



**Environmental Quality Board**  
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**Water Availability Project**  
Environmental Quality Board  
Work Plan\*  
February 21, 2008

### **The charge**

The EQB charge includes three components:

- Take a broad look at water availability and appropriations, including but not limited to issues specific to the ethanol industry, finding a way to put consideration of proposed water uses into a broader framework and perspective
- Consider how the state might establish (and/or has established) protective and achievable standards to quantify and address the environmental impacts of proposed water uses
- Summarize need and options for collecting additional data important to comprehensive and timely analysis of proposed water uses

### **Assumptions**

Four assumptions define the project's scope:

- The project should be completed in six months.
- The project should address the charge based upon existing data.
- There is a need to provide better information to the public about our understanding of water availability and sustainability.
- Today's decisions would benefit from an understanding of the context of future needs.

### **Questions**

To understand the broad issues related to water resources in Minnesota, the project should aim to answer the following questions:

- What do and don't we know about Minnesota's ground water resources?
- Can we make any estimates on water availability in a broad sense?
- What's our water resources management strategy?
- Do we have a sustainable planning strategy? What is it?
- What do we want to know from a resource management and planning perspective?
- Can we identify the data gaps and develop tools that would improve our understanding in any of the areas we'd like to know more about?

### **Outcomes sought**

People understand:

- The steps followed and data used in the evaluation and permitting process, and how that process determines water availability and appropriations specific to large-water use permits

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\* Adopted by the Environmental Quality Board on February 21, 2008

- The standards used or needed to quantify and address the environmental impacts of ethanol plants and other water users, and how they protect Minnesota’s water resources and environmental quality
- What we know and don’t know about ground water resources, the effects of a proposed new user, and long-term cumulative effects of water and land use
- The need and urgency of additional information and research, improving data, information management and communications, and securing necessary funding and staffing needed to satisfy growing concerns about water availability
- The links between water availability and other water-related environmental concerns
- How today’s water permitting, availability and policy decisions fit with the long term view, including population and land development changes, commercial and industrial expansion, and climate change that might be reasonably expected in the future

## **Elements**

### **1) History and background**

#### **a. Water use in Minnesota**

Put in perspective the use of water over time for its full range of purposes. Provide illustration of issues relating to production processes and efficiency opportunities for ethanol production, municipal water supplies and possibly other uses, such as irrigation and energy production.

**Principal authors: Jim Japs, DNR; Ralph Groschen, MDA; Chai Insook, PCA; Ken Brown, Commerce**

**Other contributors: Sheila Grow, MDH**

**Distribution of draft elements for review: April 4**

#### **b. Understanding past efforts to manage water availability**

Water quantity/ availability/ appropriations literature search, bibliography, timeline, key legislation, roles, etc. from the mid 70s to present

**Principal authors: Eric Mohring, BWSR; Jim Japs, DNR**

**Other contributors: Jim Stark, USGS; Dale Setterholm, MGS; Chris Elvrum, Met Council; Sheila Grow, MDH; Chai Insook, PCA**

**Distribution of draft elements for review: April 4**

### **2) Current regulatory approach**

#### **a. Environmental review and permitting**

Describe various requirements, standards and procedures, including those for inter-agency coordination and public involvement

**Principal authors: Chai Insook, PCA; Matt Langan and Jim Japs, DNR**

**Other contributors: Gregg Downing, EQB**

**Distribution of draft elements for review: April 11**

**b. Water appropriation permitting**

Permit information requirements (DNR letter), discussing the types of data that are useful (or required) to assess water availability for a proposed project and the extent of their existence:

- Existing published sources (reference bibliography)
- Existing well data
- Other existing data

Water resource testing and monitoring

Evaluation of surface and ground water impacts

Resource protection thresholds, including an explanation of how the current thresholds came about, how they have been and are currently put into place and used (reference “safe yield” work of 1980s, etc.)

Permit required resource monitoring

Contingency plans

**Principal author: Jim Japs, DNR**

**Other contributors: Chris Elvrum, Met Council; Sheila Grow, MDH**

**Distribution of draft elements for review: April 11**

**c. Resolution of water use conflicts**

Well interference

Surface water suspensions

Water use conflicts

Management plans

**Principal author: Jim Japs, DNR**

**Other contributors: Chris Elvrum, Met Council**

**Distribution of draft elements for review: April 18**

**3) The current understanding of water availability and sustainability**

**a. Water atlases, geologic atlases, regional hydrogeologic assessments, observation well level monitoring, wellhead protection studies and special investigations (mapping, monitoring and assessment)**

Summary of the coverage, quality and specificity of information and the extent to which it informs the understanding of water availability, ground and surface water interactions, water quality interactions, and the ability to discern cumulative impacts

**Principal authors: Jim Japs, DNR; Chai Insook, PCA; Chris Elvrum, Met Council**

**Other contributors: Jim Stark, USGS; Dale Setterholm, MGS; Sheila Grow, MDH**

**Distribution of draft elements for review: May 16**

**b. Water sustainability studies**

Summary of the EQB, DNR and Met Council studies of water sustainability, including the scale at which they are relevant; the work group will engage technical experts not involved in past efforts in discussion of the limits and applicability of this work.

**Principal authors: Princesa VanBuren, EQB; Jim Japs, DNR; Chris Elvrum, Met Council**

**Other contributors: Jim Stark, USGS; Ian Chisholm, DNR; John Nieber, Dave Mulla, Bruce Wilson and Sangwon Suh, University of Minnesota**

**Distribution of draft elements for review: May 23**

#### **4) Land use and water supply planning**

##### **a. Local water supply and land use planning**

Description of required water supply planning and contingency planning efforts administered by DNR and an assessment of the information they add to understanding water sustainability

Description of land use planning and the degree to which local governments incorporate water limits upfront

**Principal authors: Bob Patton, MDA; Eric Mohring, BWSR; Jim Japs, DNR; Chris Elvrum, Met Council**

**Other contributors: John Wells, EQB; Sheila Grow, MDH**

**Distribution of draft elements for review: May 16**

##### **b. Regional and state water supply and land use planning**

Description of state water supply planning efforts and an assessment of the information they add to understanding water sustainability

Description of state activities that affect land use and the degree to which they address water limits upfront

**Principal authors: Jim Japs, DNR; Chris Elvrum, Met Council**

**Other contributors: Jim Stark, USGS; John Wells and Princesa VanBuren, EQB; Sheila Grow, MDH**

**Distribution of draft elements for review: May 23**

#### **5) Connections with other activities and studies**

##### **a. Within Minnesota**

LCCMR: Conservation and Preservation Plan

LCCMR: Water Resource Sustainability

LCCMR: The Future of Energy and Minnesota's Water Resources

University of Minnesota Climate Change Research

University of Minnesota Ecosystem Science and Sustainability Initiative

Red River of the North Water Availability Study

Clean Water Legacy Initiative

Metropolitan Water Supply Master Plan

Impaired Waters Research Symposium

EQB Water Research Needs Assessment

**Principal authors: John Wells and Princesa VanBuren, EQB; Chai Insook, PCA; Chris Elvrum, Met Council; Jim Japs, DNR**

**Other contributors: Jim Stark, USGS; Faye Sleeper, John Nieber, Dave Mulla, Bruce Wilson, Deborah Swackhamer, Anne Kapuscinski and Sangwon Suh, University of Minnesota**

**Distribution of draft elements for review: May 30**

**b. Beyond Minnesota**

Initiatives in other states

Federal, national and regional initiatives

**Principal authors: John Wells and Princesa VanBuren, EQB; Jim Japs, DNR; Chris Elvrum, Met Council**

**Other contributors: Jim Stark, USGS; David Berry, Sustainable Water Resources Roundtable**

**Distribution of draft elements for review: May 30**

**6) Framework for understanding long-term implications and directions**

**a. Discuss the necessary steps and resources needed to build a long-term water resources policy framework**

Develop a framework for helping people put individual uses and future demands for water into a broad, long-term context and addressing possible cumulative environmental effects relating to water availability

**Principal authors: John Wells and Princesa VanBuren, EQB; Matt Langan and Jim Japs, DNR; Chai Insook, PCA, Chris Elvrum, Met Council**

**Other contributors: All work group members and advisors**

**Distribution of draft elements for review: June 20**

**b. Discuss the necessary steps and resources to develop information systems to support the framework**

Work with existing information systems to develop tools that help people understand the framework and see the connections across surface and ground water, water availability and quality, land use and future growth or change

**Principal authors: Princesa VanBuren, EQB; Matt Langan and Ian Chisholm, DNR; John Hoshal, LMIC**

**Other contributors: All work group members and advisors**

**Distribution of draft elements for review: June 27**

**7) Standards that quantify and address the water impacts**

**a. Sum up existing standards**

Describe the current collection of protective standards used to quantify and address the environmental effects relating to water availability

**Principal authors: Jim Japs, DNR; Chai Insook, PCA**

**Other contributors: Eric Mohring, BWSR**

**Distribution of draft elements for review: June 20**

**b. Identify any new standards**

Describe any new standards or procedures considered during the project and options the DNR, EQB and PCA may want to consider adopting to better quantify and address the cumulative effects relating to water use and availability

**Principal authors: Jim Japs, DNR; Chai Insook, PCA; Ken Brown, Commerce; Gregg Downing, EQB**

**Other contributors: Eric Mohring, BWSR; Bob Patton, MDA**

**Distribution of draft elements for review: June 27**

**8) Information needs and priorities**

**a. Site-specific application needs and priorities for collecting and managing additional data important to comprehensive and timely analysis of individual projects**

Evaluation of observation well network density, geologic atlas content and coverage, hydrologic and hydrogeologic study and other needs

**Principal authors: Jim Japs, DNR; Chai Insook, PCA; Chris Elvrum, Met Council; Eric Mohring, BWSR**

**Other contributors: Jim Stark, USGS; Dale Setterholm, MGS; Sheila Grow, MDH; John Nieber and Bruce Wilson, University of Minnesota**

**Distribution of draft elements for review: July 3**

**b. Framework application needs**

Evaluation of information and information systems needs for improving the broad framework within which specific decisions are made, addressing issues of scale, uncertainty, application and usefulness to site-specific decision-making

**Principal authors: Princesa VanBuren, EQB; Matt Langan and Jim Japs, DNR; Chai Insook, PCA; Ken Brown, Commerce; Chris Elvrum, Met Council**

**Other contributors: John Hoshal, Land Management Information Center; Ian Chisholm, DNR; Jim Stark, USGS; John Nieber, Dave Mulla, Bruce Wilson and Sangwon Suh, University of Minnesota**

**Distribution of draft elements for review: July 3**

**9) Report production and review**

**a. Preparation of draft final report**

Based upon the components developed by team members along the way, draft concise final report for review.

**Principal authors: John Wells and Princesa VanBuren, EQB**

**Other contributors: All work group members and advisors**

**Distribution of draft for review: July 11**

**b. Preparation of final report**

Based upon the comments received from team members and others, draft final report for approval.

**Principal authors: John Wells and Princesa VanBuren, EQB**

**Other contributors: All work group members and advisors**

**Distribution of final report for review and approval: August 8**

## 10) Information and education<sup>†</sup>

### a. Develop a communication plan

Communication plan elements will be developed based upon reception to final report, identification of key audiences, and interest in member agencies in promoting it

**Principal authors: John Wells and Princesa VanBuren, EQB;**

**Chai Insook, PCA; Matt Langan and Jim Japs, DNR**

**Other contributors: All work group members**

**Distribution of draft elements for review: August 29**

### b. Prepare a package of materials and shows for various audiences

Develop PowerPoint show and other package elements

**Principal authors: John Wells and Princesa VanBuren, EQB; Chai Insook, PCA; Matt Langan and Jim Japs, DNR**

**Other contributors: All work group members**

**Distribution of draft elements for review: September 12**

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<sup>†</sup> This section can be considered a separate addendum to the project. The board will be consulted about the details, once the project report takes shape.