

Legislative Water Commission- 2019 Legislative Recommendations:

Desired Future State Minnesota's Water Resources

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DRAFT, for Discussion only, JRS

In 2008 Minnesota's citizens passed the Clean Water, Land and Legacy Amendment to the Constitution that dedicated a portion of the state sales tax for water. These resources created significant opportunities to achieve a sustainable water future for our state. Much has been accomplished, including research, monitoring, mapping, planning and implementation. However, recent analyses have suggested that improvements to our state's water, when the amendment expires in 2034, may not meet citizen expectations. In response, the Governor asked citizens to describe what could be done to improve water quality. As the amendment period reaches a half-way point, there is need to reflect and refocus on a desired future state for water for 2034 and beyond. The citizens of Minnesota, local governments, the Clean Water Council, the Administration, and the Legislature each have important roles and responsibilities to work together in prioritizing, funding, implementing and evaluating environmental programs aimed at improving our water, increasing our return on investment, and reaching a desired future state for water in Minnesota. To ensure adequate and clean water for the future, we must balance long-term plans for conserving and protecting our natural resources with those for ensuring a healthy public and healthy economy.

There are several plans and reports that lay the groundwork for a strategy for the desired future state of our water resources. Some of these recommendations have been accomplished. Others are included in the following recommendations from the Legislative Water Commission. The recommendations employ an interdisciplinary approach with multiple perspectives and expertise:

1. **Water Bank Accounts:** *Incorporate more robust water- budget information into water planning. Improve our understanding of statewide water balances (bank account) and water sustainability by enhancing the one watershed/one plan programs. Use existing information about groundwater recharge, streamflow, and water use to identify priorities for sustainability implementation, based on objective criteria. Integrate this water planning information with land-use planning.*
2. **Establish a formal interagency/legislative process** *to determine the goals and objectives of the Future State of Water in Minnesota.*
3. **Enhance the Water Appropriation Process:** *Develop an automated water-appropriation tool that assesses streamflow deletion based on the cumulative effects of groundwater pumping (Michigan example). Simplify the water appropriation-permit process for small appropriators. Criteria could include: pumping volumes relative to watershed size and total ground recharge or median streamflow and stream thermal regime. Expand the DNR's authority to designate water-resources management areas. Expand the DNR's authority to adjust appropriations when needed.*
4. **Recognize the Full Cost of Water:** *In one sense all of our water resources are allocated to important uses including natural and human-related needs. Any new use of water needs to be assessed in that context. Managers need to understand the water quality and quantity implications of additional uses of water. State rules should capture the total costs of new allocations. Consider increasing appropriations permit costs and hook-up fees to recognize these needs and the full societal costs of using water. Promote conservation pricing.*
5. **State-Wide Mining Policy:** *Develop a policy to guide mineral development across the state. Establish constraints, goals, and expectations for new mines. Develop a pre-mining baseline information needs assessment policy.*

6. **Control Emerging Contaminants from Waters of the State:** Emerging contaminant affect aquatic biota and potentially human health in ways we do not properly understand. Continue to fund studies to gain understanding of this statewide problem, Prepare legislation that mandates a simple process for the return and disposal of un-used pharmaceuticals.
7. **Data, Information and Analysis:** Maintain and enhance water information and monitoring programs. Increase emphasis on collecting information to understand water use, groundwater, surface water and aquatic biology and their interactions. Prepare a strategy for generating and managing information needed to integrate water sustainability assessment results into regulatory programs on a statewide basis. Support systematic water sustainability programs by re-assessing data programs in order to collect the data that are needed.
8. **Recharge and Re-use of excess water:** Begin to value wastewater and storm water as a resource and not as a waste liability. Include waste water and storm water. Assess the state to prioritize areas with the most critical and significant wastewater system repair needs. Identify and promote mechanisms to address areas with leaky septic systems. Identify, prioritize, allow and promote areas where groundwater recharge of waste water and storm water is feasible. Allow for managed recharge. Protect areas where enhance recharge makes hydrologic sense. Assess and allow water reuse where appropriate.
9. **Keeping Water on the Land:** Slowing runoff to streams in urban and rural areas will reduce erosion as well as reducing the impacts of nutrients, sediment and other contaminants. Focus on retaining water on the land, in all parts of the state, to improve groundwater and surface water quality. Best- management practices are key to improving the quality of our waters. Identify conservation practices most likely to reduce the impacts of our uses of the land if they are tailored to specific landscapes and land uses across the state. This could be a required step in in future BMP implementation. Leverage state and federal funding programs to maximize land-owner involvement and enrollment in conservation practices using existing programs and incentives.
10. **Wastewater and Drinking Water Infrastructure:** Conduct cost-effectiveness reviews of best-management practices at drinking water and wastewater facilities: The societal benefits of cleaner water, resulting from improvements in wastewater and drinking water facilities practices are difficult to measure because they are qualitative. Therefore, we need to move toward with infrastructure-improvement decisions based on cost-effectiveness reviews that examine feasible alternatives to meet required needs relative to the cost. Recommend that wastewater and drinking water facilities undergo an “alternatives review” process that includes improvements to best-management practices. Move forward with pilots of watershed-scale trading programs that involves stakeholders: Identify efficiencies for regional drinking water and wastewater administration, operation and maintenance. Define the level of infiltration and inflow that is considered excessive--above which corrective action should be funded.
11. **Adapt a state-wide climate change adaptation policy.** Develop policy to guide adaptation for changes that likely will occur to landscapes, biota, hydrology and infrastructure.
12. **In order initiate the Future State Process, strengthen communication and ties between the Legislative Water Commission and the Environment and Natural Resources Committees in the House and Senate.**
13. **Protecting our lakes:** Consider policy/legislation/incentives aimed at protecting shorelines of lakes based on a tired approach that considers lake status. Consider more rigorous legislation focused on stopping the progression of invasive species across lakes in the state. Provide additional agency support to understand stressors and best management practices to preserve and to enhance deep lakes. Provide program support to assess lakes across the state, focused on the potential effects of climate change and management practices that can mitigate those impacts. Provide analyses, funding and incentives, and support legislation to address and to fix inadequate septic systems.

14. **Economic Analyses:** *Assess the costs and benefits of ensuring water sustainability. Quantify the economic value of ecosystem services provided by adequately managed streams and lakes. Assess problems and cost associated with aging infrastructure and leaking water system. Prioritize areas that are most vulnerable.*
15. **Inter-jurisdictional water planning:** *Support and encourage inter-jurisdictional water planning through the one-watershed/one-plan process. Use that process to explore options for conjunctive use and water*
16. **Enhance our understanding of the connections between hydrology and aquatic biology:** *Increase programs to understand the interrelationships between hydrology and aquatic ecology as well as associated eco-services. Continue to develop criteria for assessing the critical water levels or flow conditions required to support ecosystems. Include, in these analyses, habitat- and population-based minimum flows, high-flow protection standards for habitat-forming, and silt-flushing high flows, protections for downstream needs, and protection for natural variability of flows over time (hydrograph shape).*
17. **Groundwater/Surface Water Interactions** *Develop programs that intergrate groundwater, surface water and aquatic biological interaction into rule as part of the water appropriations process. Increase programs to collect information to understand groundwater and surface water interactions that increase our understanding of the interrelationships between hydrology and aquatic ecology as well as the associated eco-services.*
18. **Importance of Sustainable Water:** *Establish a Clean Water "Sustainability Committee" within the Clean Water Council*

Background and Resources:

1989: Minnesota Groundwater Act: Prior to the 1980's, there was little federal or state regulation that related to groundwater. In the late 1980's, all levels of government began to understand the importance of groundwater as well as the contamination and depletion that were occurring to the resource. The Minnesota Groundwater Act (Act) contains a non-degradation goal and health risk-limits for drinking water. The act also addressed agricultural chemicals by providing a process to implement a strategy for nutrient management. It singles out sensitive areas for special protection. It contained provisions designed to protect groundwater contamination through new, existing, or unsealed abandoned wells and borings. It prohibited once through cooling permits in most areas. The Act established a wellhead protection program. Nonpoint issues, such as pesticides that leach into groundwater, and runoff that leaches into surface water also are addressed by the Act. However, the Act focused on groundwater quality and is basically silent to sustainability as a water quantity issue. The Act contains several areas that are important to Minnesota's water future.

1999: The U. S. Geological Survey (USGS) prepared an extensive report that outlines information required for the analysis of groundwater systems in order to manage groundwater for sustainability. The categories of information include information to understand the physical framework, hydrologic budgets and stress, and the chemical framework of groundwater systems. Generally speaking, agencies in Minnesota have made good progress in using this document to guide efforts to address future water needs. The Minnesota's Groundwater Atlas program is an example of the high level of technical analysis being done in our state. Work like the Atlas Program (MGS and DNR) is an example that is a goal for most other states in the Midwest.

Impaired Waters program (G16). In 2004, recommendations were developed for the design of an impaired-waters program. The Minnesota Environmental Initiative led this collaborative effort at the request of the Minnesota Pollution Control Agency. More than sixty organizations contributed to the process. The process resulted in 31 recommendations that defined the scope of the impaired-waters program and outlined strategies for the program's funding, priority setting, and identification and restoration of impaired waters. This process provided for a comprehensive assessment of the state's surface waters every 10 years, accelerated and prioritized TMDL report development and restoration activities and proposed a dedicated source of funding to accomplish these efforts.

The recommendations also focused on watershed assessments, the Total Maximum Daily Load process, and on restoration. The report led to the process that resulted in the Legacy Amendment. Most of the recommendations have been implemented into the state's clean water program. However, the recommendations were mostly silent in addressing the state's problem with respect to groundwater.

DNR Groundwater Report: In 2005, the Legislature asked the DNR to assess groundwater sustainability. The DNR suggested that a sustainability definition was needed and proposed the following: "Sustainable use of groundwater is the use of water to provide for the needs of society, now and into the future, without unacceptable social, economic or environmental consequences. That definition has since been put into statute. The DNR argued that there were many areas of the state where withdrawals of water from wells were resulting in aquifer-level declines and where streams, lakes and wetlands were being adversely affected by groundwater withdrawal. Some of the suggestions in the report have been adopted as policy by state agencies.

Clean Water Legacy Act (CLWA): The 2006 Act provided an operational framework and tools to ensure Minnesota's legacy of clean water passes intact to future generations. The Act accelerated testing of Minnesota's waters; provided resources to develop specific plans (TMDLs) to clean up Minnesota's contaminated waters; and targeted additional financial resources to existing state and local programs designed to improve water quality, leveraging federal, local and private resources. The CWLA provided funding of \$25 million for clean-water funding priorities and created the Clean Water Council. The majority of CWLA funding went to local government units and local stakeholders through existing programs to protect and restore lakes, rivers and streams. Other funds were made available to state agencies to perform critical activities related to monitoring and assessment of Minnesota's waters. The Act generally was silent with regard to groundwater.

In 2006, the Environmental and Natural Resources Trust Fund supported a unique partnership among the University of Minnesota and partners focused on the evaluation of state's natural resources. The objective of the effort was to identify key issues affecting those resources, and to make recommendations for improvement and protection of those resources. The work addressed Minnesota's constitutionally identified natural resources: air, water, land, wildlife, fish, and outdoor recreation. In doing so, the project assessed the past and present condition of each of these six natural resources. They also identified and describe drivers of change impacting them, and identified key issues that could be addressed to protect and conserve them. They addressed the key issues and developed recommendations. These recommendations were synthesized into a framework with five strategic areas. Recommendations were identified as being either policy and action recommendations or recommendations that add to our infrastructure (research needs, data gathering and monitoring needs, or educational activities). Some of these recommendations have been adopted by state agencies and some remain to be implemented.

2008: Clean Water, Land and Legacy Amendment: The Amendment provided stable funding, from sales' tax dollars for monitoring, planning, restoration and protection activities for lakes, rivers, streams, and groundwater for the next 25 years. The funds are used primarily for: assessments of drinking water protection and subsurface sewage treatment systems, acceleration of analysis and restoration of impairments from nonpoint and point contamination, and watershed research and tool development. The Amendment has resulted in fundamental changes and improvements to the sustainable management of waters in the state.

Minnesota Water-Sustainability Framework: In 2008, the citizens of Minnesota passed the Clean Water, Land and Legacy Amendment to the state constitution, dedicating a portion of a small increase in the state's sales tax for the next 25 years. The Amendment created the Clean Water Fund to protect and enhance the state's water resources. This rare and unique opportunity allowed Minnesota to do what no other state has done: to take action for a sustainable water future. At that time, the legislature directed the University of Minnesota to construct a framework describing what needed to be accomplished and how that could be accomplished. Aspects of water sustainability included drinking water,

Storm-water, agricultural and industrial use, surface and groundwater interactions, and infrastructure needs, all within the context of predicted changes in climate, demographics and land use. The result is the Minnesota Water Sustainability Framework. The 140-page report presented the most pressing issues that needed to be addressed to achieve sustainable water use, presented strategies for what should be done, and provides recommendations for how to meet these challenges. Some of the recommendation in the report have been incorporated into the work of our state agencies. Others remain to be addressed.

2009: EQB report: Managing for Water Sustainability: This report also examined whether the state's water supplies are sufficient to meet the long range requirements of communities, businesses and ecosystems. This was in response to a request from the Minnesota Pollution Control Agency, the Environmental Quality Board. In addressing these charges, the EQB convened managers and technical experts. Participants discussed the issues and identified Minnesota's needs both today and long term, and reached a set of 14 conclusions and 15 recommendations for action or further consideration. Some of these remain to be addressed. The report concludes that information is the key ingredient of Minnesota's water allocation program. In one sense, they concluded that the water resources of the the state all have been allocated and every use has its purpose, whether for people or the environment. Therefore state managers need to understand how much water may be available, the quality of that water, how the water is currently being used, what or who is depending on that source, and what will happen to public interests if a change is made. The report concluded that adequate data is integral to sustainable management because it allows for proper understanding of our resources and answers questions that decision makers and citizens ask. It tells us whether water of sufficient quality can be reliably tapped in a location or a region and whether the use can be sustained over the long run without harming the natural environment, other users, or the prospects of future generations. The Environmental Quality Board's conclusions and recommendations set a course for collecting and applying the information essential to Minnesota's continued progress toward sustainable management of its precious water resources.

2012: Groundwater Management Areas (GWMAs): The Minnesota legislature created groundwater management areas as a tool for the DNR to address difficult groundwater-related resource challenges. The DNR is developing three pilot groundwater management areas plans. They will be located in the North and East Metro, the Straight River area, and the Bonanza Valley. The purpose of the pilot planning projects is to learn how to effectively create and establish GWMAs in other places facing groundwater management challenges. Minnesota State Law - 2012"Subd. 4. Groundwater management areas: "The commissioner may designate groundwater management areas and limit total annual water appropriations and uses within a designated area to ensure sustainable use of groundwater that protects ecosystems, water quality, and the ability of future generations to meet their own needs". The GWMA process is a great step forward in managing our groundwater on a sustainable basis. However, the process is not robust enough and does not cover a sufficient portion of the state or the state's needs.

Freshwater Society, 2017- Several reports: The Freshwater Society has published several reports on groundwater sustainability in an effort to inform the state's residents about the demands on our groundwater and the limitations those resources face. Collectively, these reports present recommendations that can be encapsulated within three broad categorical suggestions—reduce, re-use, recharge and manage