Evaluate the need for a cooperative groundwater program to protect domestic and industrial water supplies. **Status: Implement, as needed.**

Action: Participate in wellhead protection efforts in the District. **Status: Ongoing.**

Policy GW-2: Increase awareness of groundwater resources that are used for domestic and industrial purposes. **Status: Ongoing.**

(8) Erosion and Sediment Control

Goal: Facilitate the use of erosion and sediment control practices to reduce the impacts to channel stability, water quality, and wetlands from sedimentation.

Policy ESC-1: Establish, develop, or endorse consistent methods, procedures, and criteria for erosion and sediment control.

Action: Establish a template for erosion and sediment control plans that assists cities with the NPDES permit process. **Target Date for Completion: 2015.**

Action: Use the criteria within the NPDES Construction General Permit as the minimum acceptable criteria when reviewing projects or for District-lead projects. **Status: Ongoing, as needed.**

Action: Establish sediment loads at key locations (i.e., regional assessment locations) within the District. **Status: Anticipated to be developed through TMDL process.**

Policy ESC-2: Manage erosion and sediment delivery from agricultural lands in accordance with allowable levels.

Action: Define priority areas where forgetting tools (i.e. digital terrain analysis, LiDAR, and GIS software technology) can be implemented within the four planning regions of the District, for exploring the potential application of BMPs and conservation structure. **Status: Ongoing.**

Action: Coordinate and / or cost share with appropriate agencies to pursue positive conservation measures for lands under traditional agricultural practices. **Status: Ongoing.**

Action: Establish Water Management Districts or other funding alternatives to assist in financing Erosion Control and Erosion Reduction Projects. **Status: Implement, as needed.**

Action: Evaluate the sediment transport capability of natural channels and the delivery of sediment to these channels. **Status: Anticipated to be developed through TMDL process.**

Action: Reasonably ensure the stability of natural waterways and drainage ways. **Status: Ongoing.**

Action: Develop sediment rating curves at key locations within the District. **Status: Anticipated to be developed through TMDL process.**

Action: Install BMPs along waterways. **Status: Ongoing – Implement with SWCDs.**

Action: Implement agricultural and drainage BMP's along all drainage systems and promote land use changes (e.g., buffers and grassed waterways, residue management, no active farming in road right-of-ways, etc.). **Status: Ongoing, as needed.**

Action: Complete sediment modeling to understand the sources and sinks of sediment within the District. **Status: Anticipated to be developed through TMDL process.**

Action: Use modeling to establish benchmark, or reference, conditions for sediment erosion and loads within the District. **Status: Anticipated to be developed through TMDL process.**

Action: Use modeling to identify specific implementation activities to reduce sediment erosion and sediment loads to benchmark, or reference, conditions within the District. **Status: Anticipated to be developed through TMDL process.**

Policy ESC-3: Estimate and quantify the effect of District led projects on sediment supplies within the District to analyze their effectiveness in meeting District-wide goals.

Action: Coordinate monitoring at RAL sites for tracking sediment load trends, along with other water resource parameters. **Status: Ongoing, as needed.**

(9) Education

Goal: Heighten the awareness of key constituencies within the District, sufficient to modify behavior to improve the recognition of Watershed Management through implementation of District policies, programs, and activities.

Policy ED-1: Use emerging technologies and tools to inform target audiences of District activities and programs.

Action: Maintain a web page that includes conveying educational materials.

Status: Ongoing.

Action: Complete and implement a stakeholder involvement program. **Status: Ongoing.**

Action: Web-enable databases and information collected by the District.

Status: Ongoing.

Policy ED-2: Maximize the use of shared education resources and joint participation in educational activities.

Action: Provide funding to the River Watch Program, or suitable entities, to develop and implement education programs and materials for improving water quality. **Status: Ongoing.**

Action: Pursue partnerships between public and private entities within the District, with an emphasis on schools, to implement educational programs and projects. **Status: Ongoing.**

Policy ED-3: Structure educational activities to mesh with defined target audiences.

Action: Organize education outreach opportunities for target audiences.

Status: Ongoing.

Policy ED-4: Use existing facilities and natural resources to apply education programs.

Action: Elevate the public awareness of significant surface waters and their habitat values. **Status: Ongoing.**

Action: Identify high quality landscapes that may be used for education or interpretive activities. **Target Date for Completion: 2015.**

Action: Pursue educational opportunities at stormwater demonstration sites or notable low impact development facilities in the District. **Status: Ongoing.**

Policy ED-5: Serve as a management and technical resource for surface water drainage, tile drainage, wetland management, and shoreland management. **Status: Ongoing, as needed.**

(10) Long Range Work Planning and Financing

Goal: Utilize District funds to initiate or support long range work plan programs, projects, and activities to improve the resources of the District.

Policy WP-1: Proactively coordinate with cities, counties, SWCDs, and others to effectively synchronize long range work plan projects, thereby providing the best value to watershed constituents. **Status: Ongoing.**

Policy WP-2: Maintain a flexible approach to long range work planning.

Action: Periodically review and adjust the District's long range work plan as new information, circumstances, or resources arise. **Status: Ongoing, as needed.**

Policy WP- 3: Use the Long Range Work Plan to integrate development of the annual work plan, the annual budget, and the annual report.

Action: Prioritize the items with the Long Range Work Plan. **Target: Complete Annually.**

Action: Annually review the priorities assigned to the action items within the Long Range Work Plan and reprioritize based upon the needs of the District. **Target: Complete Annually.**

Action: Use the planning level budget estimate for action items in the Long Range Work Plan to assist in development of the annual budget. **Target: Complete Annually.**

Action: Use the self-assessment procedure within the WMP to assess District progress for reporting in the Annual Work Plan. **Target: Complete Annually.**

Action: Report activities using the program established within this WMP. **Target: Complete Annually.**

Policy WP- 4: Pursue cost-sharing and grant opportunities to help and assist in financial obligations for the local project and program costs, and to make these local projects possible.

(11) *Data Collection and Management*

Goal: Collect and manage data in a manner that maximizes the availability to and use by constituents of the District and enhances decision-making.

Policy DCM-1: Maintain data in an electronic, or other suitable format, enhancing the ease of distribution to others.

Action: Post data in electronic format for downloading on the District's web page. **Status: Ongoing.**

Action: Create an electronic bibliography of reports and other technical information pertinent to the District. **Target Date for Completion: 2011. Update Annually.**

Action: Serve as a source for FEMA boundary information and data. **Target Date for Completion: 2011.**

Policy DCM-2: Encourage the development of hydrologic, hydraulic, and water quality models within the District using consistent methods, input parameters, and procedures.

Action: Define hydrologic parameter development methods. **Target Date for Completion: 2015.**

Action: Collect data to characterize hydrology, waters, and regional assessment locations within the District. **Status: Ongoing.**

Policy DCM-3: Maintain the data collection program for District resources.

Action: Define goals, objectives, and protocols for the data collection program (Monitoring Program Plan/Manual). **Target Date for Completion: 2015.**

Action: Evaluate the data collection network and revise the program to fill gaps or streamline efforts. **Status: Ongoing, as needed.**

Action: Recognize the efforts of volunteers in collecting water quality data. **Status: Ongoing.**

Policy DCM-4: Maintain a repository of technical information related to hydrologic, hydraulic, and water quality modeling for District related activities.

Action: Provide standardized input data needed for hydrologic and hydraulic modeling to the cities and counties. **Status: Ongoing, as needed.**

Action: Use the District web page to disseminate technical information to others, including: gaged flow rates, stages, runoff volumes, subwatershed boundaries, and other information useful in completing technical analyses. **Status: Ongoing.**

Action: Use the District web page to disseminate information to others. **Status: Ongoing.**

Action: Maintain good drainage system records, including benefited areas. **Status: Ongoing.**

Action: Modernize historic drainage system records to a digital format in accordance with BWSR standards. **Status: Ongoing.**

Action: Pursue outside funding for drainage record modernization. **Status: Ongoing.**

4.2 District Programs

4.2.1 Rules and Permitting

The SHRWD operates a permitting program. The purpose of the permitting program is to implement the rules of the District and policies identified within this WMP. The permit system allows the Board of Managers to determine whether or not a proposed plan is consistent with the Policies and Goals of the WMP. Permits are submitted to the District and reviewed prior to construction. Inspections are completed by District staff to ensure conformance with the rules and conditions imposed through the permit. The District may periodically modify its rules, in response to resource issues. Once this WMP is approved and adopted, the District may decide to modify the rules in accordance with M.S.A. 103D.341. A copy of the District's rules are shown in **Appendix E**.

4.2.2 Data Collection and Management

The SHRWD collects and manages a variety of information types. The information is used for multiple purposes including:

- Calibrating hydrologic, hydraulic, and water quality models;

- Evaluating conditions within the District at important locations (i.e., regional assessment locations);
- Measuring and assessing progress toward achieving the desired future condition;
- Characterizing long-term trends;
- Assessing the potential beneficial and adverse effects of projects.

The specific activities comprising the Data Collection and Management Program are subject to change, based upon the needs of the District. The SHRWD strives to distribute the cost for monitoring to those receiving benefits. Monitoring prior to the construction of a project, as well as post-construction monitoring, is considered a project obligation, subject to cost-share with the other agencies receiving value through monitoring. Long-term monitoring is considered to have district-wide benefit. Therefore, the cost for long-term monitoring is shared across the District.

The District has largely completed a “Monitoring Program Plan” to help direct future monitoring activities. The Monitoring Program Plan describes the goals and objectives of the program, opportunities for cooperation to maximize the value of the program, the monitoring locations and parameters, and the responsibilities for executing the plan.

4.2.2.1 Surface Water Hydrology (Stage, flow and runoff volume)

The SHRWD provides cost share funds to the United States Geological Survey (<http://www.usgs.gov/state/state.asp?state=MN>), to fund continuous stream flow gages within the District. The following gages are currently supported:

- **05069000 Sand Hill River near Climax**

The SHRWD periodically establishes temporary gages, operated from one to several years, to address the needs of specific studies or projects. The District plans to coordinate surface water hydrology monitoring during the concept development phase of a project in order to provide site-specific information needed to evaluate impacts and improve the calibration of tools (e.g., hydrology models) used during the design process. The SHRWD also anticipates post-construction surface water hydrology monitoring in accordance with the Flood Damage Reduction Mediation Agreement.

4.2.2.2 Surface Water Quality

The SHRWD surface water quality monitoring program currently consists of providing annual financial support to the River Watch Program through the MPCA.

<http://www.internationalwaterinstitute.org/riverwatchmain.htm>. An independent surface water quality monitoring network is not operated by the District. However, the District is actively involved in defining the locations for water quality monitoring within the SHRWD. More recently, the SHRWD is applying for a grant with the MPCA and others to design a monitoring program to provide assessment and TMDL study data for the Sand Hill River and its tributaries. Funding for water quality monitoring was obtained by the District through Surface Water Assessment Grants (SWAG) administered and awarded by the MPCA.

The SHRWD is now contracted with the MPCA for a watershed-wide TMDL study. Thus, the District intends to become more engaged in monitoring surface water quality by establishing locations (at regional assessment locations) within the District to prioritize surface water quality monitoring. Results of this monitoring within the can be expected to support the determination of whether waters are impaired and should be placed on or removed from the 303(d) list, used in the completion of TMDLs, and used to evaluate long-term trends. In addition, by having long-term monitoring data available at set locations, the effectiveness of BMP implementation strategies can be assessed once the watershed's TMDL study is complete and implementation efforts begin.

4.2.2.3 Groundwater Quantity and Quality

The potential for a large increase in the consumptive use of groundwater within the SHRWD is the impetus for initiating groundwater quantity and quality monitoring. The District will provide technical and consultative assistance to communities relying on groundwater for domestic use.

4.2.2.4 Natural Resources

This WMP establishes quantifiable goals for natural resources within the SHRWD. These goals are provided in greater detail in the Planning Region summaries located in the **Appendices A** through **D**. These goals are based upon an analysis of the plans and programs of those agencies with primary responsibility for managing natural resources. Natural resource enhancement goals are also included within the Flood Damage Reduction Mediation Agreement. Some of the streams, rivers, and lakes within the SHRWD (as determined by the MPCA) fail to attain their beneficial uses because of aquatic life impacts (see **Figure 3.1**).

The SHRWD plans to implement a limited natural resource monitoring program, focused on key ecological indicators at specific locations within the District. The District anticipates the program will be a cooperative effort (i.e., shared cost) with those state and federal agencies responsible for natural resource management.

4.2.2.5 Survey and Topographic Data

The SHRWD encourages the collection of survey and topographic data within the District and the Red River Basin. Topographic information has been collected within the SHRWD using Light Detection and Ranging (LIDAR) technology, for the purpose of revising regulatory floodplains. The most recent LIDAR collect completed by the IWI in 2008 and 2009 included all of the SHRWD. Much of this data is currently available. The remaining data is being processed and is anticipated to be publicly available in the upcoming months. The SHRWD anticipates a program of providing financial support to collect survey and topographic data, when it is considered in the best interest of the District. Survey and topographic data specific to a project is assigned to the cost of developing that project. The SHRWD actively supported the IWI's Red River Basin Mapping Initiative (RRBMI), which will collect and disseminate high accuracy digital elevation data using LiDAR technology for the entire U.S. portion of the Red River Basin.

4.2.3 Education and Information

The purpose of the SHRWD Education and Information Program is to raise the awareness of its residents, cooperators, and stakeholders about the efforts of the District. These efforts are generally intended to reduce flooding, improve natural resources, and address water quality issues. The program aims to inform residents about the direct and indirect impacts they have on flooding and the resources within the SHRWD. The program is cooperative and involves input from multiple entities. Press releases, its website, financial support to educational programs, and annual reports have been the primary education and information tools used by the District. However, the District recognizes the need to use additional tools and plans to consider creation of a formal Education and Information Work Plan.

Education and information activities of the SHRWD are implemented in part by financially supporting other organizations with a mission and goals consistent with those of the District, such as the efforts of the RRWMB. The SHRWD also supports the educational activities associated with the River Watch Program. The Red River Basin River Watch Monitoring Program began in Minnesota in 1995. The program is being implemented through a partnership with the IWI, MPCA, the North Dakota Department of Health (NDDoH), and the RRWMB. The River Watch Program provides hands-on, "real world" science opportunities for students, teachers, and citizens participating in the program, and is designed to provide leadership experiences and greater awareness and understanding of baseline water quality in the Red River Basin (see <http://www.internationalwaterinstitute.org/riverwatchmain.htm>).

Through the River Watch Program, baseline chemical and biological data are collected to assess water quality in local waterways (see **Figure 3.2**). The information collected

includes the turbidity of the water (to determine sediment levels and clarity). Another objective of the program is to promote greater awareness and understanding of watersheds and land and water practices affecting water quality, through local hands-on, real-world monitoring and education. Sampling is done on a regular basis, usually once a month throughout the open water season.

The website is used by the District to inform stakeholders about on-going and past activities, and to distribute educational materials and information. Considerable information about the District can be obtained from the website (www.sandhillwatershed.org).

4.2.4 Floodplain Management Program

The responsibility for managing (regulating) floodplains within the SHRWD rests with the cities and the counties. Floodplain management consists of implementing a program of corrective and preventative measures for reducing flood damages. These measures take a variety of forms and generally include requirements for zoning, subdivision or building, and special-purpose floodplain ordinances. A community's agreement to adopt and enforce floodplain management ordinances, particularly with respect to new construction, is an important element in making flood insurance available to home and businesses owners.

The SHRWD plans to continue supporting the floodplain management programs established by those responsible for implementation. Support provided by the District currently consists of providing financial and technical assistance, including the preparation of hydrologic and hydraulic studies, survey and topographic data.

4.2.5 Natural Resource Enhancement Program

The SHRWD envisions establishing a program for natural resource enhancement projects lead by others within the District, which are not a component of a project initiated by the District, to achieve the quantitative natural resource goals identified by this WMP. Cost share will only be considered when progress toward the flood damage reduction and natural resource enhancement goals can be quantified. Decisions about the whether to provide cost share for a specific project will be made by the Board of Managers on a case-by-case basis.

4.2.6 Farmstead Ring Dikes

The SHRWD anticipates continued involvement in this program, as funds are available. The Minnesota Legislature, through the Minnesota Flood Damage Reduction Program, periodically provides funding for the construction of farmstead ring dikes. The purpose of the program is to promote the construction of farmstead ring dikes built to a minimum of 2 feet of free board over the flood of record, or 1-foot above the administrative 100-year flood

(whichever is greater). Current cost sharing for the construction of farmstead ring dikes has been 50% by the State of Minnesota, 25% by the SHRWD, 25% by the local landowner. Participation in the program requires execution of a Flood Damage Reduction Grant Agreement with the DNR. The Minnesota Legislature annually reviews appropriations to this program.

4.2.7 Drainage System Buffer Strip Cost Share

The State of Minnesota convened a “Drainage Work Group” to evaluate methods and means to improve the processes and procedures associated with implementing public drainage law (103E). The recommendations of the Drainage Work Group were many, but establishing permanent, perennial vegetation adjacent to drainage systems remained a common theme (for the summary of recommendations see <http://www.bwsr.state.mn.us/news/DWG011907.pdf>).

Minnesota Drainage Law (103E) identifies requirements for establishing a one-rod (i.e., 16.5-foot) grassed strip along drainage systems. The requirement pertains to those newly established and improved drainage systems or when a redetermination of benefits occurs, or through M.S.A. 103E.021, Subd. 6 which was added in 2007 by the MN Legislature to ease the installation of buffer strips and side inlet control for erosion.

The SHRWD may provide cost-share to landowners along select drainage systems for the additional cost of establishing permanent, perennial vegetation when native grasses and forbs are used (rather than turf grass). The intent is to create a permanent water quality buffer and provide grassland habitat along key wildlife migration corridors. The intent of this program is not to implement or cost share buffers when these are required in accordance with the obligations as described under Minnesota Drainage Law (103E).

4.2.8 Wellhead Protection Investigation

The potential for a large increase in the consumptive use of groundwater within the SHRWD is the impetus for initiating groundwater quantity and quality monitoring. The District will provide technical consultative assistance to communities relying on groundwater for domestic use.

4.2.9 Surface Water Quality Enhancement Program

Recreational lakes are an important resource within the SHRWD. There are numerous existing programs for assessing and improving the condition of lakes. The MPCA operates several programs specific to lakes. These include:

- Citizen Lake Monitoring Program (CLMP);
- Lake Assessment Program (LAP);

- Section 319 and Clean Water Partnership (CWP); and
- Clean Water Fund (CWF), administered by BWSR.

Participating in the CLMP is generally considered the first step in assessing a lake's condition. The CLMP began in 1973 and currently includes volunteers working to collect information about lake conditions on more than 1,300 lakes – 2008 CLMP Report (<http://www.pca.state.mn.us/publications/wq-lar2-08.pdf>). The CLMP is primarily intended to collect basic information about water clarity and visual conditions of a lake. Volunteers take weekly transparency measurement (8-10 during the summer) readings on lakes using a Secchi disk (an instrument that is lowered into the water and used to record water transparency). Participants also record their perceptions of the physical appearance and recreational suitability of that lake during the summer months. The data is valuable for assessing the condition of a lake relative to other lakes within the area and the state, assessing general trends in lake condition, and understanding the relationship between water transparency and recreational suitability.

The second level of lake investigation is participation in a LAP study. LAP studies serve to characterize a lake's condition and provide some basic information regarding the interaction of the lake and its watershed. A detailed individual report is written for each LAP project. These reports provide valuable information for the local group, the MPCA, and others interested in protecting or improving the quality of the lake. LAP studies are intended to complement the Clean Water Partnership Program by providing information necessary for selecting projects and communicating ideas regarding lake protection and restoration. The LAP includes the involvement of MPCA staff and local citizens, such as a lake association or a municipality. The DNR and Soil and Water Conservation Districts (SWCD) also cooperate on many of the studies. More than 200 LAP projects have been completed since 1985 (<http://www.pca.state.mn.us/water/lakereport.html>). Each year approximately 12 to 15 lakes are evaluated through the LAP.

The CWP and Section 319 programs are generally applicable to detailed lake studies and efforts to restore a lake to some desired condition. The CWP provides matching grants to local units of government to protect and improve lakes, streams, and groundwater that are affected by nonpoint source pollution. Funding for these projects is awarded in two phases.

The first phase of the project involves the completion of a diagnostic study. Local sponsors work with the MPCA to collect data and information on the water resource and its surrounding drainage area. This information is used to identify pollution problems and

their sources. Project sponsors also develop a plan identifying the combination of education, management practices, and other activities needed to restore water quality. The monitoring conducted by Clean Water Partnership projects provides a detailed characterization of in-lake water quality and information to develop a detailed nutrient and water budget for the lake. It also includes a comprehensive assessment of conditions in the lake's watershed.

The second phase of the program involves implementation of BMPs identified in the diagnostic study. BMPs are methods of reducing pollution. BMPs may include sedimentation ponds, animal-waste management, conservation tillage, and restoring wetlands. Monitoring in the second phase focuses on assessing the lakes' water quality during and after implementation. Monitoring in both phases requires in-lake and tributary sampling. Detailed analysis of the data is required in each phase of the project.

The 2006 Minnesota Legislature passed the Clean Water Legacy Act. The purpose of the Clean Water Legacy Act is to protect, restore, and preserve the quality of Minnesota's surface waters by providing authority, direction, and resources to achieve and maintain water quality standards for surface waters as required by Section 303(d) of the Clean Water Act. The legislature appropriated \$15 million in its supplemental budget bill, and an additional \$9 million for water-related projects in the capital investments bill, totaling \$24 million for the CWL in 2006. The need for long-term funding for CWL is estimated to be in the range of \$80-\$200 million per year for at least 10 years. Passage of the 2008 Constitutional Amendment Authorized-Sales Tax Increase Proposal for Natural Resources and Cultural Heritage Purpose is expected to provide a stable funding source for the next 25 years. The Clean Water Legacy grant program has been replaced with the Clean Water Fund (CWF) raised through the Constitutional Amendment Authorized-Sales Tax Increase.

Portions of the dollars in the CWF pass through the DNR, Board of Water and Soil Resources (BWSR) and the MPCA, for testing and monitoring of our lakes and streams, establishment of plans (TMDLs) to clean up impaired waters and protection and preservation of lakes and streams.

The Surface Water Quality Enhancement Program envisioned by the SHRWD is to build upon (and not duplicate) the existing programs of the State of Minnesota. The SHRWD program is intended to provide technical and consultative assistance to:

- Accelerate the completion of LAP studies;

- Initiate studies and develop implementation programs using the various programs of the State; and
- Complete TMDLs working cooperatively with MPCA.

Lake Associations can apply to the District for technical and financial assistance. A Lake Association must be participating in the CLMP for the District to consider their request and be able to show they have pursued all options at the state level to be considered for this program. The SHRWD also anticipates leading and cooperating with others to complete watershed and TMDL studies. *The District will give priority to those studies and efforts it feels will identify specific projects that can be developed and constructed to improve conditions within the SHRWD (the intent is not to merely participate in studies that can show implementation).* In this regard, a management classification scheme was developed for lake management. A management framework can be used to guide the management of the SHRWD's lake resources. It can also assist Managers in determining where critical time and financial resources should be focused for lake protection.

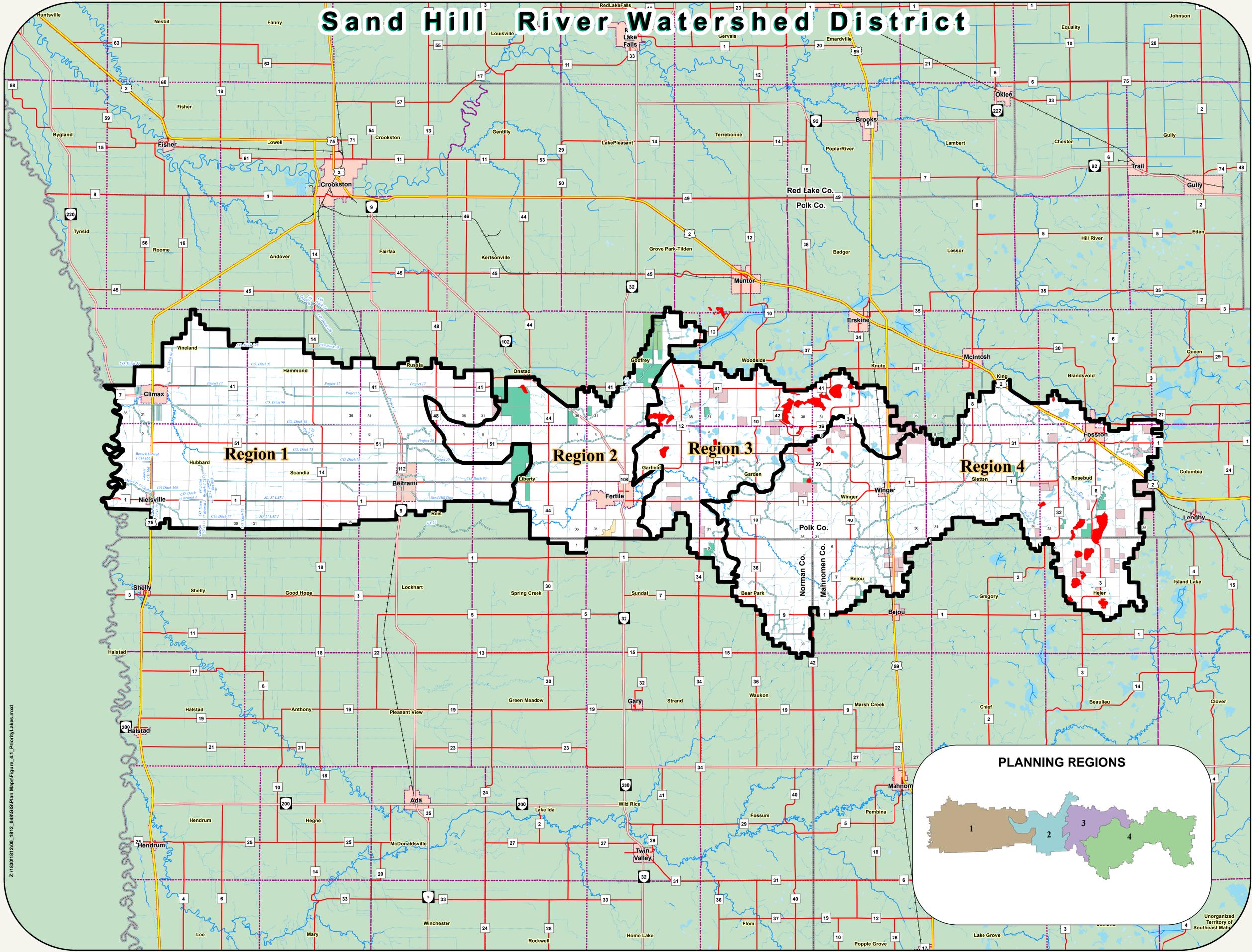
Table 4.1 shows the list of priority lakes that were identified in the SHRWD, along with their DNR lake ID number and the Planning Region where they are located. **Figure 4.1** shows the locations of the priority lakes within the SHRWD. The information in **Table 4.1** was obtained from the MN DNR Data Deli, Metadata at:

<http://deli.dnr.state.mn.us/metadata.html?id=L390003700201>

Table 4.1 General Characteristics of Lakes in the SHRWD

Lake Name	ID	Lake Area	Planning Region	Quality	Sensitivity to Disturbance	COMBINED
Allen	44-0157-00	156	4	high	Moderate	I-A
Arthur	60-0309-00	123	3	moderate	Moderate	II
Bungum	60-0222-00	67	3	moderate	Moderate	II
Cable	60-0293-00	82	3	moderate	Moderate	II
Chicog	60-0332-00	113	3	moderate	Low	III
Clydes	60-0117-00	47	4	moderate	Moderate	II
Eastland	44-0159-00	41	4	high	Moderate	I-A
Frethem	44-0154-00	65	4	marginal	High	I-A
Halverson	60-0228-00	161	3	moderate	Moderate	II
Hilligas	60-0093-00	130	4	marginal	High	I-A
Ketchum	44-0152-00	170	4	high	Moderate	I-A
Kittleson	60-0327-00	304	3	moderate	Low	III
Labrie	60-0071-00	193	4	high	Moderate	I-A
LaDuc	44-0151-00	101	4	high	Moderate	I-A
Lundby	60-0323-00	33	3	moderate	Moderate	II
Maltrod	60-0237-00	20	4	moderate	Moderate	II
Matson	60-0181-00	42	4	moderate	Moderate	II
Newton	60-0145-00	46	4	moderate	High	II
Rindahl	60-0238-00	54	4	moderate	High	II
Sand Hill	60-0069-00	598	4	marginal	High	I-A
Sarah	60-0202-00	366	3			
Simonson	44-0162-00	137	4	high	Moderate	I-A
Strand	60-0116-00	28	4	impaired	High	I-B
Union	60-0217-00	910	3	moderate	Moderate	II

Sand Hill River Watershed District



- Legend**
- County Boundary
 - Legal Boundary
 - Cities
 - Sections_Watershed
 - Townships
- Transportation**
- US Highway
 - State Highway
 - County Highway
 - County Road
 - Legal Drainage Ditch
 - Railroads
- Water Features**
- Centerline (River)
 - Stream (Perennial)
 - Drainage Ditch (Perennial)
 - Stream (Intermittent)
 - Drainage Ditch (Intermittent)
 - Waterbody
- State and Federal Land**
- National Wildlife Refuge
 - Waterfowl Production Areas
 - Wildlife Management Areas
 - Scientific and Natural Areas
 - Sandhill Priority Lakes



Location Map



Figure 4.1: Priority Lakes

Scale: AS SHOWN	Drawn by: CEQ	Checked by:	Project No.: 1812-048	Date: 11/3/2011	Sheet:
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701.237.5065

HoustonEngineering Inc.
1401 21st Avenue North Fargo ND 58102

Unorganized Territory of Southeast Mn

Z:\1800181200_1812_048\GIS\Plan Maps\Figure_4_1_PriorityLakes.mxd

These selected lakes were analyzed to see how sensitive they were to water quality degradation due to increased demands. Descriptive, qualitative criteria representative of lake sensitivity were utilized for the analysis. Criteria were selected based not only upon the power to predict lake sensitivity, but also the ease of accessing the information. Criteria used in this analysis were: size (acres), maximum depth (feet), percent littoral area (%), lake access type, and shoreland management classification. This data was obtained primarily from the DNR lake finder web page and secondarily obtained from historical records of the Detroit Lakes branch office of the DNR.

The individual criterion values were used to score the selected lakes. An overall average score was calculated, which was used to attribute each lake as having a high, moderate, or low sensitivity.

Criteria were also utilized to describe the quality of the selected lakes. The criteria utilized to establish lake quality were clarity (feet) and impairment status. Clarity data was obtained in similar fashion to the sensitivity criteria; impairment data was obtained from MPCA records.

Similar to the sensitivity criteria, the selected lakes were scored based upon the criteria as having high, moderate, or marginal quality. Impairment status was used as a fourth category to describe lake quality.

A proposed management classification scheme was developed based upon lake sensitivity to disturbance and quality status. These two measures were used in a matrix, found as **Table 4.2**, to provide the selected lakes' management classification.

Table 4.2 Management Classification Matrix

		Sensitivity to Disturbance		
		High	Moderate	Low
Quality	High	I-A	I-A	III
	Moderate	II	II	III
	Marginal	I-A	IV	IV
	Impaired	I-B	I-B	I-B

Four possible classes were used in the classification scheme, which are described as follows:

Class I-A – lakes moderately or highly sensitive to disturbance, with high water clarity; also, highly sensitive lakes with marginal water clarity.

Class I-B – any lakes designated as impaired for stressors other than mercury.

Class II – lakes moderately or highly sensitive to disturbance, with moderate water clarity.

Class III – lakes with low sensitivity to disturbance, but with moderate to high water clarity.

Class IV – lakes with marginal water clarity, having moderate to low sensitivity to disturbance.

The management classification obtained for each priority lake can be found in **Table 4.2**.

The management classification framework allows Managers to pursue objective goals for lakes based on available environmental data. Watershed management activities or policy decisions can be guided for classified lakes, such as maintaining the status quo or pursuing lake restoration.

Suggested management goals for the lake management classes are as follows:

Class I-A and I-B – actively protect the resource to prevent degradation. Pursue lake restoration and lake management efforts, where appropriate.

Class II – maintain watershed integrity.

Class III – promote recreational use, with caution.

Class IV – maintain recreational capacity and consider watershed improvements to improve clarity.

It is important to note that this management classification scheme was based upon available data from DNR records. The classification status of lakes will need to be revised as more current, up-to-date information becomes available. The environmental data used in the classification will also need to be corroborated with the data local counties are using in their classification schemes.

Further, this management classification scheme was only applied to a small sample of SHRWD lakes. Lakes smaller than 100 acres in size were not classified; however, the selected lakes provide a starting point to utilize the framework and focus resources.

4.3 Desired Future Conditions

Improving resources within the SHRWD requires establishing quantifiable (measurable) goals for flood damage reduction and enhancing natural resources in the future. This section presents goals established by the SHRWD with the intent of providing a vision for the future (i.e., “Desired Future Conditions”) within the SHRWD. The Desired Future Conditions generally reflects resource conditions, such as the:

- Distribution of wetlands by Planning Region;
- The quantity and locations of native prairie blocks within the District;
- Maximum rate of discharge or runoff volume at key locations;
- The contribution of the SHRWD to the peak discharge on the mainstem of the Red River;
- Water quality within rivers, streams, and priority District lakes; and
- General locations for establishing buffer strips.

The quantifiable, measurable goals should not be construed as having any regulatory or legal meaning. The purpose is simply to establish targets for the future for various resources within the District. The Desired Future Conditions are expected to be used to assess the potential adverse and beneficial effects of projects and programs.

The Desired Future Conditions for a selection of resources by planning region or location within the SHRWD are presented in **Section 5 and in Appendices' A through D**. These tables are subject to revision based on additional studies and experiences gained by the District.