2020 Clean Water Fund Report Summary

Protecting and restoring Minnesota's waters for generations to come

Minnesotans value clean, safe, and abundant water. In 2008, Minnesota residents voted for the Clean Water Land and Legacy Amendment, increasing their own sales tax and making a strong commitment to clean water in Minnesota. Here are some accomplishments since the amendment passed:

- All major watersheds in Minnesota have been assessed. We now know the clean water challenges we face.
- We have restored water quality in 50 lakes and streams. We are beginning to turn the tide.
- Vulnerable municipal water systems are engaged in protecting their source water.
- Over 30,000 private wells in 50 counties have been tested for nitrate.
- 500,000 acres on almost 800 farms now meet agricultural water quality certification standards.
- The average use of water per person in Minnesota is down by 20% over the last eight years.
- Municipal wastewater treatment upgrades have reduced phosphorus discharges by over 139,000 pounds per year.

Protection and restoration of Minnesota's waters requires a systematic approach. Minnesota is focusing on watersheds as the way to organize water work. This approach inspires and supports local and state partnerships and incorporates a wide range of issues, including water quality and quantity, groundwater, drinking water, habitat and recreation.

A foundational set of tools, reports and plans now support the systematic targeting of Clean Water Fund activities. Watershed Restoration and Protection Strategies (WRAPS) provide details on water quality issues and identify what needs to be done to clean up and protect our surface waters. Groundwater Restoration and Protection Strategies (GRAPS) outline groundwater issues and strategies to prevent overuse and contamination of groundwater and protect private and municipal wells that provide drinking water. Local comprehensive watershed plans, known as "One Watershed One Plan," use the WRAPS and GRAPS reports to create an action plan that will make positive changes in local watersheds that will lead to a better clean water world.

As we enter the second decade of the amendment, we continue to innovate and enhance our efforts. A decade of experience is paying off as we put new science into practice and shift more dollars into implementation. We should remember that it took us 150 years of land and water alterations to get us into our present situation. It will take a concerted effort over many years to significantly improve our water resources across the state. The Clean Water Fund alone will not be sufficient to address all the water challenges in the state. We need to continue to innovate, collaborate and leverage other resources to make a significant difference. Along the way, we will also enhance economic opportunity, recreational enjoyment, wild habitats and the quality of life of all Minnesotans.

New measures in the 2020 report

- Tracking the percent of land in Drinking Water Supply Management Areas that have protective uses that benefit water quality.
- Tracking the success of new water quality monitoring design to better meet local and other state monitoring needs.

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2020 Clean Water Fund Report Card

Minnesotans care deeply about the state's natural resources and cultural heritage. In 2008, we voted to increase our sales tax and pass the Clean Water, Land and Legacy Amendment, providing 25 years of constitutionally-dedicated funding for clean water, habitat, parks and trails, and the arts.

The following report card highlights work done using Clean Water Land and Legacy Amendment dollars for Minnesota's many water resources. The Report Card tracks a suite of performance measures that are described in the full report that follows. It provides a qualitative assessment of how well actions are being implemented and what outcomes are being achieved.

The legend shows the symbols used to describe how measures were scored. Measures are scored according to their status as of the end of fiscal year 2019 (FY19) and for their trend over time. Scores were developed using data-informed professional judgment of agency technical staff and managers.

Action status legend

Symbol	Meaning
●	We are making good progress/ meeting the target
▲	We anticipate difficulty; it is too early to assess; or there is too much variability across regions to assess
■	Progress is slow/we are not meeting the target; or the activity or target is not commensurate with the scope of the problems

Outcome status legend

Symbol	Meaning
●	Water quality is high – we are on track to meet long-term water resource needs and citizen expectations
▲	Water quality needs improvement or it is too early to assess – it is unclear if we will meet long-term water resource needs and citizen expectations; and/or water quality varies greatly between regions
■	Water quality is under intense pressure – long-term water resource needs and/or citizen expectations exceed current efforts to meet them

Trend legend

Symbol	Meaning
↗	Improving trend
→	No change
↘	Declining trend
NEI	Not enough information to determine trend at this time

Investment Measures

INVESTMENTS

Measure	Status	Trend	Description
Total Clean Water Fund dollars appropriated by activity	$1.2B has been appropriated to the Clean Water Fund from FY10-21, ranging from $157M in FY 10-11 to $261M in FY 20-21.	FY 14-15: $182.5M FY 16-17: $228.3M FY 18-19: 201.4M FY 20-21:$261.0M	Appropriation levels will vary by biennium and the strength of the economy. FY10-19 funds have been allocated, while FY20-21 allocations are in progress.
Total Clean Water Fund dollars per watershed or statewide by activity	Most watersheds in the state are benefiting from local and statewide projects.		For FY10-19, all 80 watersheds benefited from Clean Water Fund supported activities. Implementation activities comprise the largest portion of spending in watersheds statewide.
Total Clean Water Fund dollars awarded in grants and contracts to non-state agency partners	$491M was awarded in grants and contracts to non-state agency partners in FY10-19.		About 82% of grant and contract awards are for implementation activities; 50% of total FY10-19 appropriations were awarded to non-state agency partners.
Total dollars leveraged by Clean Water Fund	Required Clean Water match funds were met and exceeded. Leveraged funds trended up in FY18-19.		Required Clean Water match funds were met and exceeded.

Surface Water Measures

ACTION

Measure	Status	Trend	Description
Percent of monitoring addressing state and local needs	▲	→	Nearly half of watersheds met goals for addressing state and local needs for monitoring. Ongoing program development is aimed to ensure local needs are identified for monitoring.
Local partner participation in monitoring efforts	●	→	As of 2019, all programs are meeting participatory goals.
Number of nonpoint source best management practices implemented with Clean Water funding and estimated pollutant load reductions	■	↗	Although funding has increased and there is a continued increase in projects, practices and activities being implemented, the total request for projects has remained three times greater than available funds.
Number of municipal point source construction projects implemented with Clean Water Funding and estimated pollutant load reductions	●	→	Pace of awards is linked to permit cycles, compliance schedules and available Clean Water Funds. Applications exceed currently available funds.

OUTCOME

Measure	Status	Trend	Description
Rate of impairment/unimpairment of surface water statewide and by watershed: Stream aquatic life	▲	NEI	Water quality varies greatly by region. In general, better quality is found in the north when land is less disturbed. It is unclear whether long-term goals will be met.
Rate of impairment/unimpairment of surface water statewide and by watershed: Stream swimming	▲	NEI	Water quality varies greatly by region. In general, better quality is found in the north when land is less disturbed. It is unclear whether long-term goals will be met.
Rate of impairment/unimpairment of surface water statewide and by watershed: Lake swimming	▲	NEI	Water quality varies greatly by region. In general, better quality is found in the north where land is less disturbed. It is unclear whether long-term goals will be met.
Changes over time in key water quality parameters for lakes and streams: Lake clarity	●	NEI	There are improving trends in lake water clarity in more lakes than not.
Changes over time in key water quality parameters for lakes and streams: Nutrients and sediment in large rivers	▲	NEI	In general, concentrations in phosphorus and sediment are improving while nitrates are getting worse in surface water.
Changes over time in key water quality parameters for lakes and streams: Pesticides in streams	▲	NEI	Detections in streams vary greatly as a result of hydrologic and agronomic conditions; exceedances of pesticide water quality standards are rare.
Changes over time in key water quality parameters for lakes and streams: Pesticides in lakes	▲	NEI	Detections in lakes vary by region; detections in lakes rarely exceed water quality standards.
Changes over time in key water quality parameters for lakes and streams: Chloride in large rivers	▲	↘	Chloride concentrations continue to increase along all major rivers in the Twin Cities metropolitan area. Trends for chloride are limited to the metropolitan area.
Number of previous impairments now meeting water quality standards due to corrective actions	■	→	Although many projects are making progress in improving water quality, more waterbodies are being listed as impaired relative to the slower rate of waterbodies being restored.
Mercury in fish	▲	→	Mercury in game fish is not yet responding to decreases in local mercury emissions, although these reductions likely have prevented a steeper upward trend. Global emissions have increased. The time lag between emission reductions and response is likely several decades. It is too soon to see a measurable response in fish mercury levels. Long-term and consistent monitoring is necessary to track changes in fish tissue.
Mercury emissions	▲	↗	Significant progress has been made reducing mercury emissions from power plants. To meet Minnesota's 2025 emissions goal, significant reduction of mercury emission from the mining sector and further reduction of mercury use in various prodcuts will be necessary.
Municipal wastewater phosphorus discharge trend	●	↗	Significant phosphorus load reductions have been achieved through regulatory policy, infrastructure investments, improved technology and optimization of operations.

Drinking Water and Groundwater Measures

ACTION

Measure	Status	Trend	Description
Number of community water supplies assisted with developing source water protection plans	●	↗	On track to meet goal of protecting all vulnerable systems under Source Water Protection Plans by 2020.
Number of grants awarded for source water protection	●	↗	Increasing funds accelerate implementation of proven strategies for source water protection.
Number of local government partners participating in groundwater nitrate-nitrogen monitoring and reduction activities	●	↗	New partnerships continue to be established for nitrate-nitrogen monitoring and reduction activities
Number of new health-based guidance values for contaminants of emerging concern	▲	→	Did not meet target for FY 18-19. On track to meet goal of ten guidance values developed next biennium.
Number of counties completing a county geologic atlas for groundwater sustainability	●	↗	County atlases (including the Geologic & Groundwater atlases) are being completed at the planned rate and counties continue to step up to participate. With continued and consistent funding, completion of Geologic Atlases for all counties is expected around 2035, and completion of Groundwater Atlases for all counties around 2040.
Number of long-term groundwater monitoring network wells	■	↗	Many areas of the state still lack important groundwater information. Long-term ramp up in monitoring accelerated by Clean Water Fund investments is filling gaps.
Number of unused groundwater wells sealed	●	→	FY18 funding was awarded to seven public water-suppliers to assist in sealing 17 unused wells. FY 19 funding was awarded to nine local government units to assist in sealing over 300 private unused wells.
Land use in Drinking Water Supply Management Areas	●	↗	There is increasing research, engagement and activity to protect vulnerable areas in DWSMAs.

OUTCOME

Measure	Status	Trend	Description
Changes over time in pesticides, nitrate-nitrogen and other key water quality parameters in groundwater: Pesticides	▲	→	Variable trends for five common pesticides indicate a mixed signal. Low levels are frequently detected in vulnerable groundwater.
Changes over time in pesticides, nitrate-nitrogen and other key water quality parameters in groundwater: Nitrate-nitrogen statewide	▲	NEI	In many agricultural areas, drinking water supplies are not vulnerable to surficial contamination and most wells have low levels of nitrate-nitrogen. However, in vulnerable groundwater areas including the southeast, Central Sands and southwest, nitrate contamination is a significant concern.
Changes over time in pesticides, nitrate-nitrogen and other water quality parameters in groundwater: Nitrate-nitrogen southwest region	■	NEI	In areas where groundwater is vulnerable, nitrate levels can be high. Of the 21 vulnerable townships tested in southwest Minnesota (2013-2018), 100% of them were determined to have 10% or more of the wells over the nitrate-nitrogen 10 mg/L standard.
Changes over time in pesticides, nitrate-nitrogen and other key water quality parameters in groundwater: Nitrate-nitrogen Central Sands	■	→	Trend data from the Central Sands Private Well Network shows a slight downward trend in the 90th percentile . However, Township Testing data show a high level of nitrate in some vulnerable aquifers in the Central Sands.
Changes over time in pesticides, nitrate-nitrogen and other key water quality parameters in groundwater: Nitrate-nitrogen southeast region	■	→	Trend data from the Southeast Minnesota Volunteer Nitrate Monitoring Network shows no change. However, Township Testing data show a high level of nitrate in some vulnerable areas in southeast Minnesota.
Changes over time in source water quality used for community water supplies	●	NEI	Identifying correlations between drinking water contaminants is a significant step in trend analysis of source water quality.
Nitrate concentrations in newly constructed wells	▲	→	Since 1992, there has been a general increase in the percent of new wells that have nitrate levels above the drinking water standard.
Arsenic concentrations in newly constructed wells	▲	→	The percentage of wells with arsenic above the drinking water standard has remained steady over the past 10 years. Evaluation of ways to reduce this percentage is ongoing and may take years before significant progress is made.
Changes over time in groundwater levels	▲	↗	Most observation wells show no signficant change or an upward trend; many areas of the state lack important groundwater information while some areas experience declines.
Changes over time in total and per capita water use	▲	↗	There has been a slight improvement in water efficiency in recent years, although continued tracking is needed to determine the amount of impact from annual difference in weather versus changes in management.

Social Measures and External Drivers

DRIVERS

Measure	Status	Trend	Description
Social measures	▲	NEI	In recent years, state agencies have developed and piloted the Social Measures Monitoring System—integrating social science into Clean Water Fund projects.
External drivers	▲	→	The external drivers identified continue to alter land-water interactions across Minnesota, impacting how Clean Water Funds need to be invested.