

Planning Far into the Future: the Minnesota Water Sustainability Framework



Jean Coleman
University of Minnesota
Water Resources Center

wrc.umn.edu

What is the Framework?



- Funded by the Clean Water Fund of the Clean Water Land and Legacy Amendment
- Requested by Legislature, delivered to Legislature
- A 25-year plan to protect, conserve, and enhance the quantity and quality of the state's groundwater and surface water

Definition of Sustainability

“SUSTAINABLE WATER USE DOES NOT HARM ECOSYSTEMS, DEGRADE WATER QUALITY, OR COMPROMISE THE ABILITY OF FUTURE GENERATIONS TO MEET THEIR OWN NEEDS.”

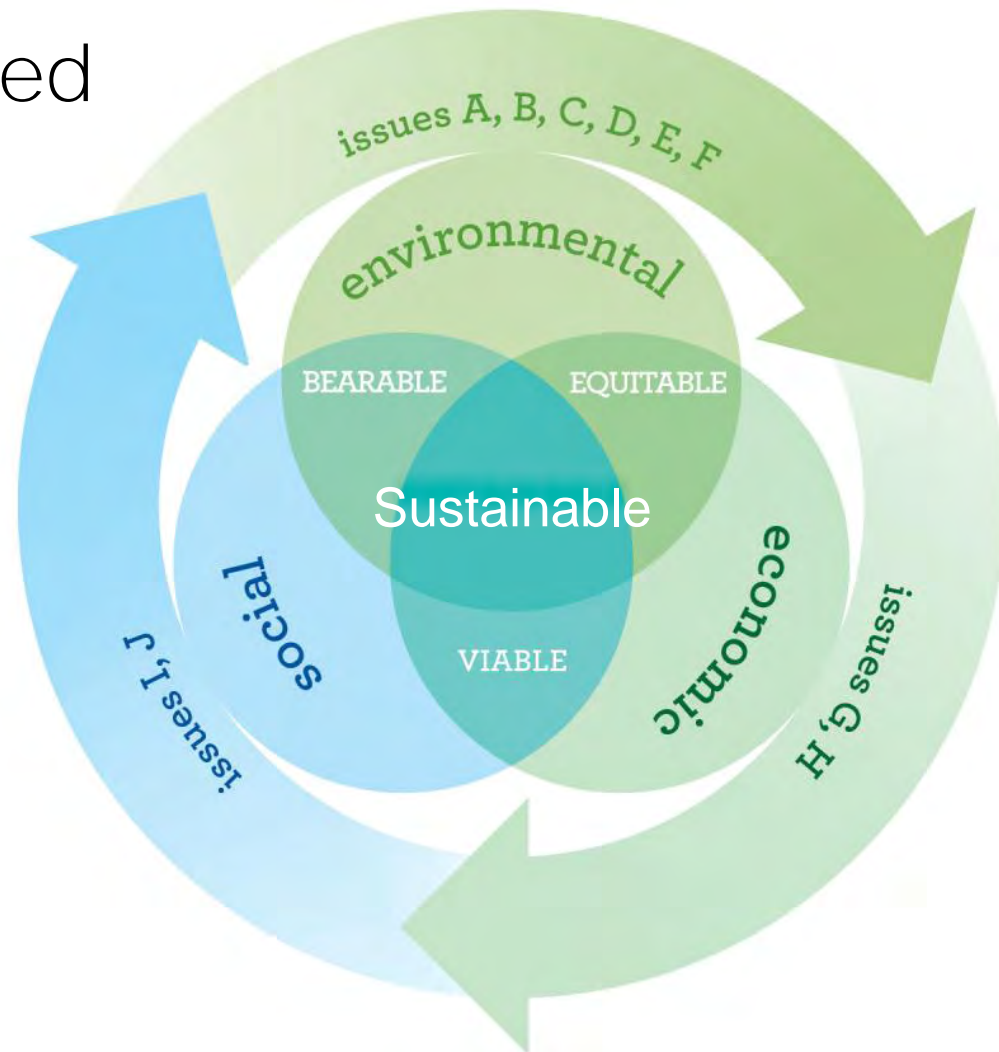
—Minnesota Laws 2009, Chapter 172

Process

- Science-based
 - Background papers at wrc.umn.edu
- Collaborative
 - 8 Technical Teams
 - Synthesis Team
 - 200+ direct participants
 - 4,500 survey participants

Sustainability Framework

- Project teams framed 90 specific needs
- Collected under **10 “Big” Issues**
- Contained in 3 categories of sustainability



Ten Big Issues – Table of Contents

<i>Environmental</i>	The Need for a Sustainable and Clean Water Supply	Issue A	27
	Excess Nutrients and Other Conventional Pollutants	Issue B	39
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Crosscutting Themes

- Systems thinking
- Watershed-based approach
- Transboundary stewardship
- Compliance with existing policy
- Outcome-based recommendations
- Adaptive management
- Science-based decisions
- Decision-making in the face of uncertainty
- Accountability








Organization for Each Issue

- Problem statement
- Desired future condition for Minnesota
 - **Objective & 26 Strategies (“what”)**
 - **60 Recommended actions (“how”)**
 - Benchmarks for measuring progress
- Implementation schedule
- Impact matrix

Table of Desired Future, Issues & Strategies – Page 3

DESIRED MINNESOTA FUTURE	ISSUE	STRATEGIES
<p><i>A water supply that is protected for all future generations that is of high quality and that is sustainable for all uses of water.</i></p>	<p>A.The Need for a Sustainable and Clean Water Supply</p>	<p>A.1: Determine the state’s water balance and improve water appropriations permitting</p> <p>A.2: Improve privately supplied drinking water quality</p> <p>A.3: Plan for water re-use</p>
<p><i>The “Land of Unimpaired Waters,” where we have met all our water standards for nutrients and solids, we are not contributing to eutrophication problems beyond our borders, we can safely eat local fish.</i></p>	<p>B.Excess Nutrients and Other Conventional Pollutants</p>	<p>B.1: Reduce excess nutrient and conventional pollutant loads by strengthening policies to meet clean water standards, and require implementation of pollutant load reductions by all sources</p> <p>B.2: Establish a farmer-led, performance-based approach to meeting clean water standards</p>

“Dashboard” Summary of 60 recommendations – Pages 4-8

RECOMMENDATION	IF FUNDED, WHO SHOULD IMPLEMENT	RESEARCH TASK	IMPLEMENTATION PHASE	LEVEL OF BENEFIT TO WATER RESOURCES	MULTIPLE BENEFITS
A.1.a i, ii, iii: accelerate water balance mapping needs and implement hydrologic monitoring network	Executive		Phase 1		
A.1.a iv: design and complete the water balance hydrologic models	Executive	R	Phase 1		
A.1.b i, ii: develop a web-based screening permit system	Executive		Phase 1		
A.1.b iii: restrict water exports from state	Legislative		Phase 3		

How the Framework will be Used

- Inform Clean Water Fund priorities
- Legislation
- Agency budgeting and programs
- Research

**It is up to all of us to work on
implementation**

The Essential Top Actions

Protect and restore water quantity and quality through comprehensive, integrated, and informed management and policy:

A.1 Revise water appropriations permitting, **and model the state's water balance**

B.1/2 Comply with water quality standards through implementation plans for reducing pollutants and bring farmers to the table to be part of this solution

C.1/2 Address future contaminants

The Essential Top Actions

Address the interconnected nature of water by integrating and aligning planning and policies:



D.1 Integrate water and land use planning

J.1 Align water, energy, land, transportation policies for sustainability

Watershed Recommendations








Issue A: Sustainable and Clean Water Supply

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RECOMMENDATION	IF FUNDED, WHO SHOULD IMPLEMENT	RESEARCH TASK	IMPLEMENTATION PHASE	LEVEL OF BENEFIT TO WATER RESOURCES	MULTIPLE BENEFITS
A.1.b iv: develop eco-based thresholds for minimum flows	Executive	R	Phase 1		

Issue B: Excess Nutrients and other Conventional Impairments







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RECOMMENDATION	IF FUNDED, WHO SHOULD IMPLEMENT	RESEARCH TASK	IMPLEMENTATION PHASE	LEVEL OF BENEFIT TO WATER RESOURCES	MULTIPLE BENEFITS
B.1.a: require compliance of pollutant load reductions by all sectors	Legislative		Phase 1		
B.1.b : strengthen approaches to stormwater pollution	Executive		Phase 3		
B.1.c : strengthen shoreland rules	Executive		Phase 3		
B.2.b: establish agricultural sustainable water certification	Executive		Phase 3		

Issue C: Contaminants of Emerging Concern





Issue D: Land, Air, and Water Connection

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RECOMMENDATION	IF FUNDED, WHO SHOULD IMPLEMENT	RESEARCH TASK	IMPLEMENTATION PHASE	LEVEL OF BENEFIT TO WATER RESOURCES	MULTIPLE BENEFITS
C.2.a: develop framework for managing contaminants of emerging concern	Executive		Phase 1		
D.1.a: require comprehensive land and water planning	Legislative		Phase 1		
D.1.b: integrate sustainability in land use permitting	Legislative		Phase 1		





Issue E: Ecological & Hydrological Integrity

Pages 6-7

RECOMMENDATION	IF FUNDED, WHO SHOULD IMPLEMENT	RESEARCH TASK	IMPLEMENTATION PHASE	LEVEL OF BENEFIT TO WATER RESOURCES	MULTIPLE BENEFITS
E.1.a i: enact Ecosystems Services Act	Legislative		Phase 3		
E.2.a: develop statewide policy for aquatic invasive species	Legislative		Phase 1		





Issue G: Water Pricing and Valuation

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RECOMMENDATION	IF FUNDED, WHO SHOULD IMPLEMENT	RESEARCH TASK	IMPLEMENTATION PHASE	LEVEL OF BENEFIT TO WATER RESOURCES	MULTIPLE BENEFITS
G.1.a: include ecological benefits in water pricing	Legislative		Phase 2		
G.1.d: research and model value of water ecological benefits	Other	R	Phase 1		





Issue I: Governance and Institutions

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RECOMMENDATION	IF FUNDED, WHO SHOULD IMPLEMENT	RESEARCH TASK	IMPLEMENTATION PHASE	LEVEL OF BENEFIT TO WATER RESOURCES	MULTIPLE BENEFITS
I.1.a: ensure long-term citizen engagement and support	Executive		Phase 2		
I.2.a: ensure youth water literacy	Other		Phase 2		

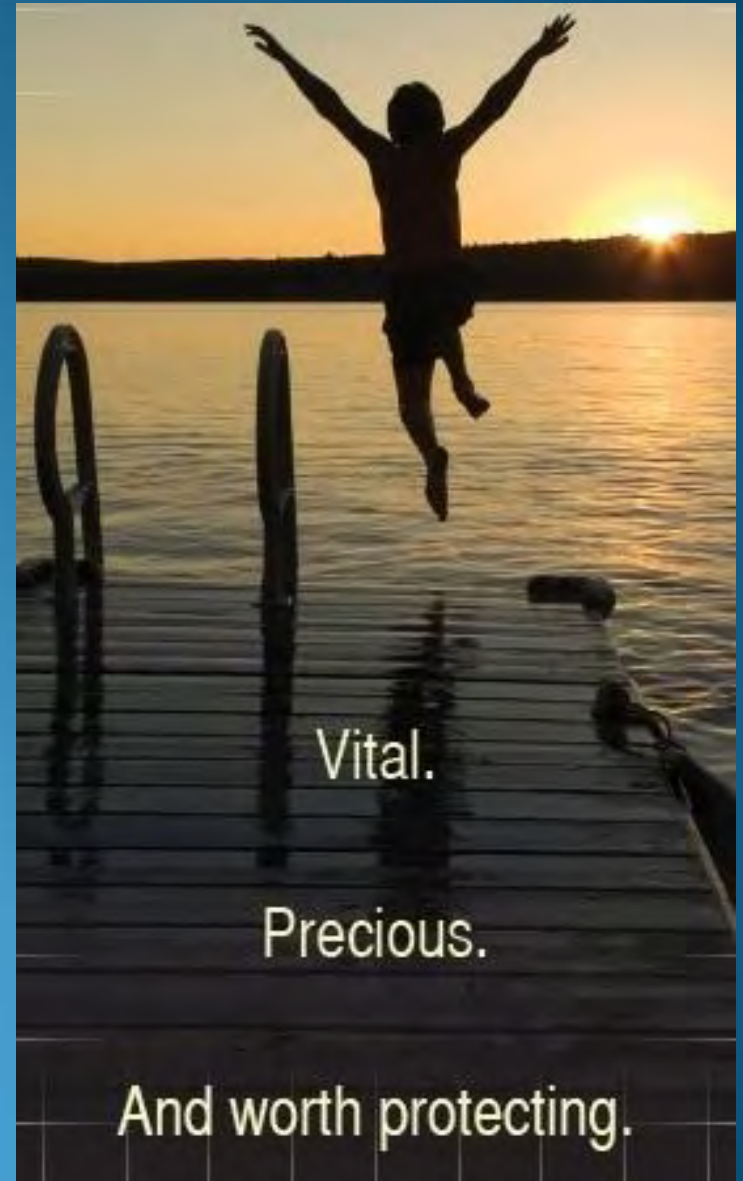
Issue J: Governance and Institutions

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RECOMMENDATION	IF FUNDED, WHO SHOULD IMPLEMENT	RESEARCH TASK	IMPLEMENTATION PHASE	LEVEL OF BENEFIT TO WATER RESOURCES	MULTIPLE BENEFITS
J.1.d: create Water Sustainability Board	Legislative		Phase 2		
J.1.e: form Watershed and Soil Conservation Authorities	Legislative		Phase 3		

Minnesota Water Sustainability Framework

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Vital.

Precious.

And worth protecting.