

Project Example Curb Cut Rain Garden Retrofits

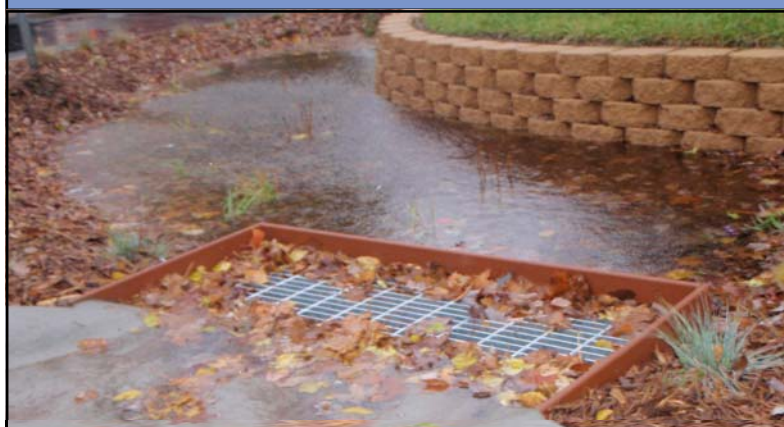
Project Description

Curb cut rain gardens can be scaled to fit almost any landscape setting, providing an ideal solution for highly developed areas with few opportunities for stormwater retrofits. Benefits of curb cut rain gardens include:

- Infiltration resulting in groundwater recharge and flood reduction
- Removal of nutrients and suspended solids
- Highly cost effective and easy to maintain with pretreatment chambers
- Partnership with homeowners to provide long term operation and maintenance

Over the 30 year anticipated life of the Rice Lake project, for every \$100 spent we removed .199 lbs of phosphorus, 55,755 gallons of water and 85.3 lbs of solids from the stormwater system feeding Rice Lake.

One of 6 Rice Lake Assessment Curb Cut Rain Gardens Installed in 2010



One of 3 Crooked Lake Curb Cut Rain Gardens 3 Months After Installation in 2010



Project Example Northdale Pond Outlet Modification

Project Description

Modification of existing stormwater treatment ponds to increase their efficiencies is one of the most cost effective methods to enhance stormwater treatment. Much of existing stormwater infrastructure was primarily designed for rate control. Relatively inexpensive retrofits can add water quality benefits and volume reduction. The project below was installed for \$8,700 with a benefit of removing 13.3 lbs/yr total phosphorus, 19.8 acre-ft/yr water volume, and 2,121 lb/yr total suspended solids. Over the 30 year anticipated life of the project, for every \$100 spent we removed 4.5 lbs of phosphorus, 6.8 acre-feet of water and 731 lbs of solids from the stormwater system feeding Sand Creek, Coon Creek and ultimately the Mississippi River.

Pond Outlet Retrofit Being Installed on School District Property at Northdale Middle School



Completed Northdale Pond Outlet Modification Will Improve Water Quality and Reduce Discharge

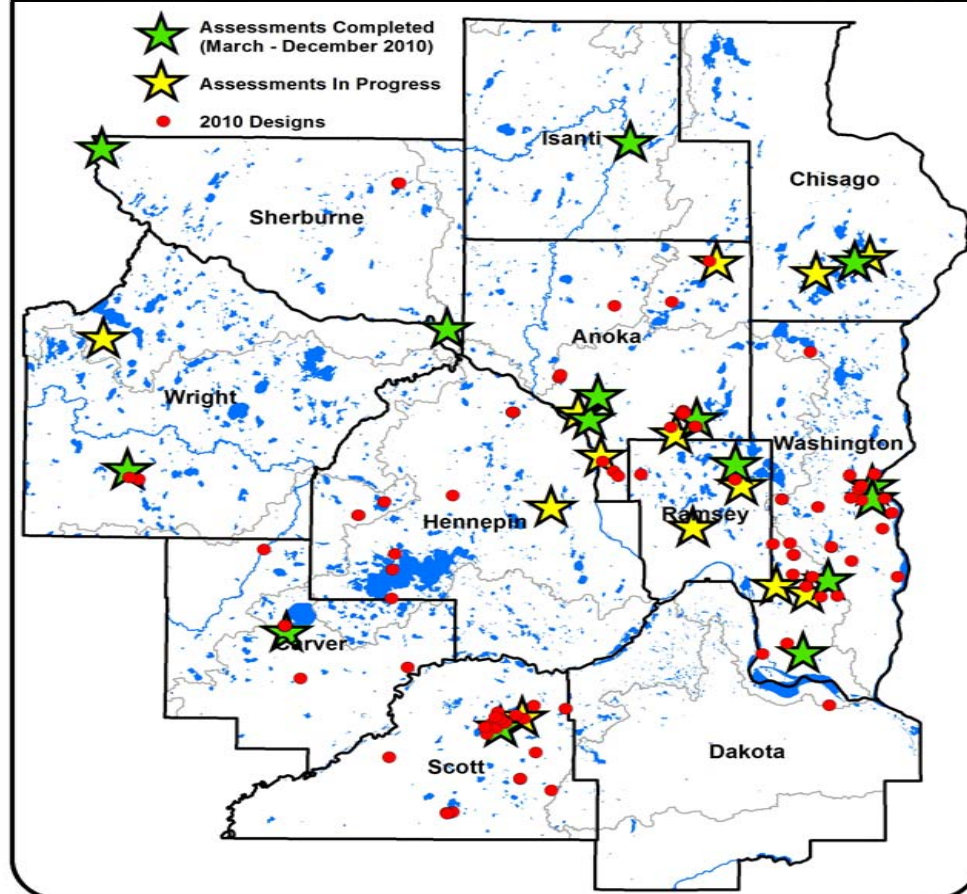


Metro Conservation Districts Putting Clean Water Legacy Funds to Work

Metro Landscape Restoration Program

- Partnership spanning the eleven county metro area
- Soil and Water Conservation District lead
- Cooperation with cities, counties, watershed districts, water management organizations, school districts, lake associations and others.
- Shared full time design specialists
- Provide watershed assessment, project design, installation management, and educational services
- Leverage local, federal and state installation funds and technical expertise
- Coordinate installation and cost share funding with local SWCD staff
- Work with interested landowners to improve water quality, reduce flooding, and recharge groundwater supplies

Check out our virtual tour at www.MetroCD.org

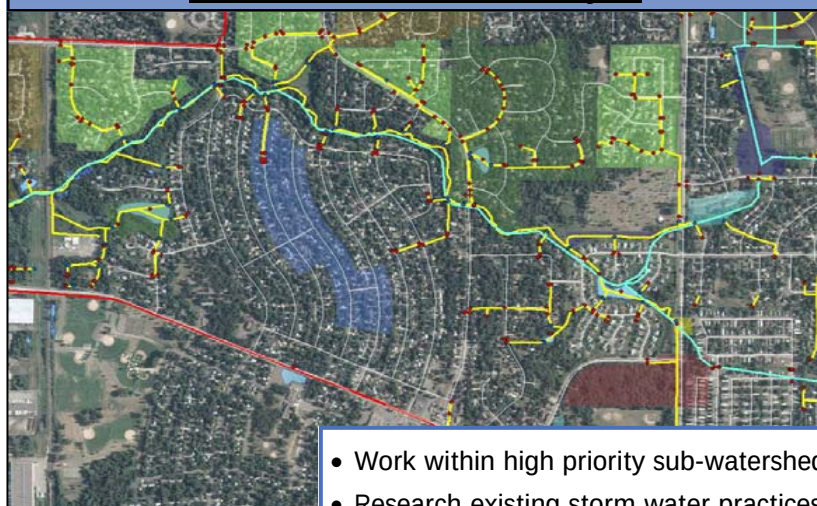


Focused Stormwater Retrofitting

Goal and Concept

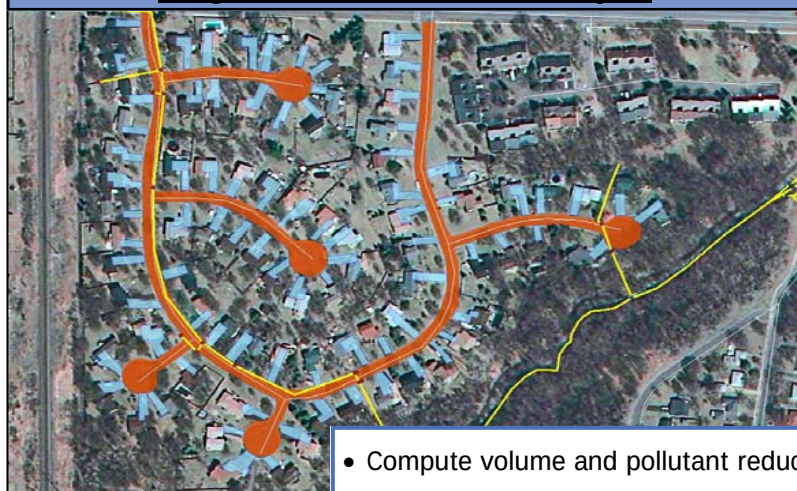
- Reduce stormwater volumes and pollutant loads entering water bodies of concern by
- Identifying pollutant 'hot-spots' within sub-watersheds, and then
- Prioritizing neighborhoods and project sites to maximize treatment per dollar spent, resulting in a greater benefits across the metro, and ultimately
- Installing retrofit projects that improve water quality, reduce flooding, and recharge groundwater supplies.

Subwatershed retrofit analysis



- Work within high priority sub-watersheds
- Research existing storm water practices
- Define objectives and preferred treatment approach
- Conduct desktop search for retrofit sites
- In-field investigation and verification

Neighborhood treatment analysis



- Compute volume and pollutant reduction potential
- Compare results with objectives

Systematic, Cost-Effective, Metro-Wide

Site evaluation and ranking



- Identify specific retrofits
- Conduct neighborhood consultations
- Rank retrofits by cost effectiveness
- Design site specific retrofits

2010-2011 Clean Water Legacy Accomplishments

Working together, Metro Conservation Districts have made significant progress with the \$400,000 in Clean Water Legacy Funding awarded in 2010. Between March and December 2010 when funding became available, the following activities were completed.

- ♦ 13 assessments complete, 9 more by March 2011, 8 pending (metrocd.org programs/CWF/assessments)
- ♦ 28 high priority water resources being addressed
- ♦ 1766 projects identified
- ♦ 99 project designs completed (metrocd.org programs/CWF/designs)
- ♦ 8 projects installed (metrocd.org programs/CWF/project profiles)
 - 40.5lbs/yr Total Phosphorus (TP) reduction
 - 21,848lbs/yr Total Suspended Solids (TSS) reduction
 - 51.57acre-ft/yr stormwater reduction (acre-ft = 325,829 gallons)
 - \$9,205 CWF spent, \$21,341 local funding leveraged
 - Partners: 1 city, 2 watershed districts, 7 homeowners, 1 school district

This success can be attributed to the fact that we have;

- ♦ a long history of working effectively together
- ♦ established partnerships with cities, townships, counties, and water management organizations
- ♦ well trained staff experienced with project installation and cost share management

In 2010 we focused on completing assessments. In 2011 we will focus on the design and installation of at least 67 more projects with the remaining \$600,000.

Best Project, in the Best Place, for the Best Price

Assessment Outcomes

13 assessments were completed by 2010 year end. 9 more not listed below will be done by March 2011, with another 8 pending. The table below shows the projects, benefits and costs associated with the best projects identified through the assessment process.

The need far exceeds available staff and funding, allowing us to focus on installing only the Best Project, in the Best Place for the Best Price.

Assessment	County	# Projects	TP reduction lb/yr	TSS reduction lb/yr	Water reduction acre-ft/yr	Install Cost
Sand Cr	Anoka	53	66.2	25,366	89.5	\$336,600
Rice Lk	Anoka	127	72.8	46,909	68.2	\$491,000
Woodcrest Cr	Anoka	64	91.5	42,698	69.8	\$326,860
Burandt Lk	Carver	83	52.5	13,404	6.9	\$634,320
Lindstrom	Chisago	432	72.1	43,056	46.8	\$512,300
Cambridge	Isanti	49	61.4	29,949	57.2	\$256,560
Lambert Cr	Ramsey	290	102.8	73,482	84.1	\$399,600
Prior Lk	Scott	45	42.5	2,605	2.01	\$344,612
Elk River	Sherburne	160	69.7	28,150	54.1	\$428,795
St. Cloud	Sherburne	113	40.1	22,830	33.4	\$177,700
Lily Lk	Washington	126	89.3	34,562	36.3	\$576,000
McKusak Lk	Washington	149	38.6	26,248	32.4	\$246,025
Howard Lk	Wright	75	23.7	10,787	15.14	\$264,000
Total		1766	823.2	400,046	595.85	\$4,994,372

2012-2013 Metro LRP Needs - \$2,000,000

33 Assessments to Complete, 200 Projects to Install

Putting Clean Water Legacy Funds to Work

We're completing focused subwatershed assessment work to install projects where they are most needed and for the least cost, not just where interested landowners happen to be.

Assessment and Design - \$600,000

To fully implement the sub-watershed assessment strategy metro-wide and design the projects that are identified as a result, continued support for shared and individual district capacity is needed.

Agricultural Element - Stormwater retrofits in heavily developed areas allow us to address only one aspect of water resource management. The addition of an assessment and design protocol adapted to agricultural areas will ensure better utilization of program dollars focused on helping agricultural producers manage their natural resources.

Installation - \$1,400,000

Water quality improvement, flood reduction and groundwater recharge can only happen with sufficient installation funding. Contributions from the state for installation along with funding through watershed management organizations and municipalities is critical. Financial assistance to SWCD's for project promotion and coordination is essential.