October 15, 2014

The Minnesota Water Management Framework

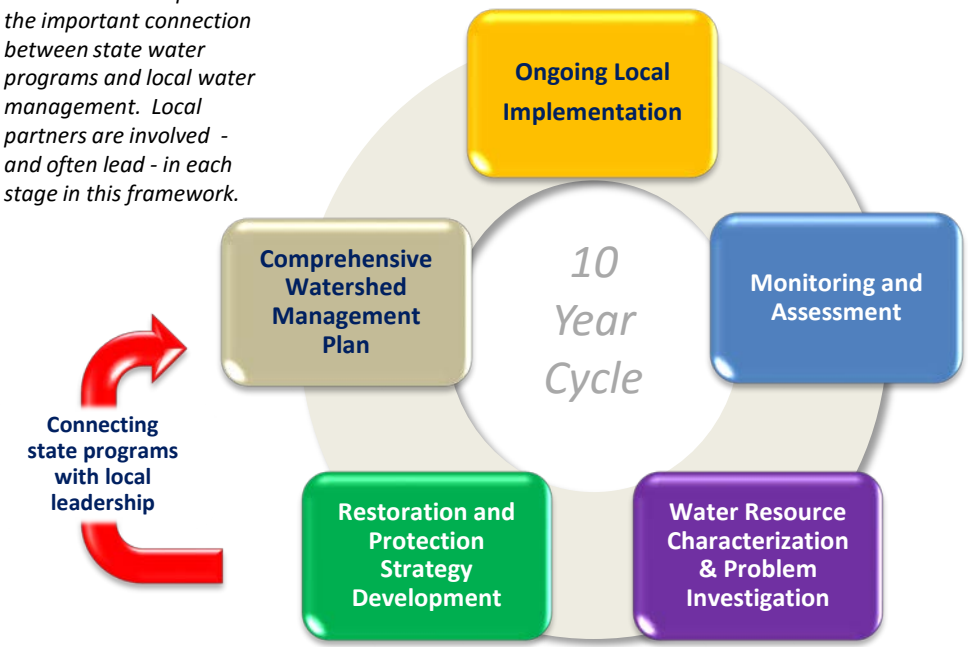
A high-level, multi-agency, collaborative perspective on managing Minnesota's water resources

The passage of the Clean Water, Land, and Legacy Amendment is a **game-changer** for water resource management in Minnesota. Increased funding and public expectations have driven the need **for more and better coordination** among the state's main water management agencies.

The **MN Water Quality Framework** and the companion **MN Groundwater Management Framework** were developed by the agencies to enhance collaboration and clarify roles in an integrated water governance structure, so that it's **clear to everyone who is responsible** at each stage in the process, making it **easier and more efficient** for state and local partners to work together.

Goals: cleaner water via comprehensive watershed management; ensure that groundwater is protected and managed sustainably.

The red arrow emphasizes the important connection between state water programs and local water management. Local partners are involved - and often lead - in each stage in this framework.



Building on a classic "plan - do - check" adaptive management approach, the framework uses 5 "boxes" to outline the steps Minnesota's agencies are taking toward our goals of clean and sustainable water. The agencies aim to streamline water management by systematically and predictably delivering data, research, and analysis and empowering local action.

Ongoing Local Implementation is at the heart of the state's overall strategy for clean water. Actions must be prioritized, targeted, and measurable in order to ensure limited resources are spent where they are needed most. The rest of the cycle supports effective implementation.

Monitoring and Assessment determines the condition of the state's ground and surface waters and informs future implementation actions. The state's "watershed approach" systematically assesses the condition of lakes and streams on a 10-year cycle. Groundwater monitoring and assessment is more varied in space and time.

Water Resource Characterization and Problem Investigation delves into the science to analyze and synthesize data so that key interactions, stressors, and threats are understood. In this step, watershed and groundwater models and maps are developed to help inform strategies.

Watershed Restoration and Protection Strategies (WRAPS) and Groundwater Restoration and Protection Strategies (GRAPS) include the development of strategies and high level plans, "packaged" at the 8-digit HUC scale (81 major watersheds in Minnesota). These strategies identify priorities in each major watershed and inform local planning.

The **Comprehensive Watershed Management Plan** is where information comes together in a local commitment for prioritized, targeted, and measurable action. Local priorities and knowledge are used to refine the broad-scale WRAPS and other assessments into locally based strategies for clean and sustainable water.

MN Department of Natural Resources • MN Department of Health • MN Pollution Control Agency • MN Board of Water and Soil Resources
MN Department of Agriculture • MN Public Facilities Authority • Metropolitan Council

Minnesota Board of Water & Soil Resources	Funding and technical assistance for locally implemented watershed restoration and protection projects	Monitor progress of local implementation goals	Conservation targeting tools (e.g,., Environmental Benefits Index) BMP guidance (e.g., drainage water management)	Participate on interagency watershed teams developing WRAPS (with all agencies)	Comprehensive Watershed Management Planning (One Watershed, One Plan) Local water and watershed plans
Minnesota Department of Natural Resources	Appropriations and Public Waters Permitting Shoreland and floodplain management Technical assistance for projects	Stream flow Fish and plants (lakes) Mercury in fish tissue Aquifer levels (with Met Council)	Stream hydrology and geomorphology (support MPCA) Small scale watershed modeling and groundwater level modeling County Geologic Atlas	Advise on conservation actions based on holistic view of watershed health (hydrology, geomorphology, connectivity, biology, water quality)	Input on local conservation actions informed by statewide plans for prairies, forests, etc. Water supply planning and groundwater management areas (with Met Council)
Minnesota Department of Health	Funding for source water protection, contaminants of emerging concern Well sealing cost share	Source water and finished drinking water Bacteria monitoring on Lake Superior beaches	Guidance for contaminants of emerging concern Data analysis and modeling to support WHPA delineation and vulnerability assessments for public water supplies	Source water protection planning (identification of problems, issues, and opportunities) Well construction management	Guidance for infiltration in DWSMAs Source water protection planning (local measures and strategies)
PFA	Loans and grants for water infrastructure projects based on priorities set by MDH and PCA				
Minnesota Pollution Control Agency	NPDES permit programs, SSTS compliance Grants for Clean Water Partnership, Great Lakes Restoration, stormwater and wastewater treatment (PFA)	Water chemistry (surface and groundwater) Fish and macroinvertebrates (streams) Surface water assessment grants	Stressor Identification for biological impairments Watershed Modeling (8-HUC) TMDLs Civic engagement	Stakeholder agreement on broad watershed restoration and protection strategies (WRAPS) WRAPS report – includes implementation table TMDLs to EPA	Provide WRAPS for incorporation into local plans Input on management strategies informed by statewide nutrient plan
Minnesota Department of Agriculture	Ag BMP loans MN Agricultural Water Quality Certification Program Implement Pesticide and Nitrogen Fertilizer Management Plans	Pesticides in surface and groundwater Nitrate in groundwater	Research/evaluation on ag sources, practices and solutions Technical assistance on ag sources and practices, BMP demonstration/evaluation sites Stressor ID for pesticides	Ag practices and management options, nitrogen fertilizer and pesticide use Participate on interagency teams developing WRAPS Vegetative cover	Input on management strategies informed by pesticide and nitrogen fertilizer management plans
Metropolitan Council	Technical assistance and demonstration projects	Lake, stream, river monitoring: flow, chemistry, biology Effluent monitoring (WWTPs) Impervious surface and land cover assessments	Modeling and trend assessments (surface water) Pollutant load calculations Groundwater mapping and characterization	Participate in WRAPS and local water planning teams Master water supply plan Groundwater management areas (with DNR)	Participate in review of local water and watershed plans (metro area); local water supply plans; and comprehensive land use plans (metro area)