

DEPARTMENT: NATURAL RESOURCES - WATERS
STATE OF MINNESOTA

Office Memorandum

DATE: February 25, 2000

TO: Water Management Unification Task Force, Marilyn Lundberg, Director

FROM: St. Croix River Basin Team, Dale Homuth, Co-chair

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SUBJECT: REPORT OF ST. CROIX BASIN TEAM ON WATER PLAN 2000

The St. Croix Basin Team has compiled comments from Basin residents, federal, state, and local agencies, and its own members, and has recommended changes to the draft Goals, Objectives, and Indicators to make them more applicable to the St. Croix Basin. During this review process the Team noticed that many people consider the St. Croix Basin to be a unique basin with different needs and issues when compared with the other major basins of the state.

The St. Croix Basin is also unique in that an interagency and interstate Basin Team has been working together since 1993 to better coordinate efforts between Minnesota and Wisconsin. To avoid confusion by our stakeholders, we combined the Basin Teams into one team, since several members already served on both teams. The St. Croix Basin Team membership now includes representatives of MPCA, MnDNR, the BWSR, the Wisconsin DNR, the National Park Service, the Minnesota - Wisconsin Boundary Area Commission (MWBAC), the Metropolitan Council, the Mn Department of Agriculture., the Mn Department of Health, the University of Minnesota, the University of Wisconsin, the U.S.G.S., the U.S. EPA, and the NRCS.

The Wisconsin DNR is also embarking on a Basin Planning process quite similar to Water Plan 2000, for the St. Croix Basin. Unfortunately, their process is not yet far enough along to fully coordinate it with this proposal, but we have made efforts to include all of the Wisconsin DNR staff comments into our recommendations.

PUBLIC INPUT

The St. Croix Basin Team, and the MWBAC in particular, did the following to obtain public input:

- Published a summary of the plan and solicited comments in the PCA's St. Croix Basin electronic newsletter, which was sent to some 125 people interested in the St. Croix Basin.
- The MWBAC published the draft plan and a comment form in their St. Croix River Stewards Journal. They also included notice of a February 17, 2000 public meeting on the plan. This publication reaches some 3800 people who are interested in the Basin. At least 25 responses to the request for comments were received from this publication.
- The MWBAC sponsored a major public meeting on February 17th in Hudson, Wisconsin, to obtain public input on the proposed Goals, Objectives and Indicators. Notice of the meeting was

individually mailed to some 637 basin residents who had previously shown interest in the St. Croix Basin.

- Notice was also published in local newspapers. Due to weather and lack of controversy, only about 10 stakeholders attended the meeting. However, excellent input was received.
- The Basin team met with the St. Croix Watershed Planners Network on January 28, 2000, which consists of some 25+ City and County Planners. Some nine people attended this meeting.
- The Basin team met with the St. Croix River Regional Committee of the MWBAC on Jan. 12, 2000 to discuss the proposal and obtain their input.
- The Basin Team met with the local water planning task forces of six counties over the past 2 or 3 months, including Aitkin, Pine, Kanabec, Chisago, Isanti, and Mille Lacs Counties, to present and discuss the Goals, Objectives and Indicators. Some 90 people interested in local water planning attended these meetings.

THE RECOMMENDED CHANGES

Attached are three documents compiled for this review process: 1) A summary of all comments received on the proposed Goals, Objectives and Indicators as of 2/25/2000; 2) the Recommended Goals, Objectives and Indicators for the St. Croix Basin; and 3) the rationale for the changes recommended to be applied to the St. Croix Basin. The review of the comments was done two days ago, so Basin Team members have not had a chance to thoroughly review the attachments. Hopefully, the Task Force will be willing to accept corrections after the 2/25/2000 deadline, if they are needed.

Most people who commented on the Plan agreed that many more indicators were needed to fully assess the condition of the St. Croix Basin. Agency staff who understand the cost and effort involved in monitoring indicators, tried to consolidate and simplify the indicators as much as possible. However, the Team still ended with some 68 indicators, many more than originally hoped.

You will notice that the term “Minnesotans” has been replaced with the term “St. Croix Basin Residents” in the attachment. This was done to show that the State’s are working together on Basin Planning, and to encourage Wisconsin basin residents to comment on the Plan.

The original individual comments received will be forwarded to you, upon request.

Attachments

c: St. Croix Basin Team Members

Minnesota Water Plan 2000
Rationale for Changes to Goals, Objectives and Indicators
relating to the St. Croix Basin
February 25, 2000

Comments are based on the original proposed goals, objectives and indicators from
the October 1999 Public Review Draft

Goal: Minnesotans will improve the quality of water resources

The term “Minnesotans” was removed from all Goals and replaced with “St. Croix Basin Residents” because we want to reinforce our cooperation with the State of Wisconsin, who controls more than half of the St. Croix watershed area.

Objective A: Protect and improve water quality in streams

This objective was reworded slightly and combined with Objective B, since most people felt that water quality concerns in lakes and streams were very similar.

Indicator 1: Phosphorus - This indicator was amended to specify total and ortho phosphorus.

Indicator 2: Nitrogen - This indicator was amended to specify Total Nitrogen

Indicator 3: Ammonia - This indicator was amended to specify unionized ammonia.

Indicator 4: Biochemical oxygen demand - This indicator was deleted and replaced with Dissolved Oxygen, which PCA and WiDNR staff felt was a better indicator that is more commonly used in the St. Croix Basin.

Indicator 5: Total suspended solids - This indicator was deleted and replaced with Turbidity, which PCA and WiDNR staff felt was a better indicator that is more commonly used in the St. Croix Basin.

Indicator 6: Fecal Coliform bacteria - This indicator was felt to be good as an indicator relating to water contact.

Additional Indicators Proposed:

Water temperature - This indicator was considered important due to the number of trout streams in the Basin.

Chlorophyll A - This indicator was felt necessary to track algae growth in lakes and reservoirs and is commonly used.

Sediment contamination tied to likely urban and industrial sources - The Team received several comments about mercury, PCB's, copper and other heavy metals. It was felt that general monitoring for these materials was too expensive and we expect that due to new laws and practices, the trends for levels of these materials will be generally downward. However, any new contamination could come from specific or point sources, and monitoring of specific sites may provide protection for the St. Croix.

Health advisories for water use and fish consumption - This is another way to get at the concerns expressed by a number of people about mercury and PCB contamination. DNR and Dept. of Health are doing this testing regularly. The results of the testing should be monitored and may point the way to specific sediment testing.

Watershed Land Use Changes - A number of people expressed concern that the draft indicators did not address the effect of land uses on water quality. Using GIS methodology we expect that land use changes can be monitored and their effects on water quality accessed. This will be an important indicator to local governments who regulate such land use changes.

Objective B: Protect and improve lake water quality

This objective, and Indicator #7, were combined with Objective A.

Indicator 7: Secchi transparency in lakes

New Objective B: Protect the scenic and ecological values of lakes and streams, particularly the Wild and Scenic St. Croix River and other lakes and streams of special interest, such as designated trout streams. - This objective was felt necessary to address a major criticism the Team received from many people. Basically, they said that what people did to the shorelines of waters was just as important to maintaining a “quality “ water resource and water quality. Also, the St. Croix Basin contains several waters of significant state and national concern, such as the St. Croix River, the Kettle River, and a number of designated trout streams. It was felt that we needed to recognize the importance of these special and unique resources. Eight indicators are proposed to address the scenic and ecological concerns.

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

Measure levels of pollutants in ground water:

Indicator 8: Nitrate

Indicator 9: Chloride

Indicator 10: Volatile organic compounds

Indicator 11: Total Atrazine

Indicator 12: Fecal Coliform bacteria

Additional Indicators Proposed:

Numbers of suspected abandoned wells - This indicator is proposed to address the most likely sources of contamination to our buried aquifers.

Numbers of class 5 injection wells - This indicator was recommended by PCA as a way of finding potential contamination sources.

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

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

Indicator 13: Water levels in wells

Additional Indicators Proposed:

Percent Impervious surfaces - From studies, we know that impervious surfaces affect the hydrology of ground and surface waters in a number of ways. It was felt that a high percentage of impervious surfaces will indicate hydrology changes that can adversely affect ground and surface water interactions.

Base flow in streams - A number of hydrologists feel that base flow is the easiest way to measure groundwater contributions to surface water. Changes in base flow can indicate potential problems.

Volume of ground-water being appropriated - This easily obtained indicator should be watched. Significant increases in appropriations can signal a potential problem.

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

Indicator 14: Trends in stream flow

Additional Indicators Proposed:

Numbers of dams removed - The St. Croix Basin team is currently studying the effects of dams. Both Wisconsin and Minnesota have been promoting the removal of dams, where it is feasible.

Number of dam operations that deviate from run-of river operation - Although there are probably only a few of these in the St. Croix Basin, the environmental effects of these dams are currently being studied by several agencies.

Percent of Flood Plains lost - Though not thought to be a big problem in the St. Croix Basin now, it was felt that the filling or diking of flood plains needs to be monitored, so as not to cause loss of flood storage in the basin.

Objective F: Maintain the quality and diversity of Minnesota's lakes and wetlands while acknowledging regional variation

Streams are an extremely important asset to the quality of the St. Croix Basin and were added to lakes and wetland in this Objective.

Indicator 15: Changes in wetland acres - Both Minnesota & Wisconsin have no net loss policies.

Additional Indicators Proposed:

Changes in Wetland type and quality - Several people commented that wetlands can be ruined by type changes, not just drainage or filling.

Changes in Stream type - There are ways being used to assess the health of stream (Rosgen classification, for example). These can be excellent indicators of a loss of quality and diversity in streams.

Goal: Minnesotans will restore and maintain healthy ecosystems that support diverse plants and wildlife

Objective G: Ensure that aquatic environments have conditions suitable for the maintenance of healthy self-sustaining communities of plants and animals

Indicator 16: Blue-winged teal population

Indicator 17: Mallard population

Indicator 18: Percent of lakes where loons reproduce successfully

Indicator 19: Number of territories occupied by bald eagles

Indicator 20: Frog and toad populations

Indicator 21: Aquatic invertebrates population

Indicator 22: Walleye population

It is recommended that all of these indicators, except #18 and 19, be deleted and replaced with indicators that better assess the integrity of the ecosystem as a whole. The following replacement indicators are proposed:

Monitor indicators of community structure and biotic integrity, including Macro invertebrates, fish, mollusc, herpatile, aquatic plant and algae communities

Average percent of embededness of course substrates

Index of Biotic Integrity (relating to fish, macro and micro-invertebrates)

Due to the special significance, and number of species of special concern, it is also recommended

that the following indicator be added: Populations Unionid Mussels

Objective H: Limit introduction and spread of exotic species

Indicator 23: Number of water bodies with Eurasian watermilfoil

Indicator 24: Miles of waterways and number of lakes and reservoirs with zebra mussels

Additional Indicators Proposed:

Number and amount of purple loosestrife infestations - Many felt this was a more troublesome exotic species than Eurasian watermilfoil, especially in the St. Croix Basin.

Extent of rusty crayfish infestations - An exotic species of concern to St. Croix residents

Acres of European Buckthorn infestations - It was noted that this is probably the number one threat to upland areas of the watershed and will adversely affect native vegetation.

Number of waters infested with carp - There may be a number of lakes in the St. Croix Basin not yet infested.

Goal: Minnesotans will have reasonable and diverse opportunities to enjoy the state's water resources

Objective I: Provide appropriate access to water recreation sites

Many St. Croix River residents oppose this objective. They note that the access provided is damaging the resource.

Indicator 25: Number of sites for boat launching - It is recommend that this indicator be expanded to include numbers of parking spaces, because it is possible for a lake to have 10 access sites with only 10 spaces to park.

Indicator 26: Number of public fishing piers

Indicator 27: Miles of stream easements- This indicator was changed and combined with a new indicator that several members of the public thought was more important that the numbers of boat launch sites: The diversity of public access types. It was noted that the St. Croix Basin contains a wide variety of unique waters that must be treated and accessed in different ways.

Objective J: Improve or maintain the quality of water recreation

Indicator 28: Boater satisfaction by surveys

Indicator 29: Angler satisfaction by surveys

Additional Indicators Proposed:

Riparian homeowner satisfaction surveys - It was pointed out to the team that riparian owners are important users of water resources who should be surveyed specifically.

Riparian Parks and trail user satisfaction surveys - It was noted that people using land adjacent to waters may have an import view that differs from boaters and anglers.

New Proposed Goal

Goal: St. Croix Basin residents, and their respective governments, will have an accountable, locally responsive and coordinated management of water related initiatives

Several comments were received in the review process that the Agencies involved in protection

and management of the St. Croix must work together better. It was felt that this is especially important and difficult in the St. Croix Basin due to the fact that over half of the basin is in Wisconsin.

A number of comments and concerns were also heard relating to education needs and data sharing needs.

Therefore, the Team proposes the above new goal, two new objectives and 10 new indicators relating to these issues.

Minnesota Water Plan 2000

Recommended Goals, Objectives and Indicators for the St. Croix Basin, as recommended by the St. Croix Basin Team, after review of written and oral comments of the public and other agencies

February 25, 2000

Goal: St. Croix Basin residents will improve the quality of water resources

Objective A: Protect and improve water quality in lakes, wetlands, rivers, and streams and establish priorities for their protection

Indicator 1: Phosphorus (Total and Ortho) - Set a standard for discharges of less than 1 mg/liter and no net increase

Indicator 2: Total Nitrogen

Indicator 3: Unionized Ammonia

Indicator 4: Fecal Coliform bacteria

Indicator 5: Water temperature

Indicator 6: Turbidity

Indicator 7: Dissolved oxygen

Indicator 8: Chlorophyll A (In lakes and reservoirs)

Indicator 9: Secchi transparency (In lakes and reservoirs)

Indicator 10: Sediment contamination tied to likely urban and industrial sources

Indicator 11: Health advisories for water use and fish consumption

Indicator 12: Watershed land use changes

Objective B: Protect the scenic and ecological values of lakes and streams, particularly the Wild and Scenic St. Croix River and other lakes and streams of special interest, such as designated trout streams.

Indicator 13: Percent of stable shoreline - Set a goal of achieving increases

Indicator 14: Delta depositional areas associated with external sources such as storm sewers and drainageways

Indicator 15: Percent of shoreline developed

Indicator 16: Percent of developed shoreline with buffers (both scenic and water quality related)

Indicator 17: Percent loss of native aquatic plant habitat

Indicator 18: Sensitive and critical habitat surveys and management plans

Indicator 19: Changes in monetary value of shoreland properties

Indicator 20: Increased noise levels on and along waters of special interest

Objective C: Prevent degradation of ground-water quality and reduce

concentrations of contaminants

Indicator 21: Nitrate

Indicator 22: Chloride

Indicator 23: Volatile organic compounds

Indicator 24: Total Atrazine

Indicator 25: Fecal Coliform bacteria

Indicator 26: Numbers of suspected abandoned wells

Indicator 27: Numbers of class 5 injection wells

Goal: St. Croix Basin residents will conserve water supplies and maintain the diverse characteristics of water resources to give future generations a healthy environment and a strong economy

Objective D: Maintain ground-water levels to sustain surface water bodies (particularly trout streams) and provide water supplies for human development

Indicator 28: Water levels in wells

Indicator 29: Percent impervious surfaces

Indicator 30: Base flow in streams

Indicator 31: Volume of ground-water being appropriated

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

Indicator 32: Trends in stream flow

Indicator 33: Number of dams removed

Indicator 34: Number of dam operations that deviate from run-of-river operation - Set a goal to have all dams operated run-of-river by 2010

Indicator 35: Percent of Flood Plains lost

Objective F: Maintain the quality and diversity of the St. Croix Basin's lakes, streams, and wetlands while acknowledging regional variation

Indicator 36: Changes in wetland acres- The goal shall be to have a net increase in wetland acres

Indicator 37: Changes in wetland types and quality

Indicator 38: Changes in stream types

Goal: St. Croix Basin residents will restore and maintain healthy ecosystems that support diverse plants and wildlife

Objective G: Ensure that aquatic environments have conditions suitable for the maintenance of healthy self-sustaining communities of plants and animals

Indicator 39: Monitor indicators of community structure and biotic integrity, including

Macroinvertebrates, fish, mollusc, herpatile, aquatic plant and algae communities

Indicator 40: Populations Unionid Mussels

Indicator 41: Average percent of embededness of coarse substrates

Indicator 42: Percent of lakes where loons reproduce successfully

Indicator 43 Number of territories occupied by bald eagles

Indicator 44: Index of Biotic Integrity (relating to fish, macro and micro-invertebrates)

Objective H: Limit introduction and spread of exotic species

Indicator 45: Number of water bodies with Eurasian watermilfoil

Indicator 46: Miles of waterways and number of lakes and reservoirs with zebra mussels

Indicator 47: Number and amount of purple loosestrife infestations

Indicator 48: Extent of rusty crayfish infestations

Indicator 49: Acres of European Buckthorn infestations

Indicator 50: Number of waters infested with carp

Goal: St. Croix Basin residents will have reasonable and diverse opportunities to enjoy the area's water resources

Objective I: Provide appropriate access to water recreation sites

Indicator 51: Number of sites for boat launching and parking spaces

Indicator 52: The diversity of public access types (walk-in, small boat, large boat, stream easements, etc)

Indicator 53: Boat number and type surveys and counts

Indicator 54: Number of public fishing piers

Objective J: Improve or maintain the quality of water recreation

Indicator 55: Boater satisfaction by surveys

Indicator 56: Angler satisfaction by surveys

Indicator 57: Riparian homeowner satisfaction surveys

Indicator 58: Riparian Parks and trail user satisfaction surveys

Goal: St. Croix Basin residents, and their respective governments, will have an accountable, locally responsive and coordinated management of water related initiatives

Objective K: Education about water-related issues and stewardship of our waters and adjacent lands will be encouraged

Indicator 59: Numbers and the quality of local water plans addressing education and stewardship

Indicator 60: Amount of local, state and federal funds spend on education and stewardship

Indicator 61: Numbers of Watershed-related data sites (must be reduced to ease access)

Indicator 62: Time and cost to obtain necessary watershed-related data (must be reduced)
Indicator 63: Number of stakeholders involved in watershed planning and water resource improvement projects

Objective L: Coordination between Federal, State, and Local Agencies will be improved, so that public resources are better utilized to address watershed-related problems

Indicator 64: Percent of agencies involved in the St. Croix Basin Planning process

Indicator 65: Amount of funds and staff time designated by each state and agency for this purpose (must be increased) - The goal would be to have a single, adequately funded coordinator's office for the St. Croix Basin, with funding coming equally from both states

Indicator 66: The number of problems that occur due to lack of agency coordination (must decrease)

Indicator 67: Numbers of local water and watershed plans reviewed by the Basin Planning Team members

Indicator 68: Number of conflicts between Minnesota and Wisconsin standards and rules (must be reduced)