

Tracking Minnesota's Clean Water Fund Effectiveness

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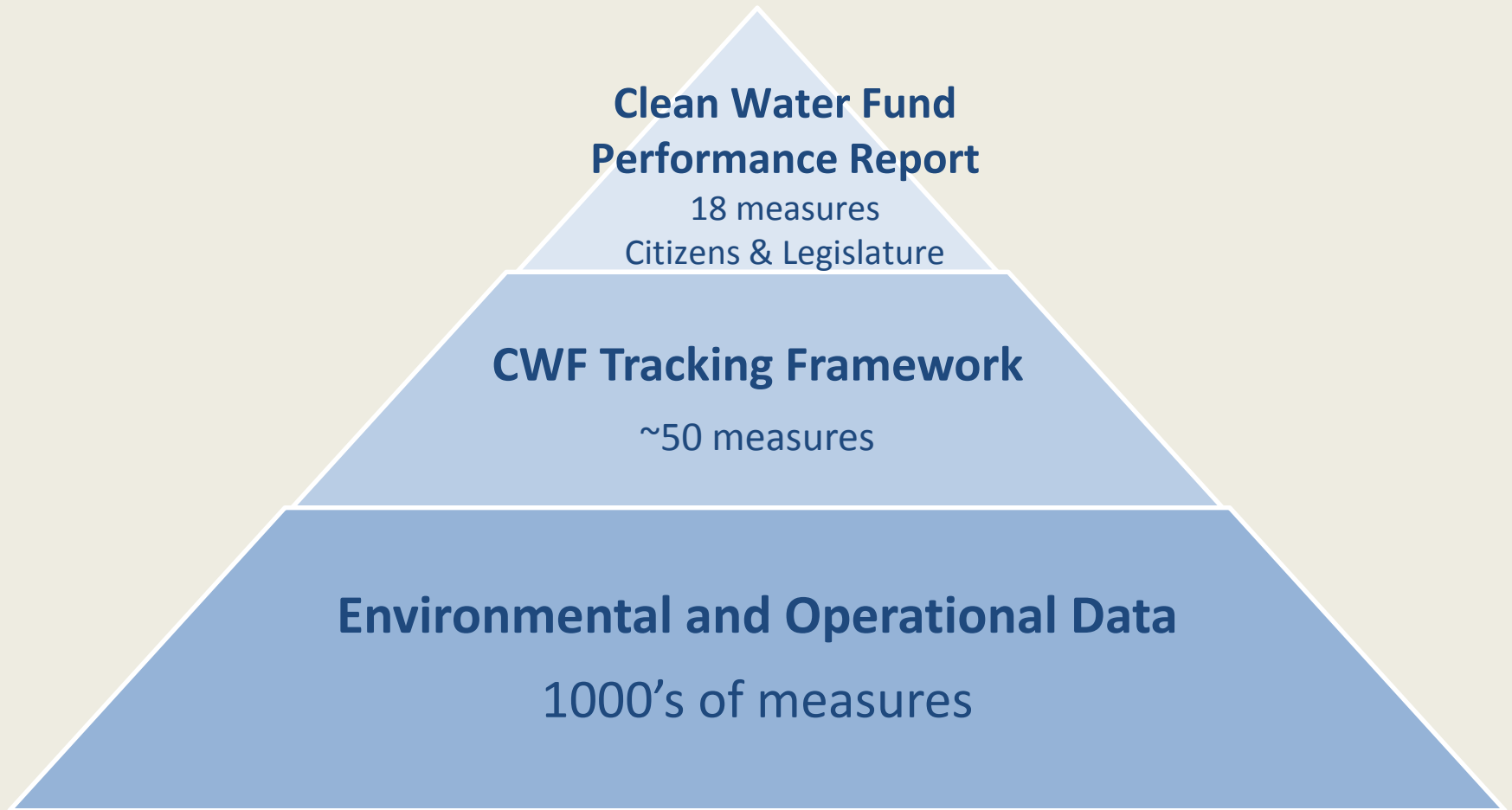


April 3, 2013

Where it all started

- ❑ Clean Water Legacy Act and Clean Water Council
- ❑ Multi-agency & stakeholder process hosted by Water Resources Center at U of MN – report 11/2008
- ❑ Clean Water, Land and Legacy Amendment passed 11/2008
- ❑ Environmental Protection Agency – measures pilot
- ❑ Clean Water Council Research & Measures Team
- ❑ Interagency staff team – started 1/2009

Clean Water Performance Measure Pyramid

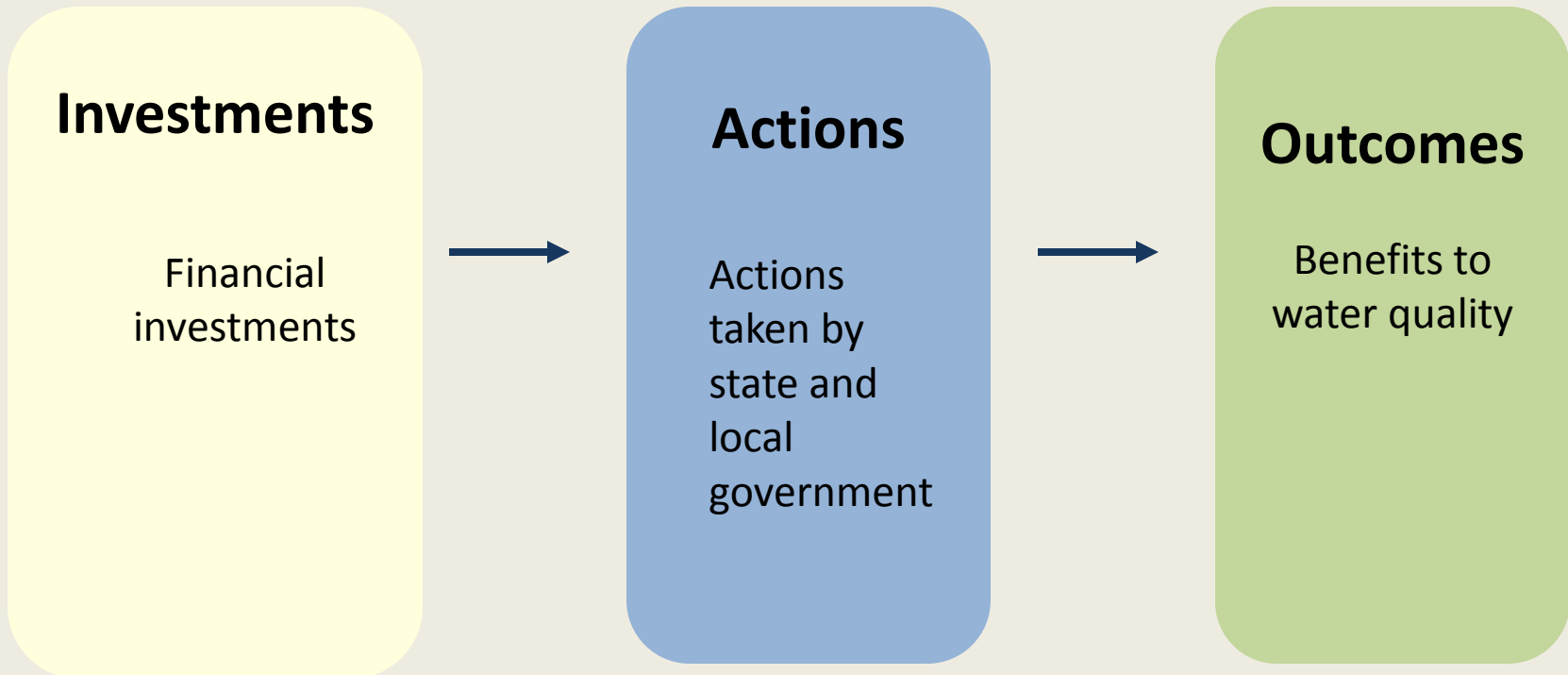


Guiding principles

- ❑ Can't measure and report on everything.
- ❑ Need to collect data on key measures that show how we are performing in context of multiple pressures.



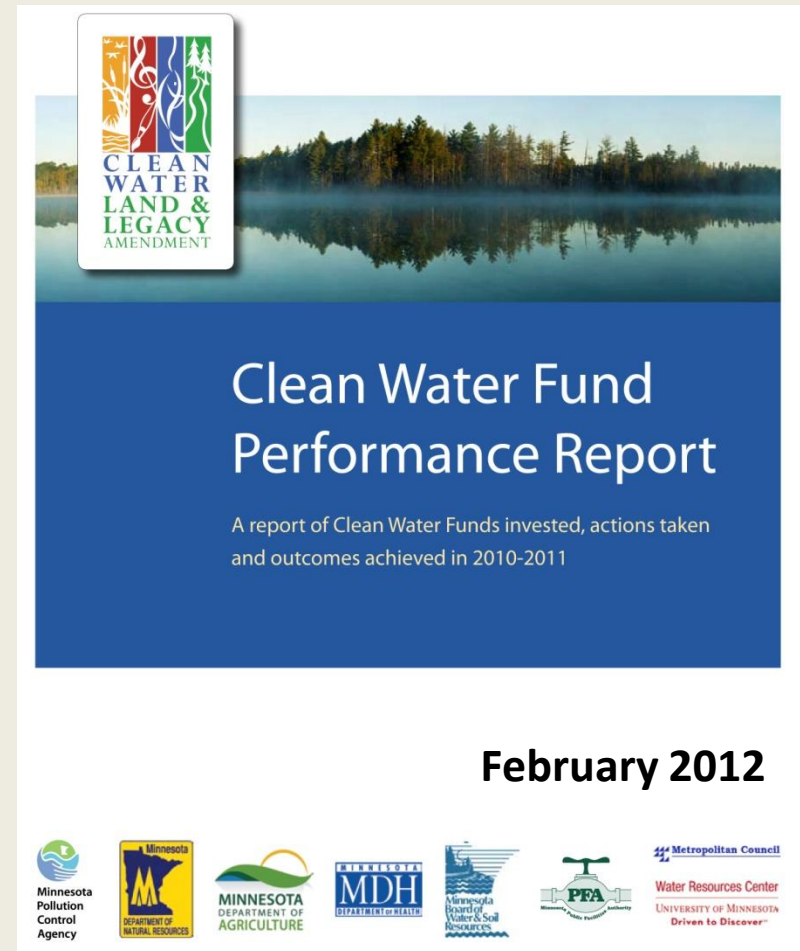
Three measure types



Measures track incremental progress to achieve long-term results

Clean Water Fund Performance Report

- ❑ Grouped by investment measures, surface water and drinking water measures
- ❑ 18 nested investment, action and outcome measures
- ❑ Contextual information and highlights of work



Profile measures

Each profile includes:

- ❑ Measure type: investment, action or outcome
- ❑ Measure narrative
- ❑ Graphic to summarize measure's data
- ❑ Measure score for action and outcome measures



Mercury trends

OUTCOME

Measure: Trends of mercury in fish and mercury emissions in Minnesota

Why is this measure important?

Many Minnesota lakes and rivers contain contaminants, primarily mercury, which accumulate in fish and may pose a risk to humans as well as fish-eating wildlife. Because air pollution is the primary source of mercury, reducing mercury in fish requires large reductions in mercury emissions from sources in Minnesota and throughout the world. To evaluate if Minnesota waters are getting cleaner, mercury emission levels can be tracked over time through periodic emissions inventories and then measured against how fish mercury levels respond. Because of the large variation in mercury concentrations from year to year within and among lakes, long-term trends of mercury in fish are necessary to see if pollution control efforts are sufficient.

What are we doing?

The Minnesota Department of Natural Resources (DNR) is leading efforts to track mercury levels in fish. The DNR collects fish from approximately 150 lake and river sites annually throughout Minnesota and prepares samples for testing. Each year, thousands of walleyes, northern pike, panfish, and other species are tested; Clean Water Funding has expanded the number of sites tested each year by 80. The Minnesota Pollution Control Agency (MPCA), Minnesota Department of Health (MDH), and U.S. Forest Service provide input on where samples should be collected; the Minnesota Department of Agriculture's (MDA) laboratory analyzes the samples.

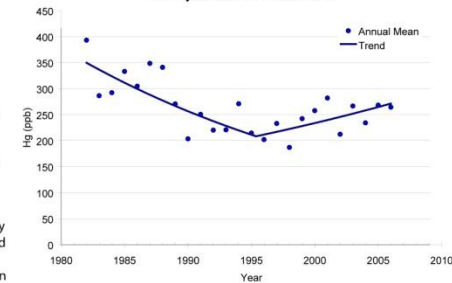
Decades of monitoring has shown that most fish contain some mercury, that the average mercury level generally increases from south to north in Minnesota, and that panfish have lower mercury levels than top predator fish. Sampling previously tested waters to look for trends in fish-mercury levels has been a priority in the last 15 years. Between 1982 and about 1996, a clear downward trend in mercury concentrations in northern pike and walleyes was observed.

However, that pattern was reversed and the 1996 to 2007 period shows a significant upward trend (figure below). The fish mercury trend analysis will be updated in 2012 and every five years thereafter.

What progress has been made?

To achieve the necessary reductions of mercury in the fish, Minnesota's Statewide Mercury TMDL established a goal of a 93 percent reduction in mercury input from all human sources. Minnesota receives 90 percent of its mercury pollution from outside the state. Rapid economic growth in Asia and India since 1990 has contributed to increased global emissions of mercury, despite mercury emissions in North America and Europe being cut to half since 1990. The United Nations Environment Program is negotiating reductions among all countries of the world. Minnesota is doing its part, and has taken significant steps towards achieving the identified mercury air emission reductions. Since 1990, removing mercury from latex paint, requiring mercury controls on municipal waste combustors, banning small onsite incinerators, mercury in batteries, and disposal of mercury-containing products has reduced mercury emissions in Minnesota by more than 70 percent.

Trend of mercury in northern pike and walleye from Minnesota lakes






Scoring criteria for actions, outcomes

Action

-  We are making good progress/meeting the target
-  We anticipate difficulty
-  Progress is slow/we are not meeting the target

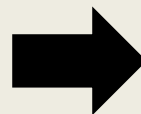
Outcome

-  Water quality is high
-  Water quality needs improvement or it is too early to assess
-  Water quality is under intense pressure

Trend



Improving









No change


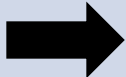








Declining

Surface water measures: actions

Measure	Status	Trend
Percent of major watersheds monitored Good progress. Monitoring schedule being followed and met.		
Non-point source BMP implementation Though funding has increased, total requests for projects approximately three times greater than available funds.		
Municipal infrastructure projects Good progress, though pace affected by uncertain municipal budgets and changing construction schedules.		

Surface water measures: outcomes

Measure	Status	Trend
<p>Waters restored</p> <p>Great variability statewide; projects are making progress to improve water quality.</p>		
<p>Mercury trends</p> <p>Lakes and rivers are impaired due to high mercury concentrations in fish. Significant progress made to reduce mercury emissions in Minnesota, though global emissions are increasing.</p>	Fish 	
	Minnesota emissions 	
<p>Municipal wastewater phosphorus changes</p> <p>Wastewater sources continue to reduce phosphorus discharges.</p>		

Report findings

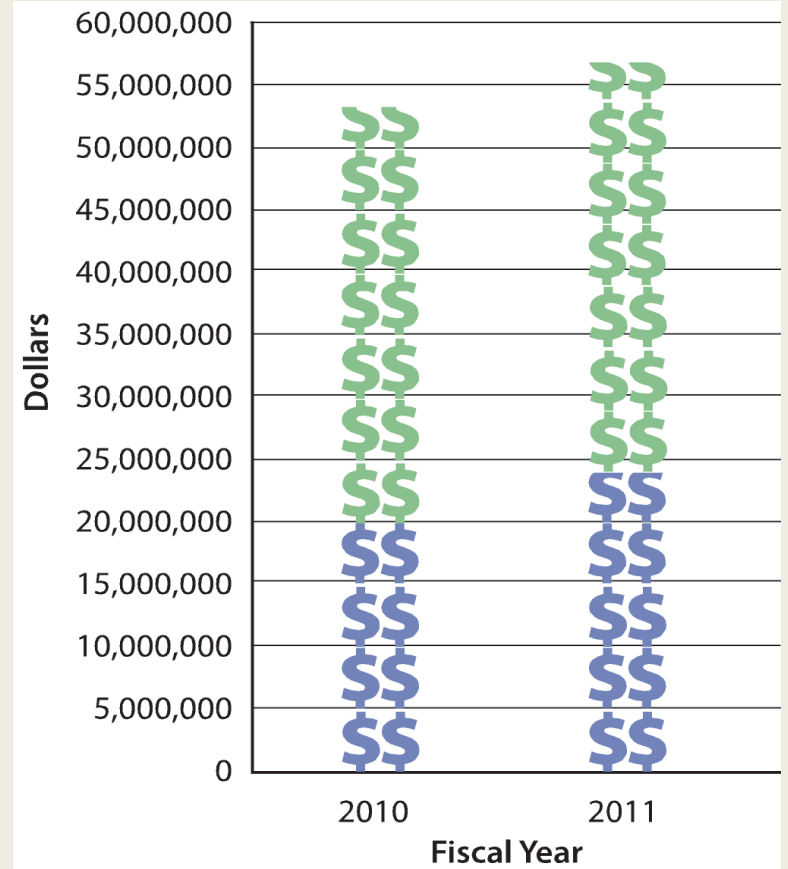
- ❑ **The state is on track with its investments so far**
- ❑ Of the 18 measures, status and trends vary:
 - Six measures showed improving trends
 - Seven were too early to assess and
 - One showed a declining trend
 - The report does not include trend information for investment measures
- ❑ More progress reported on short-term actions taken than long term outcomes achieved

Investments: Dollars leveraged

In FY10-11:

❑ \$68.3M was leveraged, or \$1.43 for every state dollar invested

❑ All required Clean Water match funds were met and exceeded



Leveraged dollars

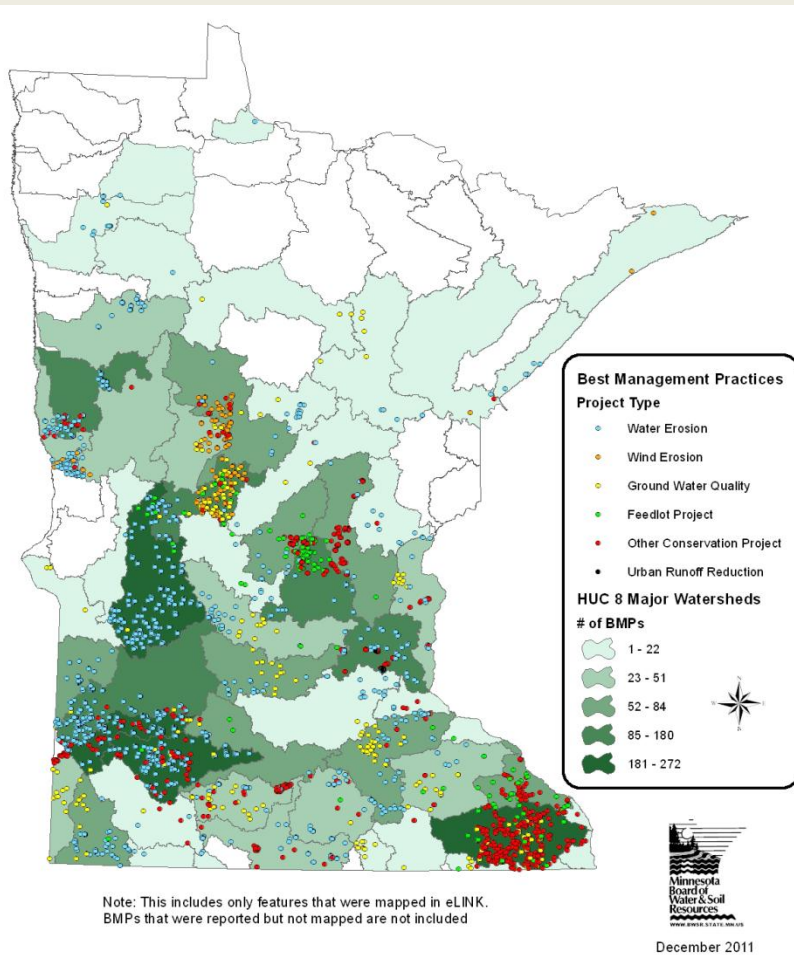


Clean Water Funding

Surface water: BMP implementation

In FY10-11:

- ❑ 159+ projects to protect and restore Minnesota water resources funded
- ❑ 195+ loans to prevent non-point source water pollution or solve existing water quality problems issued
- ❑ 246 imminent health threat Subsurface Sewage Treatment Systems were repaired

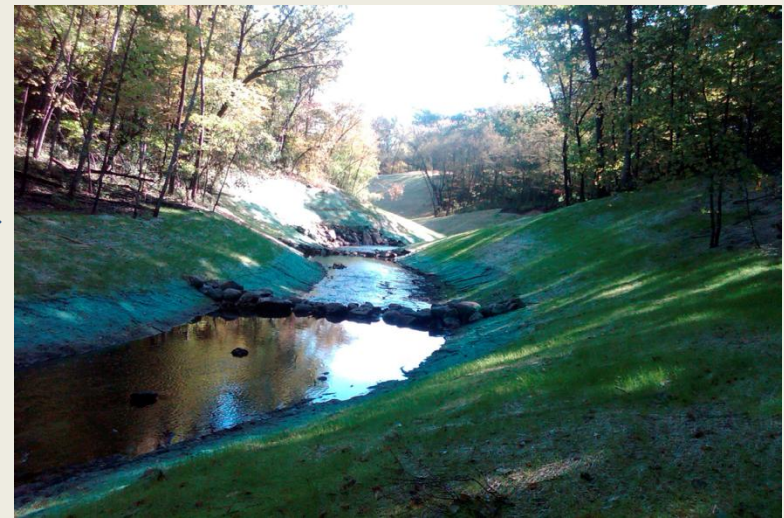
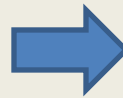


Surface water: Waters restored

Ultimate target is to restore all waters



Significant erosion from the Utica Ravine contributed to the turbidity-impaired Credit River.



Scott WMO was awarded a \$130,000 Clean Water Fund grant to stabilize the ravine. **As a result, the Credit River is no longer impaired.**

Next steps

- ❑ Release Clean Water Fund Performance Report every two years
- ❑ In the interim:
 - Refine measures – focus on pressure/stressors and social measures
 - Improve data management and reporting capabilities
 - Get feedback on current report and implement improvements

Find the report

Minnesota's Legacy Website

www.legacy.state.mn.us



Questions

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