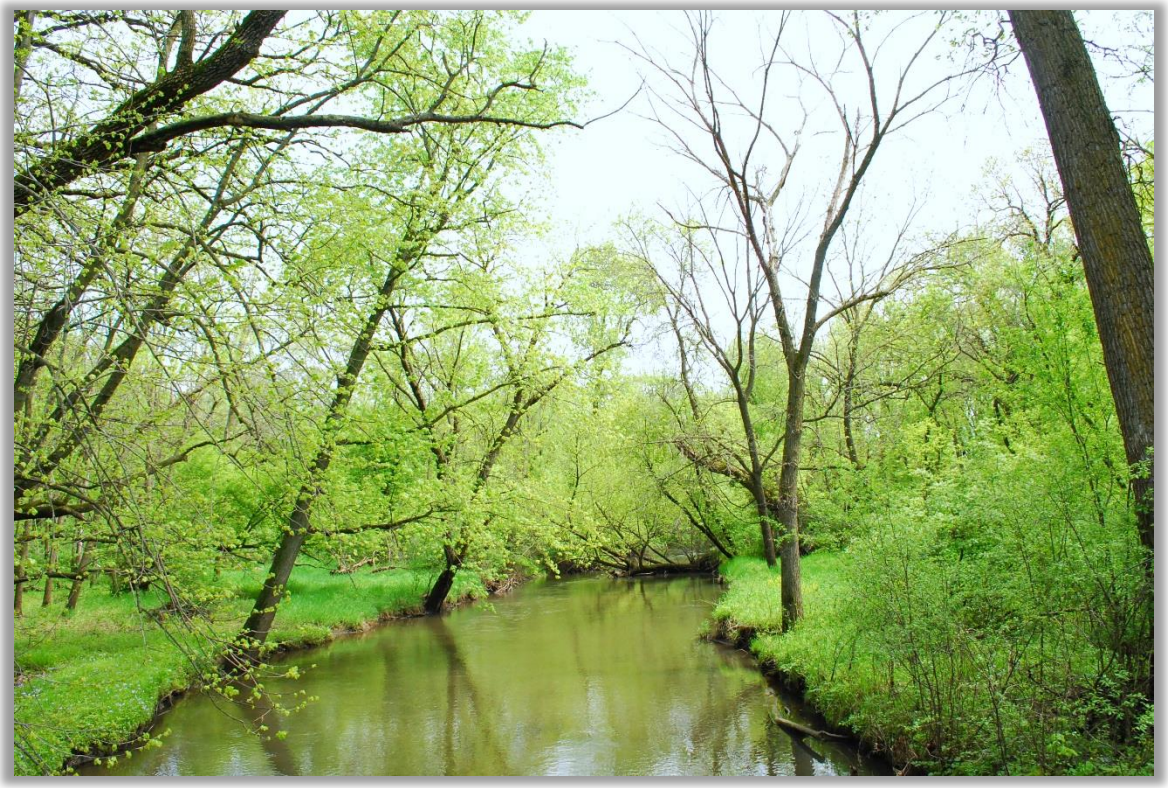
Clean Water Fund Appropriations

Annual Report to the Legislature



Minnesota Board of Water & Soil Resources

March 1, 2016

CLEAN WATER LAND & LEGACY AMENDMENT

Pictured on the front cover:
Top: Dobbins Creek, near Austin, Minn., part of the Targeted Watershed Program.
Bottom left: Crow Wing County's Serpent Lake.
Bottom center: Producers gather around a sediment receptor on a newly installed bioreactor in Nicollet County.
Bottom right: Construction of the new bank along the Knife River in Lake County.

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BWSR is reducing printing and mailing costs by using the Internet to distribute reports and information to wider audiences. This report is available at www.bwsr.state.mn.us/cleanwaterfund and available in alternative formats upon request.

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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.

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 2015, 1st Special Session, Chapter 2, Article 2, Section 7. This requires BWSR to submit "to the legislature by March 1 each even-numbered year a 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) 2016 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 2015 Legislative Session passed FY 2016 Clean Water Fund appropriations of $56.8 million to BWSR for the implementation of nonpoint source pollution reduction programs. As of March 1, 2016:

- Governor Dayton submitted a proposal for a Minnesota Conservation Reserve Enhancement Program (CREP) in late 2015. In support of that proposal, $9.0 million has been allocated for implementation of that program. An additional $4.88 million for permanent conservation easement projects to establish buffer strips adjacent to public waters and $1.75 million for conservation easements in wellhead protection areas will be used to support the program if the CREP proposal is accepted. Our agency partners with Soil and Water Conservation Districts (SWCDs) to implement these conservation easement programs.
- We oversee $500,000 of contracted services with the Conservation Corp of Minnesota and Iowa for installing and maintaining conservation practices.
- We awarded approximately $11.9 million through a competitive grant process for high priority projects and practices that protect and improve water quality. Projects that receive awards are required 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 Statutes 114D.50, Subdivision 4 and 3.303, Subdivision 10. Table 1 summarizes the programs and funding allocated under the appropriations.
- $11 million was appropriated in FY 2016 to supplement, in equal amounts, each soil and water conservation district to support local capacity and delivery of soil and water conservation programs and projects. Each district will receive $100,000 in FY 2016 because of this appropriation.

Table 1: Summary of FY 2016 Clean Water Fund Appropriations to BWSR

Program	FY16 Appropriation	Description
Accelerated Implementation*	$6.0M	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*	$750K	Funds grants to be used for community partners within an 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.
Conservation Reserve Enhancement Program (CREP)	$9.0M	Supports implementation of a CREP aimed at restoring surface water quality in areas targeted for nutrient reductions and protecting sensitive groundwater and drinking water resources.
Critical Shoreland Protection-Permanent Conservation Easements	$1.0M	Purchases permanent conservation easements to protect lands adjacent to public waters with good water quality but threatened with degradation (Pilot program).
Local Capacity	$11.0M	Provides grants to SWCDs to supplement, in equal amounts, each district's general service grant.
Multipurpose Drainage Management*	$750K	Provides funding for implementation of a conservation drainage/multipurpose drainage water management program in consultation with the Drainage Work Group to improve surface water management under the provisions of 103E.015.
One Watershed, One Plan	$2.1M	Accelerates implementation of the State's Watershed Approach through the statewide development of watershed-based local water planning that is synchronized with Watershed Restoration and Protection Strategies (WRAPS) and Groundwater Restoration and Protection Strategies (GRAPS).
Oversight, support, accountability reporting	$950K	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.
Projects and Practices*	$10.19M	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.
Restoration Evaluations	$84K	Provides a technical evaluation panel to conduct up to ten restoration evaluations under Minnesota Statutes, Section 114D.50, Subdivision 6.

Program	FY16 Appropriation	Description
Riparian Buffer or Alternate Practices	$2.5M	Provides grants to enhance compliance with riparian buffers or alternative practices.
Riparian Buffer Conservation Easements	$4.88M	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.
Targeted Watershed Demonstration Program*	$4.88M	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.
Tillage and Erosion Transects	$500K	Systematically collects data and produces statistically valid estimates of the rate of soil erosion and tracks the adoption of high residue cropping systems in the 67 counties with greater than 30% of land in agricultural row crop production.
Washington County Grey Cloud Slough Habitat Improvement	$520K	Funds a water quality improvement project in Washington County that will improve water quality and restore an essential backwater aquatic area by reconnecting Grey Cloud Slough to the main channel of the Mississippi River Area.
Wellhead Protection Conservation Easements	$1.75M	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.

**Competitive grant process*

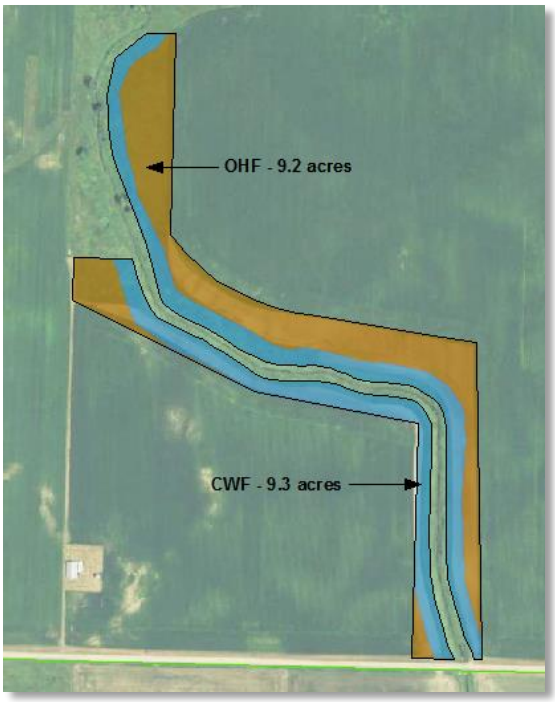
Clean Water Fund Conservation Easement Programs

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 on 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.

Leveraging Buffers for Multiple Benefits

This 18.5 acre easement in Redwood County has a 100-foot Clean Water Fund buffer (pictured in blue) that provides water quality benefits to a tributary that outlets into the Cottonwood River. That buffer is matched by 100 feet of Outdoor Heritage Fund buffer (pictured in tan), providing more acreage for wildlife habitat. The site is set to expire from the Conservation Reserve Program (CRP) and was put into permanent protection through Reinvest in Minnesota (RIM). In addition to this site, neighboring landowners have RIM easements that add to the overall benefits to water and wildlife.

Landowner Diane Jensen is actively involved in seeding the easement with a diverse group of vegetation. She manages for pollinators, removes buckthorn by hand, and has used other practices to manage her land. It's a success story, and a clear demonstration of how both funds - and the enthusiasm and commitment of local landowners - can be leveraged to maximize benefits for water and wildlife.



Targeting Critical Lands

Minnesota is experiencing a significant loss of grasslands – further complicated by the expiration of over 500,000 acres of Minnesota Conservation Reserve Program (CRP) contracts over the next five years. 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.

Minnesota CRP Status	
Acres expiring over next 5 years	**- 598,000**
Expected acres retained based on recent average	+ 299,000
Minnesota CREP	+ 100,000
Projected net loss of acres*	**- 199,000**

* 2015 - 2019

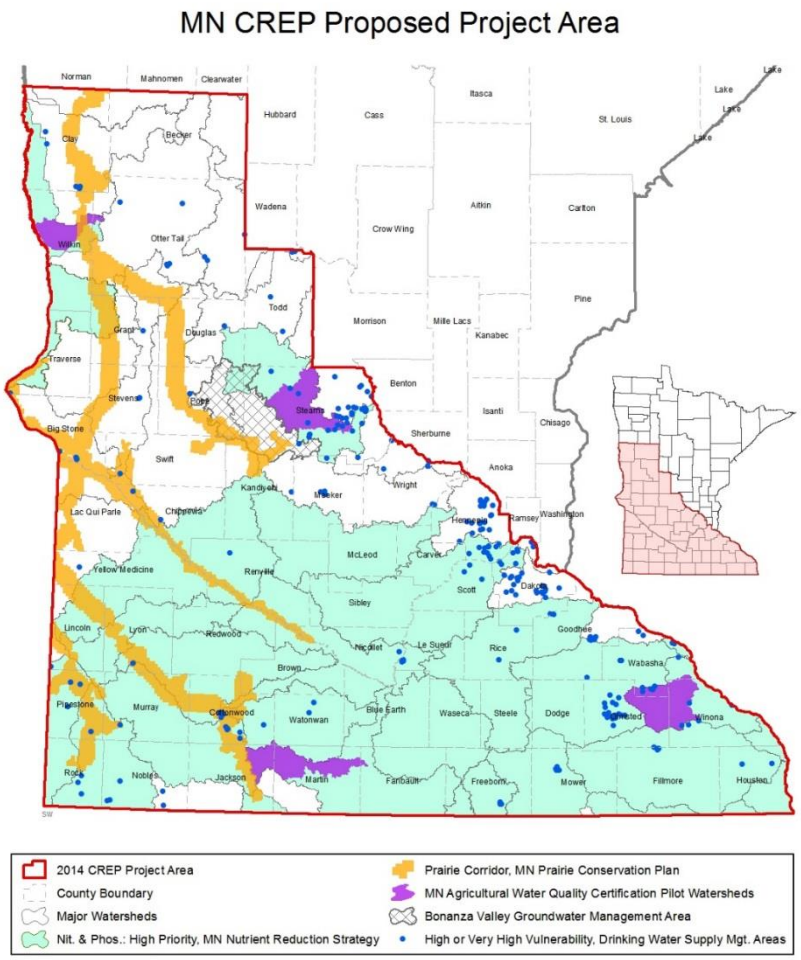
The Minnesota CREP Proposal

In the fall of 2014, BWSR, the Department of Agriculture, the Department of the Health, the Department of Natural Resources, and the Pollution Control Agency began work on developing a Conservation Reserve Enhancement Program (CREP) proposal. Minnesota is ready to implement a CREP that will directly address resource problems with strategic, long-term solutions, yielding significant progress for the State's water quality and habitat needs and serving as a national model for local-state-federal partnerships.

The CREP will use the nationally recognized state Reinvest in Minnesota (RIM) easement program and the USDA Farm Service Agency (FSA) Conservation Reserve Program (CRP). A five-year program, it will enroll 100,000 acres prioritized and targeted for water quality and habitat.

Federal CRP Conservation Practices (CP) focus on four main areas:

- **Riparian Lands - Grass Filter strips (CP 21)**
  - Acreage Goal: 50,000 acres
- **Wetland Restoration – non- floodplain (CP 23a)**
  - Acreage Goal: 30,000 acres
- **Wetland Restoration - Floodplain (CP 23)**
  - Acreage goal: 15,000 acres
- **Wellhead Protection Areas (CP 2)**
  - Acreage Goal: 5,000 acres



On December 15, 2015, Governor Dayton submitted the CREP proposal to the United States Department of Agriculture. The project area for the proposed CREP focuses on 24.4 million acres in 54 counties in the southern and western regions of Minnesota, which are the dominant agricultural regions of the State.

The $795 million proposal allows for up to a 80:20 federal-to-state match for funds. The following FY 2016 appropriations to BWSR in the conservation easement program are being held to support the State CREP commitment:

- Riparian Buffer Conservation Easements: $4.88 million
- Wellhead Protection Conservation Easements: $1.75 million
- CREP: $9.0 million

Outcomes

The $15.6 million the State has appropriated through BWSR's easement programs in FY 2016 will leverage up to $62.5 million in federal funding. The combined funds could permanently protect up to 10,000 acres for water quality and wildlife habitat.

CREP Overall Outcomes

Changing the land cover of 100,000 acres of annual cropland to perennial vegetation will provide significant nitrogen, phosphorus, and sediment load reductions, including:

- 32,000 pounds of total phosphorus per year
- 2,400,000 pounds of total nitrogen per year

- 205,000 tons of sediment per year

Additional benefits include restored hydrology, increased filtration and enhanced habitat for resident and migratory wildlife.

A decision is anticipated on the CREP proposal in spring 2016. Should the USDA not move forward with a Minnesota CREP, the appropriated State funds will continue to be used to support the nationally recognized Reinvest in Minnesota (RIM) Reserve program, for which interest has always exceeded available funding.

Critical Shoreland Protection-Permanent Conservation Easements

BWSR is currently developing this new program, which will provide permanent protection through easements purchased along public waters whose water quality is at risk.

Clean Water Fund Competitive Grants Program

Interest in our Clean Water Fund Competitive Grants Program has always exceeded available funding, as demonstrated in Figure 2. 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 2016, our agency's Competitive Grants Program included Projects and Practices, Accelerated Implementation, Community Partners, and the Multipurpose Drainage Management Program. Funding for these programs was provided under Laws of Minnesota 2015, 1st Special Session, Chapter 2, Article 2, Section 7. We distributed appropriated program funds for the Competitive Grants Program as indicated in Figure 1.

The Clean Water Fund Competitive Grants 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 17, 2015:

Figure 1. FY 2016 CWF Competitive Grants Applications

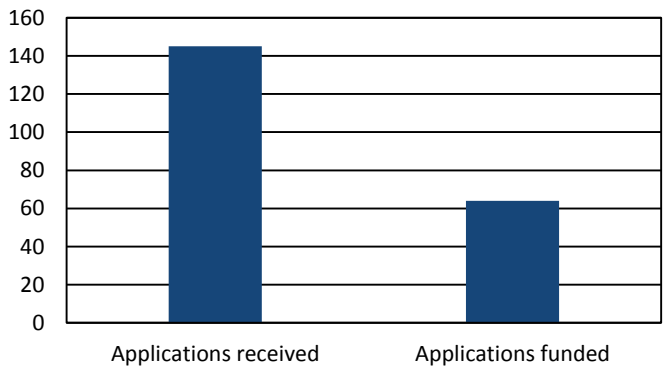
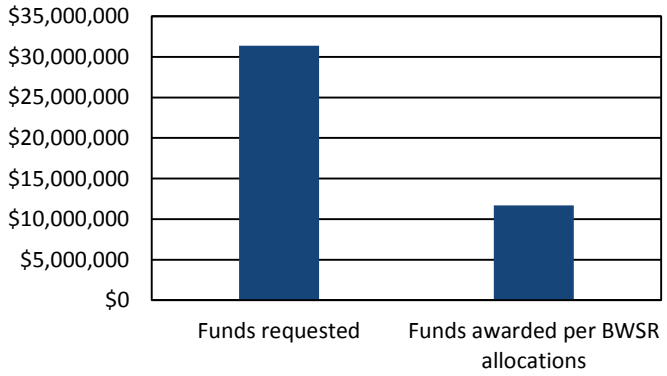


Figure 2. FY 2016 CWF Competitive Grants Funding



http://www.bwsr.state.mn.us/cleanwaterfund/fy2016/FY16_CWF_Competitive_Grants_Policy_FINAL.pdf

Table 2: Clean Water Fund Applications Funded per Grant Program		
Grant Program	**Applications Funded FY16**	**Total Funds Awarded FY16**
BWSR Board Approval, December 2015		
Projects and Practices	35	$8,895,255
Accelerated Implementation*	19	$2,006,078
Community Partners	4	$403,000
Multipurpose Drainage Management	6	$675,000
Total	**64**	**$11,979,333**

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

FY 2016 Competitive Grant Process

BWSR opened the FY 2016 Competitive Grant application from July 6 through August 28, 2015. Staff conducted an information and outreach session to review the grant programs and criteria, held on August 6, 2015. 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 145 applications for these competitive grants, and the total amount requested was more than $33 million.

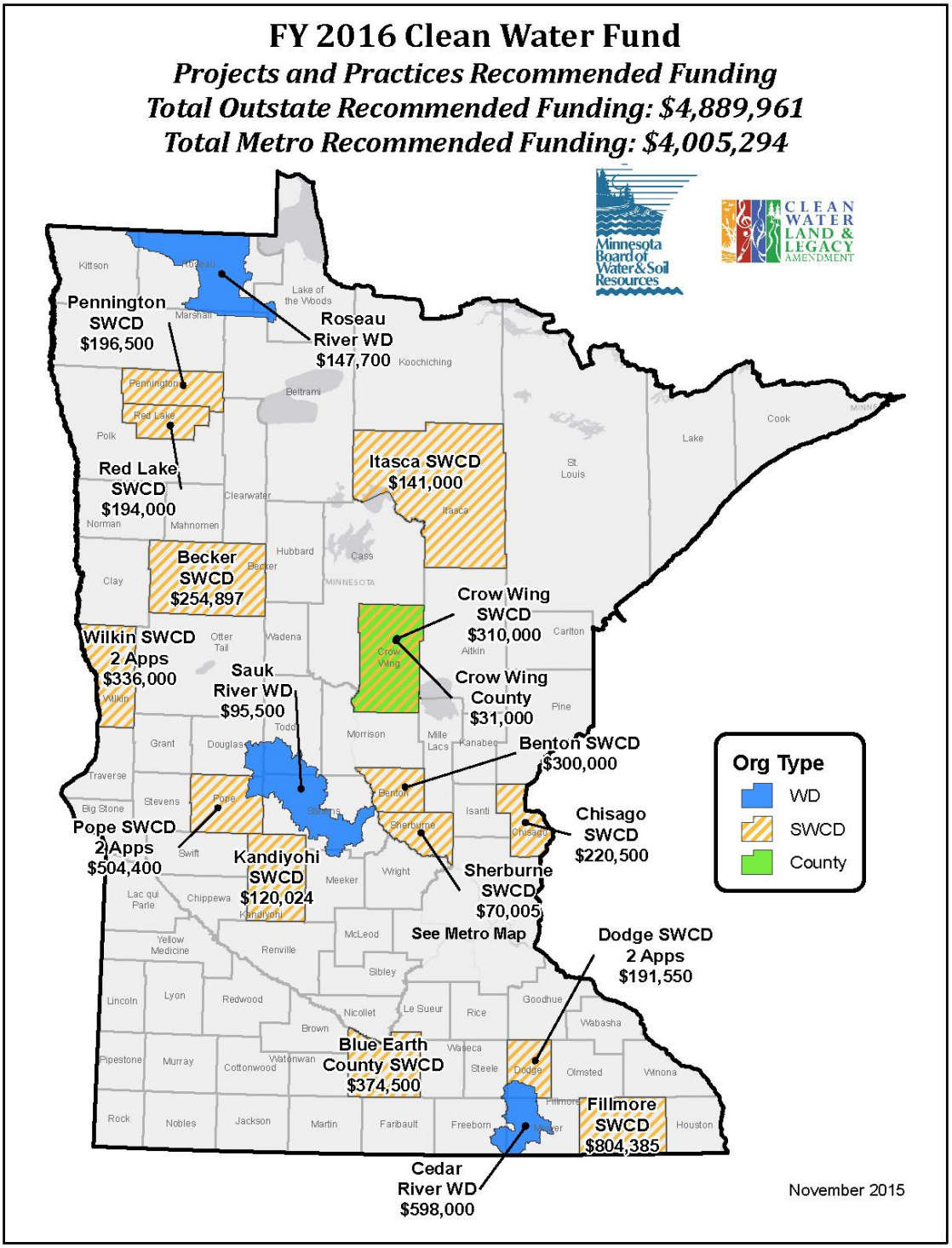
BWSR allocates Clean Water Funds through an interagency decision-making process that includes the Minnesota Department of Agriculture, the Department of Natural Resources, the Minnesota Pollution Control Agency, and the Minnesota Department of Health with the goal of effectively coordinating water quality 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 November 10, 2015 and December 8, 2015, recommending it be forwarded to the BWSR Board. The BWSR Board Grants Program and Policy Committee reviewed the funding recommendation on November 12 and December 15, 2015. The BWSR Board approved the final funding recommendations for the FY 2016 Clean Water Fund Competitive Grants on December 16, 2015, 64 projects, totaling $11,979,333 in grant funding.

The BWSR Board specified a deadline for completion and approval of the work plans by February 19, 2016 and grant execution by March 18, 2016.

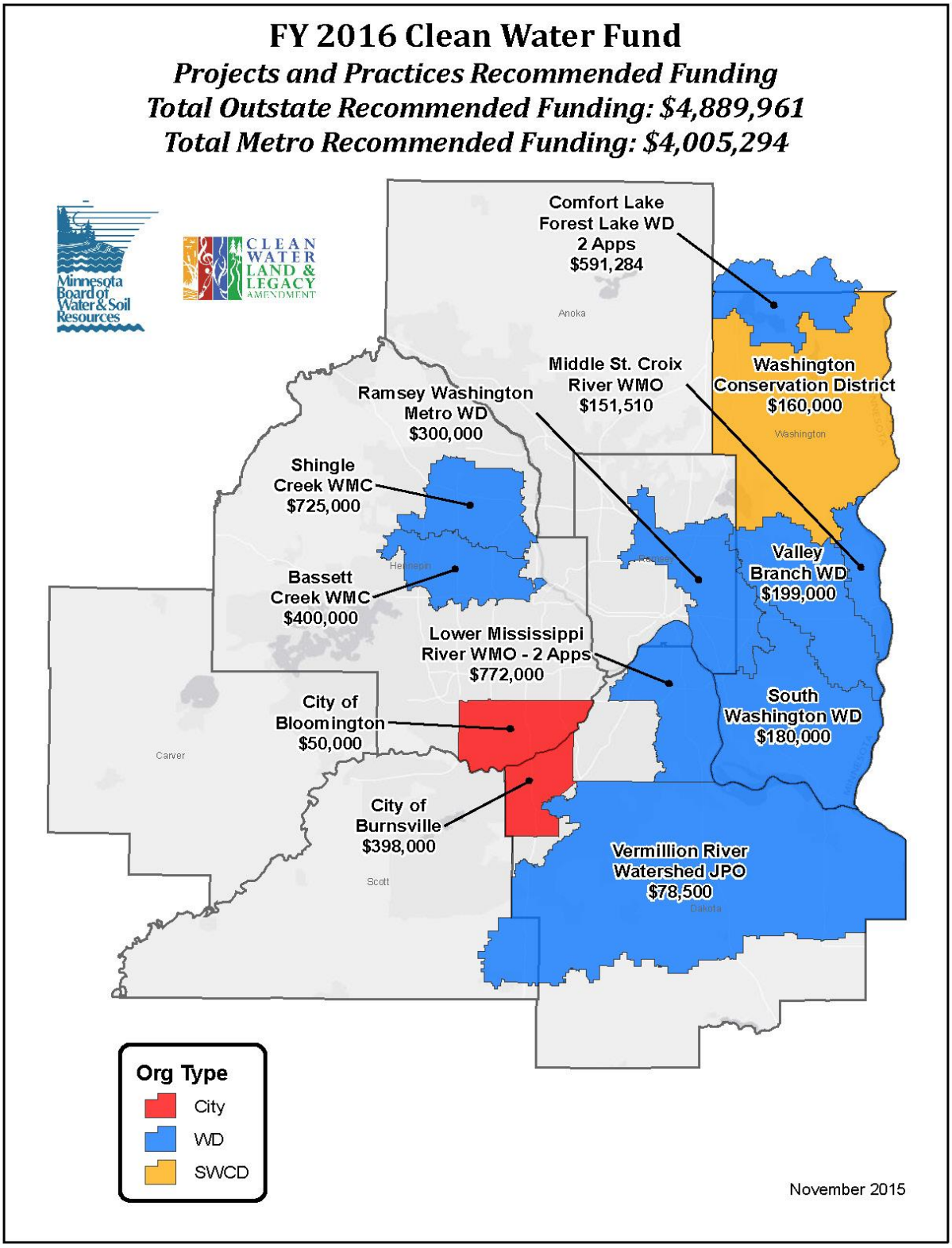
FY 2016 Allocation Shift between Grant Categories
BWSR had $675,000 available in Community Partners funding for FY 2016 but received only $403,000 in requests. Of the remaining $272,000, $6,078 was shifted to the Accelerated Implementation Grant program to fully fund a specific project. The Accelerated Implementation Grant program now contains $2,006,078 in funds. $245,255 was shifted to the Projects and Practices program. The Projects and Practices program now contains $8,895,255 in funds.

FY 2016 Clean Water Fund Competitive Grant Awards



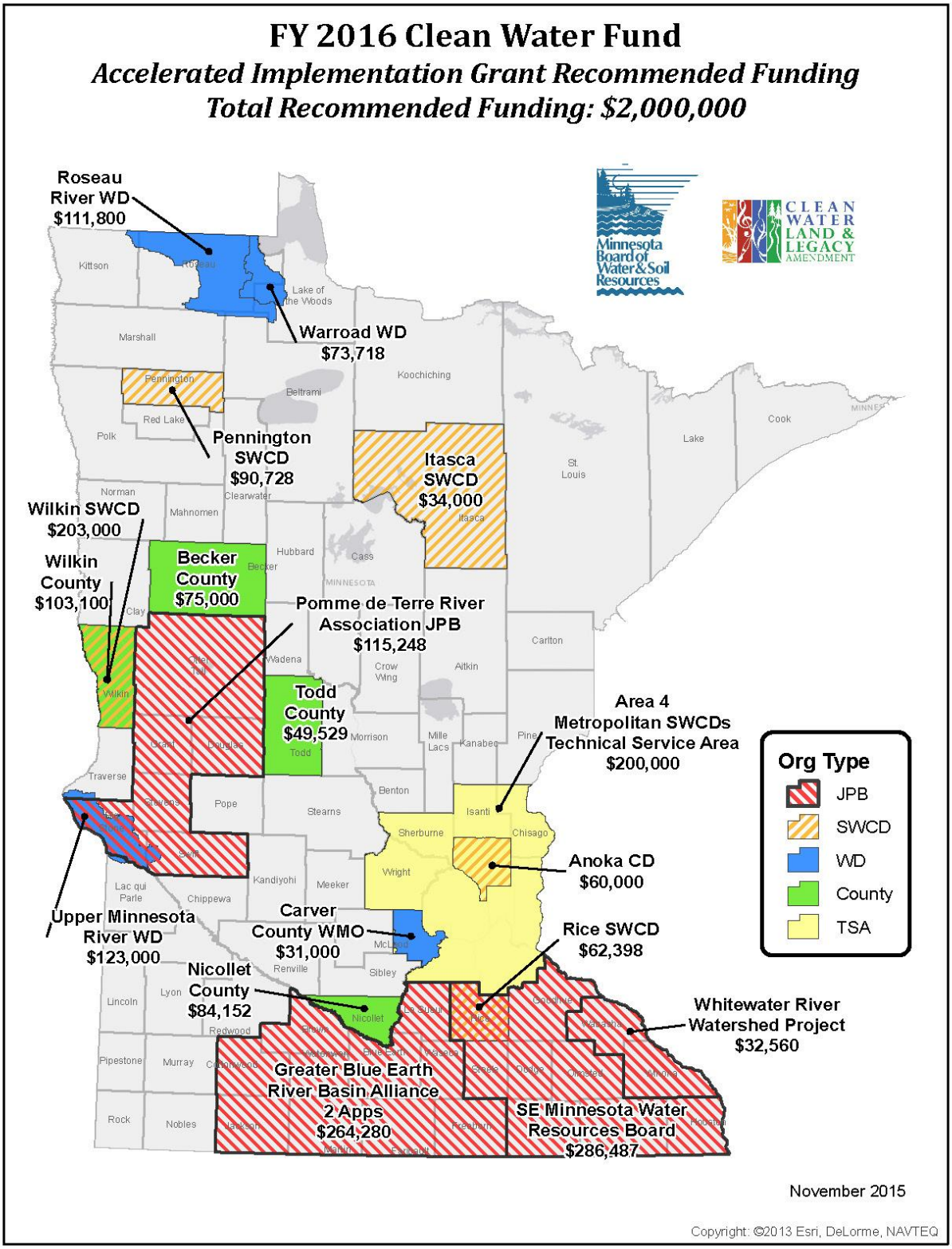
Projects and Practices Grants: Outstate

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.



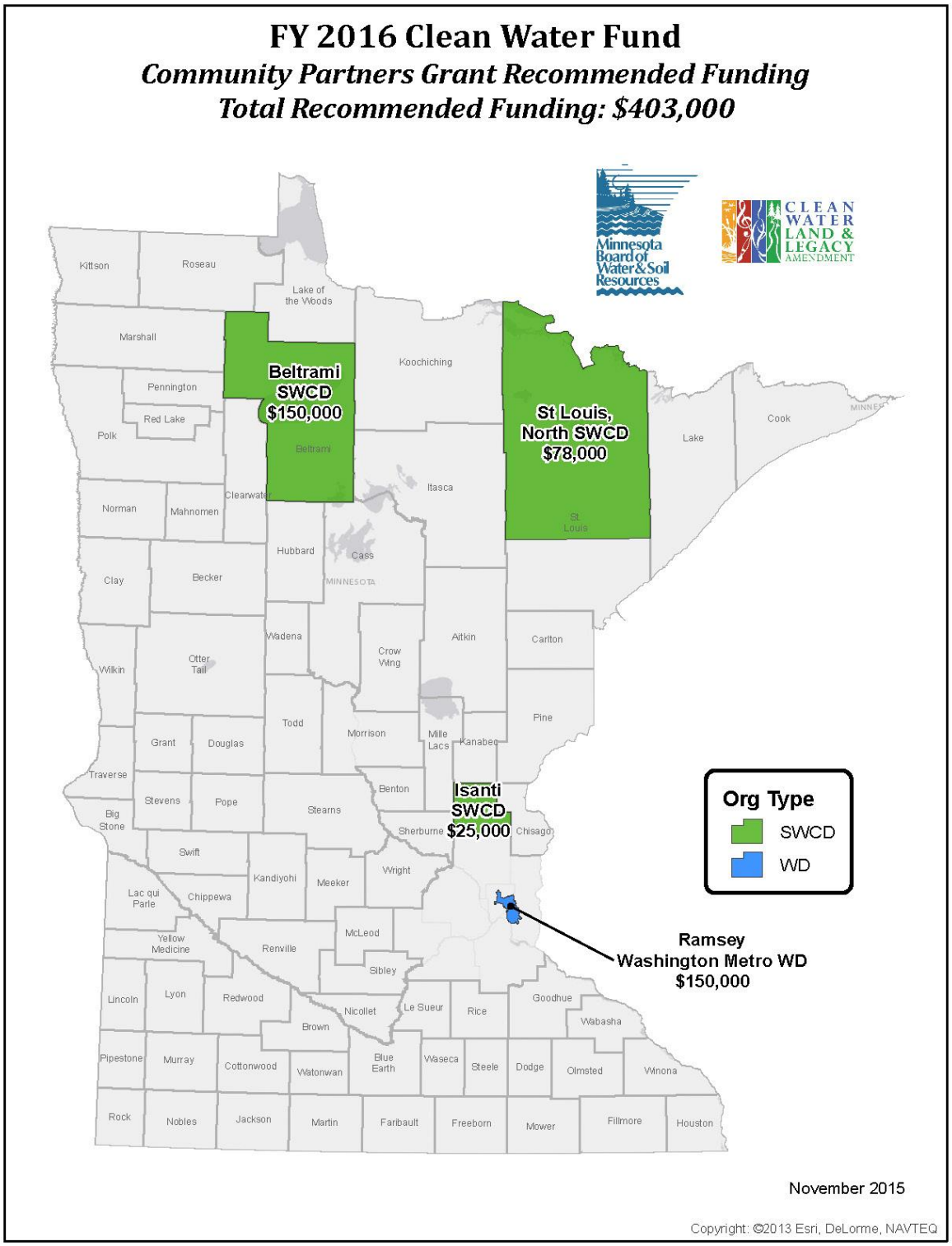
Projects and Practices Grants: Metro

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.



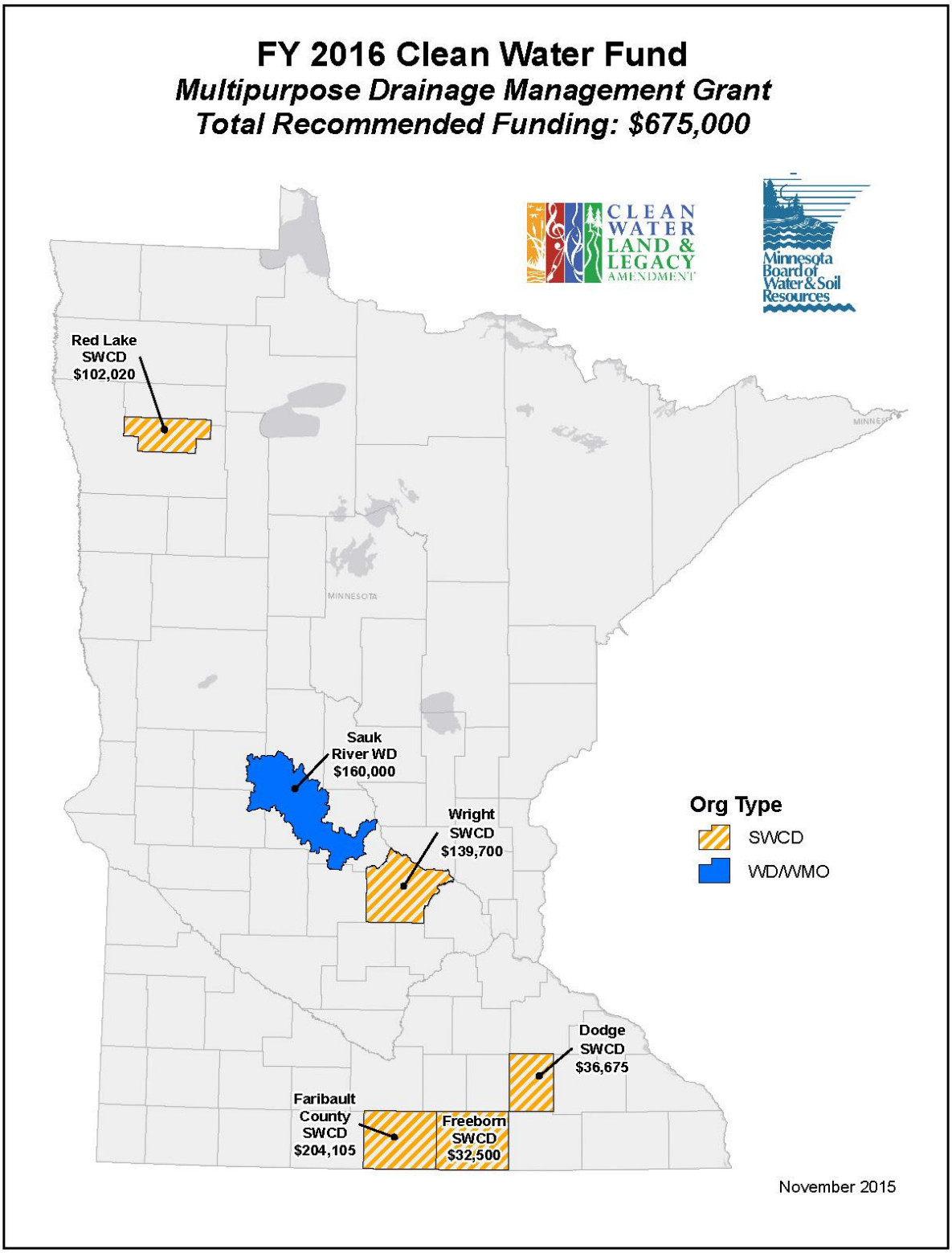
Accelerated Implementation Grants: Statewide

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.



Multipurpose Drainage Management Grants: Statewide

The purpose of these funds are implementation of a conservation drainage/multipurpose drainage water management program in consultation with the Drainage Work Group to improve surface water management under the provisions of 103E.015.

Targeted Watershed Program

In 2013, the Minnesota Legislature passed Laws of Minnesota 2013, Chapter 137, Article 2, Section 7(a), requiring BWSR, using Clean Water Fund appropriations, to award competitive grants to local government units that will result in a significant reduction in water pollution in a selected subwatershed. Priority in making grants must be given to the three to six best designed plans each year. Based on this legislation, BWSR created and implemented the Clean Water Fund Targeted Watershed Demonstration Program (TWDP).

Seven watersheds were selected as part of the demonstration program. At the time of this report, project watersheds are one year into a four-year grant period. In two of the seven watersheds, significant federal and private dollars were leveraged as a result of receiving this funding and will accelerate implementation efforts. To assess the progress being made in each of the selected watersheds, milestone schedules have been established along with identified goals that are specific, measurable, results-orientated and time-bound. To date, each of the seven watersheds are on track to meet their watershed reduction goals. A report on the program was submitted to the Legislature on January 15, 2016, and can be found in Appendix B.

BWSR is currently seeking nominations for the FY 2016/FY 2017 Targeted Watershed Program. The application period closes on March 9.

Outcomes and effectiveness

BWSR funded thirty-five grant applications through the Projects and Practices Grants: 29 are for water bodies listed as impaired that have a completed Total Maximum Daily Load study (TMDL); 4 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 2 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 FY 2016 will remove 16,468 pounds of phosphorus and 19,218 tons of sediment from Minnesota waters.

Applicant	Title	Sediment Outcomes (tons/year)	Phosphorus Outcomes (pounds/year)
Crow Wing SWCD	Big Trout High Quality Lake: County Road 66 Stormwater Project	40	40
Wilkin SWCD	Otter Tail River Streambank Restoration and Protection	440	-
Becker SWCD	Becker County Targeted Phosphorus Reduction and Lake Protection Project	73	176
Pope SWCD	2016 Lake Minnewaska Targeted Subwatershed Project Phase III	518	466
Burnsville, City of	Keller Lake (Crystal Beach Park) Storm Water Quality Improvement Project	-	78
Lower Mississippi River WMO	LMRWMO WRAPS Internal Phosphorus Loading Control: Lake Augusta and Sunfish Lake	-	317

Applicant	Title	Sediment Outcomes (tons/year)	Phosphorus Outcomes (pounds/year)
Middle St. Croix River WMO	Lake St. Croix Direct Discharge Stormwater Retrofit Phase II	2	-
Lower Mississippi River WMO	Thompson Lake Water Quality Improvement and WRAPS Implementation	12	48
Shingle Creek WMC	Becker Park Infiltration Project	-	118
Cedar River WD	Cedar River Capital Improvement Plan Implementation	338	168
Sherburne SWCD	Birch Lake Stormwater Retrofits	-	3
Comfort Lake-Forest Lake WD	Moody Lake Wetland Rehabilitation	-	445
Bassett Creek WMC	Northwood Lake Improvement Project	-	22
Benton SWCD*	Mayhew and Big Elk Lake Phosphorus Reduction Program	7,938	6,846
Pope SWCD	2016 Lake Emily Watershed BMP Targeted Implementation Project	1,121	960
Blue Earth County SWCD	Crystal Lake Watershed Phosphorus Reduction Project	1,638	2,209
Wilkin SWCD	Ottertail River TMDL Water Quality Improvement Projects to Reduce Turbidity Phase V	1,375	1,870
Dodge SWCD*	Dodge Saturated Buffer Project Implementation	-	-
South Washington WD	SWWD Lakes Targeted Retrofit	21	-
Chisago SWCD	2016 St. Croix River Escarpment Taylors Falls Gully Stabilization	196	43
Sauk River WD	Chain of Lakes Targeted Reduction	6	20
Ramsey-Washington Metro WD	Spent Lime Treatment System for Wakefield Lake	9	45
Comfort Lake-Forest Lake WD	Forest Lake Wetland Treatment Basin Implementation	-	56

Applicant	Title	Sediment Outcomes (tons/year)	Phosphorus Outcomes (pounds/year)
Valley Branch WD	Silver Lake Watershed Treatment Project	-	15
Crow Wing County**	Cost-Share Program to Seal Wells in Sensitive Groundwater Aquifers	-	-
Red Lake SWCD	2016 Red Lake River Subwatershed (63025) Improvement Projects	690	590
Kandiyohi SWCD	Kandi Creek Watershed	542	801
Fillmore SWCD*	Field to Stream Partnership Phase II Implementation	1,504	1,070
Itasca SWCD	2016 Itasca SWCD Stormwater Implementation Grant	2	8
Roseau River WD	CD 8 Subwatershed Sediment Reduction Project	275	-
Vermillion River Watershed JPO	King Park Stormwater Reuse Project	1	4
Dodge SWCD	Middle Fork Zumbro River Critical Source Area Restoration	49	-
Washington Conservation District	Ag BMP Soluble P Reduction	-	50
Bloomington, City of***	2016 Anti-Icing Production Upgrades	-	-
Pennington SWCD	CD-96-21-16 Gully Control and Buffer Implementation	2,428	-

*These projects include nitrogen reductions.

- Benton SWCD: 337 pounds/year
- Dodge SWCD: 2,700 pounds/year
- Fillmore SWCD: 15 pounds/year

**This project will seal 80 wells.

***This project will remove 300 tons of chloride per year.

Clean Water Fund in Action

BWSR works hard to tie Clean Water Fund project pollution reduction estimates to local and State water quality goals. From 2010-2016, through 753 CWF awards, more than 4,574 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.

These conservation practices are estimated to reduce **100,500** tons of sediment per year and prevent **79,300** pounds of phosphorus per year from entering Minnesota 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 critical. It is important to understand that project impacts can vary depending on the pollutant, reduction goals, scale and scope of plan. 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 begin to see the impact of this work in a relatively short time frame, but the larger the scale, the longer it takes to see outcomes.

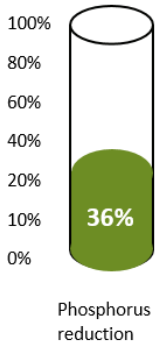
Some FY 2016 project examples include:

Field-to-Stream Partnership Phase II Implementation
Fillmore SWCD

This project will install priority conservation practices in three (3) sub-watersheds of the Root River. In preparation for Best Management Practice implementation, extensive planning was completed using LiDAR terrain and other analysis to prioritize practices. The priority practices are grassed waterways, water and sediment control basins and feedlot runoff control projects. These practices will keep an estimated 1,504 tons of sediment and 1,070 pounds of phosphorus out of the Root River annually.

Mayhew and Big Elk Lake Phosphorus Reduction Program
Benton SWCD

The district will work with livestock producers to implement best management practices like vegetated filter strips, nutrient management, and feedlot pollution control to reduce runoff and improve water quality within the Mayhew and Big Elk Lake watersheds. The district estimates this will reduce phosphorus by 6,486 pounds a year and sediment by 7,938 tons per year.

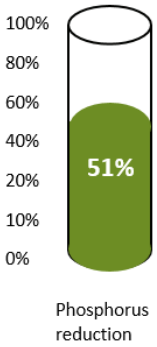


Gully Control and Buffer Implementation
Pennington SWCD

This project will install conservation practices to stabilize three county ditch systems and reduce erosion. The district estimates that these practices will keep 2,428 tons of sediment from entering the Red Lake River near St. Hilaire, the point at which the river becomes impaired for turbidity.

Moody Lake Wetland Rehabilitation
Comfort Lake-Forest Lake Watershed District

This project will implement three wetland rehabilitations within the Moody Lake watershed. Rehabilitating the degraded wetlands in the northwest portion of the watershed is expected to achieve 80% of the watershed phosphorus load reductions needed for Moody Lake to meet water quality standards.



Telling the Story

The Sand Hill River: Big project, small watershed

Taking a watershed approach to conservation isn't necessarily a new concept in resource management, but it's something we're hearing more and more of in Minnesota. In some parts of the State, it's been an informal part of local conservation for generations. In the northwest part of the State, where the Sand Hill river cuts through the southern half of Polk County, a whole host of conservation professionals and agencies have been working together for years to turn around a river system that was largely diverted, ditched, and drained throughout the early 1900s.

To understand the river's current challenges, we have to travel back in time to the early 1950s. The Sand Hill River had been diverted from its original channel into a seemingly more useful straight ditch between the northern Minnesota towns of Fertile and Beltrami. In the 1950s, noting bank erosion and a deepening of the channel because of the straightening, the Army Corps of Engineers designed and installed four very large drop structures to try and slow down the water as it moved downstream.

Sixty years later, faced with higher overall precipitation, more frequent significant rainfall events, more aggressive agricultural practices, and record-setting floods, those structures are no longer sufficient. Not only are they struggling to keep up with greater demands, these structures also hinder fish passage and natural stream channel habitat. What to do?

One of the Army Corps drop structures installed between Fertile and Beltrami, Minnesota on the Sand Hill River. This structure will be modified as part of the project.

The answer for the Sand Hill River includes a watershed approach. While small projects were used to try to address emerging issues like fish passage over the years, in 2011 local conservation professionals started working together in a concerted effort. The Sand Hill River Watershed District, along with East Polk Soil and Water Conservation District (SWCD), started finding upstream landowners interested in implementing small, strategically placed, farmable water retention practices called "water and sediment control basins." These structures help hold water back for a longer duration of time than a standard tile intake system. They can be farmed through, so they do not interfere with cropping, and they are cost-shareable with State and federal program money.

East Polk SWCD has received over $1.1 million from the Clean Water Fund for implementation efforts in the Sand Hill River Watershed, with more than $300,000 coming directly from the Sand Hill River WD during that time. These practices set the stage for addressing the in-stream problems in the straightened stretch. Using a 2009 design developed in partnership by the Sand Hill River WD, Houston Engineering, and the MN Department of Natural Resources, a multi-purpose solution was created that addressed the erosion and sedimentation issues and fish passage and habitat.

West Polk SWCD was awarded $475,000 from BWSR through the CWF to fund portions of the project's construction. Sand Hill River WD contributed an additional $118,000 and the SWCD leveraged another $100,000 from the Enbridge Corporation's "Eco-Footprint" grant program. US Army Corps of Engineers and Lessard-Sams Outdoor Heritage funds will be used to fund other project components. When all is said and done, the project as a whole is estimated to reduce the amount of sediment entering the Sand Hill River, which is impaired for turbidity, by over 50% or approximately 1,200 tons of sediment per year, per mile over the five-mile project area.

Nicole Bernd, West Polk SWCD said of the project: "It's been really impressive seeing all the different partners and everyone making a genuine effort to work together in the Sand Hill Watershed, from all the work done upstream to here, it's exciting."

A shining example of collaboration and partnerships, this project includes eight funding sources, and many more partners including: West Polk SWCD, East Polk SWCD, Sand Hill WD, MN Board of Water and Soil Resources, MN DNR Ecological and Water Resources, and DNR Fisheries, Lessard-Sams Outdoor Heritage Council, Houston Engineering, NRCS, Red River Valley Conservation Service Area engineers, and most importantly over 100 local landowners. The result of these partnerships and collaborations will be a more fishable, swimmable river system, with cleaner water, more suitable fish habitat and connectivity, and the restoration of a small watershed's legacy in the Red River Valley.

Restoring Shingle Creek

Piece by piece, the Shingle Creek Watershed Management Commission (SCWMC) along with the cities of Brooklyn Park and Brooklyn Center, are restoring Shingle Creek. The eleven-mile-long Shingle Creek begins at the confluence of Eagle and Bass Creeks in Brooklyn Park, winding through a fully developed landscape in the heart of the metro before eventually discharging into the Mississippi River in Minneapolis.

In 2005 the City of Brooklyn Park started the process with help from the SCWMC. The partners completed a restoration project on 2,300 feet of Shingle Creek through a residential area in response to concerns from homeowners that erosion on the streambanks was cutting into their properties. They stabilized the banks using live stakes of willows and shrubs, removed a dam, and installed 32 rock vanes to address scouring in the channel.

Work on the Creek continued in 2011, this time with help from the Clean Water Fund (CWF). The City of Brooklyn Center, the SCWMC and Hennepin County Works used a $105,237 CWF grant to improve another reach of the Creek with rock vanes and tree pins, which help aerate the stream. Additionally, 5,000 feet of streambank received a native buffer. Finally, to address concern about stormwater runoff impacting water quality, a pond was added to provide pretreatment before the water entered Shingle Creek.

Top: A photo of the 2005 restoration.
Bottom: Riffle as part of the 2011 restoration.
Photos courtesy Diane Spector.

In 2014, the SCWMC received an additional $200,000 CWF grant to continue the restoration efforts over 1,400 feet of the Creek. Using a variety of conservation practices, this project is focused on addressing impairments for aquatic life.

In addition to the water quality improvements, the cities of Brooklyn Park and Brooklyn Center are working on a trail project along the Creek that will connect to the regional trail system, improving conditions for pedestrians and bikers along a portion of Brooklyn Boulevard, and creating outdoor learning spaces for Park Center High School and Brooklyn Junior High students.

The restoration project is ongoing, and the SCWMC's commitment to working in partnership with other agencies in the region shows no signs of slowing. It's not just Shingle Creek's water quality that benefits – it is improving habitat both for plant and animal life as well as the people that live, work, and play around its banks.

Conservation at work on the Knife

The waters of northeast Minnesota are one of the jewels in our state's crown. They are important natural resources, an economic driver, and a destination for tourists and sportspeople alike. Impaired watersheds are rare in this part of the State and the Knife River is one of them.

The Knife River plays an important role in the region for a number of reasons, and the river's water quality impacts Lake Superior. It is home to Minnesota's naturalized wild steelhead trout population.

The problem in the Knife River is turbidity – cloudy water – caused by soil erosion along the river's banks. Since 2010, the Lake County Soil and Water Conservation District (SWCD) and its partners have successfully designed and implemented several projects aimed at reducing the Knife River's turbidity, multi-benefit work that will make a difference both for water quality and wildlife habitat.

The SWCD identified five banks on the river that were priorities for stabilization, and in 2012 received a $221,000 Clean Water Fund (CWF) grant to stabilize the largest one. Flooding in the region delayed the project and work was finally completed during this last field season.

"It was a doozy," Lake SWCD Manager Dan Schutte said. "The scope was huge."

Pictured, top: Construction of the new bank. Pictured, bottom: Floodplain bench installed at the bank stabilization site on the Knife River.

The stabilized bank is 1,200 feet long and 80 feet high, which is quite a footprint. It was designed to follow the natural channel and has drawn interest from other districts as a demonstration site for this type of approach to river restoration.

The SWCD was able to leverage federal funding thanks to the CWF grant. The Great Lakes Commission awarded the district an additional $293,000 grant to work on additional streambank and channel stabilization projects along the Knife, so they were able to maximize their impact.

The SWCD estimates that through the CWF project alone, they'll reduce sediment loading to the river by 21%, which amounts to 750 tons of sediment a year. District staff are encouraged by what they've seen so far. Vegetation is taking off, and the restored banks are performing well with the river flow.

"You can already visibly see how it's keeping sediment out of the river," Schutte said. "We've set ourselves up for success."

Building capacity in Rock County

Nestled in the most southwest corner of Minnesota, Rock County is predominantly farmland, and selling conservation has at times been challenging. With the passage of the Legacy Amendment and the ability to pursue Clean Water Funds, the Rock SWCD was able to accelerate its work with landowners and producers to get conservation on the ground. Over the years, the Rock SWCD received Clean Water Funds to address feedlot problems, sewage treatment, and support an engineer the district shares with others in their Technical Service Area.

With support from the Clean Water Fund, the district began focusing on developing technology and mapping capabilities that would allow them to be more strategic in their conservation work, performing terrain analysis and using other data to determine where best management practices (BMPs) would be most effective within the county. Armed with these analyses, the district began working with landowners in those targeted locations to begin the implementation process.

Rock SWCD's Doug Bos meets with agency staff about Clean Water Fund projects.

"The Clean Water Fund really created a lot of opportunities for us," Doug Bos, Rock SWCD/Land Management Assistant Director said. "We've got projects completed that wouldn't have been possible without it."

Then historic rains fell, again and again. In 2014 and 2015, the county experienced significant flooding – a 500-year rain event –that hit the landscape particularly hard. Planned projects came to a screeching halt as flood recovery took priority. For Bos, though, there was one small silver lining in the heavy rains.

"When the rains hit, the office phone starts ringing off the hook."

As farmers in the area recognized the limitations of the practices they were using to prevent flooding and erosion, they turned to the SWCD for help.

Disaster appropriations provided some relief as a stop-gap, but the Clean Water Fund has been what has kept long-term work moving forward. Even then, there was simply more work than the district could reasonably accomplish. After the 2014 flooding, the district had more than 100 requests from landowners for conservation practices. They simply couldn't keep up.

That's why the capacity dollars that were included in the FY 2016-2017 Clean Water Fund appropriations are a game-changer for the SWCD, and many others like it.

"It's huge for us," Bos said. "With Clean Water Fund support we've been able to target and prioritize projects so we can put them in the ground where they're going to make the biggest difference, but we haven't had the staff to be able to get this work moving."

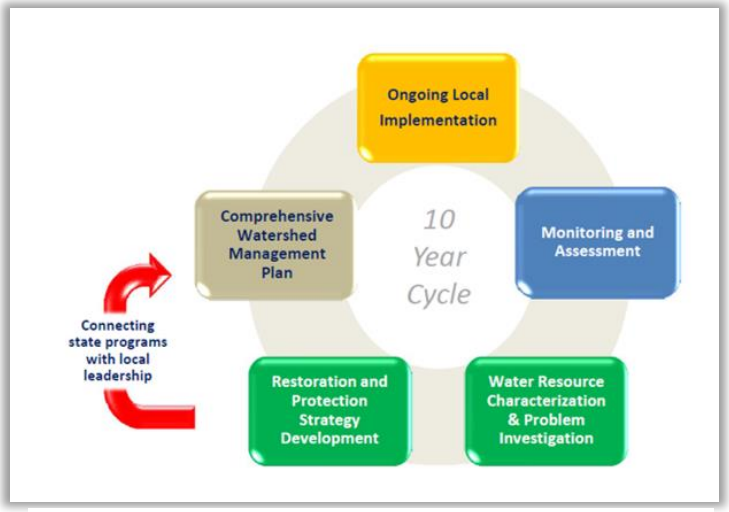
The Legislature's $22 million appropriation over the biennium, $11 million annually through the Clean Water Fund, means that each district is getting an additional $100,000 to increase their ability to provide technical assistance to landowners. The Technical Service Area that supports Rock and other SWCDs in the region received $241,000 for FY 2016 as well to increase the work they are able to do for the districts.

The support that the district has already gotten from its Technical Service Area engineering staff and Shared Services grants has been crucial in helping them get to this point, but those additional resources have allowed the district to hire a new conservation technician who will survey and design conservation projects to meet the county's significant landowner demand.

"The need for these practices is not going away, and our agricultural producers recognize that if these heavy rains become the norm, they're going to need to be more proactive," Bos said. "The capacity dollars mean we can deliver what they need, which benefits both the farmers and the environment."

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 framework.

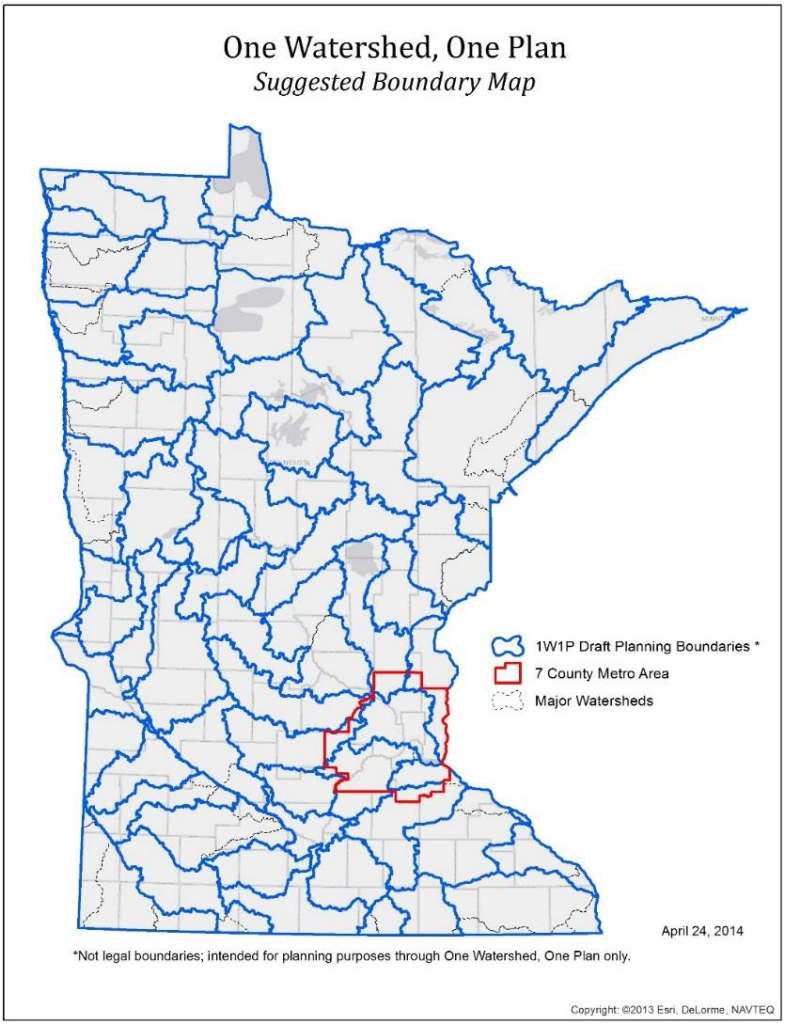


The Minnesota Water Quality Framework

One Watershed, One Plan

Background

The vision of One Watershed, One Plan is to align local water planning on major watershed boundaries with State strategies towards prioritized, targeted and measurable implementation plans. Achieving this vision is a multi-step process. In 2012, legislation was passed that authorized BWSR to adopt methods to allow comprehensive plans, local water management plans, or watershed management plans to serve as substitutes for one another; or to be replaced with one comprehensive watershed management plan. This legislation is referred to as One Watershed, One Plan.



In 2013, the BWSR Board adopted a set of Guiding Principles to direct and influence the program's future policies and procedures. In 2014, BWSR adopted the suggested watershed boundary framework and allocated Clean Water Fund grants appropriated in the FY 2014 biennium to five pilot projects to develop local water plans using this framework, current local water plans, State and local knowledge, and a systematic, science-based approach to watershed management. The resulting plans, developed over a two-year process, will address the largest threats that provide the greatest environmental benefits to each watershed.

In 2015, the Minnesota Legislature passed Minnesota Statutes § 103B.801, the Comprehensive Watershed Management Planning Program. This legislation defined the

purposes and further outlined the structure for the One Watershed, One Plan Program.

In 2016, the pilot watershed areas are wrapping up their work in developing plans and helping BWSR develop, test, and inform the One Watershed, One Plan program framework, policies, criteria, and guidance. The final One Watershed, One Plan program (moving from a pilot to a program) is anticipated to be adopted by the BWSR Board in April 2016 along with a grant program policy and request for proposals to implement planning grants associated with the FY 2016 appropriation for "assistance, oversight, and grants to local governments to transition local water management plans to a watershed approach" (Session Laws 2015, 1st Special Session, Chapter 2, Article 2, Section 7). These funds will be used to continue to support the program and provide planning grants to 12-14 new watershed planning areas over FY16 and FY17.

Nonpoint Priority Funding Plan

In June 2014, BWSR developed the Nonpoint Priority Funding Plan (NPFP) as required under the Clean Water Accountability Act and began utilizing the NPFP beginning with FY 2016. For grant and easement programs that invest funding in on-the-ground conservation, BWSR evaluated proposals based on the nine NPFP criteria while placing emphasis on the high-level State priorities laid out in the plan.

For FY 2016, BWSR emphasized (prioritized) the three high-level state priorities, which are:

- Restore those impaired waters that are closest to meeting state water quality standards.
- Protect those high-quality unimpaired waters at greatest risk of becoming impaired.
- Restore and protect water resources for public use and public health, including drinking water.

and added Cost Effectiveness to our Clean Water Fund Competitive Grant and Targeted Watershed Ranking Criteria as a result of the NPFP. The other criteria have previously been addressed in the ranking criteria, through eligibility requirements or program policy. Those criteria are:

- *Aligned with State Priorities:* Alignment of proposed activities with state priorities.
- *Locally Prioritized and Targeted:* Effective prioritization and targeting of proposed activities at the watershed scale.
- *Measurable Effects:* Capability of the proposed activities to produce measurable results at the watershed scale.
- *Multiple Benefits:* Secondary water quality or other environmental benefits of the proposed activities.
- *Longevity:* Expected lifespan of the proposed activities with proper maintenance or, for annual management practices, assurance that practices will be maintained for a specified period of time.
- *Capacity:* Readiness and ability of local water management authorities and partners to execute the proposed activities.
- *Leverage:* All non-Clean Water Fund dollars contributed for every dollar of Clean Water Fund money. Non-Clean Water Fund dollars include non-state dollars as well as state dollars from sources other than the Clean Water Fund.
- *Cost-Effectiveness:* Cost per unit of pollutant load reduced or prevented as compared against specific water quality goals – Clean Water Fund cost and total project cost.
- *Landowner Financial Need:* Increased financial assistance for low-income landowners.

Local Capacity

Legislative action in 2015 increased soil and water conservation districts services funding by $11 million for FY 2016. The increase recognizes the role SWCDs play in providing technical assistance to private landowners. It also recognizes new demands for SWCD services from:

1) increases in CWF on-the-ground implementation dollars,

2) Minnesota's new buffer law,

3) expansion of soil loss limits law statewide,

4) the Agricultural Water Quality Certification Program, and

5) a growing role in land-related groundwater issues.

The funding focuses on increasing SWCD capacity to address four resource concern areas—soil erosion, riparian zone management, water storage and treatment, and excess nutrients. Eligible activity categories include staffing, cost share/incentives, and technology/capital equipment. In FY 2016, grantees completed an initial request identifying their funding needs and the connection to their State-approved, locally adopted plan. Aimed at achieving additionality, these funds are intended to fill gaps in local capacity, increase delivery of essential conservation services, and accomplish critical soil and water conservation goals consistent with the following principles:

- Expand the level and/or variety of technical services districts and TSAs are able to deliver.
- Increase the amount of existing, targeted, and priority services necessary to address outreach to landowners and assist landowners in meeting land and water regulatory requirements.
- Extend high priority programs funded by short-term grant funds that are expiring.
- Add to, improve, or develop, staff skills so that skills better align with resource priorities identified by the District Board.

Technical Service Area (TSA) Funding

These funds invest in building the capacity of Non-Point Engineering Assistance TSA Joint Powers Boards to increase the capacity of soil and water conservation districts to provide highly skilled technical and engineering assistance to landowners. TSAs use these funds to invest in building regional capacity across the State to efficiently accelerate on-the-ground projects and practices that improve or protect water resources.

In October 2015, BWSR's Board awarded each of the eight TSA areas $241,000 for FY 2016.

Technical Training and Certification

Establishing conservation practices on private lands in Minnesota is critical to achieving state and federal goals for clean and sustainable water resources, healthy and sustainable soil resources, and abundant fish and wildlife. Conservation Technical Assistance requires statewide, core technical assistance capabilities, as well as capabilities tailored to the local priority resource concerns and conservation practices found in the diverse landscapes of Minnesota. Training and certification are key quality assurance elements of an effective conservation delivery system.

The following principles will guide the development of a new program for technical training and certification for conservation technical assistance in Minnesota:

- Integrates into a quality assurance framework for state-funded conservation practices.
- Addresses conservation planning, engineering practices and ecological sciences practices for agricultural, forested and urban lands.

- Coordinated with, but not duplicative of, nor dependent on, NRCS to meet requirements of both state and federal conservation programs.
- Does not preclude private technical assistance when available and cost effective.

BWSR, the Minnesota Association of Soil and Water Conservation Districts, the Minnesota Association of Conservation District Employees, and the Natural Resources Conservation Service (NRCS) have committed to providing resources for technical training and certification of local staff to maintain and enhance conservation delivery as laid out in the Technical Training and Certification Strategy. Next steps include the development of an implementation plan, establishment of a State Technical Training Committee, and the hiring of a State Technical Training Coordinator. NRCS and BWSR have committed resources to support the hiring of that position.

Buffer Law

$5 million was appropriated to BWSR for the FY 2016 – FY 2017 biennium for purposes of supporting local governments in their implementation of the new buffer law. Funds were made available on a non-competitive, formula-based basis to SWCDs to support their local implementation.

SWCD roles in buffer/soil erosion law eligible for funding include:

- Meeting/s with county and drainage authority (county or watershed district) to discuss year one implementation roles and responsibilities.
- Pass through funding to counties and/or drainage authority to support local implementation.
- Assistance to collect and provide drainage-system-benefitted-area maps, files, and/or GIS files to DNR to support mapping.
- Landowner outreach and information.
- Provide technical and financial assistance to landowners, e.g., seed cost-share, drill loan, etc.
- Purchase of equipment to support implementation, such as grass drill.
- Provide alternative practice validations, if requested, where the prescribed buffer may not be the right the water quality practice for a site.
- Review DNR maps and landowner outreach prior to finalization.
- Adopt buffer recommendations for waters not mapped by DNR for inclusion in local water management plans.
- Implement the now statewide excessive soil erosion provisions that protect downstream waters and property owners from negligent or absent soil and water conservation management practices.
- Inventory of baseline conditions.

SWCDs will begin tracking of implementation progress starting in late 2016.

Tillage and Erosion Survey Program

$500,000 was appropriated to this new program, which will “systematically collect data and produce county, watershed, and statewide estimates of soil erosion caused by water and wind along with tracking adoption of conservation measures to address erosion.”

BWSR is working with The University of Minnesota, Department of Soil, Water and Climate and the Iowa State University, Department of Agricultural and Biosystems Engineering to develop a long-term program to systematically collect tillage (crop residue after planting) data and soil erosion estimates to analyze trends in agricultural soil and water management in the 67-county area with greater than 30% of land dedicated to row crop production. The first collection of this data is planned for the spring of 2016.

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. The Board approved reserving $500,000 in FY 2016 Projects and Practices program funds (Table 1, p. 4) to comply with this appropriation.

Since 2007, Conservation Corps Minnesota has received Legacy funds from the Minnesota Board of Water and Soil Resources (BWSR) to partner with local governments throughout the state on projects to restore and protect water quality of streams, rivers, and lakes. Based on the tradition of the Civilian Conservation Corps, Conservation Corps Minnesota's goals are to help young people become more connected to the environment, engaged in conservation, involved in the community and prepared for future employment.

Photo of partners prepping Riceford Creek for restoration. Photo Credit: © Rich Biske/TNC

The Corps provides training in resource management, safety, job-readiness and technical skills, and helps young people develop personal responsibility, a strong work ethic and environmental stewardship through direct service managing natural resources. Young adults serve in crews of 4 to 6 people, volunteering as AmeriCorps national service participants for 8 to 10 months to restore public and private lands in their communities.

"The partnership is a win-win for everyone involved" said Tim Johnson-Grass, Program Director. "Local government partners receive funded labor for smaller-scale projects and Conservation Corps Minnesota AmeriCorps members gain restoration skills while helping improve water quality in their community." Legacy funds from BWSR enable the Corps to partner with local government units on around 50 projects each year, engaging over 85 AmeriCorps members in direct service improving water quality.

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, which 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 program activities.

For FY 2016 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 2016 initial spending plan has allocated $3,512,000 for implementation, administration, and oversight. Staffing of 33 (full-time equivalent) is supported in this spending plan, including six full-time positions charged with getting protection and TMDL-derived restoration strategies adopted into local water plans, directing over $39 million of grant and easement funds to priority areas and activities, working with the One Watershed, One Plan program, assisting with implementation of the buffer and soil loss law, 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.	25
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
Cost Effectiveness: The application identifies a cost effective solution to address the non-point pollution concern(s).	5
Biennial Budget Request (BBR): A BBR was submitted by the applicant organization in 2014.	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**

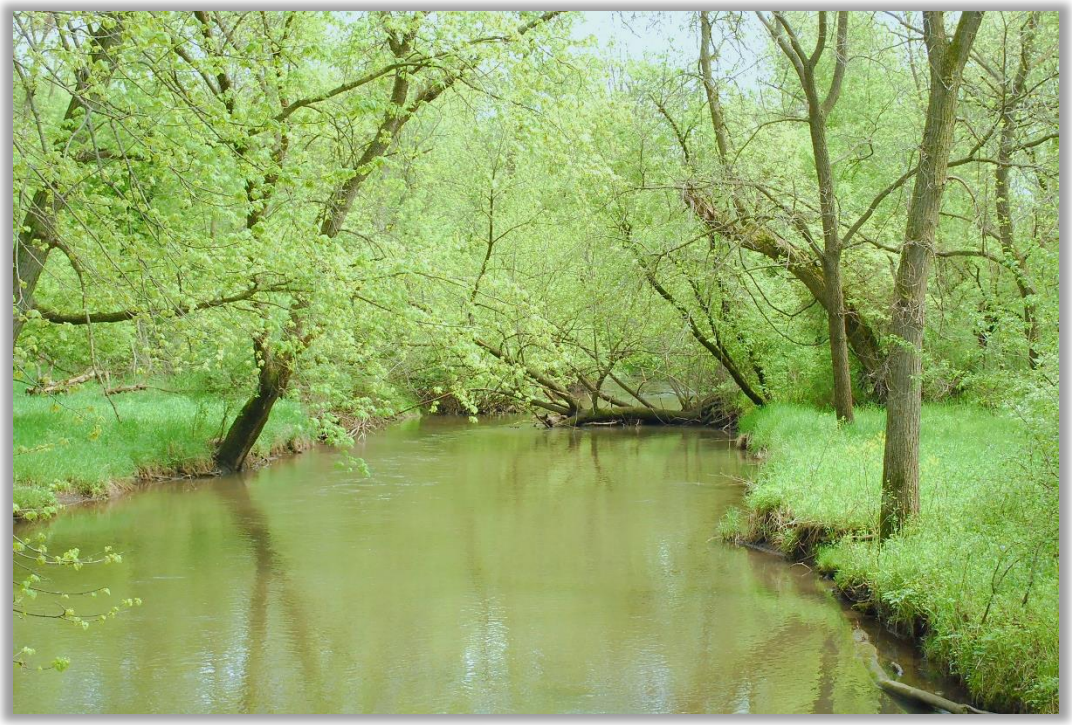
Table A-3 Community Partners Grant Ranking Criteria	Maximum Points Possible
Clarity of project goals, projected impact and involvement with community partners.	40
Prioritization and Relationship to Plan: The proposal is based on priority protection or restoration actions listed in or derived from an approved local water management plan or address pollutant load reductions prescribed in an approved TMDL.	30
Plan for assessing the program's 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-4 *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**

Appendix B: TWDP Report

Clean Water Fund Targeted Watershed Demonstration Program

Report to the Legislature



Minnesota Board of Water & Soil Resources

January 15, 2016

CLEAN WATER LAND & LEGACY AMENDMENT

Pictured on the front cover: Top: Dobbins Creek near Austin, Minnesota.
Bottom left: Chisago SWCD staff meet with BWSR staff.
Bottom right: Construction underway above the Poplar River.

This reports meets the legislative requirements found in Minnesota Session Laws 2013 Chapter 137 Article 2 Section 7 (a) which reads:

By January 15, 2016, the board shall submit an interim report on the outcomes achieved with this appropriation, including recommendations, to the chairs and ranking minority members of the senates and house of representatives committees and divisions with jurisdiction over environment and natural resources policy and finance.

Prepared by Celi Haga and Marcey Westrick. The estimated cost of preparing this report (as required by Minn. Stat. 3.197) was:

Total staff time: $1,880
Production/duplication: $25
Total: $2,005

BWSR is reducing printing and mailing costs by using the Internet to distribute reports and information to wider audiences. This report is available at www.bwsr.state.mn.us/cleanwaterfund and available in alternative formats upon request.

Minnesota Board of Water and Soil Resources
520 Lafayette Road North
St. Paul, MN 55155-4194
651-296-3767

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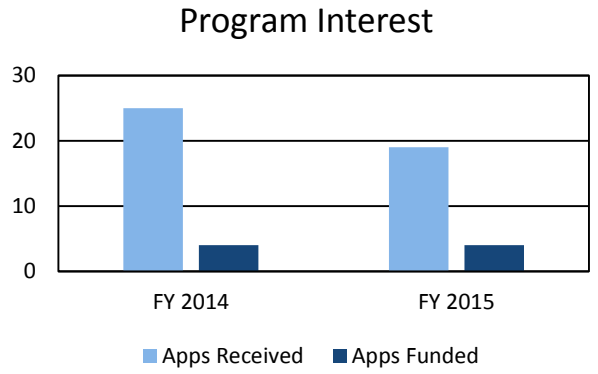
Targeted Watershed Demonstration Program

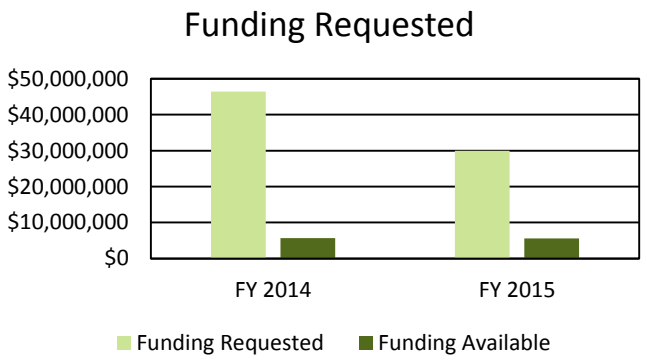
In 2013, the Minnesota Legislature passed Laws of Minnesota 2013, Chapter 137, Article 2, Section 7(a), requiring the Minnesota Board of Water and Soil Resources (BWSR), using Clean Water Fund appropriations, to award competitive grants to local government units that will result in a significant reduction in water pollution in a selected subwatershed. Priority in making grants must be given to the three to six best designed plans each year. Based on this legislation, BWSR created and implemented the Clean Water Fund Targeted Watershed Demonstration Program (TWDP).

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 a majority of those actions can be implemented within a four-year time period. Its emphasis is on demonstrating water quality improvements, not on sustaining high quality systems. The program stresses the importance of incorporating the wealth of science-based information, summarized in TMDLs, WRAPS and other technical reports, into sound decision-making. However, managing water resources is an ongoing task and the lag time between when actions are taken and environmental improvements are observed depends on the scale of the problem. With this in mind, preference was given to smaller watersheds that were 10 or 12-digit Hydrologic Unit Codes.

Program Interest

$12,000,000 was appropriated by the Legislature for the FY2014-2015 Targeted Watershed Demonstration Program. As with BWSR's other Clean Water Fund competitive grants, interest in the program greatly outpaced available funds. In FY2014, 24 local governments submitted 25 proposals totaling $46.4 million dollars. Three proposals were selected totaling $5.7 million dollars. In FY2015, 19 local governments submitted proposals totaling more than $30 million dollars. Four proposals were selected totaling $5.6 million dollars.





Selection Process

BWSR used a two-phased review process. The first phase consisted of interested candidates nominating a watershed through the Request for Interest (RFI) for the program. All nominated watersheds submitted for consideration were first be screened by BWSR staff based on the following criteria:

A. Suitability of the watershed for this program

B. Extent of water quality and quantity monitoring within the watershed

C. Knowledge of the applicant organization regarding pollution sources and pathways

D. The level of landowner or occupier interest and willingness to participate in water quality implementation actions and,

E. The availability of financial and technical resources to the proposed watershed

The highest screened applicants were deemed candidates for final selection and were invited for an interview with the interagency Selection Committee, comprised of representatives of the Minnesota Pollution Control Agency, Minnesota Department of Natural Resources, Minnesota Department of Agriculture, Minnesota Department of Health and BWSR.

The criteria used during the interview process were:

A. The efforts of proposer to address the long-term sustainability of soil and water resources within their jurisdiction;

B. A systematic way to identify and track non-point water quality efforts can be demonstrated;

C. An understanding of social and cultural barriers within the watershed can be demonstrated;

D. The amount of existing local effort occurring within the watershed and the commitment of other agencies, non-profits, and private interest; and,

E. The evaluation plan for the project.

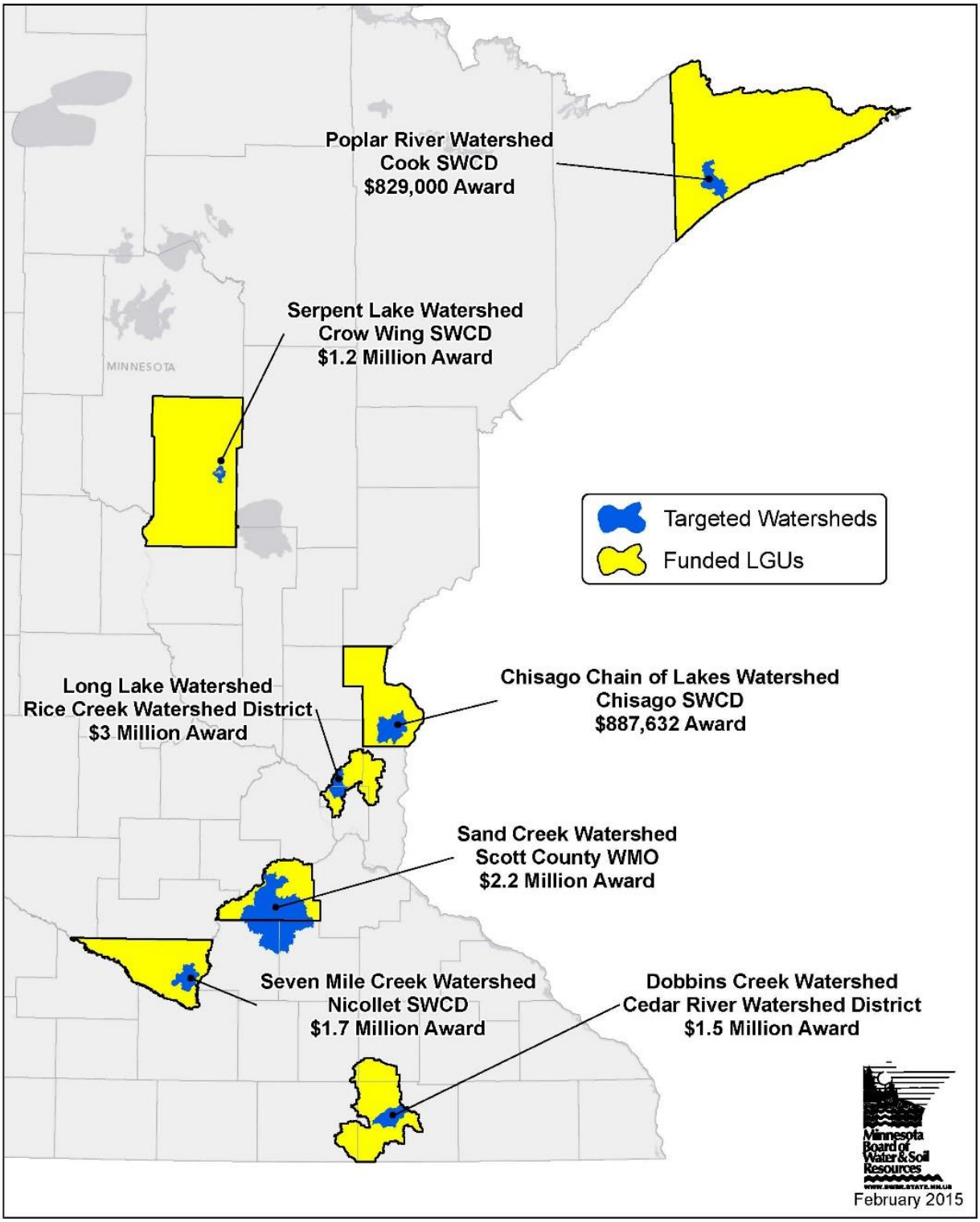
In March 2014 the board funded the first group of Targeted Watershed Demonstration Program grants. Projects receiving funds were:

- **Cedar River Watershed District, $1.5 million award for Dobbins Creek Watershed**
- **Rice Creek Watershed District, $3 million award for Long Lake Watershed**
- **Crow Wing Soil and Water Conservation District, $1.2 million award for Serpent Lake Subwatershed**

In December 2014 a second round of grant announcements was made, awarding an additional $5.6 million in Targeted Watershed Demonstration Grants to four watersheds throughout the state. Those projects were:

- **Chisago SWCD, $887,632 award for the Chisago Chain of Lakes Watershed**
- **Cook SWCD, $829,000 award for the Poplar River Watershed**
- **Nicollet SWCD, $1.7 million award for the Seven Mile Creek Watershed**
- **Scott County Water Management Organization, $2.2 million award for the Sand Creek Watershed**

Targeted Watershed Demonstration Program



Locations of the seven projects selected in FY2014 and FY2015 for the Targeted Watershed Demonstration Program.

Chisago Soil and Water Conservation District, Chisago Chain of Lakes Watershed

Award amount: $887,632

The Chisago Soil and Water Conservation District (SWCD) project centers on the Chisago Chain of Lakes watershed, which includes several regionally significant waterbodies. The watershed is a destination for water tourism recreation, and so improving water quality is important in the region not just for environmental reasons, but economic ones, as well. Those resources are at risk, however, as several lakes within the watershed are currently on the Environmental Protection Agency's 303(d) Impaired Waters List because of high phosphorus levels. Several other lakes within the watershed have total phosphorus levels that are nearing the state standard, so action in the watershed is a priority.

The first completed TWDP project was this grassed waterway.

The Goal

The Total Maximum Daily Load and Watershed Restoration and Protection Plan Reduction Goal is a 6,268 pound reduction in the total phosphorus from stormwater runoff. Using the TWDP grant, the district goal is to achieve an 11% reduction in total phosphorus – 690 pounds annually.

Mixing Practices to Maximize Outcomes

The Chain of Lakes watershed covers both urban and rural areas, so a diverse mix of conservation practices are being implemented to restore the lakes. A number of urban stormwater management practices have been put in place, including rain gardens, iron-enhanced sand filters, gully stabilizations and more. The district has worked with the cities of Lindstrom, City Center, and Chisago City to implement best management practices, as well.

Outside city limits, the SWCD has installed rural best management practices like water and sediment control basins, filter strips, and wetland restorations to reduce phosphorus. They've provided incentives to encourage agricultural producers to plant cover crops, practice no-till farming, implement nutrient management, and plant permanent vegetation on their lands. They've also implemented a number of practices related to livestock waste management.

A rock lined channel was installed to stabilize a large road side gully draining directly to North Center Lake.

Making an Impact

In its first year, the Chisago Chain of Lakes TWDP is exceeding the district's expectations. They've maximized the value of Clean Water Fund allocation, leveraging it with dedicated USDA Mississippi River Basin Initiative funds. This allowed SWCD and USDA Natural Resources Conservation Service staff to dedicate significant amounts of time in the watershed, and that work is paying off. There is a high amount of landowner interest in implementing practices – both in the urban and rural environments – and a large list of potential projects has been generated. Over the course of the fall and winter of 2015 and early 2016, staff will survey these sites and design projects for the 2016 construction season.

Dobbins Creek, Cedar River Watershed District

Awarded amount: $1,500,000

Located at the headwaters of the Cedar River, the unique geography of the Dobbins Creek watershed makes for some distinct resource challenges. There is almost no natural storage in the area, and significant elevation changes, so conditions during a rain event are much like pouring water down a tilted kitchen table. The resulting runoff and stream channel erosion dramatically reduces water quality. During a five-inch rain event, the creek sends approximately 10,250 tons of sediment through the system, a problem that this project will help address.

Dobbins Creek is impaired for turbidity, which means the water is cloudy, negatively impacting aquatic life. The Cedar River Watershed District will implement an entire suite of practices that, collectively, will improve the water quality of the stream so it can support environmentally sensitive fish and macroinvertebrates.

Water and sediment control basins have been installed in farm fields to help minimize flooding and keep sediment out of the creek.

The Goal

The work being done with these program dollars will bring the district to 15% of its sediment reduction goal for the watershed, with leveraged dollars from other funding sources accelerating their progress toward that goal.

Practices that Work

To help slow down and trap the initial flows, the district is installing water and sediment basins throughout the headwaters. They've also targeted key areas for large scale impoundment projects that will keep water on the land. Saturated buffers and grass waterways are among the other planned practices to help improve water quality.

The district has been at work within the Dobbins Creek Watershed for over 15 years, and have the studies and modeling completed to know where the problem areas are and what practices will deliver the most meaningful results. They knew what the problems were, but they lacked the funding to make progress. This award accelerates implementation and has been the leverage the district needs to make real progress on the watershed level.

Impoundment structures like this help slow down water, minimizing erosion and helping keep sediment out of the creek.

Community Commitment

Landowner support has been very high for the project, and thanks to the community's commitment to water quality improvement, the district secured a $3 million grant from the Hormel Foundation as well USDA Mississippi River Basin Initiative funding. These dollars will be used to match local and state grant funding, allowing the district to increase its ability to put projects on the ground and reverse the declining trend for Dobbins Creek.

Over 25 projects have been completed already in the watershed, with over 30 in progress and many more in the initial stages of development.

Rice Creek Watershed District, Long Lake Watershed

Amount awarded: $3 million

During rain events, runoff from approximately 100,000 acres of urban and suburban land flows into Long Lake. This water is not only high in phosphorous, a nutrient that supports algae growth, but has limited opportunities to soak into the ground. This was especially evident during July 2011 when many residents in the southwest corner of the District experienced flooding.

Work within this metro-area watershed will target Long Lake, a premier 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. With this Clean Water Fund grant, Rice Creek Watershed District (RCWD) is planning its largest multi-purpose project to-date, aimed at improving water quality in Long Lake, located in New Brighton.

The Goal

Long Lake is 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.

Tackling Runoff

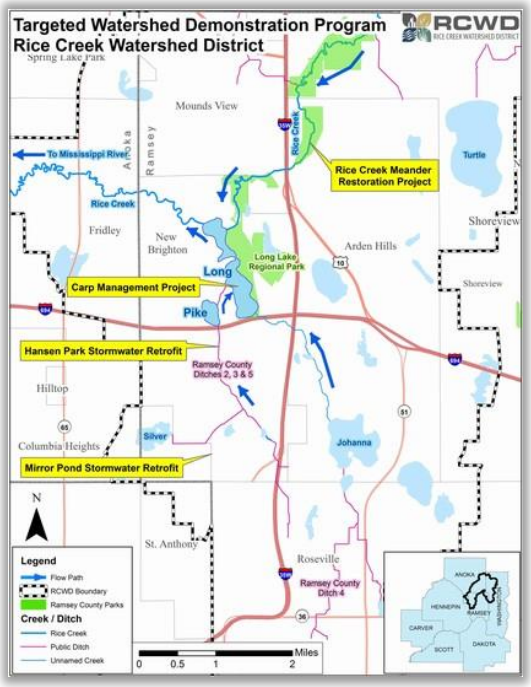
Through a formal partnership with the cities of New Brighton, St. Anthony, and Roseville, RCWD is focusing on multi-benefit projects that provide both water quality and flood control benefits.

This award will focus on four areas: Middle Rice Creek Remeander Restoration Project, which will stabilize the banks of the creek to prevent soil and phosphorus from washing downstream into Long Lake; a carp management project in partnership with the University of Minnesota; and two large stormwater retrofit projects in the cities of New Brighton and St. Anthony. One of the components of the retrofits is a stormwater capture system that will help irrigate city ball fields.

Leveraging community support

Recognizing the significance of these projects, RCWD's Board of Managers pledged up to $4.3 million toward the effort, bringing the project total to as much as $7.3 million. This partnership will save the district time and money while improving Long Lake and the lives of many district residents.

The district is committed to using all the tools in its toolbox to build community understanding and support for this work. That means that every project has an outreach component, to encourage community investment in improving water quality. Town hall meetings have been well attended, local media has increased the projects' visibility, and public feedback – and willingness to support this work – has been strong. The district has a strong track record of producing results, and as work begins on this project in earnest, will look for the same success here.



Top: The Long Lake Watershed grant includes four major projects, including the Mirror Pond Stormwater Retrofit. The pond is pictured, bottom.

Cook Soil and Water Conservation District, Poplar River Watershed

Awarded amount: $829,000

The Poplar River watershed is a high-profile watershed that is a vital trout fishery, recreation area, natural area, and economic engine for the North Shore. Erosion along the Poplar River's stream banks and main tributaries are major contributors to its sediment issues, and the watershed is impaired for turbidity. Determining where the biggest problems areas are and stabilizing them is a district priority. The funds from this grant will accelerate work to reduce non-point pollution entering the Poplar River and Lake Superior. With the water quality improvements gained from this work, Cook Soil and Water Conservation District (SWCD) hopes to remove the Poplar from the impaired waters list.

The Goal

The district estimates that through the practices implemented over the next four years with this grant, they will reduce sediment in the watershed by 400 tons annually, 100% of their reduction goal.

Tackling Erosion

GIS analysis of the lower watershed was used to map erosion flow lines. Once these sites were identified, staff verified the findings in the field. Based on that work, the SWCD is targeting conservation practices to those areas along the river that are at highest risk of erosion.

The district is using a similar process to look at bank erosion risk to prioritize streambank restorations and reduce the amount of sediment washing directly into the river. To complement this work, four water clarity sampling stations have been installed along the river.

Maximizing Investment

To help manage and control erosion along the Poplar, the SWCD is considering conveyances that shift water away from failing slopes, stormwater basins, gully repairs, and revegetation in addition to the streambank restorations. Thanks to these Clean Water Fund dollars, the district has been able to target where practices should be installed – and which specific practices will be the most effective to help improve the Poplar River's water clarity.

Top: A GIS specialist with Lutsen Mountain collects erosion data, documenting areas of high erosion lines on this Poplar River tributary.

Bottom: Low erosion lines were documented on the Lower Moose/Mystery Mountain area.

Partnerships Matter

The Poplar River Management Board represents over 90% of the private land in the lower watershed, and from the outset, the SWCD has been attending board meetings and providing project updates. The landowners understand the importance of this work and are excited about the prospect of delisting the River. They've opened their land to staff, providing access to trails and even assisting with field work.

Scott County Water Management Organization, Sand Creek Watershed

Awarded amount: $2.2 million

The Scott Water Management Organization (WMO) project focuses 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 phosphorus runoff in four water bodies within the three-county watershed.

The Goal

The WMO estimates that implemented practices will keep 1,332 tons of sediment and 1,380 pounds phosphorus out of these lakes annually. That amounts to a 20-30% reduction in sediment in the Sand Creek and Porter Creek. Phosphorus reductions in Cedar Lake and McMahon Lake will bring the organization to 100% of its reduction goal. These lakes, currently impaired for recreation, are on track to be de-listed.

Targeting Positive Outcomes

The Scott WMO knows where the problems are. Armed with Total Maximum Daily Load studies, implementation plans, and subwatershed assessments, from the outset the organization had already done a great deal of work identifying priority waters and source areas for pollutants. Through bank, ravine, and bluff stabilization, riparian vegetation plantings, and grade control structures, the WMO will work to minimize sediment loading in the watershed. Filter strips and native grass plantings will help filter nutrients.

Partnering for Progress

The Scott WMO is working closely with the Scott, Le Sueur, and Rice County Soil and Water Conservation Districts to make this project a success. Trainings and coordination meetings have been held to make sure staff across county lines are on the same page. The WMO has met with producers and private landowners to talk about project plans and the path forward.

Landowners have been open to working with the WMO, allowing access to sites and demonstrating an understanding of the issues on the landscape. There is interest in working together to address these impairments and improve the water quality within the region.

Top: Scott County's Cedar Lake is on track to be de-listed thanks to projects implemented through this program.

Bottom: Water Resources staff analyze erosion within the Sand Creek Watershed.

Crow Wing Soil and Water Conservation District, Serpent Lake Subwatershed

Amount awarded: $1.2 million

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. A comprehensive watershed monitoring and modeling project led the Crow Wing Soil and Water Conservation District to conclude that if stormwater runoff problems are not addressed within Serpent Lake, the resulting costs of water quality impacts will increase greatly, negatively altering the quality of life and economic vitality of the Deerwood and Crosby area and Crow Wing County.

The Goal

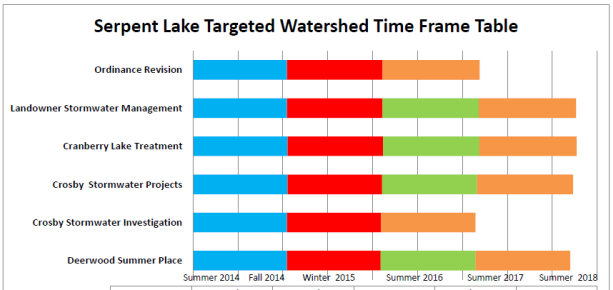
Through scientific analysis, Crow Wing has determined that best management practices funded by this grant will reduce phosphorus by 139 pounds annually, over 40% of the current load. That's significant, because it's the amount needed to reverse the declining water quality trend and meet 100% of the lake's goal for phosphorus.

Targeting Practices

To reach their goal, the district is using a three-pronged approach to protection which includes community ordinances (regulation), stormwater retrofits (restoration), and education and outreach (engagement).

The district is working with the Cities of Deerwood and Crosby and Irondale Township to adopt Minimal Impact Design Standards Ordinances. These regulations promote implementation of effective techniques to limit water pollution from stormwater runoff. The district is implementing projects to help mitigate runoff and flood issues in the City of Deerwood.

Also on the docket: identifying problem areas and solutions for stormwater runoff in the City of Crosby. An alum treatment on Cranberry Lake to address dissolved phosphorus stemming from past use as water discharge pond will help address water quality issues in Serpent Lake. Finally, the district is doing targeted outreach with landowners to help educate them about options available to help reduce runoff.



	Deerwood Summer Place	Crosby Stormwater Investigation	Crosby Stormwater Projects	Cranberry Lake Treatment	Landowner Stormwater Management	Ordinance Revision
Project Start Date	Jun-14	Jul-14	Apr-15	Feb-15	Jul-14	Aug-14
Planning	Jul-14	Sep-14	Jul-15	Jul-16	Jul-16	Jul-16
Installation	Jun-15		Sep-15	Jul-17	Jul-17	
Completion	Aug-15	Mar-15	Oct-16	Jun-18	Jun-18	Jun-18

Top: The Serpent Lake project timeline.

Bottom: District representatives, city staff, and landowners meet to talk about stormwater runoff projects.

Community Impact

These projects wouldn't be possible without this investment from the Clean Water Fund. These are small, unregulated communities that have a water resource need but lack the time, expertise, and finances to be able to take meaningful action to protect these waters. The cities and townships have been greatly supportive of these projects, so the district has been able to move quickly to start getting new ordinances in place.

The Serpent Lake Association and other community residents have seen the declining water quality in the lake over the years, and watched as flooding has impacted both their property and the lake itself. They're invested in the success of this work so that future generations can enjoy the resource.

Nicollet Soil and Water Conservation District, Seven Mile Creek Watershed

Awarded amount: $1.7 million

The Nicollet Soil and Water Conservation District (SWCD) project centers on the Seven Mile Creek watershed, which is the priority watershed for Nicollet County. The creek, a designated trout stream, 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 realities of agricultural economics can make conservation in this part of the state challenging, but thanks to the focused projects within this grant and its high visibility in the region, the district is making real progress.

The Goal

The district will achieve 40-50% of the watershed goal for sediment reduction, 15-25% of the goal for nutrient reduction, and 20-30% of the goal for E. coli reduction.

Moving the Needle

Nicollet has not historically had significant financial resources to put toward conservation best management practices, and does not work in a culture where many farmers seek out that type of assistance from their SWCD. This infusion of funding has given the district the flexibility to respond to landowners' needs in situationally-appropriate ways both through conservation implementation dollars and increased staff outreach. The district will implement a variety of conservation practices, including drainage water management, woodchip bioreactors, drainage swales, water and sediment control basins, livestock waste management, and cover crops.

For the district, it's not just been an opportunity to get more conservation on the ground, but to change the conversation about their work with landowners and create lasting connections that will benefit the watershed moving forward.

Top: Community members participate in a cordgrass planting at one of the project sites.

Bottom: Producers gather around a sediment receptor on a newly installed bioreactor.

Community Responds

Beyond increased outreach to landowners and agricultural producers, the grant has allowed the district to expand the outreach it does to a broader group of watershed stakeholders: other residents, county park users, member of the public interested in clean water. These voices have added important, diverse perspectives to the conversation.

The community reaction has been overwhelmingly positive. There's been a great deal of media interest in the project, and over 120 people attended three different public events in the fall of 2015 geared toward getting people involved in clean water work. Landowners have also recognized that financial support from the district for implementation of practices minimizes the risk of trying a different approach, and the successes they've seen have generated interest from other farmers in the community.

Summary

At the time of this report, project watersheds are one year into a four year grant period. In two of the seven watersheds (Dobbins Creek and Chisago Chain of Lakes), significant federal and private dollars were leveraged as a result of receiving this funding and will accelerate implementation efforts. To assess the progress being made in each of the selected watersheds, milestone schedules have been established along with identified goals that are specific, measurable, results-orientated and time-bound. To date, each of the seven watersheds are on track to meet their watershed reduction goals.

Specific watershed outcomes expected:

- Fully restore two lakes (Cedar and McMahon Lakes) and one stream (Popular River)
- Prevent one lake (Serpent Lake) from becoming impaired
- Meet 10-40% of the pollution reduction goals in other targeted water bodies (Sand Creek, Dobbins Creek, Chisago Chain of Lakes, Seven Mile Creek, and Long Lake)

Factors common to all of the selected watersheds and which are deemed critical to achieving meaningful and measurable restoration and protection are:

- Solid baseline of water quality data and a plan to continue monitoring into the future to track results and trends
- Science-driven implementation plans
- An understanding of the social and cultural barriers within the watershed and a plan to continue to build community capacity and be intentional about building relationships and trust with land owners.
- Have on-going efforts to address the long-term sustainability of soil and water resources within the watershed
- Building off of momentum of existing local efforts and have the commitment of other state agencies, non-profits, and private interest

Conclusion/Recommendations

The Targeted Watershed Demonstration Program was designed around meeting sub-watershed scale water quality goals aimed to restore or protect entire waterbodies. As a demonstration program, the primary goal is to show that the concentrated efforts of various targeted management actions can have a positive impact on water quality. Various management actions have not been limited to structural BMPs but include all tools in the watershed management toolbox necessary to achieve significant pollutant reductions.

- Targeting watershed implementation funds to smaller watershed areas (HUC 10-12 digit watersheds) has shown to be a scale at which reductions in pollution sources are at an order of magnitude necessary to achieve significant progress toward an established water goal/objective is successful.
- Quantifiable changes to physical and chemical measures of water quality from implementation of restoration and protection projects do take time to see. It's important that agency and project partners continue to monitor and evaluate the progress each watershed is making toward water quality goals over an extended period of time.
- Ensure future funding recognizes the importance of all tools in the watershed management toolbox including structural and non-structural best management practices, outreach, engagement and enforcement.
- The agency recommends that the Targeted Watershed Demonstration Program become a permanent part of the agency's non-point restoration and protection programs.
- The agency supports that a portion of future Clean Water Fund appropriations be allocated to this program.

Minnesota Board of Water & Soil Resources