



Minnesota Water Plan 2000

**Red River Basin
Report**

Due February 25, 2000
Minnesota Water Management Unification Task Force

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Out Reach Process

Residents and stakeholders of the Red River Basin (Basin) are in a unique position to be involved in a major planning effort such as the *Minnesota Water Plan 2000*. After recently joining into a flood damage reduction agreement and completing their own 5 year water quality plan, many are committed to unified management of the Basin's water resources.

The Red River Basin Team (Team) approached its charge of gathering input on the Public Review Draft - Preparing for Minnesota Water Plan 2000 (Draft) in two phases. First, Team members utilized established organization in the Basin to promote the state water planning process and the Team's strategy. Second, to gather actual comment on the Draft, the team made use of the existing basin planning structure.

Members of the Team made several informational presentations about the state water planning process to existing organizations in the Basin. The impetus behind the presentations was to prime individuals for the input gathering phase of the team's approach. Formal presentations were made at the Minnesota Association of County Planning and Zoning Administrators annual conference, Area I and II Soil and Water Conservation District fall meetings, Joint Powers Board of the Red River Basin in Minnesota meeting, Red River Watershed Management Board December conference and the *Minnesota Red River Basin Water Quality Plan 1999 (Basin Plan)* implementation kick-off meeting.

Phase two of the Team's strategy relied on the basin planning structure of 4 local committees and the Basin Committee. This structure allowed for involving a broad cross section of Basin residents and stakeholders. Local planning committee meetings were held in Thief River Falls, Bagley, Detroit Lakes and Fergus Falls. The Basin Committee meeting was held in Moorhead. Team members sent out 250 meeting notices to past basin planning participants. To reach additional interested persons, a press release was distributed to over 90 media outlets. The release generated two major newspaper articles and several radio spots throughout the Basin.

Participants at local committee meetings formed their input on the basis of where the Draft was consistent with the *Basin Plan* and where it differed. It was very important to committee members to use the *Basin Plan* as the foundation for their comments on draft goals, objectives and indicators. The *Basin Plan* was built upon local and regional plans such as Comprehensive Local Water Plans, local land-use plans, watershed district comprehensive plans, the *Red River Basin Flood Damage Reduction Agreement (FDR Agreement)* and the *1997 Minnesota Wetlands Conservation Plan*. It was always the intent that the *Basin Plan* would serve as a building block for development of *Minnesota Water Plan 2000*.

Local committee comments were brought to the Basin Committee at their monthly meeting in January. Members of the Basin Committee reviewed local committee comments through a holistic view of the Basin. They supported many of the local remarks and provided some additional broad reaching suggestions. Through the decision making process, not all comments from local committees were included in the final report. However, they were considered at the Basin Committee level. Local committees reached consensus on their suggestions and their opinions must be preserved. A document containing all of the comments collected during the process is included as an attachment to this report.

A draft of this report was sent to all that participated in the input gathering process. They were given the opportunity to provide feedback to the Team before submittal of the report to the Task Force. The Red River Basin Team will continue to involve local interests in the state water planning process through the Basin Committee and the Flood Damage Reduction Workgroup.

Comments from the input gathering sessions were used to write this report. While the Red River Basin Team gathered to consider the breadth of the comments, stakeholders and residents of the Basin can be assured they provided the substance for this report.

Suggested Changes to Draft Goals, Objectives and Indicators

Suggested changes to draft goals, objectives and indicators are included in this section of the report. Only draft goals, objective and indicators that we commented on are included. Each goal, objective and set of indicators are interrelated, therefore they are addressed together. Each recommended change to the goals, objectives and indicators are grouped together respectively in order of the Draft.

Objective A – *Protect and improve water quality in streams*

Objective

- Modify the objective to include, “**and water management systems**” at the end of the objective. The objective would read, *Protect and improve water quality in streams and water management systems.*

Water quality in streams is dependent upon the water quality of systems entering streams. By including “water management systems”, artificial drainage systems on agricultural lands and urban storm water systems would be captured in this objective. The *Basin Plan* addresses this issue and has specific goals to address it.

Environmental Indicators

- **Chemical oxygen demand, sulfates, sodium and protozoa’s including cryptosporidium** should be used as environmental indicators.

Drinking source water protection is not included in the Draft. There are four surface water providers in the Basin; Moorhead, East Grand Forks, Fergus Falls and Thief River Falls. The *Basin Plan* outlines the importance of this issue and has set goals to address it. The indicators included in the Draft focus on point source discharge permits and do not get at the concerns of surface water providers. These parameters should be monitored in the future to address the needs of source water providers.

- The **Index of Biological Integrity (IBI)** should be used as an environmental indicator.

The *Basin Plan* points out that Basin residents are concerned about the biological integrity and aquatic species diversity in streams and rivers. James Karr rationalizes the importance of biological monitoring in the following statement. “Biological monitoring allows us to understand more of the processes occurring in our watersheds by determining what organisms are found in a stream and comparing it to what organisms are expected to be present. Biological integrity of streams is directly influenced by human activity (forestry, agriculture, urban development, recreation, grazing, etc.) Measuring biological integrity provides an insight to the human impacts upon stream systems and provides clues regarding where we need to protect streams or where we can start helping to restore their integrity.” Perhaps in the future, federal, state, and local resource management agencies will develop a unified approach to monitoring that will include biological monitoring.

- **Stream water clarity** should be used as a basic environmental indicator for water quality.

The clarity of stream water is generally a function of the amount of suspended material (total suspended solids) and the ability of those materials to scatter light in the water. The *Basin Plan* has identified sediment loading to the Basin's streams and rivers as a major problem. The Transparency Tube is a tool for measuring stream water clarity. In 1998, the Minnesota Pollution Control Agency launched a volunteer Citizen Stream Monitoring Program. This volunteer program utilizes the Transparency Tube for measuring stream water clarity. This program could be used to measure stream water clarity as an indicator for this objective

Behavioral Indicators

- The number of **zoning variances granted in shoreland areas** could be used as a behavioral indicator.

Land use activities have a direct effect on the water quality of a resource. Crowding around shoreline and shoreland areas is increasingly becoming a problem in the Basin. The *Basin Plan* identifies land use concerns in shoreland areas, particularly those associated with zoning. The Board of Water and Soil Resources currently collects zoning variance information in its shoreland reports.

- A measure of **conservation tillage** could be a useful behavioral indicator.

Soil conservation has a direct impact on the water quality of streams and rivers. The *Basin Plan* has identified sediment and nutrient loading as major problems in the Basin. Tillage transects are a method to measure conservation tillage. Currently, tillage transects are being used by the Soil and Water Conservation Districts and Natural Resource Conservation Service.

Objective B – *Protect and improve lake water quality*

Objective

- Objectives A and B should be combined into one objective that would read, *Protect and improve water quality in streams, lakes (and water management systems)*.

Secchi transparency does not adequately measure the health of a lake. Streams and lakes are an inter-related system. Indicators that measure the water quality of a stream are equally important to determining the water quality of a lake. The *Basin Plan* notes that nutrient and sediment loading, bacterial contamination, and land use issues are threats to the water quality of Basin lakes. Indicators 1 – 7 should be applied to this combined objective along with the suggested indicators for objective A - chemical oxygen demand, sulfates, sodium and protozoa's including cryptosporidium, Index of Biological Integrity, number of zoning variances granted in shoreland areas and a measure of conservation tillage – applied appropriately to the resource.

Environmental Indicators

- **Carlson's Trophic State Index** should be used in conjunction with the indicator 7, secchi transparency in lakes, as an environmental indicator

Secchi transparency is commonly used to estimate the trophic status or productivity of lakes based on different types of equations like Carlson's Trophic State Index. The index is a useful tool for comparing water quality of lakes, rather than just looking at raw data. The Minnesota Pollution Control Agency's Lake Assessment Program currently uses Carlson's Trophic State Index in lake reports.

Behavioral Indicators

- Trends in the number of **lake associations and membership** should be used as a behavioral indicator.

To a large extent, water quality of a lake depends upon the people living on or near the lake. Involvement in environmental associations and organizations often reflects public concern for a resource. Concern can equate to protection. Trends in lake association membership could easily indicate the level of concern for lakes. Minnesota Lakes Association (MLA) currently tracks lake association membership.

- Trends in **volunteer monitoring programs** should be used as a behavioral indicator.

Volunteers who are involved in monitoring programs are generally citizens who are interested in water quality and its protection. Volunteer programs such as the MPCA's Citizen Lake Monitoring Program and the River Watch program provide resource managers with valuable inexpensive data. Trends in volunteer participation could indicate an increase or decrease in citizen interest in water quality and its protection. Organizations who facilitate volunteer monitoring programs would readily have trend data available.

- Number of **wetland fills and square footage of fills** in shoreland areas could be used as a behavioral indicator.

The *Basin Plan* supports much of the *1997 Minnesota Wetlands Conservation Plan* including the following strategies "1.) For land use planning and zoning, through local units of government, prohibit draining of wetlands in shoreland and riparian areas. 2.) Create wetland preservation areas adjacent to wetlands that maintain or improve the water quality of lakes or streams." Monitoring the number of wetland fills and square footage of fills could indicate the commitment of local governmental units to protect and preserve water quality in lakes and streams. The Board of Water and Soil Resources currently has the responsibility of recording wetland fill activities.

- Number of **feedlot waste and nutrient management plans implemented** should be used as a behavioral indicator.

The *Basin Plan* has identified the issue that feedlots and poor animal waste management can contribute to nutrient loading and shoreland erosion. Measuring the number of waste and nutrient management plans implemented in shoreland and riparian areas could show the level of human dedication to the protection of a resource. Soil and Water Conservation

Districts and the Natural Resource Conservation Service assist feedlot owners and operators in the development of waste and nutrient management plans. They keep current records of the number of plans written and implemented.

Comments

- The narrative for Objective B in the *Draft* makes the statement that "...calcium carbonates discolor water and can reduce transparency as well." This statement is false. It should be removed from the narrative.

Objective C – Prevent degradation of ground water quality and reduce concentrations of contaminants

Environmental Indicators

- The **number of compounds** showing up in groundwater should be an environmental indicator.

Science can't always tell us what isn't an issue or problem today, won't be one tomorrow. If groundwater is tested for only specific compounds, new problems will be hard to identify. Public water suppliers currently test drinking water for numerous chemicals. With financial assistance from the state, they could broaden their scope of analysis to address this issue.

Behavioral Indicators

- The **time it takes the State of Minnesota to respond** to indicators that exceed a recommended allowable limit could be a behavioral indicator.

Water Plan 2000 needs address response time to red flags raised by indicators. Timely response could indicate the state's buy-in and commitment to the water plan. State agencies responsible for monitoring indicators could collect response time data.

- A measure of **Best Management Practices (BMP) in wellhead protection areas** should be a behavioral indicator.

Conservation practices on the land directly effect the quality of ground water supplies. The *Basin Plan* identified an issue that there is a lack of drinking water protection for public drinking water supplies. In addition, the *Basin Plan* laid out a strategy to support public water supplier's efforts to develop wellhead protection plans including delineation of drinking water supply management areas, inventory of potential contaminant sources and development of management strategies. A measure of BMPs implemented in wellhead protection areas would show the degree of effort being placed on the protection of drinking water supplies. Soil and Water Conservation Districts and County Local Water Plans inventory this type of information.

- Analyzing the number of **applications to receive funding for unused, unsealed or abandoned well sealing** could be a behavioral indicator.

Unused, unsealed or abandoned wells can be a direct conduit for contaminants to reach ground water resources. To close this direct route, these wells need to be sealed. The *Basin Plan* has identified the issue of unused, unsealed or abandoned wells and the need to address the problem. Many county local water plans set goals for sealing a certain number of wells per year, while providing a cost share to achieve the goal. Applications to receive funding for sealing wells could indicate the population's desire to protect ground water. County local water planners include unused, unsealed or abandoned well data in their local water plans.

- Number of **acres of aquifer recharge areas that are protected or enhanced** could be a behavioral indicator.

To safeguard source water, aquifer recharge areas need to be protected. Land use and land cover can have a large impact on contaminants reaching aquifers. The *Basin Plan* has identified goals for determining land classification standards for lands permitted for irrigation, establish a monitoring and assessment program to determine the possible impacts, including long term effects from nutrient loading and other potential pollutants associated with groundwater recharge from irrigated lands. The *FDR Agreement* and Comprehensive Local Water Plans have set goals for identifying sensitive ground water areas, establishing sensitive ground water area protection programs and identifying and protecting sensitive aquifer recharge areas. Collecting data on protected or enhanced lands in aquifer recharge areas could show what kind of priority Minnesotans are placing on the prevention of ground water degradation. The number of approved wellhead protection areas or source water protection areas will identify the number of public water supply systems that are protecting aquifer recharge areas. Acres can be determined from the approved drinking water supply management area (DWSMA) maps, which the Minnesota Department of Health produces.

Goal - *Minnesotans will conserve water supplies and maintain the diverse characteristics of water resources to give future generations a healthy environment and a strong economy*

Goal

- Modify the goal to add, **“and provide for flood damage reduction”** after the words water resources. The goal would read, *Minnesotans will conserve water supplies, maintain the diverse characteristics of water resources and provide for flood damage reduction to give future generations a healthy environment and a strong economy*

Flooding and flood damage reduction are major issues in the Basin. Rationale for the modification to this goal are the issues, goals and strategies laid out in the *Basin Plan* and more specifically the *FDR Agreement*. As stated in the introduction of the *Agreement*: “This agreement is the product of eight months of consensus-based, mediated negotiations by the Red River Basin Flood Damage Reduction Work Group (“Work Group”). It responds to a mandate from the Minnesota Legislature to resolve gridlock over state permitting of flood damage reduction projects in the Red River Basin. The agreement is intended as the

framework for a new, collaborative approach to implementing both flood damage reduction and natural resource protection and enhancement in the Red River Basin in ways that will benefit all Minnesota's citizens. The keys to this new approach are clearly identified goals, comprehensive watershed planning, early consultation and collaboration on flood damage reduction projects among stakeholders, and a cooperative approach to permitting of those projects."

The narrative for this goal should be changed to reflect the suggested modification.

Objective

- Include a new objective for this goal that reads, **Manage drainage and retention systems to balance water flow for flood damage reduction, economic purposes and natural resource enhancement.**

This suggested objective for the modified goal is essential for the Basin. It is consistent with the goals and principles of the *FDR Agreement*, the *Basin Plan* and ecosystem based management. Inadequate water supply is addressed in the Draft goal, however frequent flooding events are not. Flooding continues to plague the Basin and planning for flood damage reduction projects will continue into the future. *Minnesota Water Plan 2000* needs to reflect this reality.

Environmental Indicators

The following indicators are for the suggested objective, "manage drainage and retention systems to balance water flow for flood damage reduction, economic purposes and natural resource enhancement."

- Number of **acres of intensively farmed agricultural land receiving ten-year flood event protection** should be an environmental indicator.

A goal in the *FDR Agreement* supports the use of this indicator. The goal reads; "Reduce damage to farmland by - 1.) providing protection against a ten-year summer storm event for intensively farmed agricultural land, 2.) maintaining existing levels of flood protection when consistent with a comprehensive watershed management plan, and 3.) providing a higher level of protection, e.g., 25-year event, when feasible at a minimal incremental cost." Stakeholders in the Basin are committed to achieving this goal. The Flood Damage Reduction Work Group, Red River Basin Watershed Management Board and watershed districts could compile this data."

- Monetary **value of infrastructure that receives 100-year flood event protection** should be an environmental indicator.

A goal in the *FDR Agreement* supports the use of this indicator. The goal reads; "Prevent damage to farm structures, homes and communities - 1.) Promote the construction of farmstead ring dikes built to a minimum of two feet of freeboard over the flood of record, or one foot above the administrative 100-year flood, whichever is greater. 2.) Promote the construction of community setback levees and floodwalls built to the flood of record plus uncertainty (3 feet) or the 100-year flood plus uncertainty, whichever is greater. 3.) Promote

the acquisition and permanent removal of flood-prone structures and establishment of greenways with the 100-year flood plain.” Stakeholders in the Basin are committed to achieving this goal. The Flood Damage Reduction Work Group, Red River Watershed Management Board and watershed districts could compile this data.”

Behavioral Indicators

- A measure of success at **reducing flood damages and natural resource enhancements** could be a behavioral indicator.

Measuring the success of reducing flood damages and natural resource enhancements has never really been done. A system of monitoring or evaluating for these reductions or enhancements hasn’t been in place. With the *FDR Agreement*, a tool is now available. The Red River Watershed Management Board’s annual conference can be used to measure this indicator. At the conference, watershed districts report on the number of flood damage reduction/natural resource enhancement projects implemented, funding received to implement projects, and the willingness of people to work together.

- Number of **acres of intensively farmed agricultural land put into perpetual conservation easements** should be a behavioral indicator.

Agricultural lands that do not require 10-year flood protection can have multiple flood damage reduction and natural resource enhancement benefits. Converting marginal land from agricultural production to permanent vegetation reduces surface run-off during and/or after precipitation storm events, significantly reduces erosion of soil from affected areas and provides for wildlife habitat. Tracking retired farmland acreage can indicate the willingness of Basin residents to achieve the goals of reducing flood damages and providing natural resource benefits. The Board of Water and Soil Resources maintains data on state conservation easement programs and the Natural Resource Conservation Service maintains data for federal programs.

Comments

- Climatic cycles and planning should be utilized to address this goal. History has shown that there will always be times of too much water and too little water. Planning for wet and dry periods is crucial in the Basin. As frightening the 1997 flood was to Basin residents, a drought would be much more devastating with far reaching economic impacts.

Objective D – *Maintain ground water levels to sustain surface water bodies and provide water supplies for human development*

Objective

- The objective needs to reflect the lack of knowledge and understanding of ground water resources. The objective could read, *Maintain ground water levels to sustain surface water*

*bodies, provide water supplies for human development and **acquire more knowledge of ground water resources.***

There is a lack of knowledge about ground water hydrology. In order to maintain ground water levels and provide water supplies for human development, more knowledge about the resource is essential.

Behavioral Indicators

- The **number of County Geologic Atlases completed** in the state could be a behavioral indicator.

Currently only 10 County Geologic Atlases are complete in the state. Only eleven percent of the state has adequate knowledge for managing ground water. The *Basin Plan* has set goals for locating aquifer recharge areas, determining the connectivity between aquifers, mapping ground water resources and developing atlases for the Basin. The *FDR Agreement* has also set goals for establishing and supporting improved methods for delineating aquifers and determining aquifer parameters. Tracking the number of Atlases completed in the next 10 years could indicate Minnesota's commitment to protecting and maintaining its ground water resources by obtaining adequate knowledge to do so. The Department of Natural Resources in conjunction with the Minnesota Geologic Survey are responsible for these atlases.

- The number of **local water management plans completed** could be a behavioral indicator.

Management of water resources starts at the local level. A state water plan can provide guidance to local resource managers, however protection and enhancement occurs at the grass roots level. Tracking the number of local water management plans such as, Comprehensive Local Water Plans, watershed management organization plans, major watershed plans and basin plans, can show how much effort is being placed on water management at the local level. The Board of Water and Soil Resources has this data readily available.

Objective E – Maintain flow of rivers and streams within historical range of variation

Objective

- The words “historical range of variation” used in the objective should be changed to **natural hydrograph**.

Using a historical range of variation for stream flow management is only as good as the supporting data. An important goal for the Basin is to augment stream flow for low flow times and attenuate the peak of stream and river hydrographs. The *FDR Agreement* established natural resource management goals for river and stream flow. Goals relevant to this objective include; “1.) For natural stream characteristics – manage flow regimes that provide access to seasonably critical habitats for a variety of stream biota, with fish as a key indicator. 2.) For unaltered (non-channelized) reaches of streams - restore a more natural

annual hydrographic. 3.) Enhance or provide seasonal flow regimes in streams for water supply, water quality, recreation and support of biotic communities by; a.) use the Department of Natural Resource's Protected Flow Regime Package process to identify optimal base flow and low flows for Basin streams, and b.) increase the coordination among water management agencies and other appropriate stakeholders in setting flows using this process."

Environmental Indicator

- The number of **stream miles that have monitoring for stream stability characteristics** could be an environmental indicator.

To maintain flow of streams and rivers, a better understanding of stream stability is required. The *FDR Agreement* established natural resource management goals for rivers and streams. Goals relevant to this objective include; "1.) Manage for natural stream characteristics – a.) permanent vegetation in riparian corridor, b.) channels with horizontal and vertical meanders, c.) stable bed load, d.) flow regimes that provide access to seasonal critical habitats for a variety of stream biota, with fish as a key indicator. 2.) Manage for bed stability objectives – a.) establish a mix of bottom vegetation, substrates, pools and riffles consistent with natural fluvial processes and native biota needs (pools and riffles maintain oxygenation, provide resting, refuge and feeding areas for aquatic organisms, aid invertebrate production, and promote physical diversity), b.) eliminate excessive degradation or aggradation of the channel slope, c.) eliminate the need for channel maintenance, and d.) establish equilibrium of sediment transport throughout all reaches." The Department of Natural Resources is beginning to monitor streams and rivers for stability characteristics. This program could be utilized in the future for measuring this indicator.

<p>Objective F – <i>Maintain the quality and diversity of Minnesota's lakes and wetlands while acknowledging regional variation.</i></p>

Objective

- The objective does not include an indicator for lakes.

Behavioral Indicators

- Trends in the number of **lake associations and membership** should be used as a behavioral indicator.

To a large extent, water quality of a lake depends upon the people living on or near the lake. Involvement in environmental associations and organizations often reflects public concern for a resource. Concern can equate to protection. Trends in lake association membership could easily indicate the level of concern for lakes. Minnesota Lakes Association (MLA) currently tracks lake association membership.

Indicator 15 – <i>Changes in wetland acres.</i>
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Behavioral Indicator

- The number of **wetland management plans** developed by local resource managers could be a behavioral indicator.

Measuring changes in wetland acres is important, however it does not address diversity. If local resource managers are developing wetland management plans, they are taking into consideration many aspects of wetland management, including diversity. The Board of Water and Soil Resources maintains data on wetland management plans.

Objective G – <i>Ensure that aquatic environments have conditions suitable for the maintenance of healthy self-sustaining communities of plants and animals</i>
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Environmental Indicators

- The **Index of Biological Integrity (IBI)** should be used as an environmental indicator.

The *Basin Plan* points out that Basin residents are concerned about the biological integrity and aquatic species diversity in streams and rivers. James Karr rationalizes the importance of biological monitoring in the following statement: “Biological monitoring allows us to understand more of the processes occurring in our watersheds by determining what organisms are found in a stream and comparing it to what organisms are expected to be present. Biological integrity of streams is directly influenced by human activity (forestry, agriculture, urban development, recreation, grazing, etc.) Measuring biological integrity provides an insight to the human impacts upon stream systems and provides clues regarding where we need to protect streams or where we can start helping to restore their integrity.” Perhaps in the future, federal, state, and local resource management agencies will develop a unified approach to monitoring that will include biological monitoring.

Comments

- The objective does not include any indicators for aquatic vegetation. An indicator should be developed.
- Indicators 16 – 22 do not represent the Basin very well. Many of the indicator populations are not residents of the Basin, they are migratory. Resident species should be looked at.
- Blue Winged Teal and Mallards are not good indicators because they are very adaptable.
- Loon reproduction does not make a good indicator because it is very dependent on many factors including, but not limited to, boat use, illegal hunting and high water.

Goal – Minnesotans will have reasonable and diverse opportunities to enjoy the state’s water resources

Behavioral Indicator

- The **measure of the quality of an experience** should be a behavioral indicator.

If the goal is for Minnesotans to have reasonable and diverse opportunities to enjoy the state’s water resources, an indicator measuring enjoyment should be included. Currently the Department of Natural Resource’s Trails and Waterways division has a creel survey program. A few questions could be added to the creel survey to measure the quality of an experience.

Targets

Residents and stakeholders of the Basin did not suggest any targets for the indicators included in the Draft. The general sentiment at input gathering sessions was that setting targets could lead to standards or requirements. Many agreed that quantitative goals are best set at the local level in county, watershed or basin plans. A few participants commented, “setting targets for indicators is a set-up for one big TMDL (Total Maximum Daily Load).”

The *Basin Plan*, in its first generation did not set targets. It was the conclusion of planning participants that there is not enough specific information about water quality in the Basin to set quantitative goals. For example, the main stem of the Red River has sediment-loading problems; however, there is no information delineating how much each tributary contributes to the total load. Until more information is available, the only option is to apply strategies to reduce sediment to each tributary. When more information is available, tributaries contributing heavier loads can be targeted.

Comments Directed to the Water Management Unification Task Force

Comments from the five input gathering sessions in the Basin were somewhat varied. However, four major issues including, **funding**, the **land use connection**, **basin management** and **education**, were discussed in length at each session. These issues are very important to Basin residents. Each issue is comprehensively addressed in the *Basin Plan*. The following comments are built from the goals and strategies of the *Basin Plan*.

- **Funding** is the most important element to implementing any water management plan. *Minnesota Water Plan 2000* is no exception. Basin residents and stakeholders are very realistic about the need to adequately fund their county, watershed or basin plans, recognizing federal and state cost share are very important. In order to achieve the goals of the state plan; protection, preservation and restoration of Minnesota’s water resources has to be done at the local level. This message must be expressed clearly in the state water

plan. Success of any water management plan can not be achieved without adequate funding.

It was suggested that a goal for funding should be developed. The goal could read, "Minnesotans will manage water resources by adequately funding local water quality

- The **land use connection** is noticeably absent from the Draft. Many suggestions to the draft goals, objectives and indicators reflect the emphasis Basin residents and stakeholders have placed on focusing on what is happening on the land. Water resources can not be protected or enhanced without considering land use activities in their watersheds. It is essential for *Minnesota Water Plan 2000* to make evident the land use connection throughout all aspects of the goals, objectives and indicators. Behavioral indicators that could be utilized to measure the importance of land use include; 1.) number of acres in perpetual conservation easement programs, 2.) acre-feet of buffer strips, 3.) acre-feet of filter strips, 4.) number of sediment basins, and 5.) number of incidences of encroachment into grassy waterways.

In the near future, the Board of Water and Soil Resource's Local Annual Reporting System (LARS) could be a very useful tool for tracking what is happening on the land. BWSR, in conjunction with other state agencies, will need to work towards successful implementation of the system. LARS can track environmental and behavioral indicators such as land treatment, wetland conservation, education, land retirement and ordinance activities down to a minor watershed level. Local reporting of land use activities could be incorporated into water plans at all levels.

- **Education** is missing from the Draft. While funding is important to the success of water management plans, so is education. The goals and objectives of *Minnesota Water Plan 2000* can not be achieved unless Minnesotans are educated about their importance and relevance. People will not participate and engage in water resource protection and enhancement partnerships unless they are educated.

Suggestions to address education include the following.

- Develop a goal to say, "create educational awareness so that citizens of the state practice wise land and water stewardship." Objectives for this goal could include, accomplish a certain level of understanding at the point of high school graduation and focus efforts at all grade levels.
 - Develop a goal to say, "have substantial and diverse opportunities to learn about the state's water resources." An objective to accompany the goal could be finding ways in which the public can become actively involved in water resource management. Financial support for education must be a priority.
 - Educational objectives should be developed for each goal in the plan along with appropriate behavioral indicators.
- **Basin management** should be the focus of *Minnesota Water Plan 2000*. The opening paragraph of the *Basin Plan* emphasizes this fact. The paragraph reads; "The Minnesota Red River Basin Plan is a true partnership between federal, state and local governments,

stakeholders and residents of the Red River Basin. The objective of the partnership is to find new ways to ensure compatibility and sustainability of cultural and natural resource interests. Another focus of the Plan is unification of state efforts and activities within the Red River Basin. This focus complies with the Water Management Unification Initiative being lead by Minnesota Planning. The Red River Basin Plan will serve as a building block for development of the Minnesota Water Plan 2000.” Many residents and stakeholders in the Basin have bought into basin management. The state plan must help reinforce this management strategy.

The state plan needs to be written to recognize the uniqueness of each major river basin. The Red River Basin is not isolated in Minnesota. It reaches into South Dakota, North Dakota and Manitoba. It will take a very concerted effort by all residents of the entire Basin to manage its water resources.

One Last Comment...

Several important issues have already been discussed in this report that are key to the success of *Minnesota Water Plan 2000*. To achieve any goal or objective from any plan, the continued commitment to inter-agency cooperation on a federal, state and local level is imperative. Team work and buy-in by all partners is a must.