Clean Water Fund Appropriations

Annual Report to the Legislature

Minnesota Board of Water & Soil Resources

February 27, 2015

CLEAN WATER LAND & LEGACY AMENDMENT

Pictured on the front cover:
Top, Wirth Lake, Minneapolis, Minn., recipient of a 2012 Clean Water Fund grant that played a significant role in delisting the lake from the state's impaired waters list.
Bottom left: A RIM easement in Redwood County.
Bottom center: A Clean Water Fund-supported rain garden located in the City of Chisago.
Bottom right: Mille Lacs SWCD agricultural outreach technician Todd Kulaf (whose position is supported through a Clean Water Fund grant) talks with local farmer Chris Carlson.

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Introduction

The mission of the Minnesota Board of Water and Soil Resources is to improve and protect Minnesota's water and soil resources by working in partnership with local organizations and private landowners. The goal of our Clean Water Fund (CWF) Program is to help meet statewide water quality goals through the prevention and reduction of non-point source pollution.

- The Competitive Grants program works through the local conservation delivery system to fund projects that are prioritized and targeted to the most critical source areas.
- CWF easements provide permanent protection of private land in riparian and groundwater locations, resulting in improved surface water quality and the health and security of community water supplies.

Water quality improvement projects like this one in the Minnehaha Creek Watershed District have been supported by the Clean Water Fund.

Our agency's unique mission and structure provides for effective and efficient use of Legacy dollars with proven results. Working through Minnesota's local governments enables our agency to be strategic in granting funds to meet locally-identified water quality goals within the larger scope of Minnesota's clean water efforts. Our reporting and tracking requirements ensure measurable and specific results.

This report has been prepared for the Minnesota State Legislature by BWSR in fulfillment of the requirements of Laws of Minnesota 2013, Chapter 137, Article 2, Section 7. This requires BWSR to submit "to the legislature by March 1 each year an annual report prepared by the board, in consultation with the commissioners of natural resources, health, agriculture, and the pollution control agency, detailing the recipients and projects funded" with Clean Water Funds. This report outlines BWSR's comprehensive strategy to implement the Fiscal Year (FY) 2015 appropriation from the Clean Water Fund – one of four funds established through the Clean Water, Land and Legacy Constitutional Amendment approved by voters in 2008.

Clean Water Fund Appropriation Summary

The 2013 Legislative Session passed FY 2015 Clean Water Fund appropriations of $36.1 million to BWSR for the implementation of nonpoint source pollution reduction programs. As of March 1, 2015:

- We are in the process of allocating up to $6.5 million for permanent conservation easement projects to establish buffer strips adjacent to public waters and $1.3 million for conservation easements in wellhead protection areas. Our agency partners with Soil and Water Conservation Districts (SWCDs) to implement these conservation easement programs.
- We oversee $500,000 contracted with the Conservation Corp of Minnesota and Iowa for installing and maintaining conservation practices.
- We have awarded approximately $14.1 million through a competitive grant process for high priority projects and practices that protect and improve water quality. Projects that receive awards are expected to be prioritized and targeted to achieve measurable outcomes. Each grant applicant must meet various reporting requirements to demonstrate the effectiveness of these expenditures. These requirements are found in Minnesota Statues 114D.50, Subdivision 4 and 3.303, Subdivision 10. Table 1 summarizes the programs and funding allocated under the appropriations.

Table 1: Summary of FY 2015 Clean Water Fund Appropriations to BWSR

Program	FY15 Appropriation	Description
Riparian buffer conservation easements	$6.5M	Purchases permanent conservation easements on riparian lands adjacent to public waters, except wetlands. Establish buffers of native vegetation that must be at least 50 feet where possible.
Wellhead protection conservation easements	$1.3M	Purchases permanent conservation easements on wellhead protection areas under MS 103F.515 Subd. 2, paragraph (d). Must be in drinking water supply management areas designated as high or very high by the Commissioner of Health.
Projects and Practices*	$10.756M	Protects and restores surface water and drinking water through grants to local government units and joint powers organizations of local government units; to keep water on the land; to protect, enhance and restore water quality in lakes, rivers and streams; and to protect groundwater and drinking water, including feedlot water quality and subsurface sewage treatment system projects and stream bank, stream channel, shoreline restoration and ravine stabilization projects.
Accelerated Implementation*	$4.5M	Funds grants for projects and practices that supplement, or exceed current State standards for protection, enhancement, and restoration of water quality in lakes, rivers and streams or that protect groundwater from degradation, including compliance.
Community Partners Conservation Program*	$1.5M	Funds grants to be used for community partners within a LGU's jurisdiction to implement structural and vegetative practices to reduce stormwater runoff and retain water on the land to reduce the movement of sediment, nutrients and pollutants.
Soil Erosion and Drainage Law Compliance*	$1.7M	Restores and protects surface water quality, particularly impaired waters by supplementing local efforts to apply existing soil erosion reduction and drainage statutes across Minnesota.
One Watershed, One Plan	$0.45M	Establishes a framework for comprehensive local watershed plans and funds local governments through assistance and grants to transition local water management plans to a watershed approach as provided for in Minnesota Statutes, chapters 103B, 103C, 103D, and 114D.
Targeted Watershed Demonstration Program*	$7M	Provides grants to local government units organized for the management of water in a watershed or subwatershed that have multiyear plans that will result in a significant reduction in water pollution in a selected subwatershed.
Oversight, support, accountability reporting	$0.95M	Provides State oversight and accountability, evaluate results and measure the value of conservation program implementation by local government units and to prepare an annual report detailing recipients and projects funded.
Restoration Evaluations	$0.084M	Provides a technical evaluation panel to conduct up to ten restoration evaluations under Minnesota Statutes, Section 1214D.50, Subdivision 6.

**Competitive grant process*

The Legislature passed a supplemental appropriations bill during the 2014 session. In Laws of MN 2014, Chapter 312, Article 14, Section 2, Subdivision 2, Section 4, BWSR received additional Clean Water Fund appropriations, detailed in Table 2.

Table 2: Summary of FY 2015 Supplementary Clean Water Fund Appropriations to BWSR

Program	FY15 Appropriation	Description
Groundwater Management	$0.15M	Collaborate with the commissioner of health and local units of government in the North and East Metro Groundwater Management Area through development or implementation of local water management plans.
Groundwater Management	$0.25M	Collaborate with the commissioner of health and local units of government in the Bonanza Valley Groundwater Management Area and the Straight River Groundwater Management Area through development or implementation of local water management plans.
Groundwater Management	$0.1M	Develop workshop for public works professionals or other local officials that promote landscape best management practices that keep water on the land within the North and East Metro Groundwater Management Area.
Projects and Practices*	$0.9M	Protects and restores surface water and drinking water through grants to local government units and joint powers organizations of local government units; to keep water on the land; to protect, enhance and restore water quality in lakes, rivers and streams; and to protect groundwater and drinking water, including feedlot water quality and subsurface sewage treatment system projects and stream bank, stream channel, shoreline restoration and ravine stabilization projects.

**Funds used for four of the next highest ranked, but unfunded, FY 2014 projects.*

Clean Water Fund Conservation Easement Programs

BWSR's clean water easement programs are a part of a comprehensive, statewide clean water strategy to prevent sediments and nutrients from entering Minnesota's lakes, rivers and streams; enhance fish and wildlife habitat; and protect wetlands, groundwater and drinking water supplies. These programs focus permanent protection of private land to address clean water in key riparian and groundwater locations. This results not just in improved surface water quality, but benefits the health and security of community water supplies and wildlife habitat.

In FY 2015, BWSR fully allocated the $6.5 million in Clean Water funding for buffers and the $1.3 million in Clean Water Fund wellhead funding.

Targeting Critical Lands

At its highest point, landowners in Minnesota enrolled 1.7 million acres in the federal Conservation Reserve Program (CRP). Today, that number has dropped to around 1.3 million acres. 360,000 acres were set to expire over 2013 and 2014. Even with focused conservation efforts, 225,000 acres still expired – meaning approximately 66% of those acres are no longer grasslands and wetlands.

The Reinvest In Minnesota (RIM) Reserve program aims to slow down the loss of these acres, targeting the most critical CRP land – those areas at risk for soil erosion, those most affecting water quality, and those lands that have high wildlife habitat quality.

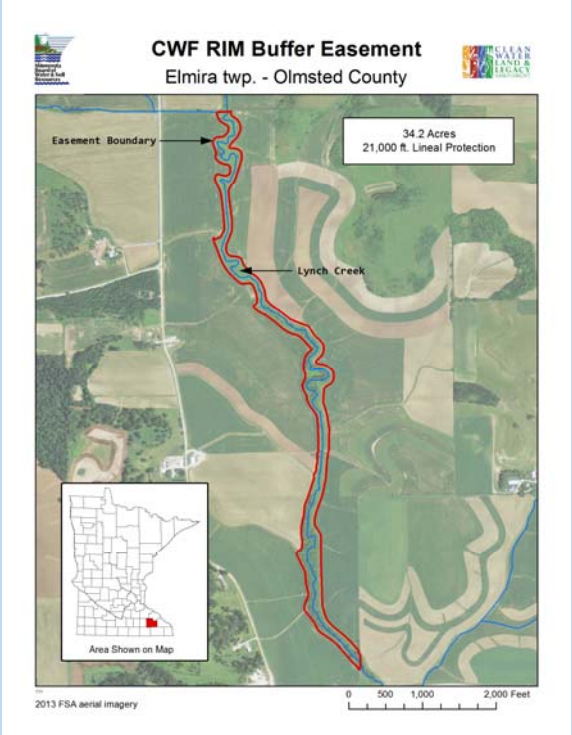
Riparian Buffer Easement Program

BWSR received $6.5 million in FY 2015 to acquire permanent RIM conservation easements on riparian lands adjacent to public waters, except wetlands. Using an innovative approach, the RIM easement program connects both Clean Water and Outdoor Heritage Funds ($3.52 million in FY 2014 from OHF) to expand buffers beyond clean water minimums in order to provide additional wildlife habitat benefits, as seen in Figure 2.

The program creates multiple benefits by targeting lands with a cropping history and new or existing USDA Conservation Reserve Program contracts. Participating landowners receive a payment to retire land from agricultural production and to establish permanent buffers of native vegetation.

Permanent Protection: A 2014 Easement Highlight

When Dan Keefe, a long-time conservation cooperator and the 2014 Olmsted County Outstanding Conservationist, wanted to turn his short-term conservation commitment with the Conservation Reserve Program into a long-term legacy, the RIM Riparian Buffer program was the right fit. Keefe, who had two RIM easements as part of his active farming operation, was approached by Olmsted Soil and Water Conservation District's Skip Langer about participating again because of the benefits this easement could provide. It protects both sides (over 1.5 miles) of Lynch Creek, a cold-water trout stream that winds its way through his farm before it eventually outlets into the Root River. Water quality and wildlife habitat will both benefit in the area, thanks to his participation.

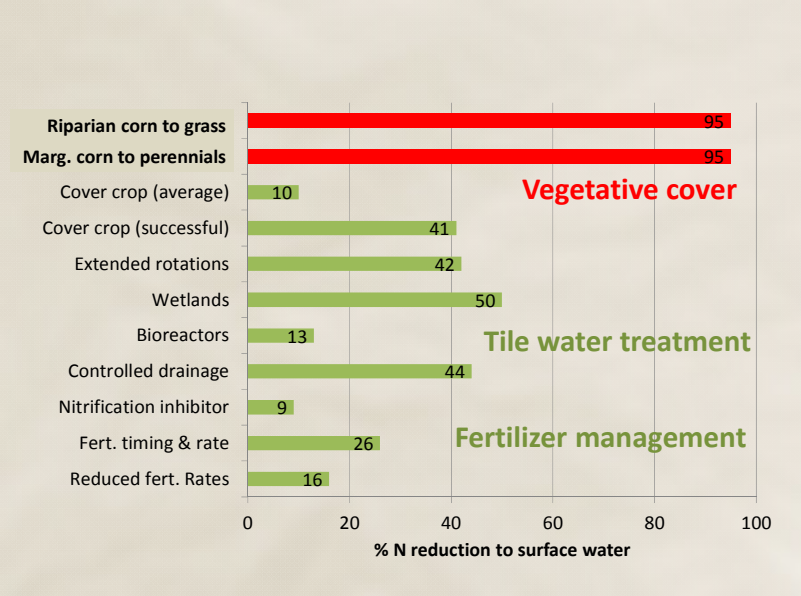


Outcomes and Effectiveness

As of December 31, 2014, nearly 100% of the available $6.5 million was used to provide permanent easement protection on 358 acres. An additional 1,535 acres are well into the acquisition process and will be completed in the coming months. Landowner demand for this program greatly exceeds current resources. BWSR estimates $20 million in pending landowner interest.

A 2013 MPCA study, *Nitrogen in Minnesota Surface Waters*, also shows significant benefits to this approach to conservation. The two most significant treatments for reducing nitrogen are putting riparian land that is currently in corn into grass and putting into perennials those areas where corn grows only marginally, as seen in Figure 1.

Figure 1. Percent nitrogen reduction in treated areas



Source: *Nitrogen in Minnesota Surface Waters,* 2013 MPCA study

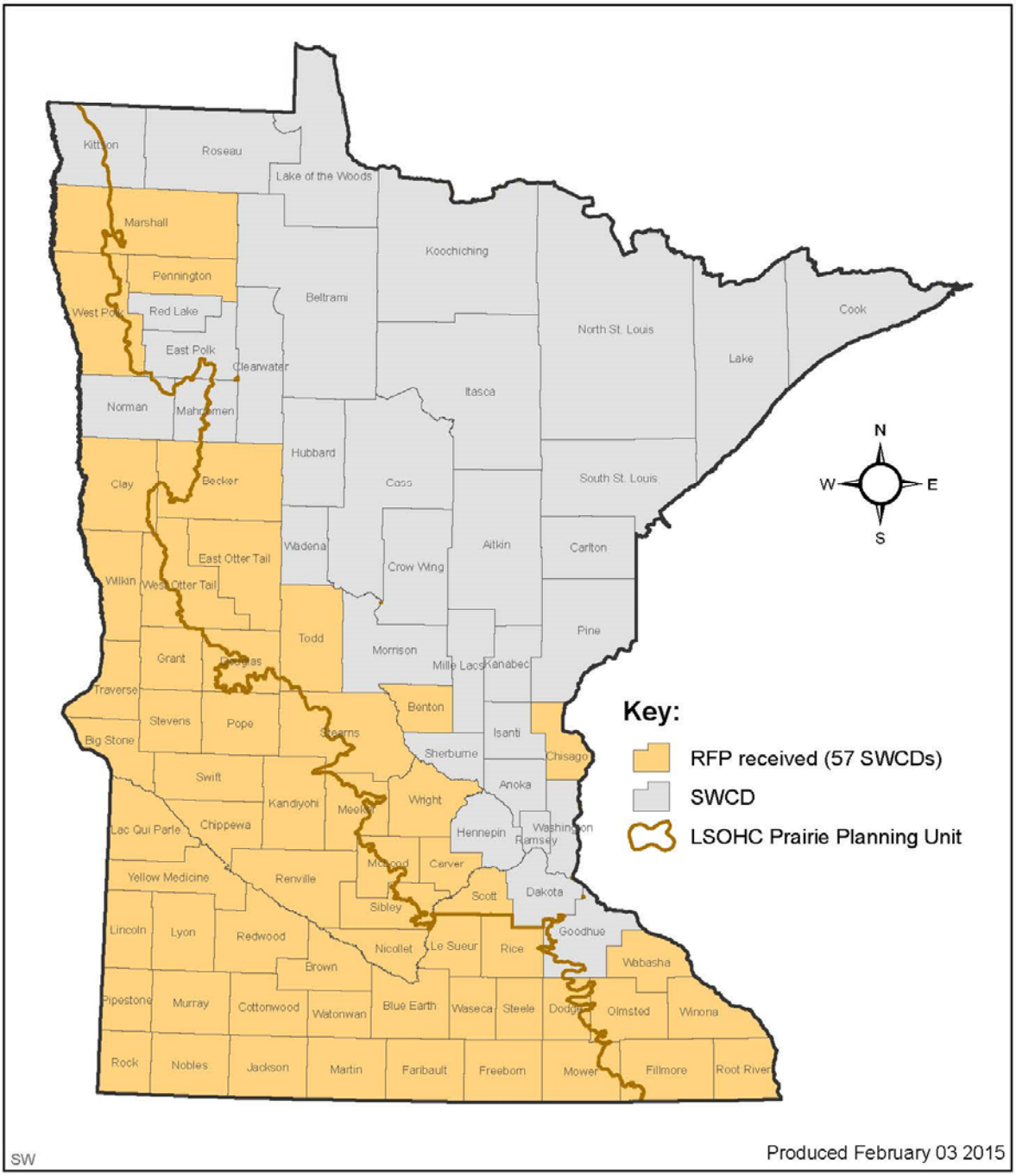
Wellhead Protection Conservation Easement Program

There are currently over 250 identified and approved Wellhead Protection Areas in Minnesota. BWSR received $1.3 million in FY 2015 appropriations for RIM easements under this program. The Wellhead Protection program is targeted to areas where the vulnerability of the drinking water supply management area (as defined by Minnesota Rules, part 4720.5100, subpart 13) is designated as High or Very High by the Minnesota Department of Health (MDH). As of December 31, 2014, 100% of the available $1.3 million has been allocated or encumbered.

Outcomes and Effectiveness

Restoring grasslands within affected wellhead protection areas can produced dramatic, measurable improvements in water quality. Since the beginning of the RIM Wellhead Protection Program in 2010, BWSR has funded 18 easements totaling 1,752 acres. These acres will be restored to native perennial vegetation and will have little to no negative impacts on groundwater quality as compared to pre-easement conditions. Landowner interest in this program now exceeds available funding.

Figure 2. Clean Water Fund/Outdoor Heritage Fund Riparian Buffer Request for Proposals



Clean Water Fund Competitive Grant Program

Interest in our Clean Water Fund Competitive Grants Program has always exceeded available funding. Our local government partners are engaged and invested in protecting and restoring Minnesota's lakes, streams, rivers and groundwater. Their ability to do so is significantly limited by the state dollars that are available to award.

Given the demand, BWSR works to fund the best projects that make the biggest difference in water quality. Our agency allocates CWF resources through a decision-making process based on sound science, prioritized local planning, and a commitment to identify projects that will be the most effective. Projects that lack source assessments, clear connections to water plans, or an adequate description of overall impact to the water resource of concern do not compete well under this program.

In FY 2015, our agency's Competitive Grant Programs included Projects and Practices, Accelerated Implementation, Community Partners, Soil Erosion and Drainage Law Compliance and the Targeted Watershed Demonstration Program. Funding for these programs was provided under Laws of Minnesota 2013, Chapter 137, Article 2, Section 7. We distributed appropriated program funds as indicated in Table 3.

The Clean Water Fund Competitive Grant Program also incorporated requirements of M.S. 114D.20, which directs the implementation of Clean Water Funds to be coordinated with existing authorities and program infrastructure. Those requirements are referenced in the Clean Water Fund Grants Policy adopted by the BWSR Board on June 25, 2014: http://www.bwsr.state.mn.us/cleanwaterfund/fy2015/FY15_CWF_Competitive_Grants_Policy.pdf.

Figure 3. 2015 CWF Competitive Grant Applications

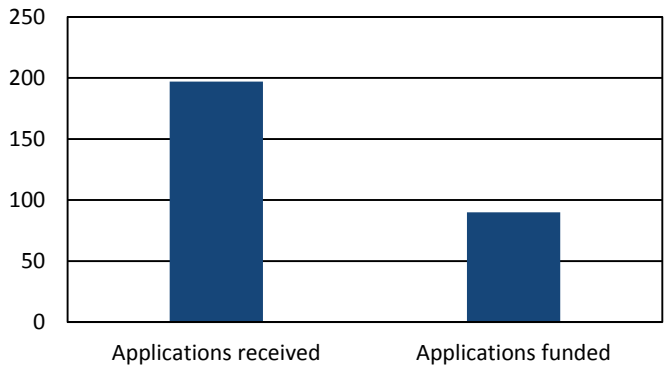


Figure 4. 2015 CWF Competitive Grant Funding

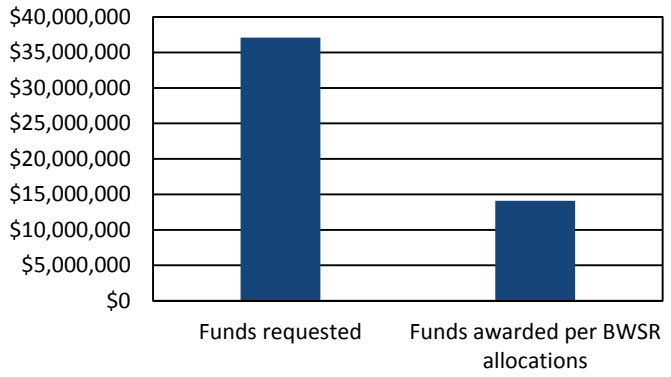


Table 3: Clean Water Fund Applications Funded per Grant Program		
Grant Program	**Applications Funded FY15**	**Total Funds Awarded FY15**
BWSR Board Approval, January 2015		
Projects and Practices	36	$9,250,000
Accelerated Implementation*	32	$2,922,994
Community Partners	12	$1,359,425
Soil Erosion and Drainage Law Compliance	10	$610,476
Targeted Watershed Demonstration Program	4	$5,592,632
Total	**94**	**$19,735,527**

**$1 million of appropriated funds were used for FY 2014 Shared Services grant awards.*

FY 2015 Competitive Grant Process

BWSR opened the FY 2015 Competitive Grant application from August 18 through September 26, 2014. Staff conducted three information and outreach sessions to review the grant programs and criteria. These sessions were held on September 4, 5, and 10 of 2014. In addition, staff created a Frequently Asked Questions document and posted it on the BWSR website to provide updated information to potential applicants.

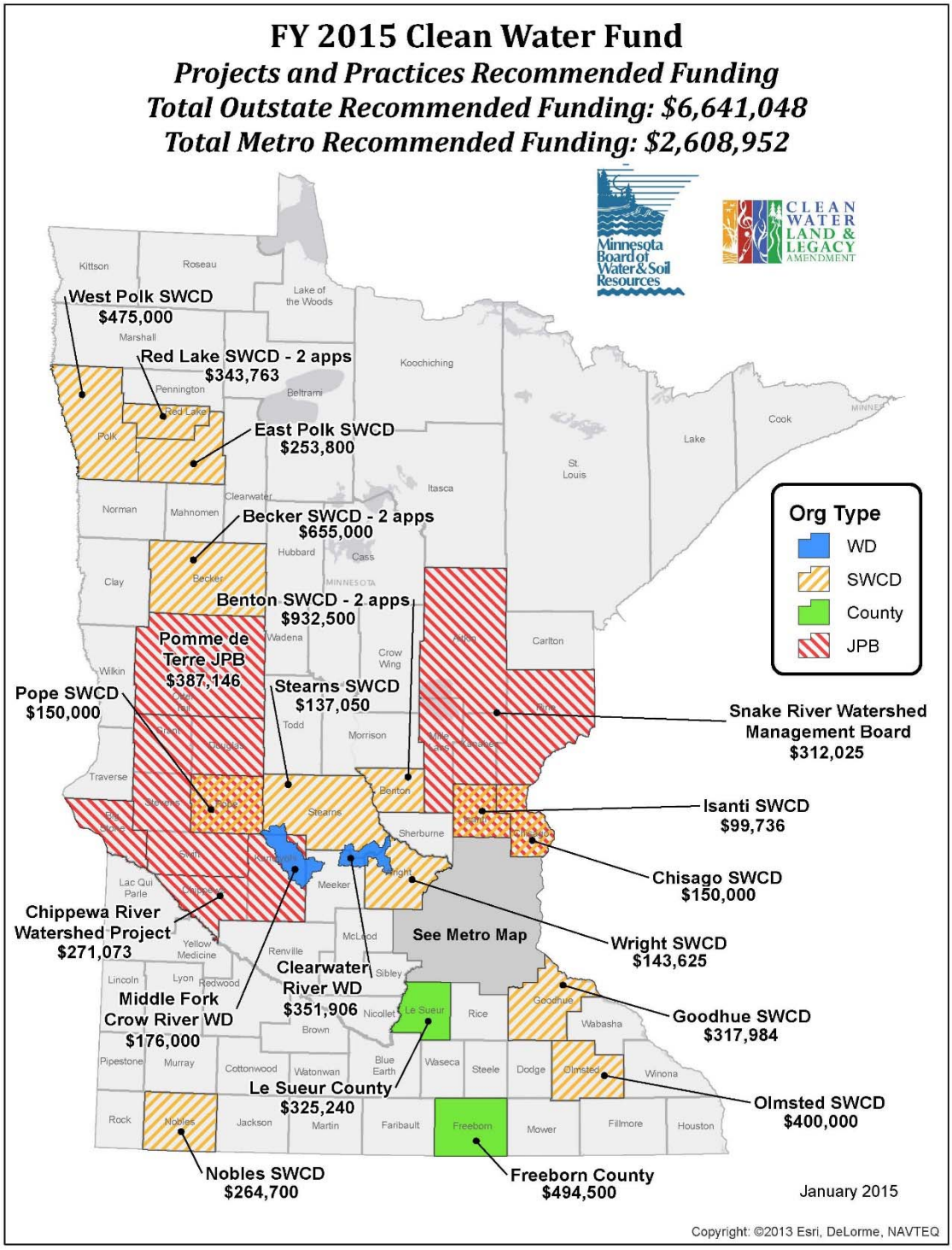
Local government units throughout the state submitted 197 applications for these competitive grants and the total amount requested was more than $37 million.

BWSR allocates Clean Water Funds through an interagency decision-making process that includes the Minnesota Department of Agriculture, the Department of Natural Resources, the Minnesota Pollution Control Agency, and the Minnesota Department of Health with the goal of effectively coordinating water quality projects and practices. The criteria (Appendix A) used in this process is based on sound science, prioritized local planning and commitment to identify projects that will be the most effective.

The BWSR Senior Management Team reviewed the recommendation provided by the interagency and BWSR staff teams on January 13, 2015 and recommended it be forwarded to the BWSR Board. The BWSR Board Grants Program and Policy Committee reviewed the funding recommendation on January 20, 2015. The BWSR Board approved the final funding recommendations for the FY2015 Clean Water Fund Competitive Grants on January 28, 2015, 90 projects totaling $14,142,895 in grant funding.

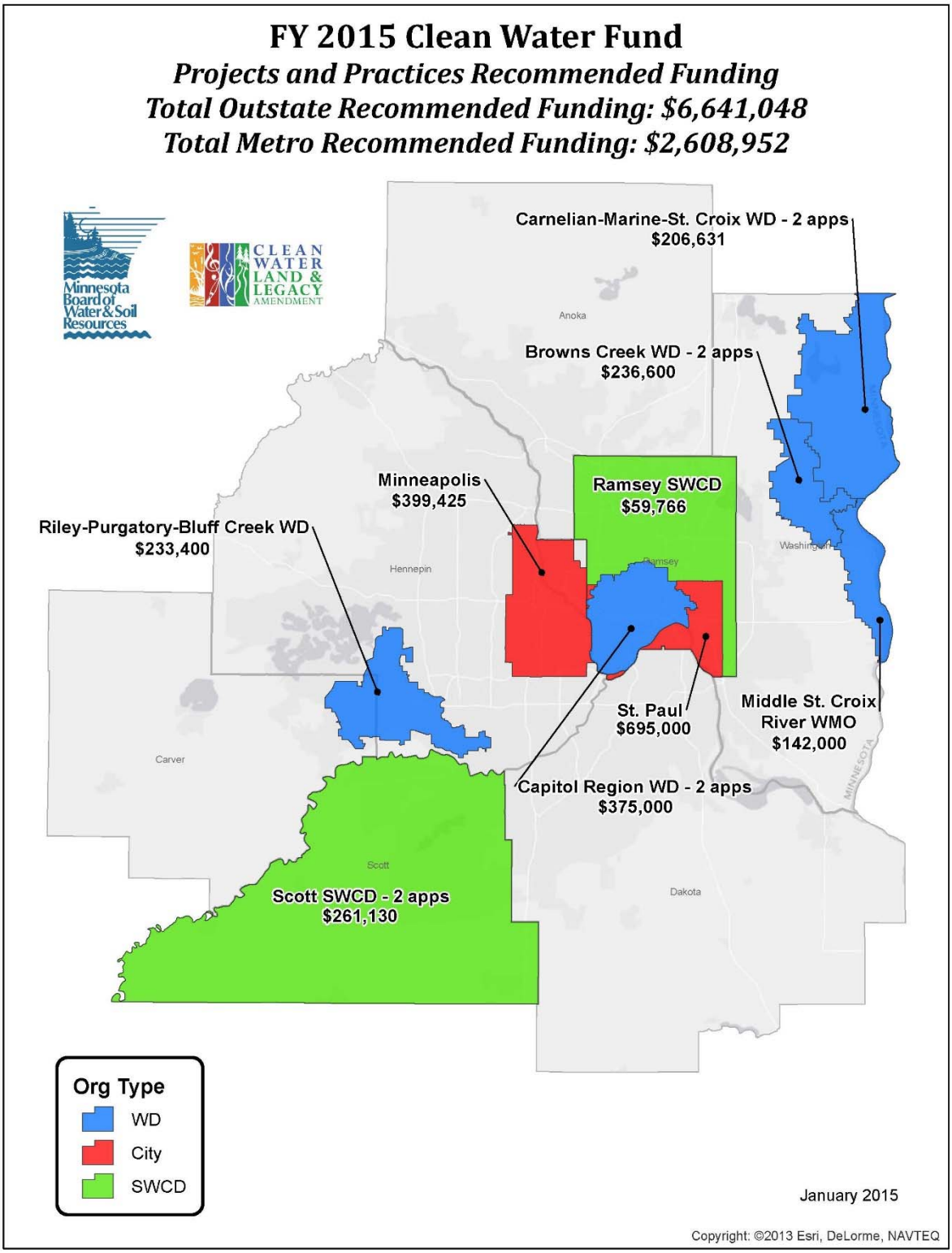
The BWSR Board specified a deadline for completion and approval of the work plans by March 20, 2015 and grant execution by April 10, 2015.

FY 2015 Clean Water Fund Competitive Grant Awards



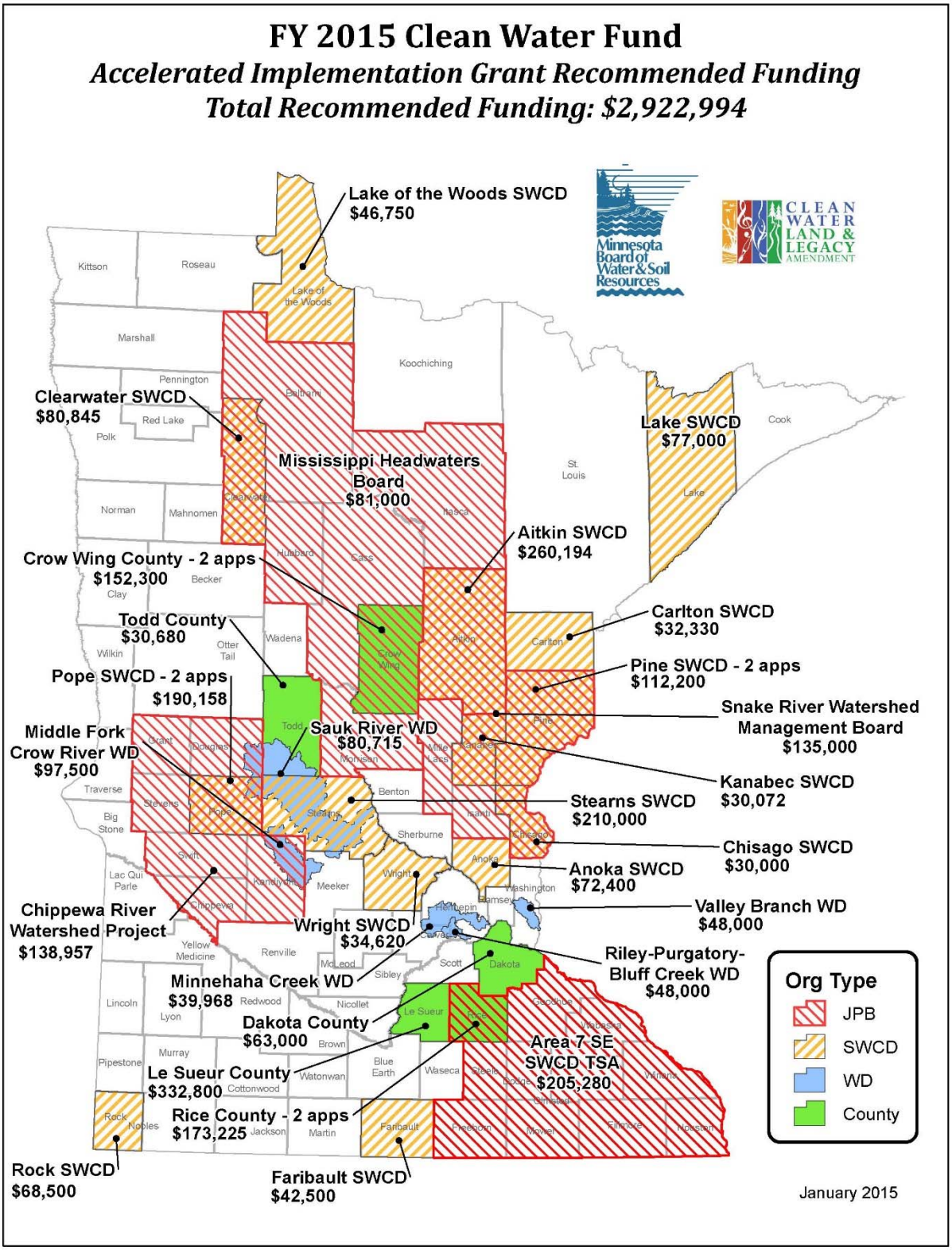
Projects and Practices Grants: Outstate

Funds are used to protect, enhance and restore water quality in lakes, rivers and streams and to protect groundwater and drinking water. Activities include structural and vegetative practices to reduce runoff and retain water on the land, stream bank, stream channel and shoreline protection projects.



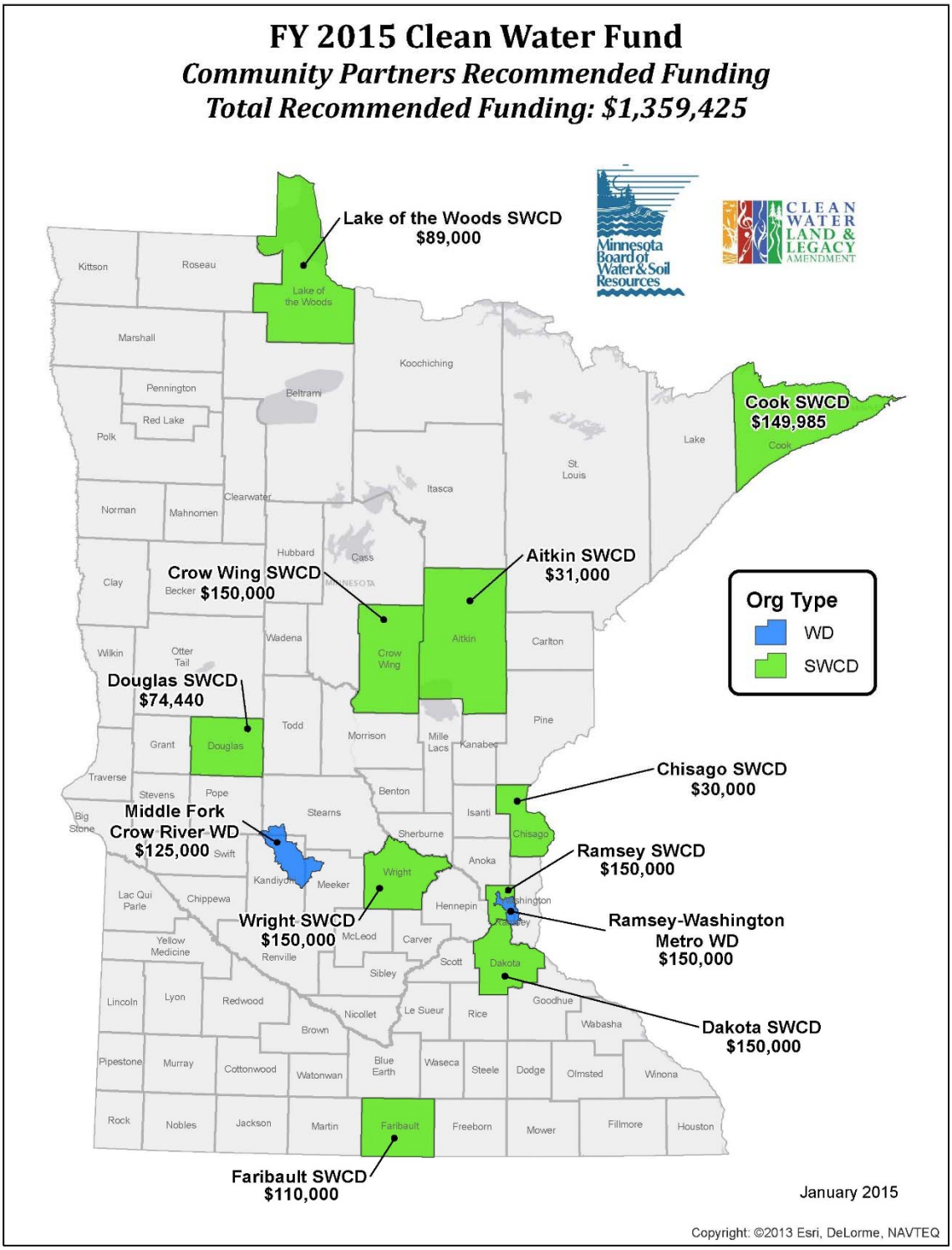
Projects and Practices Grants: Metro

Funds are used to protect, enhance and restore water quality in lakes, rivers and streams and to protect groundwater and drinking water. Activities include structural and vegetative practices to reduce runoff and retain water on the land, stream bank, stream channel and shoreline protection projects.



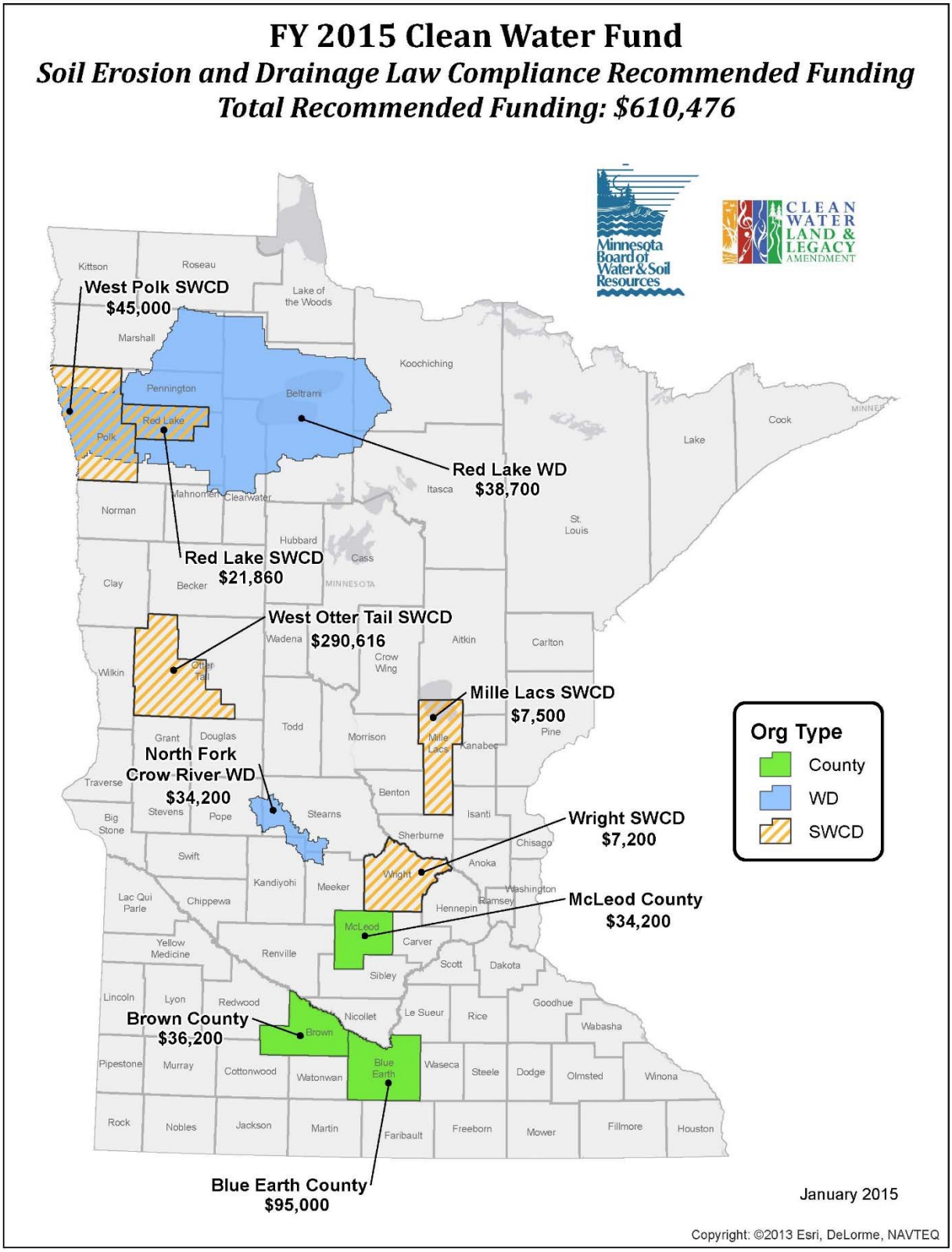
Accelerated Implementation Grants: Statewide

Funds are used for projects and activities (such as ordinances, organization capacity and state of the art targeting tools) that complement, supplement or exceed current State standards for protection, enhancement and restoration of water quality in lakes, rivers and streams or that protect groundwater from degradation.



Community Partners Grants: Statewide

Funds are used for community partners (i.e. non-governmental organizations) within a local government unit's jurisdiction to implement structural and vegetative practices to reduce stormwater runoff and retain water on the land to reduce the movement of sediment, nutrients and pollutants. LGUs will be the primary applicant and provide sub-grants to community partners who are implementing practices to protect and improve water quality in lakes, rivers and streams and/or protection of groundwater and drinking water.



Soil Erosion and Drainage Law Compliance Grants: Statewide

The purpose of these funds are to restore and protect surface water quality, particularly impaired waters, by supplementing local efforts to apply existing soil erosion reduction and drainage statutes across Minnesota.

Targeted Watershed Demonstration Program

Based on 2013 legislation, our agency created the Targeted Watershed Demonstration Program. The program focuses on watersheds where the amount of change necessary to improve water quality is known, the actions needed to achieve results are identified, and those actions can be implemented within a four-year time period. While protection of high quality resources is important and a critical part of the Clean Water effort, this program focuses on demonstrating water quality improvements, not on sustaining high quality systems.

The Targeted Watershed Demonstration utilized a two-phased review process. The first phase consisted of interested candidates nominating a watershed through the Request for Interest (RFI). All nominated watersheds submitted for consideration were first screened by BWSR staff based on responses to the questions found in the RFI. The second phase of the review process consisted of interviews with final candidates by an Interagency Selection Committee, consisting of staff from BWSR, DNR, MDA, MDH, and MPCA. Seven watersheds were funded in 2014 (Figure 3).

In March 2014 our board funded the first group of Targeted Watershed Demonstration Program grants. Receiving funds were:

- **Dobbins Creek, Cedar River Watershed District (WD), $1.5 million award.**
  An important resource in southern Minnesota, the creek is impaired, the cloudiness of the water affecting plant and animal life. This project will install conservation practices in a systematic way to reduce sediment and nutrients, efforts which are estimated to contribute 15% of the pollutant reduction necessary to achieve Dobbins Creek's water quality goal.

- **Long Lake, Rice Creek Watershed District, $3 million award.**
  Work within this metro-area watershed will target Long Lake, a key destination in the most visited regional park in Ramsey County. Long Lake is an important regional resource, enjoyed by nearly half a million people annually. It's on the State's list of Impaired Waters due to excess nutrients, and the work on this project is estimated to achieve more than 40% of the pollutant reductions necessary to meet the Long Lake water quality goals.

- **Serpent Lake Subwatershed, Crow Wing Soil and Water Conservation District (SWCD), $1.2 million award.**
  North-central Minnesota's Serpent Lake, a regionally significant body of water in Crow Wing County, is at a critical turning point as water clarity continues to decline. If polluted runoff problems are not addressed, the resulting costs of water quality impacts will increase greatly, negatively affecting the quality of life and economic vitality of the region. The SWCD estimates that the conservation practices implemented through this program will prevent 139 pounds of phosphorus from entering the lake. That represents the majority of the phosphorus pollutant reductions necessary to meet the lake's water quality goal and reverse the declining water quality trend.

In December 2014 a second round of grant announcements was made, awarding an additional $5.5 million in Targeted Watershed Demonstration Grants to four watersheds throughout the state. Those recipients were:

- **Chisago Chain of Lakes watershed, Chisago SWCD, $887,632 award.**
  The Chisago SWCD project centers on the Chisago Chain of Lakes watershed, which includes several regionally significant waterbodies and is a destination for water tourism recreation. Several lakes within the watershed are currently on the state's impaired waters list because of high nutrient levels, and others are at risk of exceeding Minnesota's standards. The projects will reduce phosphorus runoff, helping them achieve 10-15% of the total goal for reduction.

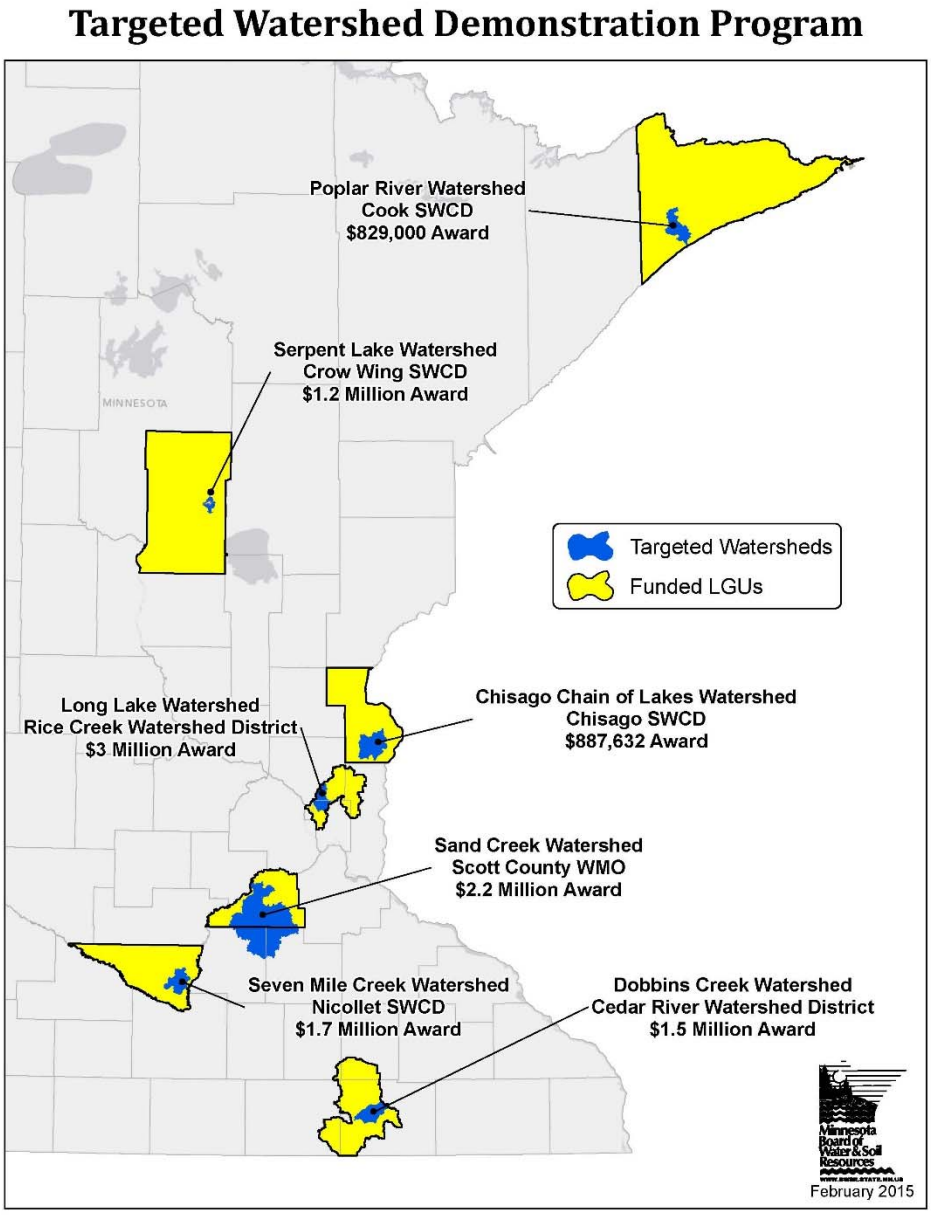
- **Poplar River watershed, Cook SWCD, $829,000 award.**
  The Cook SWCD project centers on the Poplar River watershed, a high-profile watershed that is a vital trout fishery, recreation area, natural area, and economic engine for the North Shore. The funds will

accelerate work to reduce non-point pollution entering the Poplar River and Lake River, improving water quality and achieving their goal of removing the Poplar River from the state's impaired waters list.

- **Seven Mile Creek watershed, Nicollet SWCD, $1.7 million award.**
  The Nicollet SWCD project centers on the Seven Mile Creek watershed, which is the priority watershed for Nicollet County. The creek is on the state's impaired waters list because of sediment levels, nutrients and other pollutants that affect aquatic life, recreation, and drinking water. The projects estimated to achieve 40-50% of the goal for sediment reduction, 15-25% of the goal for nutrient reduction, and 20-30% of the goal for E. coli reduction.

- **Sand Creek watershed, Scott County Water Management Organization, $2.2 million award.**
  The Scott WMO project centers on the Sand Creek watershed, which drains an area of 271 square miles along the Minnesota River near Jordan, New Prague and Montgomery. Water quality issues in the watershed have impacted aquatic life and recreational use. This project will address sediment and nutrient levels and runoff, allowing McMahon Lake to achieve all its needed pollution reduction goals, Cedar Lake to achieve the necessary reductions from its watershed, and Sand Creek to make 20-30% progress toward its goals.

Figure 3: Locations of the seven projects selected in 2014 for the Targeted Watershed Demonstration Program.



Outcomes and effectiveness

BWSR funded thirty six grant applications through the Projects and Practices Grants: 26 are for water bodies listed as impaired that have a completed Total Maximum Daily Load study (TMDL); 2 are for either drinking water or water quality protection for water bodies that are not listed as impaired and are currently meeting State water quality standards. The remaining 8 are for water bodies that are listed as impaired but have no TMDL.

BWSR required grant applicants to estimate anticipated outcomes for proposed projects during the application process. Applicants used pollution reduction calculators, such as the Revised Universal Soil Loss Equation (RUSLE2), and similar tools for estimating effectiveness of keeping water runoff on the land through infiltration, diversion or collection. Based on projected outcomes, projects funded in FY2015 will remove 21,748 pounds of phosphorus and 25,208 tons of sediment from Minnesota waters.

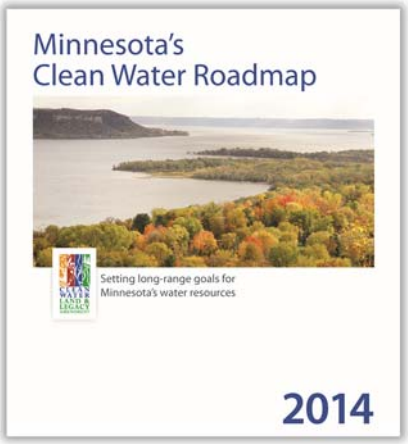
Applicant	Title	TSS (Tons/Yr)	TP (Lbs/Yr)
Becker SWCD	Buffalo Red Shallow Lakes and Mainstem Improvement Strategy	1,090	1,318
Minneapolis, City of	Nokomis Neighbors For Clean Water	2	15
Polk, West SWCD	Sand Hill River Watershed Projects and Practices Grant Application	5,675	-
Freeborn County*	2015 Myrtle On-site sewer solutions	-	174
Pomme de Terre River Association JPB	2015- Pomme de Terre WRAPS Implementation Plan	4,446	4,446
Scott SWCD	Prior Lake Spring Lake Targeted Water Quality BMP Installation Project	392	467
Pope SWCD	2015 Lake Minnewaska Targeted Sub Watershed Water and Sediment Control Project Phase II	514	440
Benton SWCD	NE St Cloud Sediment Reduction Project	8	18
Clearwater River WD	Watkins Area Stormwater Treatment	-	796
Becker SWCD	South Branch Wild Rice Sediment Reduction Project	1,548	665
Polk , East SWCD	Phase IV Sand Hill River Watershed Erosion BMP's	966	1,033
Goodhue SWCD	Protecting and Restoring Water Quality in Mississippi River/Lake Pepin Watershed	3,488	3,488

Applicant	Title	TSS (Tons/Yr)	TP (Lbs/Yr)
Carnelian-Marine-St. Croix WD	Carnelian Marine St Croix Priority Lake TMDL Implementation – 75 Pound Phosphorus Load Reduction by 2017	-	17
Brown's Creek WD**	Brown's Creek Improvement at Brown's Creek Park (Temperature Reduction)	-	-
Middle St. Croix River WMO	Lake St. Croix Direct Discharge Stormwater Retrofits	2	8
Snake River Watershed Management Board	Snake River Watershed WRAPS based projects	123	1,230
Scott SWCD	Lower MN River Targeted Water Quality BMP Implementation Project	221	220
Le Sueur County	Lake Volney Targeted Restoration	907	1,091
Riley-Purgatory-Bluff Creek WD	Lake Susan Watershed Treatment and Stormwater Reuse Enhancements	-	31
St. Paul, City of	Trout Brook Urban Stream Restoration - Phase II	16	96
Stearns SWCD	Cold Spring Southwest Stormwater Infiltration Project	1	15
Carnelian-Marine-St. Croix WD	Marine on St. Croix Innovative Stormwater Management Implementation – Phase 1	3	13
Capitol Region WD	Retrofitting the Oldest High School in MN	3	1
Ramsey Conservation District	Lambert Creek Stream Bank Restoration Project 2015	8	9
Chippewa River Watershed Project	Simon Lake and Lake Gilchrist Restoration and Protection in the Chippewa River Watershed	1,550	2,072
Isanti SWCD	Green Lakeshore Rehabilitation and Stormwater Treatment	8	1
Capitol Region WD	Stormwater Retrofits: East Kittsondale Subwatershed	4	25
Brown's Creek WD	Long Lake - Stormwater Pond Retrofit	-	1
Chisago SWCD	Dry Creek Watershed Gully Stabilization Project	25	22

Applicant	Title	TSS (Tons/Yr)	TP (Lbs/Yr)
Red Lake SWCD	2015 Cyr Creek, Black River, and Red Lake River Sub-Watersheds Water Quality Improvement Projects	594	694
Middle Fork Crow River WD	Diamond Lake TMDL Implementation Projects	-	131
Nobles SWCD	2015 - Rock River Bacterial Impairment Reduction Project	-	53
Wright SWCD	Crow River Gully Stabilization to Reduce Turbidity Phase Two	45	50
Benton SWCD	Little Rock Lake TMDL Implementation Project	2,900	2,700
Olmsted SWCD	Using Wetland Creation and Natural Stream Channel Restoration to Provide Water Quality Improvement and Protection for the South Branch Cascade Creek	545	-
Red Lake SWCD	2015 Terrebonne Creek, Beau Gerlot Creek, and Lower Badger Creek Sub-Watersheds Water Quality Improvement Projects	124	408

**Freeborn County's Myrtle on-site sewer solutions will also reduce Nitrogen levels by 475 pounds.*
***Brown's Creek's Improvement Project has a water temperature goal of 18.3 degrees Celsius to protect the long-term survival of cold-water species in Brown's Creek.*

Clean Water Fund in Action



As a state, we've set some substantial goals for our reduction efforts. In 2014, the state published its inaugural Clean Water Roadmap. The Roadmap is a step forward toward fulfilling the Legacy Amendment's promise to protect, enhance, and restore the state's water resources. Developed by Clean Water Fund agencies, including BWSR, MDA, MDH, DNR, and the MPCA, it is a living document that communicates ambitious yet achievable goals, informs strategies and resource allocations, and provides a framework for assessing progress over time. The Roadmap can be viewed here: http://www.legacy.leg.mn/sites/default/files/resources/Clean_Water_Report_web2.pdf.

At BWSR, we've worked hard to make the connection between pollution reduction estimates for CWF projects and local and state goals. From 2010-2014, through 595 Clean Water Fund awards, more than 4,152 conservation practices have been installed to reduce erosion, stormwater runoff, and to keep water on the land. These awards include public and private projects and involve Minnesotans who voluntarily engage in these activities.

The combined conservation practices of FY 2010 – FY 2014 projects are estimated to reduce 74,500 tons of sediment and 61,600 pounds of phosphorus per year from entering Minnesota's waters. That work helps move Minnesota closer to its statewide water quality goals. It works toward state waters that are fishable, swimmable and drinkable, important measures for all Minnesotans.

Linking Outcomes to Goals

When analyzing progress toward goals, scale is key. Project impacts can vary depending on the pollutant, reduction goals, scale and scope of plan, etc. For example, 1% progress toward goal in a large river system is going to look very different than 41% progress toward goal in a small lakeshed. If you start at the very local level, you can often see the immediate impact of this work, but it takes longer for those outcomes to roll up the larger the scale.

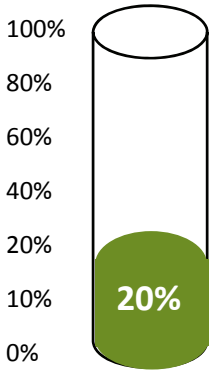
Some examples of FY 2015 CWF projects and their identified progress toward goal follow.

Sand Hill River Watershed Sediment Reduction
West Polk SWCD

This project will result in the installation of 18 rock riffles and two rock arch rapids to control the grade and stabilize the five mile channelized reach of the sediment impaired Sand Hill River, which contributes thousands of tons of sediment downstream. It will reduce over 50% of the channel sediment loading, improving water clarity.

Lake Volney Targeted Restoration
Le Sueur County

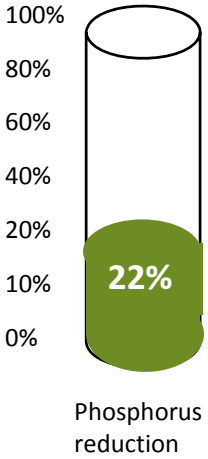
The goal of the Lake Volney Targeted Restoration project is to improve the water quality draining to Lake Volney. The project consists of eight priority areas that will have 14 Best Management Practices installed. These practices will strive for an overall 20% reduction in phosphorus and nitrogen.



Phosphorus reduction

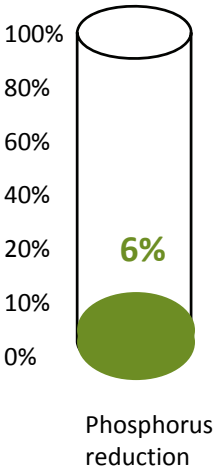
Carnelian Marine St. Croix Priority Lake TMDL Implementation
Carnelian Marine St. Croix Watershed District

This project will implement watershed load reduction practices to restore the top priority water body in the Carnelian Marine St. Croix Watershed District. These projects, in total, will reduce annual phosphorus loads by 17 pounds to Goose Lake, representing a 22% reduction in the lake's phosphorus reduction goal.



Snake River Watershed WRAPS-based projects
Snake River Watershed Management Board

The primary focus of this project is riparian restoration on 6.5 miles of targeted tributaries, ditches, and wetlands within five sub - watershed areas. These Best Management Practices are estimated to reduce phosphorus loading in the watershed by 1,230 pounds per year, which is a 6% reduction toward the phosphorus goal. In addition, sediment reduction is estimated at 123 tons per year, which is a 67% reduction toward the sediment goal.



Telling the Story: Clean Water Funds at work in the Red River Valley

For residents inside the Red Lake Watershed District, flooding is an almost annual event. Even without locally heavy rains, the area feels the effects of high water from the Red River. Over the years, the resulting flood damage has affected both land and water, a growing concern for both citizens and government.

Some of the most fertile farmland in the Red River Valley lies within the district, and flooding results in crop losses. In addition to damage to property, high water and erosion negatively impacted water quality and wildlife habitat. For years, the watershed district worked to help mitigate damage from these high water events, but progress was painfully slow.

The Grand Marais Outlet Project

In 2000, momentum began to grow for a large-scale project that would address flooding issues. Work focused on a 300 square mile area within the Grand Marais Creek Subwatershed, an area east of East Grand Forks, north of Crookston, south of Warren, and west of Thief River Falls. Although focused on flood reduction, planning specified pursing a multi-benefit approach, one that prevented erosion damage to the land, increased water clarity downstream, restored wetlands, and increased habitat for fish and wildlife.

The project was ambitious – its budget approached $6 million and relied on multiple partnerships and funding sources to bring change to the subwatershed. A key element of the overall initiative was a channel restoration project that would rectify a long-lasting bank erosion problem where the modified Grand Marais Creek outlets into the Red River of the North. Securing funding proved challenging, and the project stalled.

The cut channel, top, before the project began and bottom, after project completion.

"I honestly didn't think it would happen," Myron Jesme, Red Lake Watershed District Administrator, says. "Then the Clean Water, Land, and Legacy Amendment passed."

The Grand Marais Creek Cut Channel Stabilization

In 2011, the district secured a $662,000 Clean Water fund grant through the Board of Water and Soil Resources that would provide the impetus needed for others to commit funding and get the channel restoration project underway. The project centered on a short outlet channel from the Grand Marais Creek to the Red River of the North that was constructed in the early 1900s. The channel provided a shorter outlet to the Red River and abandoned six miles of natural and unstable banks, and over 700 tons of sediment a year make their way from the creek, listed as impaired for sediment, to the Red River.

The Clean Water Fund project stabilized the existing outlet channel so that it could continue to hold emergency overflow from high water events. Funding from the Lessard-Sams Outdoor Heritage Council was used to restore the natural channel. In addition to the channel restoration, buffer strips were established throughout the project. Two structures were installed to slow down water, reducing bed and bank erosion and bringing additional water quality benefits by keeping soil on the land.

Mitigating Flood Damage

This project's roots are in flood damage reduction, but part of the strength of its approach is that it recognizes the complexity of the problem. As a result, the project's flood reduction components also address water quality, erosion, runoff and drainage. Ditch improvements throughout the Grand Marais Project will help combat flooding while helping water quality. The construction of impoundments in the project area will provide storage for overflow, minimizing runoff. Restored wetlands and the use of buffers throughout the project as well as installing other conservation practices along drainage ditches will also help with flooding concerns.

The Power of Partnership

The Red Lake Watershed District couldn't take on a project of this size alone. Multiple partners at the federal, state and local level provided both financial and technical support to make it a reality.

"It took a lot of relationship building over a lot of years to get this project off the ground," Jesme says. "Landowners have come to understand the value of this work over the course of the last several years, and their support has been critical. State and federal agencies have stepped in, the local conservation agencies – what people have recognized is that a project like this has the potential for tremendous long-term impact, and that our shared goals for better water quality, healthy soil, and good habitat for fish and wildlife can be met by working together."

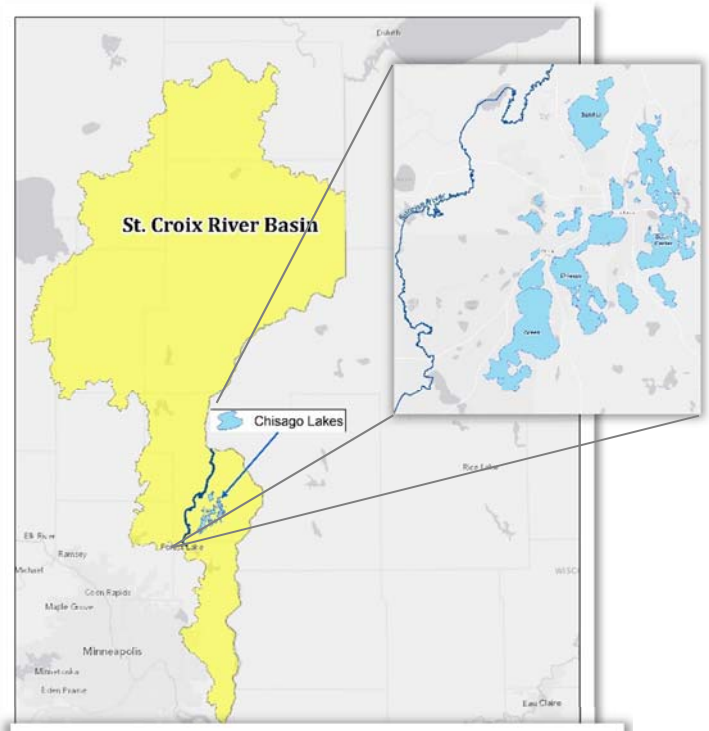
Red Lake Watershed District staff and BWSR staff met this summer at the site to review progress.

A Lasting Impact

Flood reduction. Cleaner water – in the case of the channel stabilization project, a reduction of 637 tons of sediment annually – an 87% reduction of the creek's sediment load to the Red River. Healthy habitat and flourishing wildlife thanks to 1,000 acres of restored wetlands and prairies. Each of the project outcomes couldn't be accomplished by one practice alone, and the progress being seen on the land today has been over a decade in the making. As this project grows closer to completion, the district expects the change in the subwatershed to be the kind that's impossible to ignore. The long-term benefits of this work will be a return on investment enjoyed by generations of future Minnesotans.

"When we hit the 25-year anniversary of the passing of the Amendment, this project is going to be one of its key accomplishments," Jesme predicts. "The amendment was the catalyst we needed to move forward. This is our legacy."

Telling the Story: Clean Water Funds at Work in Chisago County



Work done at the local level impacts more than just those local lakes. In Chisago, water quality improvements in the Chain of Lakes impact the Sunrise River, and eventually the St. Croix River.

Chisago County's Chisago Lakes Chain of Lakes are important resources, both ecologically and economically. Its lakes, rivers and streams are a source of fishing, swimming, boating and other recreational activities that bring in outdoor enthusiasts from all around the region. The watershed is also important as a key piece in a larger water quality puzzle. From the outlet, the Chain of Lakes drains north into the Sunrise River, which makes its way to the St. Croix, a National Scenic Riverway.

The restoration of the St. Croix River is a complex multi-state process that will take a lot of time and effort. However, by taking a closer look at the watersheds that are contributing pollutants to the St. Croix, we can see how work being done at the local level is contributing to the larger pollutant reduction goals of the river.

"When you're talking water quality," Chisago SWCD Manager Craig Mell says, "projects at the local level do more than just treating a wound. You're benefiting the entire system."

From the Lakeshed to the Watershed

Chisago's Chain of Lakes is a large contributor of phosphorus to the Sunrise River. The Sunrise River, in turn, is one of the major contributors of phosphorus to the St. Croix River. The district's work within the Chain of Lakes watershed is a prioritized and targeted approach to using Clean Water Fund dollars most effectively. The SWCD has studied the problem and knows where to target solutions for the maximum impact through a process called subwatershed assessments. For the Chain of Lakes, that means projects and practices have led to phosphorus reductions that take them to 5% of their goal. That work takes the district to 1% of its goal for the Sunrise River and .05% of goal for the St. Croix. There's a lot of work to be done, but Clean Water Fund dollars are driving their gains. "We're five percent towards our goal for the Chain of Lakes Watershed," Mell says, "and without the Clean Water, Land and Legacy Amendment and the support it's provided, that progress would be much, much slower."

> ***"We're five percent towards our goal for the Chain of Lakes Watershed and without the Clean Water, Land and Legacy Amendment and the support it's provided, that progress would be much, much slower."***
> - **District Administrator Craig Mell**

In December 2015, the district received a $887,632 Targeted Watershed Demonstration Program grant to accelerate their work to improve water quality within the watershed.

The Impact of the Clean Water Fund

Five Clean Water Fund grants since 2011 – totaling $825,500 - have been a significant factor in accelerating work in the area. The district has been able to use Clean Water Funds to leverage support from the Chisago Lakes Lake Improvement District, Chisago County, and the cities of Lindstrom, Center City, and Chisago to make real water quality progress. Over 60 conservation practices have been installed, which the district estimates will stop over 110 pounds of phosphorus and almost 40 tons of sediment overall from entering the lakes. Work on South Lindstrom Lake, one of the larger in the chain, has resulted in 13% progress towards the goal for this lake. Projects along North Lindstrom Lake have brought the district 9% towards their goal for that lake.

Practices like this rain garden benefit water quality and increase community awareness of the need for clean water.

While at first glance those numbers can seem small, residents and city officials alike are already seeing results. They've noted that there's a noticeable difference between lakes where Clean Water Fund projects have been implemented and those that haven't. The numbers back that up. Lakes where Clean Water Fund dollars have been invested are either holding steady or improving based on a recent Minnesota Pollution Control Agency lake report card. Lakes where there are no practices in place are showing declining water quality trends.

Making Connections

Chisago SWCD staff and BWSR staff consult on a stabilization project.

Clean Water Fund results have strengthened the district's local partnerships. Cities and the county are embracing conservation practices because they recognize their importance to the physical and economic health of the region. They work closely with the district to identify and support opportunities for making a difference. Landowners, and not just those with lakefront properties, have expressed increasing interest in getting involved with the district's conservation programs and implementing practices on their own land.

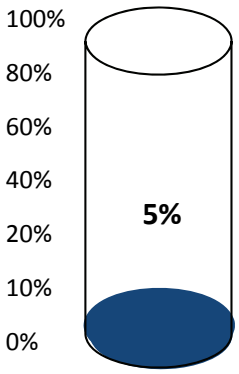
"These days we find landowners proactively coming to us with a concern or idea," Mell says.

From urban rain gardens to catchments that receive untreated stormwater to installing other best management practices that slow, capture and filter water, the district has used Clean Water Funds to improve water quality in the watershed and educate and involve the public in the conservation process.

"We're in this for the long haul," Mell says, "and expect to see impacts from the projects completed during the first several years of Amendment funding for many years to come."

Going the Distance

While a 5% gain in the Chain of Lakes is just the tip of the iceberg, it's also not the whole story. Clean Water Fund grants are supporting gully stabilization projects, installation of best practices on agricultural lands, and other efforts within the county to impact its water quality. Improvements within the Chain of Lakes Watershed eventually make their way to the Sunrise River, which feeds into the St. Croix. All of these moving parts work together to help the county, and the state, make progress toward their clean water goals.



Other project highlights from around the state

Loretto Creek Restoration, City of Medina
$334,450 FY 2012 CWF Grant

Nestled in the Twin Cities western suburbs, Loretto Creek, located within the City of Medina and City of Loretto, needed help. The east tributary of Lake Sarah, a regionally significant lake that suffers from high phosphorus levels, Loretto Creek was responsible for contributing approximately 269 pounds of phosphorus annually to the high nutrient levels.

Completed in 2014, the Loretto Creek Restoration remeandered a portion of the creek was done to restore a more natural design, flattening slopes and creating native vegetated buffers. Stormwater ponds were constructed to collect sediment and a wetland was restored to provide additional water treatment. Located within the city's ballfield complex, the restored wetland adds natural beauty while providing water quality benefits and improved wildlife habitat.

The end result: Phosphorus loading to Lake Sarah is reduced by 140 pounds per year, 52% of the Cities of Loretto and Medina's pollution reduction goals.

Above left, construction underway on the Loretto Creek remeander. Above right, the restored wetlands after the restoration work was completed. Photos courtesy Hakanson Anderson.

Teaching Water Quality to the Next Generation, Rice County Environmental Services Department
$5,000 Community Partners Grant

Learning about Minnesota's waters and ways to protect these valuable resources is important at any age. Second grade teacher Adam Larson from Lonsdale Elementary School had a vision for a project to promote hands-on education for his students while also doing something good for the environment. A Clean Water Fund grant, funded through the Board of Water and Soil Resources Community Partners Conservation Program, helped make Larson's vision a reality.

The $5,000 sub-grant, awarded in 2012 by the Rice County Environmental Services Department, was combined with $9,750 from other community partners to install a rain garden and bio-infiltration area to treat storm water runoff from the school.

Second graders learn about water resources at Lonsdale Elementary School's rain garden.

Rice County has provided small grants to other community groups for similar storm water management projects, including the River Bend Nature Center in Faribault, All Saints Episcopal Church and First United Church of Christ in Northfield, and the trail head to the Mills Town Trail in Dundas in conjunction with the Cannon River Watershed Partnership.

Red Clay Dam Phase I, Carlton Soil and Water Conservation District
$119,522 2011 CWF Grant

In the 1970s, several red clay dams were installed throughout the Nemadji Watershed to reduce sediment contribution to Lake Superior. Life expectancy of these dams was only 10-25 years. After one dam blew out, and with the remaining two in danger of failure, the Carlton SWCD knew they had to act to prevent more sediment from being discharged.

This project removed the remaining dams and restored a natural stream channel through the watershed's Elim Creek to alleviate sediment delivery concerns to Lake Superior. The district also re-established 1/3 mile of Brook Trout habitat. Included in the grant was assessment of other red clay dams within the watershed to prioritize future removal and restoration work.

By removing the dams and restoring the natural channel, the project prevented 1,260 tons of sediment from being discharged downstream into Lake Superior.

Pictured, top right, a class stands at the site where the third dam was breached, discussing restoration options.
Bottom right, the Conservation Corps of Minnesota install willow stakes and plant riparian buffers at the second dam removal site.

Directed BWSR Clean Water Fund Expenditures

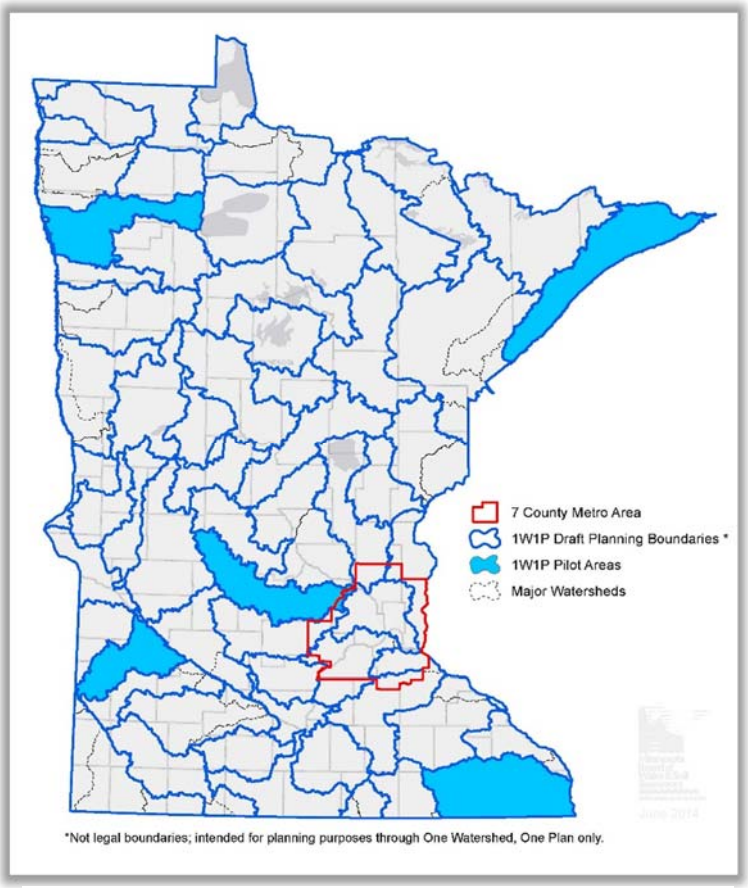
Additional BWSR clean water programs, as mandated by Minnesota Legislature, provide other key components of the comprehensive, statewide clean water strategy.

One Watershed, One Plan

One Watershed, One Plan is the next logical step in the evolution of water planning in Minnesota. The One Watershed, One Plan vision is to align local planning and implementation with state strategies over a ten year transition period into plans built largely around the state's major watersheds. This approach will address the need for focused watershed-based implementation plans that will be prioritized, targeted, and measureable.

BWSR has identified the following outcomes for the program:

- A shared understanding on the definitions of prioritized, targeted and measurable
- Be informed by existing science, studies and projects
- Establish water quality goals and targets by parameter of concern at the sub-watershed level
- Identify specific strategies and actions needed to achieve established restoration and protection targets
- Include short-term (10 year) and long-term (20 year) quantifiable milestones
- Identify the implementing authorities and establish timelines and cost estimates based on milestones
- May serve to coordinate the collection, ranking, and submission of requests for funding to the State and other sources.



Five watersheds were selected from throughout Minnesota to pilot the program.

In June 2014 our agency allocated Clean Water Fund grants to five pilot projects to begin work addressing water quality on a watershed basis. Pilot plans will build on existing efforts, using current local water plans, state and local knowledge and a systematic, science-based approach to watershed management. The resulting plans will address the largest threats that provide the greatest environmental benefits to each watershed. The pilot program will involve a broad range of stakeholders, including local governments, state agencies, and community members as true partners in the planning process.

The five pilot areas are:

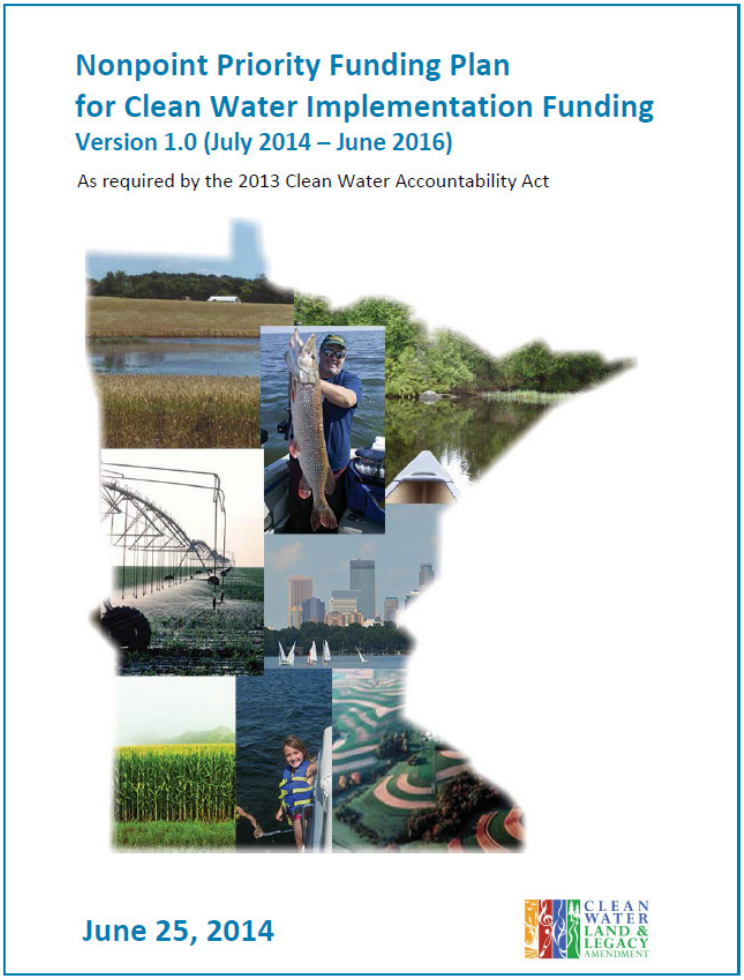
• **Lake Superior North watershed**, a two-county area that includes Cook County and Lake County.

• **North Fork Crow River watershed**, a six-county area that includes parts of Hennepin County, Kandiyohi County, Meeker County, Pope County, Stearns County and Wright County.

- **Red Lake River watershed**, a five-county area that includes parts of Beltrami County, Clearwater County, Pennington County, Polk County, and Red Lake County.
- **Root River watershed,** a six-county area that includes parts of Dodge County, Fillmore County, Houston County, Mower County, Olmsted County, and Winona County.
- **Yellow Medicine River watershed**, a four-county area that includes Lac qui Parle County, Lincoln County, Lyon County, and Yellow Medicine County.

Nonpoint Priority Funding Plan

In 2013 the Minnesota Legislature passed the Clean Water Accountability Act, an initiative that aimed to increase accountability for the public funds used to clean up our state's water. The Nonpoint Priority Funding Plan (NPFP) is a criteria-based process to prioritize Clean Water Fund investments. It provides state agencies with a coordinated, transparent and adaptive method to ensure that Clean Water Fund implementation allocations are targeted to cost-effective actions with measurable water quality results. The full report can be found at: http://www.bwsr.state.mn.us/planning/npfp/index.html.



Groundwater Management Areas

BWSR is collaborating with the commissioner of health and local units of government in the North and East Metro Groundwater Management Area, Bonanza Valley Groundwater Management Area, and the Straight River Groundwater Management area through development or implementation of local water management plans. We are also developing workshops that promote landscape best management practices within the North and East Metro Groundwater Management Area.

Conservation Corps of Minnesota and Iowa

BWSR is required to contract with the Conservation Corps of Minnesota and Iowa (formerly Minnesota Conservation Corps) or CCMI, for installation and maintenance of conservation practices benefitting water quality (Laws of Minnesota 2013, Chapter 137, Article 2, Section 7). The Board approved reserving $500,000 in FY 2015 Projects and Practices program funds (Table 1, p. 4) to comply with this appropriation.

As part of the process, BWSR staff has worked with the CCMI to ensure the following procedures are followed:

- Eligible local governments have an initial 30-day application period.
- CCMI has 30 days to review proposals and make a list of projects, consistent with the Clean Water Fund appropriation (Laws of Minnesota 2013, Chapter 137, Article 2, Section 7).

- CCMI sends the list of projects to the appropriate BWSR Clean Water Specialist for their review and approval before commitments are made to applicants. This will be accomplished within the 30-day CCMI review period.
- After initial allocations, any remaining funds are available on a first-come, first-served basis by any eligible local government.
- CCMI will report financial information on the use of State funds, and the local government will report outcome and match information in eLINK.

BWSR Administration of Clean Water Fund Expenditures

BWSR's Clean Water Fund goal is to reduce non-point source pollution by providing Clean Water Fund dollars to local government units for on-the-ground activities, many installed on private lands, that will result in improved and protected surface and ground water. The BWSR Board uses existing authorities, polices, and staff, along with the processes outlined previously, to implement Clean Water Fund programmatic activities.

For FY 2015 BWSR received a $950,000 direct appropriation for Clean Water Program Oversight and in addition, indirect authority for Clean Water Program Administration to provide for implementation and administration of Clean Water Fund dollars. The FY 2015 initial spending plan has allocated $2,588,000 for implementation and administration. Staffing of 25 (full-time equivalent) is supported in this spending plan, including five full-time positions charged with getting protection and TMDL-derived restoration strategies adopted into local water plans, directing over $15 million of grant funds to priority areas and activities, and aligning administrative procedures to optimize leveraging of non-State funds with low transaction costs.

Appendix A: BWSR Clean Water Fund Competitive Grant Ranking Criteria

Table A-1 Projects and Practices Ranking Criteria	Maximum Points Possible
Project Description: The project description succinctly describes what results the applicant is trying to achieve and how they intend to achieve those results.	5
Relationship to the Plan: The proposal is based on priority protection or restoration actions listed in or derived from an approved local water management plan or address pollutant load reductions prescribed in an approved TMDL.	15
Targeting: The proposed project addresses identified critical pollution sources impacting the water resource identified in the application.	30
Measurable Outcomes: The proposed project has a quantifiable reduction in pollution and directly addresses the water quality concern identified in the application.	35
Project Readiness: The application has a set of specific activities that can be implemented soon after grant award.	10
Biennial Budget Request (BBR): A BBR was submitted by the applicant organization in 2012.	5
Total Points Available	**100**

Table A-2 Accelerated Implementation Ranking Criteria	Maximum Points Possible
Clarity of project's goals, standards addressed and projected impact on land and water management and enhanced effectiveness of future implementation projects.	40
Prioritization and Relationship to Plan: The proposal is based on priority protection or restoration actions listed in or derived from an approved local water management plan or address pollutant load reductions prescribed in an approved TMDL.	25
Means and measures for assessing the program's impact and capacity to measure project outcomes.	20
Timeline for implementation.	15
Total Points Available	**100**

Table A-4 Community Partners Grant Ranking Criteria	Maximum Points Possible
Clarity of project goals, projected impact and involvement with community partners.	40
Prioritization and Relationship to Plan: The proposal is based on priority protection or restoration actions listed in or derived from an approved local water management plan or address pollutant load reductions prescribed in an approved TMDL.	30
Plan for assessing the programs impact and capacity to measure project outcomes.	20
LGU capacity to implement the local grant program processes and protocols.	10
Total Points Available	**100**

Table A-5 *Soil Erosion and Drainage Law Compliance Ranking Criteria* *Subprogram 1: Soil Erosion*	Maximum Points Possible
Anticipated water quality benefits relative to cost.	30
Relationship to a Plan: The proposal is clearly based on priority protection or restoration actions listed in, or derived from, an eligible water management plan.	15
% of LGU lands impacted by the eligible activity based on an accepted definition of high priority areas (e.g. map of highly erodible lands, definition of erosion problem areas via a TMDL, WRAPS, or other study) (i.e. total priority erosion area lands within the jurisdiction and % to be addressed by the activity)	20
LGU capacity to implement the local grant program processes and protocols.	10
Consistency with program purposes.	25
Total Points Available	**100**

Minnesota Board of Water & Soil Resources