Clean Water Cabinet

P-R-E-L-I-M-I-N-A-R-Y
Water Supply Vision and Strategies

September 11, 2006

Minnesota is generally regarded as a water-rich state. Even so, climatic and geologic constraints and water quality impairments limit the availability of water supplies to some communities. The legislature has responded by adopting a system of policies, priorities and procedures to govern water supply management, allocation and use. Today, Minnesota promotes a balanced use policy for water supply. Stream flows, lake levels and ground water supplies are monitored to assess availability and the appropriation of water is regulated to safeguard supplies and the environment. Yet, supplies may be put at risk by those interested in transferring water supplies or expanding water uses where resources are already stretched thin.

Vision

We will protect and manage Minnesota's waters to ensure an adequate water supply and a balanced approach to meet the state's long-term requirements for domestic, municipal, industrial, agricultural, fish and wildlife, recreational, power, navigation and water quality purposes.

Strategies

Improve understanding of water. By ___, we will target research to aid in understanding how much of Minnesota's waters can be withdrawn on a long-term basis without compromising supplies needed for natural resource functions and future generations.

Assess water availability. By ___, we will complete a first assessment of the availability of water to meet the state's projected needs.

Simplify regulation. By ___, we will streamline the state permitting processes governing the appropriation of water to provide efficient, integrated consideration of siting, water allocation and facility design.

Ensure planning. By ___, we will adopt the policies and procedures to ensure that state and local plans, programs and projects consider water supply constraints in grants, project site selection, land use plans and permitting decisions.

Reserve supplies to meet future needs. By ___, we will adapt interbasin and interstate water transfer policies and procedures to reserve supplies to meet long-term needs of Minnesota ecosystems and future generations.

Attachment A

D-R-A-F-T

Where We've Been; Where We're Going

The Pawlenty Administration and the Clean Water Cabinet

August 16, 2006

"In government, it's pretty easy to get bogged down in process and turf wars and lose sight of meaningful results. That's why we will be making sure this new Clean Water Cabinet brings results." Governor Pawlenty, June 2003

Policy

- **Clean Water** – Signed the Clean Water Legacy Act into law on June 2, 2006, providing the authority, direction and first year of funding needed to achieve and maintain water quality standards under section 303(d) of the federal Clean Water Act.
- **Wetlands** – Helped landowners restore thousands of acres of wetlands, establish a new national wildlife refuge, begin a new Conservation Reserve Enhancement Program, and set an agenda for improving wetlands accounting and reporting, targeting restorations, simplifying conservation efforts, and reducing losses.
- **Farm bill** – Developed recommendations for USDA on the conservation title of the 2007 Farm Bill that should enable Minnesota farmers to make a profit while conserving soil and water resources, protecting wetlands and improving water quality.

Priorities

- **Biennial priorities** – Identified policy and funding priorities leading to enactment of the Clean Water Legacy Act, Metropolitan water supply planning and restructuring of the Legislative Commission on Minnesota Resources.

Projects

- **Red River pilots** – Demonstrating the value of comprehensive approaches to managing watersheds with flooding, water supply, habitat, erosion and water quality needs; constructing a water management system that will provide flood protection to 40 square miles of cropland, restore approximately 1000 acres of wetland and provide fish and wildlife habitat benefits.
- **North Central lakes and shorelands** – Enabling local governments to manage development on lakes and streams in a way that respects their unique natural resources thanks to new science-based alternative shoreland standards; employing diverse partnerships between counties and groups like the Brainerd Lakes Area Conservation Collaborative, the University of Minnesota's Central Region Partnership and the Initiative Foundation's Healthy Lakes & Rivers Partnership to protect lakes.
- **Metropolitan area water supply management** – Restoring Lambert Lake in 2005 and, long-term, thereby reducing nutrient loading to the St Paul Regional Water Supply system and helping to improve water quality and lower water treatment costs; considering the interconnection of the St Paul and Minneapolis water systems in the context of regional water supply needs.
- **Southeast Minnesota water quality management** – Bringing communities along the South Fork of the Root River together to fight erosion and bacterial impairments with tools ranging from buffer strip bonus payments to targeted cropland conversions to low-interest loans for septic systems and milk house waste systems.

Lessons Learned and Next Steps

- **The power of focus**

It's better to do a few things well rather than trying to do everything. By focusing state, federal, local and private resources and programs on the most attainable priorities, the cabinet achieved better results.

- **The power of perception**

Focusing on priorities is contagious. All the state's partners see the benefit and join together to speed up the process and meet the need.

- **The advantages of collaboration and teamwork**

Results don't come from the state swooping in and imposing some new regulations and projects. They come from working in concert with local governments and private partners, and valuing measurable, achievable outcomes.

- **Policy and priorities influence**

The cabinet's participation in the four pilots boosted project interest at all levels and changed the priority they received. The next step will be to translate the concept of the pilot into a process of priority-setting and focus.

- **Performance: what's worked and what needs help**

When the cabinet provided focus and follow through, results followed. When it did not, they did not.

Next Steps

The cabinet will help the Administration:

- Identify and gain approval of the most important water-related budget and policy initiatives
- Ensure that implementation of the Clean Water Legacy Act is efficient and effective
- Ensure net long term gains in the quality and quantity of Minnesota wetlands
- Help water short regions understand and manage limited water supplies
- Identify and build projects that have community support and meet priority needs
- Streamline the organization of water duties in state government

State Water Supply Related Programs
Drawn from 2001 Water Reorganization Study
July 12, 2006

Program	Agency (Division)	Brief Description	Program Category	Agency Role in Program	Program Customer	Outcomes	Funding Source
Ground Water level Monitoring and Trend Reporting	DNR (Waters)	Measure and record water levels in observation wells in major aquifers across the state; periodically interpret the trends in water level change.	Monitoring and assessment Planning	Ambient monitoring Compliance monitoring Technical assistance	Regulated parties Local government Citizens	Data are compiled and interpreted in biennial reports; longer range trends analysis under way. Data available on DNR web page.	General Fund
Ground Water Technical Analysis	DNR (Waters)	Gather and compile data related to specific well interference or water supply conflicts; evaluate proposed new water supply wells; investigate impacts of resource development on surface and ground waters and make recommendations to water appropriations staff and field staff relative to regulatory decision.	Training and assistance Planning Regulation and enforcement	Technical assistance Regulation and enforcement	Regulated parties Local government Other state agencies	Regulatory decisions are based on sound scientific information; conflicts are avoided or addressed expeditiously. The body of knowledge about aquifers is increased.	General Fund
Geophysics	DNR (Waters)	Apply seismic reflection and refraction, electrical resistivity, electromagnetic induction techniques to determine subsurface characteristics significant to water resources issues.	Training and assistance Monitoring and assessment	Technical assistance Planning	Local government Other state agencies	Information provided to decision makers on depth to water, location of subsurface boundaries or voids, location of buried wastes or plumes.	General Fund
County and regional Geologic and Hydrologic Mapping	DNR (Waters) Minnesota Geological Survey with Counties	Gather existing and generate new data, locate and log water wells, make extensive field observations, obtain water samples for general chemistry and age analysis, and finally compile and interpret data to produce map reports.	Technical assistance Planning Monitoring and assessment	Technical assistance Planning Training	Local government Other state agencies Citizens	Develop map reports on a county or regional basis describing geology and water resources and sensitivity of aquifers to pollution.	General Fund, Small Contributions From Each County

Locate, Inventory and Seal Wells on State Land	DNR (Waters)	Physically locate wells using magnetometer, GPS, historical records etc.; examine the condition of each well found; seal all unused or unusable wells to comply with state regulations.	Infrastructure maintenance	Infrastructure maintenance	Other state agencies Citizens Local government	Wells sealed and no longer a concern for water quality into future.	Bonding
Ground Water Exploration	DNR (Waters in cooperation with various communities)	Identify locations for exploratory drilling, oversee drilling by contractor, interpret and present results to describe the nature of the subsurface in areas where little information is available.	Planning Monitoring and assessment	Technical assistance Planning	Local government Citizens Legislators Other state agencies Federal agencies	Aquifers located and described (or ruled out).	General Fund
Precipitation Monitoring, Data Compilation and Interpretation and Climate Studies	DNR (Waters in cooperation with NWS, SWCDs and others)	Collect and compile precipitation reports from observers across the state; archive the data; produce statistical summaries and interpretive maps on trends. Evaluation of the significance and likelihood of occurrence of a particular set of circumstances.	Monitoring and assessment Planning	Technical assistance Ambient monitoring Training	Citizens Regulated parties Local government	Information about magnitude and direction of precipitation/water resources made available in a timely fashion. Climate trends and water resources implications described for users and public.	General Fund
Surface Water Technical Analysis Program	DNR (Waters)	Provides hydrologic and hydraulic engineering services to support public waters permit program decisions and assist local governments and landowners. MS 103G.111	Training and assistance Regulation and enforcement	Technical assistance Training	Regulated parties Local government Citizens	Technically sound information to support permit decisions. Improved understanding of the causes and impact of flooding, lake level fluctuations, drought etc. GIS layers for major and minor watersheds and lakesheds.	General Fund
Public Water Emergency Conservation Planning	DNR (Waters)	Once every 10 years, public water suppliers serving greater than 1,000 people must prepare and implement plans to conserve water, implement emergency drought procedures and reduce future demand. MS 103G.291	Regulation and enforcement Planning	Technical assistance Planning Oversight of regulatory partners	Regulated parties Local government	311 local plans implemented. Per capita water use rate increase is reduced.	General Fund
Public Waters Work Permits	DNR (Waters)	Regulates alterations of the course, current and cross-sections of public	Regulation and enforcement	Regulation and	Regulated parties	Avoided damages to lakes, streams and public waters	General Fund, Game and Fish

	(Ecological Services) (Fisheries) (Wildlife) (Enforcement)	waters by direct permit from DNR Waters to avoid or minimize damage to public waters and allow reasonable riparian uses.		enforcement Compliance monitoring Technical assistance Standards establishment	Local government Other state agencies Federal Citizens		Account
Stream Hydrology Program	DNR (Waters)	Collects and analyzes information on river and stream flow. Provides financial support for about one-third of the cooperative federal stream gauging network in Minnesota. Provides technical assistance to others. MS 103G.285, Subd.2	Monitoring and assessment Training and assistance	Ambient monitoring Technical assistance Training	Local government Other state agencies Citizens	Statistical information on flows and flood and drought frequency needed to perform technical analyses; time of travel and stream temperature studies; community flood warning system; hydro-power compliance monitoring; information on surface water availability	General Fund, Income Contracts
Water Appropriation Permit Program	DNR (Waters)	Permits are required for appropriations of surface or ground water exceeding 10,000 gallons per day or 1 million gallons per year. MS 103G.271	Regulation and enforcement Training and assistance	Regulation and enforcement Compliance monitoring Technical assistance Standards establishment	Regulated parties Local government Other state agencies Citizens	6,800 permits statewide $2.8 million in revenues Non-interference of government water supplies Prioritization of users in event of drought	General Fund, Permit Fees
Overall state water policy coordination – includes State Water Plan, Groundwater Policy and biennial Water Priority Reports	Administration (EQB)	The EQB works through its Water Resources Committee to coordinate state-level water programs and develop the decennial State Water Plan. The 2000 plan, Minnesota Watermarks, includes statewide goals and objectives for water management, as well as goals and objectives for each of the individual basins. Water priorities, including those for groundwater, for each biennium are developed in conjunction with the EQB's Water Resources Committee. MS 103B.151 MS 103A.204 MS 103A.43	Planning	Planning	Legislators Other state agencies Citizens	State policies and priorities for water management are documented	General Fund

Water quality and quantity trends assessment	Administration (EQB)	EQB is to work with PCA, MDA and DNR to coordinate a biennial assessment and analysis of water quality and quantity, groundwater degradation trends, and efforts to reduce, prevent, minimize and eliminate degradation of water. This assessment must include an analysis of relevant monitoring data. MS 103A.43	Planning	Planning	Legislators Other state agencies	Water trends and activities are documented. NOTE: this work is conducted through the Water Unification Initiative.	No specific funding
MN Well Construction Code and Program	MDH (Environmental Health)	The program protects the health of those who drink well water, approx. 70 percent of state's population. It also protects groundwater resources through compliance with proper construction techniques for new wells and borings, and through the timely and proper sealing of old wells and borings. MS Chapter 103I	Regulation and enforcement	Regulation and enforcement Oversight of activities of regulatory partners	Local government Citizens Other state agencies	Licensure and training for well related professions. Inspection of new wells and borings. Follow-up on property transfers to ensure unused wells are sealed. Maintain data on the location of wells and borings. Establish "special well construction areas" for those parts of Minnesota known to have groundwater contamination or other special conditions. Provide information and technical assistance to public and professions, including water clinics with MDA.	Regulatory Fees
Public Water Supply Program	MDH (Environmental Health)	The MDH ensures that public water supplies provide a safe and adequate supply of drinking water to protect the health of residents and visitors. MDH sets maximum contaminant levels and monitoring frequencies for over 10,000 public water systems in the state. MS 144.381 to 144.385 - General MS 115.741 – Operator cert. MS 144.145 - Fluoride MS 446A.081- DWRF	Regulation and enforcement Infrastructure maintenance	Regulation and enforcement Infrastructure maintenance Compliance monitoring	Local government Citizens Other state agencies	Compliance assistance to ensure water suppliers meet standards. Monitor drinking water quality and perform on-site inspections of water system facilities and operations. Establish construction standards and review and approve plans for construction of drinking water facilities. Train and certify operators in conjunction with PCA wastewater operator program. Award loans to public water suppliers for infrastructure improvements in conjunction with DTED. Provide information, education, and assistance. Fluoridation of public water supplies.	Regulatory Fees, Service Connection Fees, Federal Funds and Revolving Fund

Wellhead/Source Water Protection Program	MDH (Environmental Health)	The program is designed to protect public wellhead and source water areas from contaminants that may adversely affect human health. Public water suppliers are required to delineate protection areas, investigate potential contaminant sources and develop a program for managing these sources. MS 144.381 to 144.385	Training and assistance Regulation and enforcement	Regulation and enforcement Technical assistance Training Planning	Local government Citizens Other state agencies	Work with public water suppliers to develop and implement source water/wellhead protection plans that safeguard their water sources from contamination.	General Fund, Service Connection Fees, Federal Funds (Clean Water Act 106 and 319) and Revolving Fund
Health Based Standard Setting	MDH (Environmental Health)	The program established and maintains health risk limits and health based values for groundwater and water contaminants. MS 103H.201 MS 144.0751	Standards and indicators	Standards establishment Technical assistance	Other state agencies Nonprofit organizations (Environmental and health advocacy groups) Citizens Legislators	Conducts research, analyzes results, and communicates to local, regional and state programs (PCA, DNR, MDA), results of water exposure conditions. Review and revise as necessary health risk levels (HRLs) for groundwater contaminants and health based values (HBVs) for water. Safe drinking water standards must be based on scientifically acceptable, peer-reviewed information and include a reasonable margin of safety to adequately protect the health of infants, children, and adults.	General Fund
Drinking water Revolving Fund	Minnesota Public Facilities Authority/DTED in conjunction with MDH	Provides loans to eligible water suppliers to make drinking water infrastructure improvements and provides funding to address several mandated state functions undertaken by MDH.	Financial assistance	Financial assistance Infrastructure maintenance	Local government	Fund 20-25 projects per year for $15 –$30 million annually reduce local taxes and fees by $5 million annually.	State matching funds 10%, Federal 50%, revenue bonds 35% and investment earnings 5%
County Geologic Atlas and Regional Hydrogeologic Assessments	Minnesota Geological Survey DNR (Waters)	Geologic mapping and hydrologic characterization to identify sensitive ground water resources and to support local government planning.	Training and assistance Planning	Technical assistance Training	Local government Other state agencies Citizens Schools and educators	Geologic maps (and GIS files), derivative maps, databases for land use decision-making, training of local government users.	DNR

County Well Index Database	Minnesota Geological Survey	On-going program to maintain, populate, and distribute a state-wide database of well records.	Training and assistance Planning Monitoring Regulation and enforcement	Technical assistance	Local government Other state agencies Citizens	Database of 325,000+ well records to support geologic mapping, water use investigations, spill response, regional and site-specific hydrologic investigations, code enforcement, well abandonment programs	Minnesota Geological Survey state special appropriation, supplemental support from some DNR and MDH funded projects
Borehole Geophysical Logging Program	Minnesota Geological Survey	On-going program to collect, interpret, and store geophysical logs of wells and boreholes to determine geologic units present, hydrologic properties, well construction.	Training and assistance Planning Monitoring Regulation and enforcement	Technical assistance	Other state agencies Local government Citizens	Supports many other programs by establishing aquifer(s) being used, monitored, contaminated, sampled, etc. by a particular well; used to support code enforcement by MDH; measures hydrologic properties for new hydro framework units.	Minnesota Geological Survey state special appropriation, some support from LCMR, Minnesota Department of Health
Hydro-stratigraphic Framework Studies	Minnesota Geological Survey	On-going, long-term program to develop a framework of rock units based on water-bearing characteristics.	Training and assistance Planning Regulation and enforcement	Technical assistance	Other state agencies Federal agencies	Framework of rock units specifically for water management and code enforcement; understanding of flow paths; use in ground water flow models.	MGS State Special Appropriation, LCMR, others
Geologic Mapping and Database Development to Support Wellhead Protection	Minnesota Geological Survey MDH *Southeast Minnesota Water Resources Board*	Mapping at various scales to support ground water modeling and wellhead protection.	Training and assistance Planning	Technical assistance	Other state agencies Federal agencies Local government	Geologic information to delineate wellhead protection areas and to design wellhead protection plans.	MDH, SEMNWRB, others
Karst Database Development	Minnesota Geological Survey MDH	Design, construction, and population of a statewide database of karst features.	Training and assistance Planning	Technical assistance	Other state agencies Local government Citizens	Database of features to consider in ground water management including facility siting and non-point source management.	PCA 319

Quantitative Mapping of Recharge, Twin Cities Metro Area, and others	Minnesota Geological Survey	Identification of recharge areas, recharge rates, and sustainable yields.	Training and assistance Planning Standards and indicators	Technical assistance	Local government Other state agencies Federal agencies	Maps of recharge areas and estimates of sustainable yield for water supply management.	MGS State Special Appropriation and U.S. Geological Survey (presently unfunded)
Water supply Planning	Metropolitan Council *(Environmental Services)*	The Council prepares a regional water supply plan, reviews municipal water supply plans, collects basic water use data, reviews DNR water appropriation permits, facilitates discussion groups as needed (ex. Southwest Metro Groundwater Work Group), participates in source water protection activities (ex. Miss. River Defense Network).	Planning Training and assistance	Planning Technical assistance	Citizens Local government Other state agencies Legislators	Assurance that water supply remains a viable resource to support current and future metro area users.	Ad Valorem Tax Levy, wastewater fees
Technical Assistance	*Metropolitan Council* *(Environmental Services)* *(Community Development)*	Watershed Coordinators, Sector representatives, and staff provide technical assistance to communities, watershed organizations, non-profits organizations and other public agencies. Assistance is offered in such areas as water quality management, special studies, septic systems, groundwater management, environmental education, water planning and industrial waste assistance in pollution prevention, recycling and regulation.	Training and assistance	Technical assistance	Citizens Other state agencies Local government	Sharing study results, experience, and technical and planning knowledge with others.	Ad Valorem Tax Levy, wastewater fees

Ten Year Needs
By Elements of the Governor's Vision

December 16, 2003

Protect waters from future threats:

Managing point and non-point pollution, and protecting the natural resources that depend on clean water and good habitat

Agricultural BMP loan program ($2M) + ($20M PFA from bonding)
BWSR and SWCD technical and administrative support ($83M)
DNR community assistance ($4M)
Enforcement activities ($2M)
Erosion/water quality control cost-share program ($26M)
Feedlot management ($ included under IW $M)
Feedlot water quality management grants ($45M)
ISTS management ($ included under IW $M)
Local water protection and management grants ($15M)
Municipal wastewater treatment loans ($150M bonding)
Non-point source and sustainable agricultural systems ($22M) + ($2M bonding)
Permanent wetlands preserve ($10M)
Pesticide & fertilizer non-point source and best management practices ($20M)
Pesticide use monitoring ($6M)
Pollution reduction stewardship payments (new) ($50M)
Private forest management technical and cost share assistance ($25M)
Protect rare aquatic species and critical non-game habitats ($3M)
RIM Reserve ($104M bonding)
Shoreland easements ($25M)
Stormwater management ($ included under IW $M)
Wastewater infrastructure funding ($135M from bonding)
Water quality point source regulatory programs ($7M)
Sub-Total: $345M and $411M from bonding

Restore waters that are impaired

Restoring waters and related habitat

Clean Water Partnership Loan Program ($ included under IW $M)
CREP ($46M from bonding)
Fisheries habitat and improvement projects ($70M)
Lake and riverbank erosion projects ($7M)
Mining, mineral processing, and water quality control ($4M)
Protect and restore river and lake communities ($5M)
Restoration of impaired waters ($629M -- 750M minus monitoring & TMDL assessment)
Shallow lake and wetland restoration and management ($62M)
Taconite mining and watershed restoration ($3M)
Wetland road-related replacement and banking ($27M bonding & GF)
Sub-Total: $780M and $73M from bonding

Monitor watersheds to provide clear/timely picture of status

Understanding Minnesota's surface- and ground waters, and related natural resources, so that management can be focused and effective

Ground water monitoring ($3M)
Ground water & surface water monitoring for pesticides and nutrients ($43M)
Understanding surface and ground water quantity ($19M)
Lake and stream habitat surveys ($30M)
Integrate habitat into water information ($1M)
State forest land best management guidelines application and monitoring ($2M)
Surface water monitoring ($63M)
TMDL listing, development and basin management ($58M)
Sub-Total: $219M

Ensure adequate and sustainable supplies of clean water

Managing water supplies sustainably

Geologic mapping and analysis for ground water ($25M)
Managing ground water for sustainable use ($27M)
Safe drinking water activities ($28M)
Well management ($5M)
Sub-Total: $85M

Other

Reducing flood damages, making dams safe, and providing safe access to waters

Flood damage reduction and dam safety ($110M bonding)
Water access and safe harbors ($53M)
Sub-Total: $53M and $110M from bonding

Effective Executive Branch water resource leadership

Improving how we coordinate and integrate efforts to protect and manage Minnesota's water resources

State water plan and priorities development ($2M)
Water information systems infrastructure development and management ($3M)
Sub-Total: $5M

Grand Totals:	**10 year**	**$1,487M and $594M from bonding**
	Annual	**$ 149M and $ 59M from bonding**
Grand Total Excluding IW commitment:	**10 year**	**$ 737M and $548M from bonding**
	Annual	**$ 74M and $ 55M from bonding**

Basic Process Steps
Of a Water Management System

A vision. A vision defines the broad endpoint a state seeks to reach through all its programs. For example, from Governor Pawlenty's Clean Water Initiative:

We envision a Minnesota that:

- *Keeps its waters clean and highly valued, by guarding them from present and future threats.*
- *Monitors water bodies and watersheds to provide a clear and timely picture of the "state of our waters" so that citizens and leaders have the information they need to respond quickly and appropriately.*
- *Restores waters that are impaired by our society's practices.*
- *Ensures adequate supplies of clean water to sustain healthy communities and economies.*

Another, from *Minnesota Milestones*, put it simply: *We do not want growth and change to overpower our quality of life.* Others might be cited. None seems to be authoritative.

Principles. *Achieving this requires a state water effort that:*

- *Is transparent and easily understood*
- *Integrates and coordinates federal, state and local interests*
- *Makes the link to land use*
- *Collects sufficient data and manages it in a way that is understandable and easily used by decision-makers at all levels and by citizens*
- *Involves and empowers local governments and citizens*
- *Addresses current problems and prevents the emergence of new ones*
- *Acts in a unified, economical manner*

This set of principles comes from *Minnesota Water Priorities 2003-2005.* Principles help people interpret the vision and guide the program.

Goals & objectives. The state water plan suggests a number of broad goals for managing Minnesota's waters. See *Minnesota Watermarks.* State law also sets goals and objectives for each program it authorizes.

Strategies. The EQB's biennial water priorities report, *Minnesota Water Priorities 2003-2005*, identifies a number of new strategies needed for protecting & managing water. State law also identifies state strategies for managing the state's water. These are the various programs run by state agencies and local governments.

Evaluation & feedback. Often left out in law and practice, every strategy warrants routine evaluation and feedback to make certain that the principles are relevant and well followed in route to meeting the vision, goals and objectives. This step needs to involve scientific, as well as public input.

Basic Elements
Of a Water Management System

Understanding. Citizens, scientists, planners and managers need to understand a number of things about water if it is to be managed in a sustainable way. These include the:

- State of the resource, including both quality and quantity
- Demands – both current & future – for and on the resource
- Threats – both current & future – to the resource

Educating & Learning. People and institutions and governments all need to understand the effects of their behavior on water. Educational efforts can help them get informed, and they, in turn, can teach the managers about what is actually working and what isn't.

Planning. Planning is needed to understand opportunities and threats, and devise the efforts to minimize the threats and seize the opportunities. This can involve activities focused on both short- and long-term needs.

Coordinating & Connecting. Water management involves many, many people and programs, from the individual, to the neighborhood and community, to all levels of government. Water is unlikely to be successfully or efficiently managed if they aren't engaged in a thoughtful, coordinated manner.

Managing. This is the "doing" part. Water management requires that people, businesses, communities and governments take certain steps. To be sustainable, this must go beyond traditional water management activities to include efforts to understand and manage those things that affect water and that water affects, such as economic development, transportation and settlement. Governments shepherd each of these efforts to completion through planning, education, regulation, pricing, allocation and development (i.e., construction and other implementation steps). If the result is to be sustainable, all of this must come together in a way that respects our social, economic and environmental needs and limits.

Water Supply System

- How much groundwater is available in the Twin Cities basin? What is the sustainable rate of withdrawal from the groundwater system?

- What effects would a sustainable rate of withdrawal from the groundwater system have on surface water features (lakes, wetlands, streams) ?

- Does global warming, with warmer temperatures, the potential erratic precipitation patterns and higher evapo-transpiration rates, change the outlook on what this sustainable rate of withdrawal will be?

- To what extent can rivers/streams/lakes meet the total/ partial needs for water supply?

- To what extent does the Twin Cities Metropolitan Area population depend on the upper Mississippi River reservoirs to meet its water supply needs?

- What is the critical flow at which the Metropolitan Area would require release of water in storage in these reservoirs?

- What is the lag time between the release time and the availability of the water where it is needed?

- Are our public water sources sufficiently protected from terrorist activities or accidental contamination? Do we need a detection system that alerts water suppliers relying on river water about contamination concentrations and movements to ensure adequate stocking up of river water before the pollution passes by the pumping stations?

- Is there a clear plan to manage water supply issues during a drought, or at time of massive contamination of such critical source as the Mississippi River?

- Does fragmentation of planning for and implementing capital improvement programs for water supply impede efficient and economic distribution of water, or does it limit the risk to the metropolitan population?

Water Management

- Does the state have the basic information necessary to describe the flow and water quality of streams and rivers to effectively manage the resources for healthy biotic communities, recreation opportunities, protect the health of the people, or broadly managing the resources for future generation?

- What alternatives are available to the state to fill the critical data void? Could remote sensing technology, instrumentation technology and volunteerism assist in providing a wall to wall, efficient, economic and effective data collection system?

- Does the fragmentation of water resources management responsibilities at the state level, as well as at the local level seriously:
    - Impede management of the resources,
    - Result in higher costs in dealing with water resources issues,
    - Leave issues unaddressed
    - Result in water of poorer quality?

EQB Water Reports Summary

The EQB water reports establish a sequenced series of assessments, most due September of 2008, intended to systematically check the status of water resources and identify policy and priority needs this status suggests. Each report addresses a different aspect of water policy and planning in partnership with key agencies. The chairs of the board and its water committee, the Clean Water Cabinet, instructed EQB staff and agency partners to begin work in the fall of 2007.

The following describes the five reports to be completed – four of which will be due in September of this coming year – including their statutory direction, agency participation and timeline for completion.

The Reports

Report: **Water quality trends**

Statute: M.S. 103A.43(b) Water Assessment and Reports

Description: *"(b) The Environmental Quality Board shall work with the Pollution Control Agency and the Department of Agriculture to coordinate a biennial assessment and analysis of water quality, groundwater degradation trends, and efforts to reduce, prevent, minimize, and eliminate degradation of water. The assessment and analysis must include an analysis of relevant monitoring data."*

Lead Agencies: EQB, PCA, MDA

Agency Partners: MDH, BWSR, DNR, Met Council

Date Due: September 15, 2008

Deliverables: Convene discussions of water quality, ground water degradation, and associated trends during the fall and winter of 2007; receive contributions from partners by May 2008; draft water trends report by July 2008; finalize agency review during August 2008

Report: **Water sustainability assessment**

Statute: M.S. 103A.43(c) Water Assessment and Reports

Description:	*"(c) The Environmental Quality Board shall work with the Department of Natural Resources to coordinate an assessment and analysis of the quantity of surface and ground water in the state and the availability of water to meet the state's needs."*
Lead Agency:	EQB and DNR
Agency Partners:	MGS, USGS, Met Council, MPCA, MDH and MDA
Date Due:	September 15, 2008
Deliverables:	Convene discussions of water sustainability during the fall and winter of 2007-09; perform quantitative assessment during winter and spring 2008; draft water sustainability assessment report by June 2008; finalize agency review by August 2008

Report:	**Water research priorities**
Statute:	M.S. 103A.43(a) Water Assessment and Reports
Description:	*"(a) The Environmental Quality Board shall evaluate and report to the house of representatives and senate committees with jurisdiction over the environment, natural resources, and agriculture and the Legislative-Citizen Commission on Minnesota Resources on statewide water research needs and recommended priorities for addressing these needs. Local water research needs may also be included."*
Lead Agency:	EQB
Agency Partners:	All
Date Due:	September 15, 2008
Deliverables:	Convene discussions of research priorities in January 2008; draft water research priorities report by June 2008, building upon the other EQB assessments, the University of Minnesota's Impaired Waters Research Symposium, and the University of Minnesota's conservation and preservation plan project; finalize agency review in August 2008

Report: **Biennial water policy and priorities**

Statute: M.S. 103A.43(d) and 103B.151(4) and 103A.204(a1 and b)

Description: *"(d) The Environmental Quality Board shall coordinate and submit a report on water policy including the analyses in paragraphs (a) to (c) to the house of representatives and senate committees with jurisdiction over the environment, natural resources, and agriculture and the Legislative-Citizen Commission on Minnesota Resources by September 15 of each even-numbered year. The report may include the groundwater policy report in section 103A.204."*

And

"(4) The Environmental Quality Board shall coordinate development of state water policy recommendations and priorities, and a recommended program for funding identified needs, including priorities for implementing the state water resources monitoring plan."

And

(a) The responsibility for the protection of groundwater in Minnesota is vested in a multiagency approach to management. The following is a list of agencies and the groundwater protection areas for which the agencies are primarily responsible; the list is not intended to restrict the areas of responsibility to only those specified:
(1) Environmental Quality Board: creation of a water resources committee to coordinate state groundwater protection programs and a biennial groundwater policy report beginning in 1994 that includes, for the 1994 report, the findings in the groundwater protection report coordinated by the Pollution Control Agency for the Environmental Protection Agency.
(b) The Environmental Quality Board shall through its Water Resources Committee coordinate with representatives of all agencies listed in paragraph (a), citizens, and other interested groups to prepare a biennial report every even-numbered year as part of its duties described in sections 103A.43 and 103B.151."

Lead Agency: EQB

Agency Partners: All

Date Due: September, 2008

Deliverables:	Convene discussions of water policy and priorities during the first quarter of 2008; continue discussions during second quarter 2008 based on preliminary findings of previous reports; achieve consensus by July 2008; draft water policy and priorities report by August 2008; finalize agency review by September 2008

Report:	**State water plan**
Statute:	M.S. 103B.151(2)
Description:	*"The Environmental Quality Board shall initiate, coordinate, and continue to develop comprehensive long-range water resources planning in furtherance of the plan prepared by the Environmental Quality Board's Water Resources Committee entitled "Minnesota Water Plan," published in January 1991, by September 15, 2000, and each ten-year interval afterwards."*
Lead Agency:	EQB
Agency Partners:	All
Date Due:	September 15, 2010
Deliverables:	Convene discussions of state water plan the last quarter of 2008; work throughout 2009 on plan, providing EQB with quarterly updates; finalize water plan discussions during first quarter 2010; draft state water plan by June 2010; engage citizens and other stakeholders around the state and finalize agency review by August 2010

Minnesota Statutes

103A.43 WATER ASSESSMENTS AND REPORTS.
(a) The Environmental Quality Board shall evaluate and report to the house of representatives and senate committees with jurisdiction over the environment, natural resources, and agriculture and the Legislative-Citizen Commission on Minnesota Resources on statewide water research needs and recommended priorities for addressing these needs. Local water research needs may also be included.
(b) The Environmental Quality Board shall work with the Pollution Control Agency and the Department of Agriculture to coordinate a biennial assessment and analysis of water quality, groundwater degradation trends, and efforts to reduce, prevent, minimize, and eliminate degradation of water. The assessment and analysis must include an analysis of relevant monitoring data.
(c) The Environmental Quality Board shall work with the Department of Natural Resources to coordinate an assessment and analysis of the quantity of surface and ground water in the state and the availability of water to meet the state's needs.
(d) The Environmental Quality Board shall coordinate and submit a report on water policy including the analyses in paragraphs (a) to (c) to the house of representatives and senate committees with jurisdiction over the environment, natural resources, and agriculture and the Legislative-Citizen Commission on Minnesota Resources by September 15 of each even-numbered year. The report may include the groundwater policy report in section 103A.204.
History: 1989 c 326 art 2 s 7; 1989 c 335 art 1 s 269; 1994 c 557 s 12; 1995 c 220 s 91; 1999 c 86 art 3 s 7; 2006 c 243 s 21

103B.151 COORDINATION OF WATER RESOURCE PLANNING.
Subdivision 1. Water planning. The Environmental Quality Board shall:
(1) coordinate public water resource management and regulation activities among the state agencies having jurisdiction in the area;
(2) initiate, coordinate, and continue to develop comprehensive long-range water resources planning in furtherance of the plan prepared by the Environmental Quality Board's Water Resources Committee entitled "Minnesota Water Plan," published in January 1991, by September 15, 2000, and each ten-year interval afterwards;
(3) coordinate water planning activities of local, regional, and federal bodies with state water planning and integrate these plans with state strategies;
(4) coordinate development of state water policy recommendations and priorities, and a recommended program for funding identified needs, including priorities for implementing the state water resources monitoring plan;
(5) administer federal water resources planning with multiagency interests;
(6) ensure that groundwater quality monitoring and related data is provided and integrated into the Minnesota land management information system according to published data compatibility guidelines. Costs of integrating the data in accordance with data compatibility standards must be borne by the agency generating the data;
(7) coordinate the development and evaluation of water information and education materials and resources; and

(8) coordinate the dissemination of water information and education through existing delivery systems.

Subd. 2. Governor's representative. The Environmental Quality Board chair shall represent the governor on interstate water resources organizations.

Subd. 3.[Repealed, 1995 c 186 s 28]

History: 1990 c 391 art 2 s 3; 1994 c 557 s 13

103A.204 GROUNDWATER POLICY.

(a) The responsibility for the protection of groundwater in Minnesota is vested in a multiagency approach to management. The following is a list of agencies and the groundwater protection areas for which the agencies are primarily responsible; the list is not intended to restrict the areas of responsibility to only those specified:

(1) Environmental Quality Board: creation of a water resources committee to coordinate state groundwater protection programs and a biennial groundwater policy report beginning in 1994 that includes, for the 1994 report, the findings in the groundwater protection report coordinated by the Pollution Control Agency for the Environmental Protection Agency;

(2) Pollution Control Agency: water quality monitoring and reporting and the development of best management practices and regulatory mechanisms for protection of groundwater from nonagricultural chemical contaminants;

(3) Department of Agriculture: sustainable agriculture, integrated pest management, water quality monitoring, and the development of best management practices and regulatory mechanisms for protection of groundwater from agricultural chemical contaminants;

(4) Board of Water and Soil Resources: reporting on groundwater education and outreach with local government officials, local water planning and management, and local cost share programs;

(5) Department of Natural Resources: water quantity monitoring and regulation, sensitivity mapping, and development of a plan for the use of integrated pest management and sustainable agriculture on state-owned lands; and

(6) Department of Health: regulation of wells and borings, and the development of health risk limits under section 103H.201.

(b) The Environmental Quality Board shall through its Water Resources Committee coordinate with representatives of all agencies listed in paragraph (a), citizens, and other interested groups to prepare a biennial report every even-numbered year as part of its duties described in sections 103A.43 and 103B.151.

History: 1994 c 557 s 11