

Community Driven Resource Management Dakota County, Minnesota

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A pair of hands is shown from a top-down perspective, gently cupping a small, vibrant green seedling with four leaves. The seedling is planted in a mound of dark, rich soil. The background is a blurred, dark brown, suggesting a field or garden setting. The lighting is soft, highlighting the texture of the soil and the delicate structure of the plant.

Dakota County Soil and Water

Organized by local farmers and certified by the Secretary of State on February 11, 1944

Formed in the early to mid 1940's in response to national concern over floods, erosion, and the dust storms of the 1930's

Primary goal: work with local farmers to establish practices to conserve soil and increase production of their land.

Work with partners to conserve and manage land and water resources

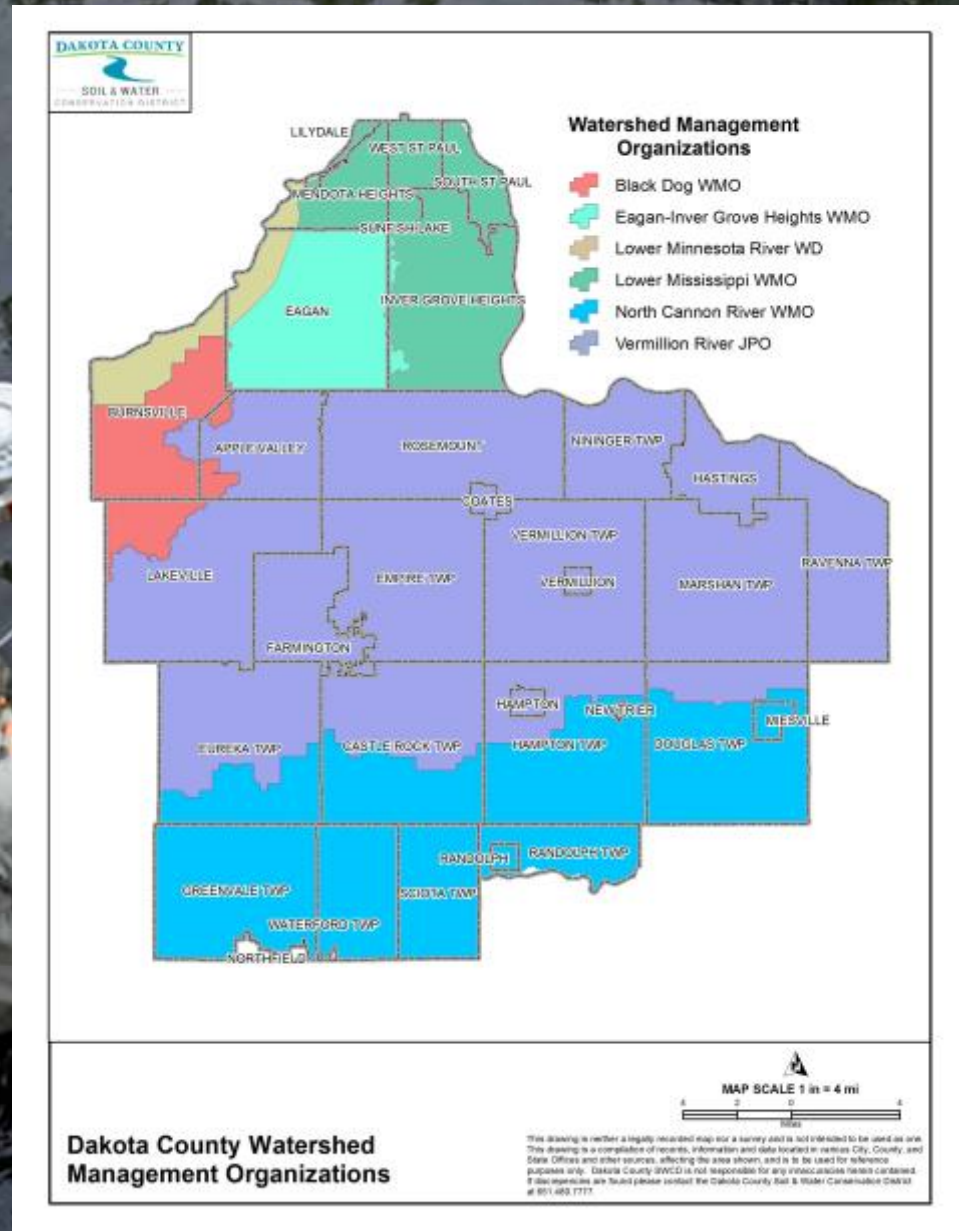
An aerial photograph of a rural landscape. A wide river flows through the center, with a bridge crossing it. The surrounding area is a mix of green fields, some brown patches, and a town with buildings and roads. The text is overlaid on the image.

Partner Organizations

- Minnesota Pollution Control Agency
- Minnesota Department of Natural Resources
- Board of Soil and Water Resources
- USDA Natural Resources Conservation Service
- Watershed Management Organizations
- University of Minnesota – Extension
- Metropolitan Council
- Cities and Townships
- Dakota County

Watersheds

- Black Dog WMO
- Eagan-Inver Grove WMO
- Lower Minnesota River Watershed District
- Lower Mississippi WMO
- North Cannon River WMO
- Vermillion River Watershed Joint Powers Organization



Dakota County Stats

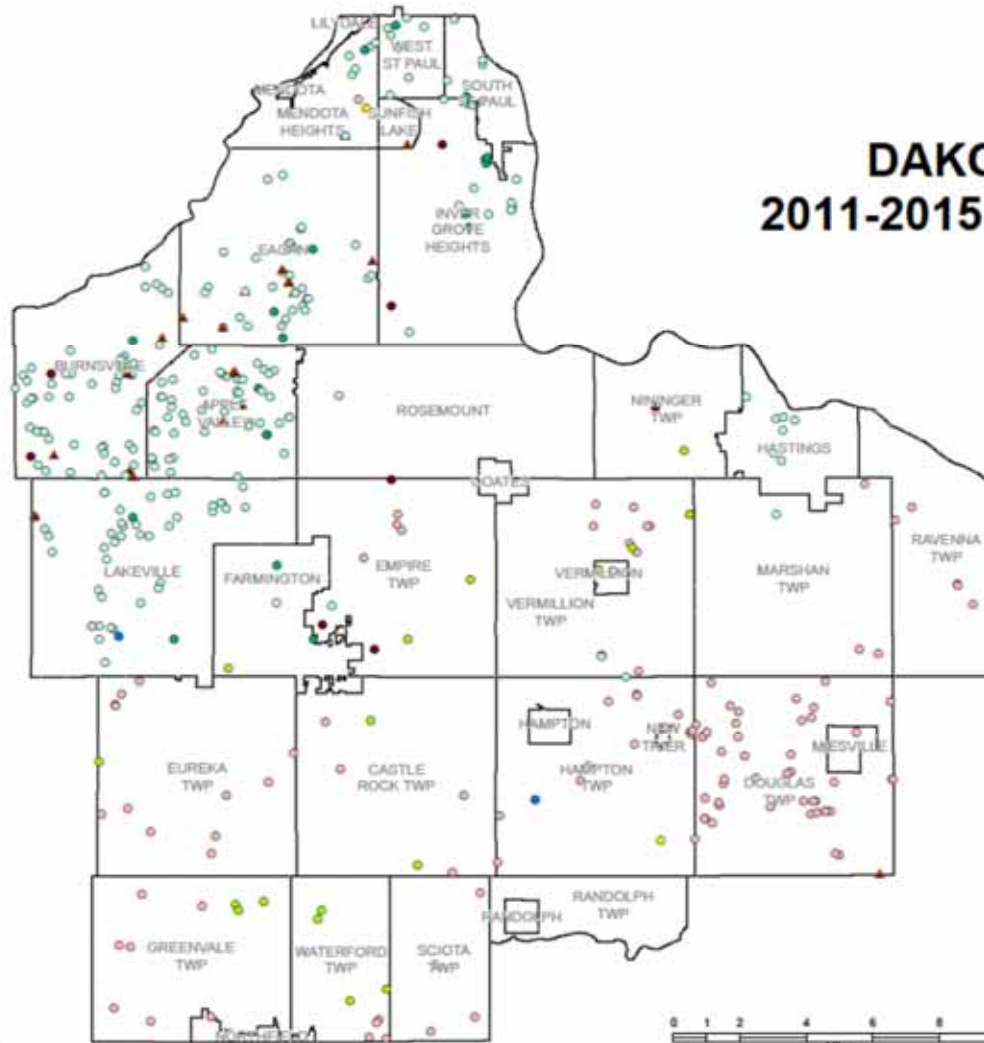
- 398,552 population (2010)
- 587 square miles
- 2/3 Urban and 1/3 Rural



SWCD Conservation Practices



DAKOTA COUNTY 2011-2015 Installed Projects



Conservation Projects (407)

- Erosion (116)
- Feedlot (0)
- Filter Strips (19)
- Groundwater (2)
- ▲ Shoreland/Streambank (23)
- Stormwater (Community) (20)
- Stormwater (Individual) (217)
- Wetland (2)
- Wildlife Habitat (8)



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 This drawing is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data located in various City, County, and State Offices and other sources, affecting the area shown, and is to be used for reference purposes only. Dakota County SWCD is not responsible for any inaccuracies herein contained. If discrepancies are found please contact the Dakota County Water SWCD Office at 612-489-7777.



SWCD Program Goals

- Protect and Restore Surface Water Quality
- Improve Soil Health and Groundwater Quality
- Improve Public Awareness of Water Resource Goals
- Conduct Water Monitoring and Land Assessments
- Protect and Restore Habitats
- Reduce Flood Impacts

Community Programming

Agricultural

- Dakota County Crops Day
- Minnesota Agricultural Water Quality Certification Program (MAWQCP)
- Irrigation Incentive Program

Water Resources

- Citizen Assisted Monitoring Program (CAMP)
- Vermillion River Watch Stream Monitoring
- Aquatic Invasive Species

Education

- Outdoor Education Days
- Landscaping for Clean Waters Workshops

Dakota County Crop Days

Partner Organizations:

USDA Natural Resources Conservation Service

University of Minnesota – Extension

Dakota County

Dakota Electric Association

Crops Day Presentations

- Introduce the latest crop management strategies
 - Nitrogen Fertilizer Management Plan
 - Irrigation management tools and technology
 - Soil moisture monitoring technology
 - University of Minnesota Extension Nitrogen Smart program
 - Minnesota Agriculture Water Quality Certification program
 - Groundwater nitrate studies

Minnesota Agricultural Water Quality Certification Program



Partner Organizations:

Minnesota Department of Agriculture
Minnesota Board of Soil and Water Resources
Minnesota DNR
Minnesota Pollution Control Agency
USDA Natural Resources Conservation Service
County governments
Watershed Management Organizations

MAWQCP

**Voluntary opportunity
for farmers and
agricultural landowners
to take the lead in
implementing practices
to promote and protect
water quality**



Benefits to Producers

Regulatory certainty: in compliance with any new water quality rules or laws during the period of certification

Recognition: ability to promote their business as protective of water quality



Benefits to Producers



Priority for technical and financial assistance: obtain specially designated technical and financial assistance to implement conservation practices that promote water quality

MAWQCP Application

Self-verification by producers that practices meet existing laws and regulations regarding water quality



Laws that are considered include shoreland setbacks, feedlot permits, disposal of waste pesticides

A man wearing a maroon baseball cap with a gold 'M' logo, glasses, a dark jacket, and blue jeans stands in a field of tall, dry grass. A small stream flows through the field. The background shows a blue sky with scattered white clouds. The image is overlaid with a presentation slide containing text and a list.

MAWQCP Assessment

- Evaluation of each field within the operation using an online assessment tool
- Assessment tool considers:
 - Physical field characteristics
 - Nutrient management factors
 - Tillage management factors
 - Pest management
 - Irrigation and tile drainage management
 - Conservation practices

MAWQCP Verification

- Score of 8.5 or higher (max of 10) is necessary for certification eligibility
- On-farm field verification with licensed certifier
 - DCSWCD staff
- Recognition as Minnesota Water Quality Certified Farm



Irrigation Incentive Program

Partner Organizations:

Vermillion River Watershed Joint Powers Organization (VRWJPO)

University of Minnesota Extension

Dakota County

Program Specifics

- Voluntary participation on 30 fields, averaging approx. 100 to 150 acres
- Provide services to collect field-specific moisture and direct assistance to producers using the “Irrigation Scheduling Checkbook”



Incentives

- Total annual cost is \$600/field
- Program provides \$400/field
- Producer is responsible for the remaining \$200/field
- University of Minnesota Extension staff will provide information about field-measured soil moisture conditions and consultation on scheduling their next irrigation cycle.



Future Irrigation Planning

Assist agricultural producers in being:

- proactive in advance of potential regulations
- demonstrating measures to improve surface and groundwater quality and quantity
- potentially avoiding regulatory burdens



Citizen Assisted Monitoring Program

Partner Organizations:

Metropolitan Council

County, City, and Township governments

Watershed Management Organizations

CAMP Program

- Citizen lake monitoring
- Local Watershed Management Organizations and Cities sponsor monitoring activities
- Lab analysis and volunteer coordination facilitated by the Metropolitan Council



A photograph of a person in a kayak on a lake. The person is in the foreground, wearing a white shirt and a red cap, looking towards the water. The background shows a calm lake with a dense forest of green trees on the shore under a clear blue sky. The text 'CAMP Monitoring Activities' is overlaid on the top part of the image.

CAMP Monitoring Activities

- Bi-weekly monitoring April through October
- Field measurements include:
 - Water temperature
 - Transparency using a Secchi disc
 - physical and recreational condition (user perception)
- Surface water sample for lab analysis of:
 - Total phosphorus
 - Total Kjeldahl Nitrogen
 - Chlorophyll-a.

Water Quality Data Uses

- Document water quality status and trends
- Provide lake and watershed managers and city staff with water quality data
- Data submitted to MPCA to be used in impairment listings and Watershed Restoration and Protection Strategy (WRAPS) projects



Vermillion River Watch and Citizen Stream Monitoring Program

Partner Organizations:

Vermillion River Watershed Joint Powers Organization

Minnesota Pollution Control Agency

Vermillion River Watch

- Partnership with Hastings and Rosemont High School Districts
- Stream monitoring activities using the Volunteer Stream Monitoring protocol
- Macroinvertebrate IDs
- Canoe trip on Mississippi



Citizen Stream Monitoring

- Monitoring transparency with Secchi tube
 - Data submitted to MPCA for water quality assessment and impairment determination
- Engage WMOs, nature centers, school districts, and Dakota County Parks programs
- Data useful to North Cannon River Watershed Management Organization



Aquatic Invasive Species

Partner Organizations:

Dakota County
Minnesota DNR
Watershed Management Organizations



Local AIS Prevention Aid

- Funding from Minnesota state legislature
- Provided to Minnesota counties to support AIS prevention programs:
 - Early Detection Monitoring
 - Boat Launch Inspectors
 - Public Outreach and Community Education

Protect your waters



**STOP AQUATIC
HITCHHIKERS!**

mndnr.gov



Dakota County Activities

Monitoring

- Summer 2016: AIS vegetation monitoring on 20 lakes with County access
- Future activities:
 - Lakes with city launches
 - Private access lakes
 - Vermillion River
 - North Cannon Watershed

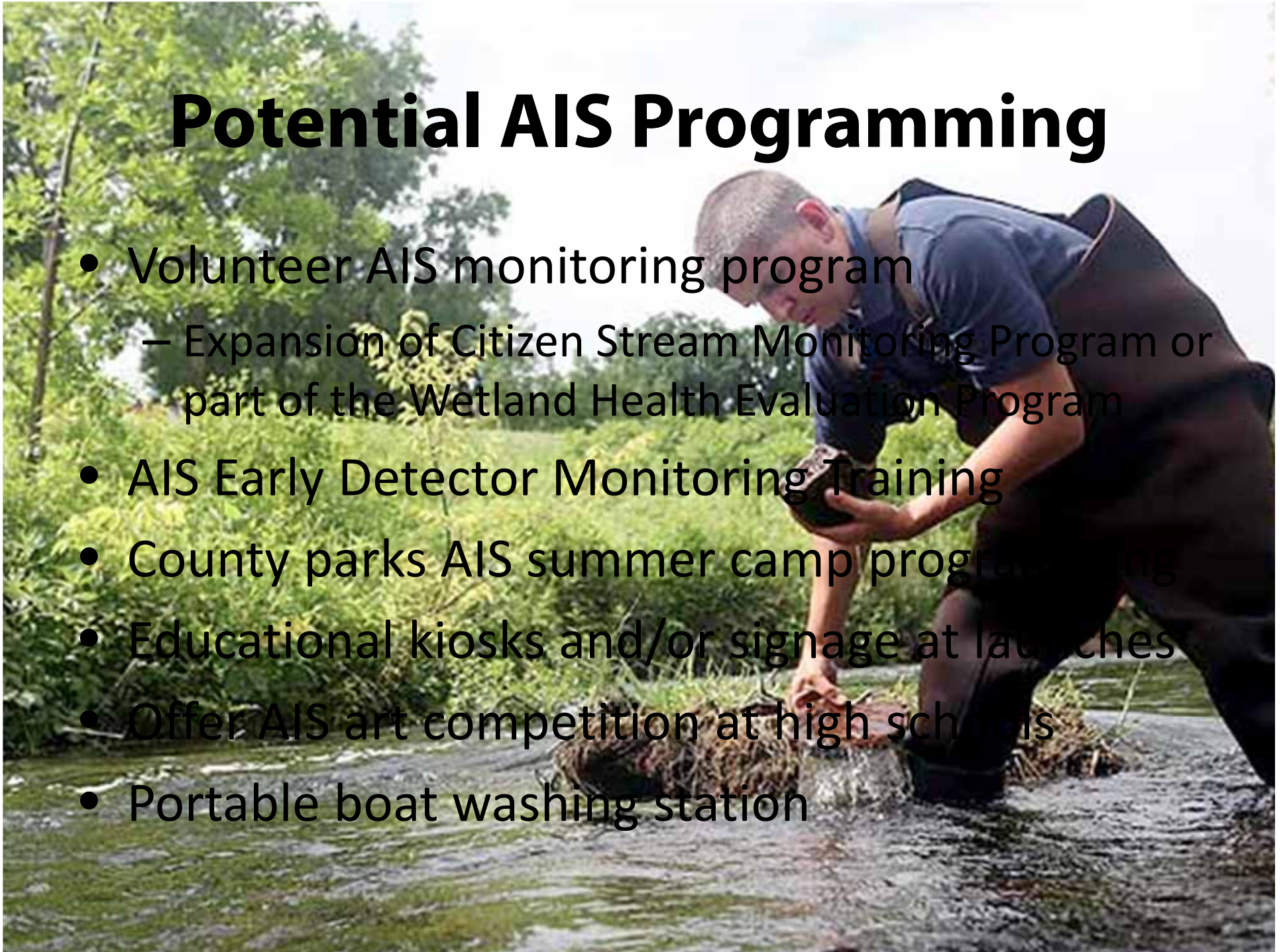
Outreach

- Update AIS signage at boat launch
- Advertisements posted at gas stations near to county boat launches



Potential AIS Programming

- Volunteer AIS monitoring program
 - Expansion of Citizen Stream Monitoring Program or part of the Wetland Health Evaluation Program
- AIS Early Detector Monitoring Training
- County parks AIS summer camp programming
- Educational kiosks and/or signage at launches
- Offer AIS art competition at high schools
- Portable boat washing station



Outdoor Education Days

Partner Organizations:

Vermillion River Watershed Joint Powers Organization

USDA Natural Resources Conservation Service

University of Minnesota - Extension

Minnesota DNR

Pheasants Forever

Dakota County Parks and Nature Centers

Outdoor Education Days

- Host over 1,000 5th grade students from local elementary schools
- 220-acre native prairie site on DC Fairgrounds
- Station topics include:
 - Water Quality
 - Forestry
 - Soils
 - Wetlands
 - Agriculture



Landscaping for Clean Water

Partner Organizations:

Watershed Management Organizations

Local Cities and Townships



How the program works



1. Learn



2. Plan/Design

A document titled "Blue Thumb Grants Application" from the "Illinois Center for Land and Water Conservation". The form includes sections for "APPLICANT INFORMATION", "PROJECT INFORMATION", "BUDGET INFORMATION", and "CONTACT INFORMATION". It also contains a "Consent" section where the applicant agrees to the terms of the grant.

3. Apply



4. Install



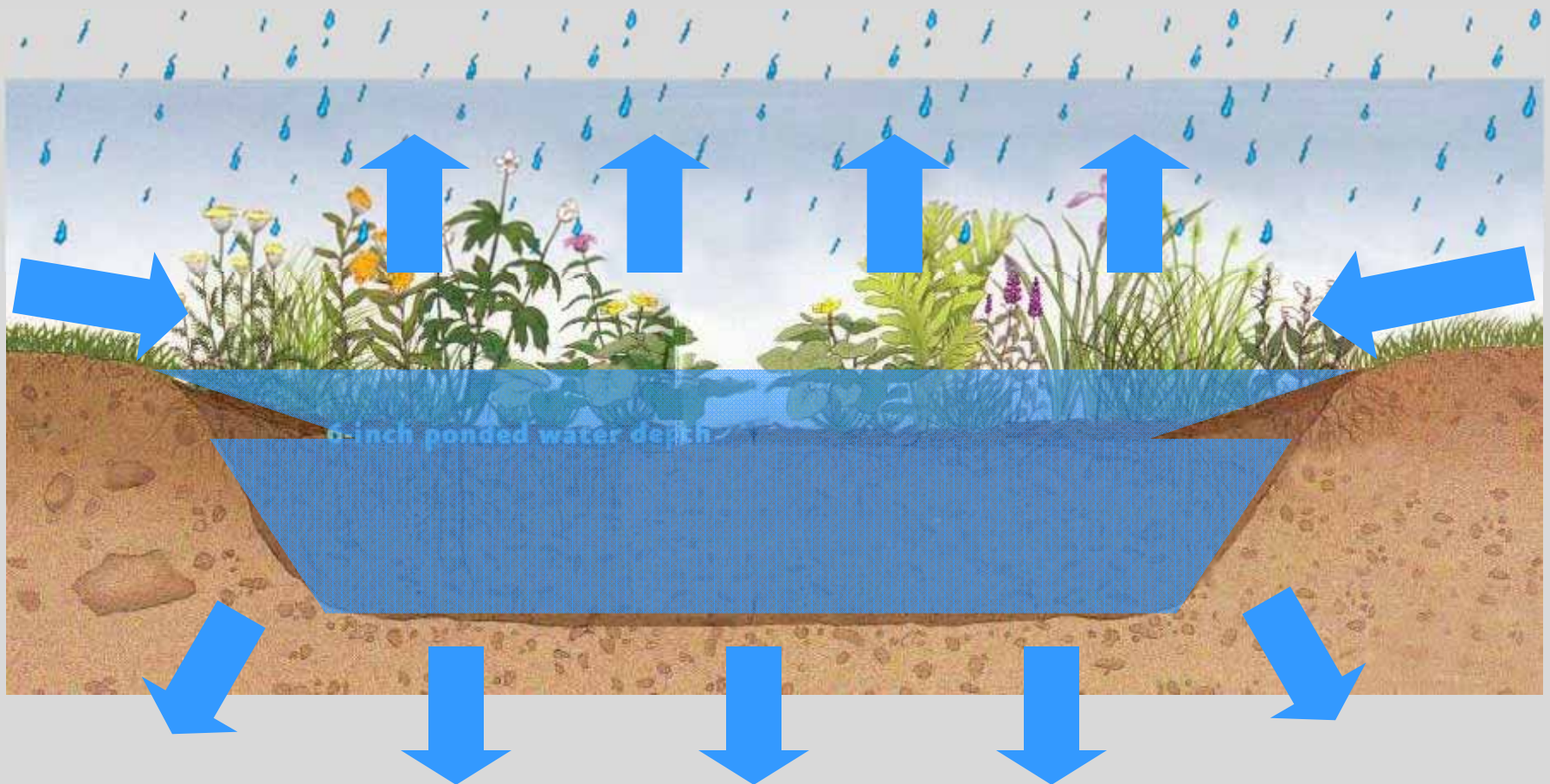
5. Enjoy!

What is a Rain garden?



- Shallow depression with flat bottom
- Dry in less than 24 hours
- Contains plants with deep roots, ideally other pollinator and wildlife benefits
- Soil microbes filters out pollutants
- Designed as a landscape feature

Raingarden Animation



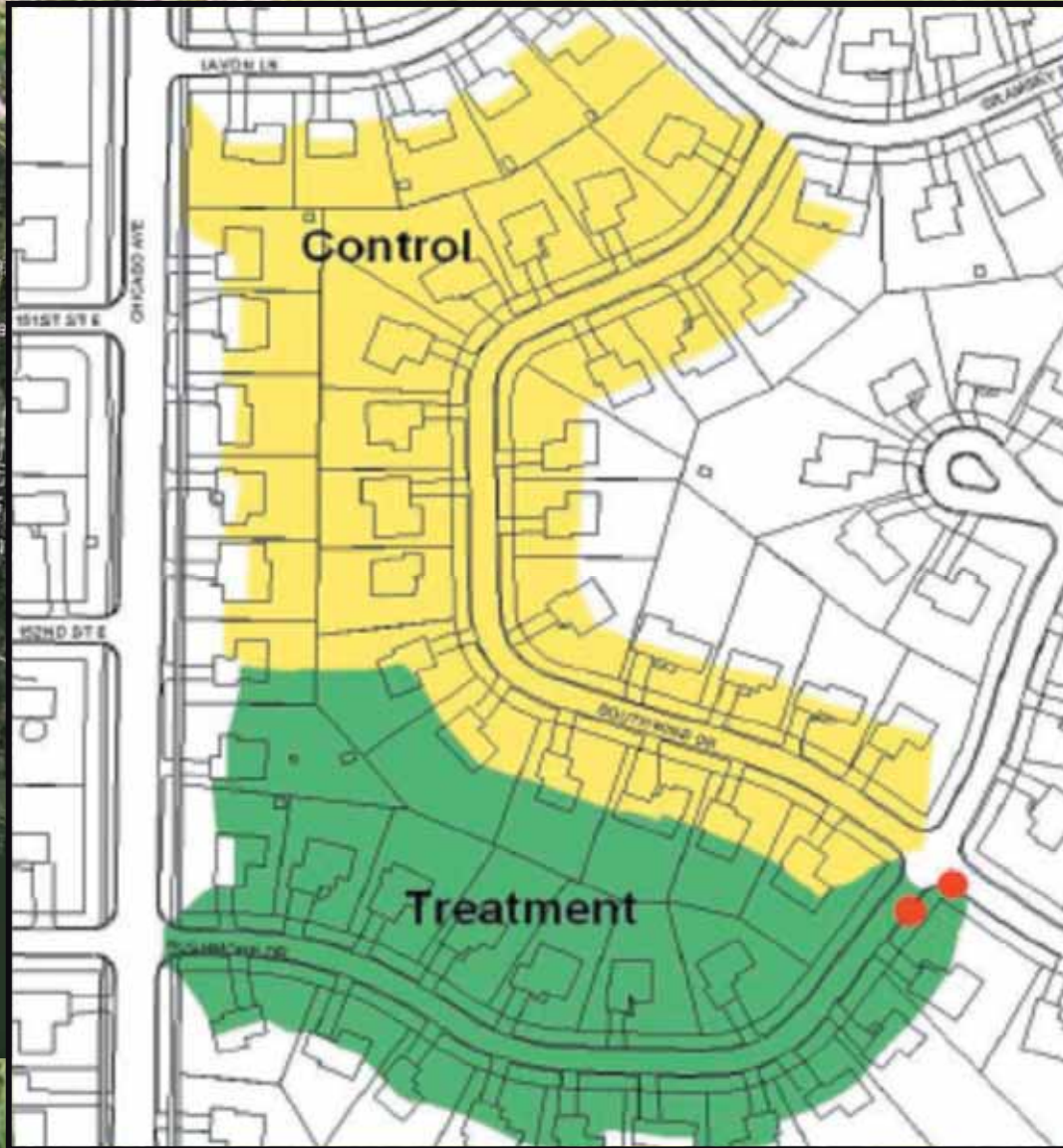
Just like a regular planting, but able to absorb rainwater and breakdown pollutants

A rain garden at work



Photo and Animation: Joe Barten and Ron Struss

Raingardens for Entire Neighborhoods



Two identical neighborhoods: 17 raingardens installed in one of them

Raingardens for Entire Neighborhoods

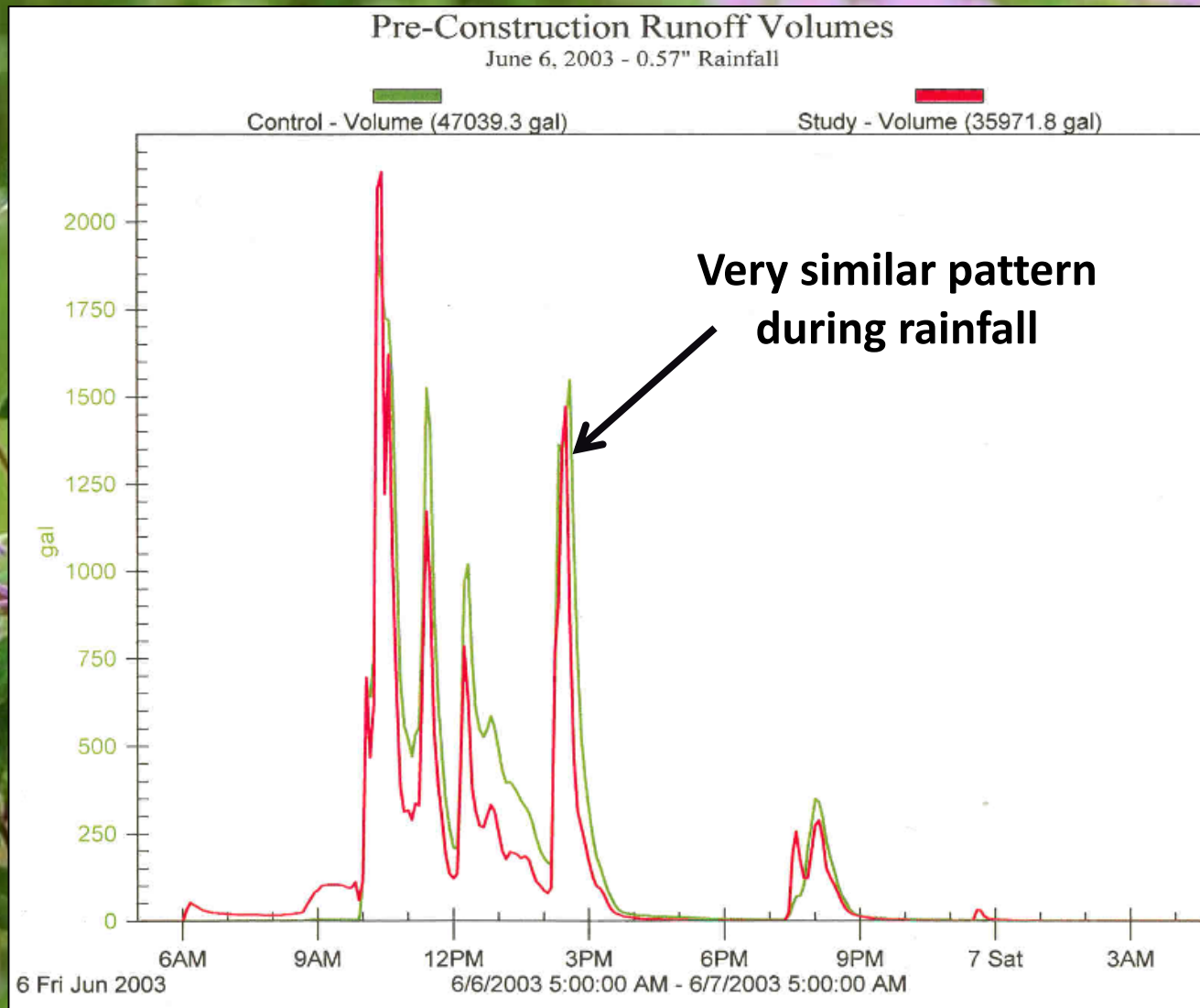


Burnsville – Rushmore Drive

5.3 acres - 25 Homes - 17 Raingardens

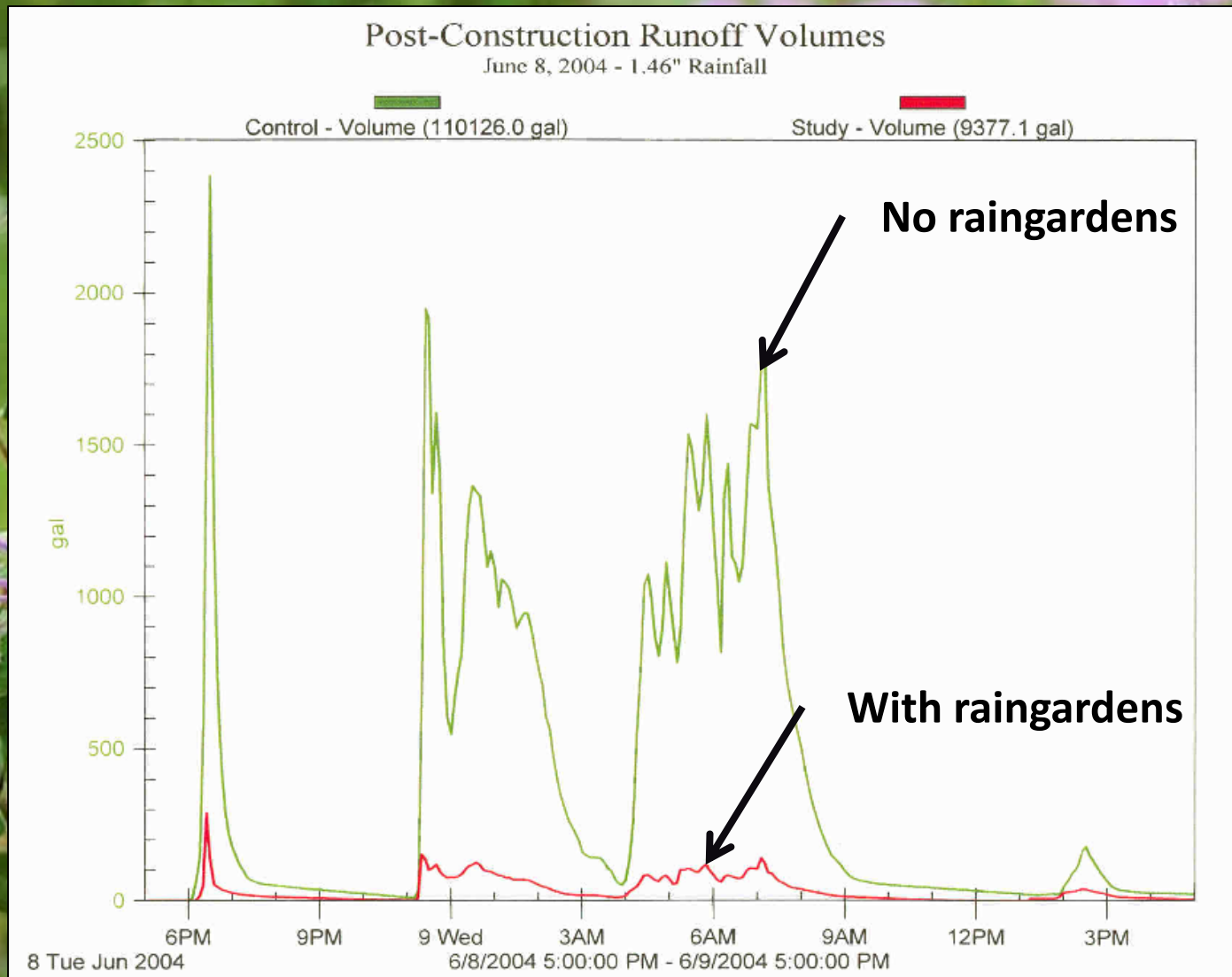
Designed by: Barr Engineering

Raingardens for Entire Neighborhoods



**Monitoring
Results
Before
Raingardens**

Raingardens for Entire Neighborhoods



**Monitoring
Results
After**

**85%
Reduction
in Volume**

**Where did the
water go?**



BEFORE

**City of Burnsville
Designed by: Barr Engineering**



AFTER

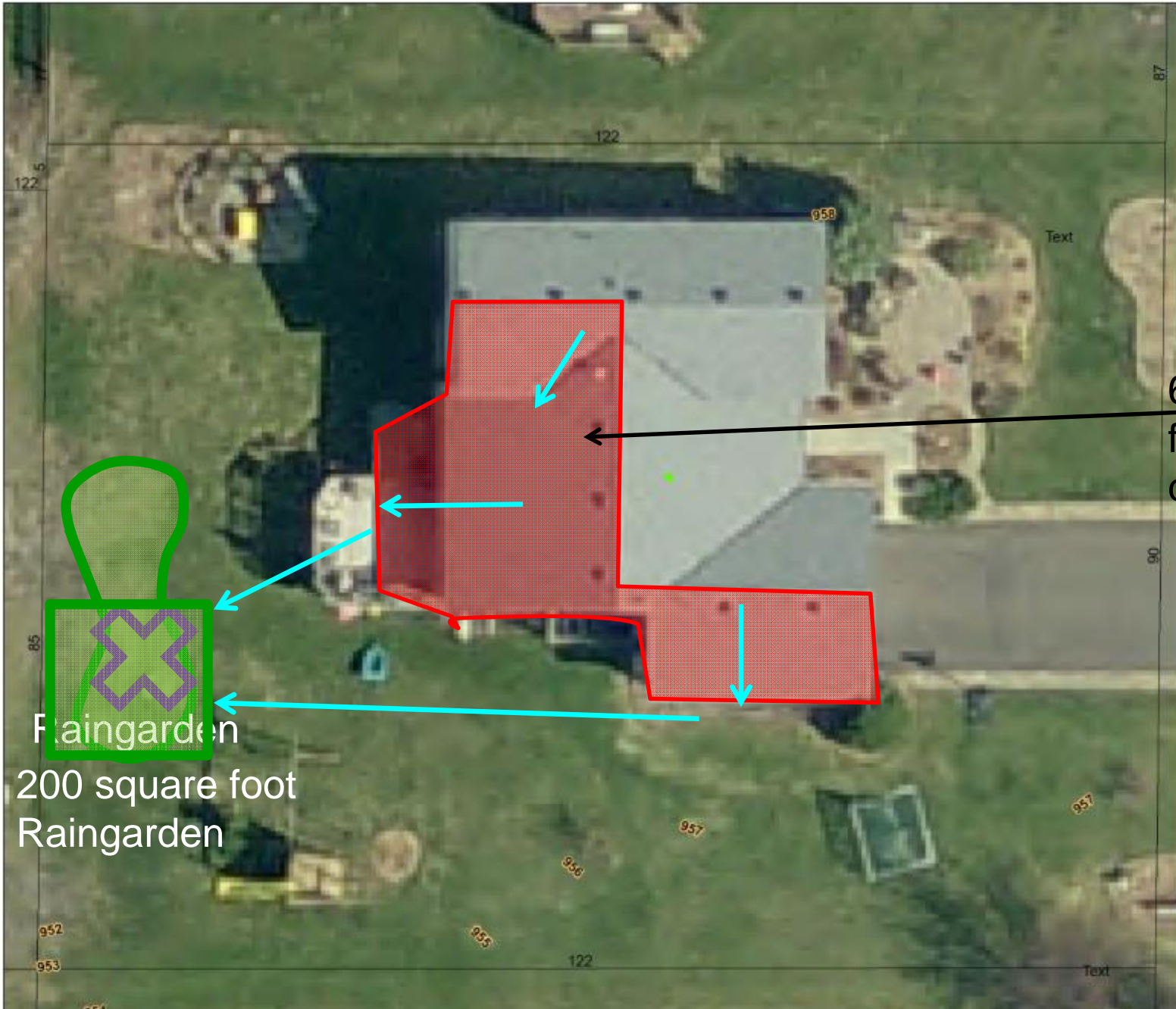
**City of Burnsville
Designed by: Barr Engineering
8.2.2004**

Design Courses

Courses All Around Dakota County

- Work with professionals to design a plan specific for your yard
- Receive a copy of *The Blue Thumb Guide to Raingardens*
- Learn about cost share opportunities to help offset the cost of your raingarden
- Access to \$250 grants and technical assistance
- All for \$25 fee!





600 square feet of roof drainage

Raingarden
200 square foot
Raingarden

Aerial View of House

Cost Estimate Worksheet

Prep Related Materials

drain tile outlet (as per plan) (4-6" pipe w/ debris cover @ inlet & outlet)
 soil Replacement for Raingarden (well-aged, weed-seed free) + delivery

1 truck = 150 Sq ft garden

Compost) Liam

	Qty	Unit	Unit Cost	Amount
		overflow	\$	\$
	2	#25 cu yd	\$ 25 25	\$ 50-
	80ft	.75 ft	\$.75	\$ 60 60
	2	60 hr	\$ 60 60	\$ 120
	1	2 hr	\$ 12	\$ 12
		delivery	\$	\$

GRADING AND SITE-PREPARATION RELATED COSTS

rock tier -

30 each block

#2

\$ 292
~~60~~
 \$ 302

Plant Materials

Blanket (Material: _____, Size: _____' x _____')
 es, 6" (for anchoring ECB)
 ish Area (at outlet of drain-tile pipe) (approx. _____' x _____' x _____")
 wood Mulch (2-3" depth) (entire planting area) (1 cy = 150 sq. ft.)

Mulch) Liam

cover

	Qty	Unit	Unit Cost	Amount
	—	roll	\$	\$
	—	each	\$	\$
	—	cu ft	\$	\$
	2	#24 cu yd	\$ 24-	\$ 48-
	—	- load	\$	\$

EROSION CONTROL MATERIALS COSTS

\$ 48-

(Plugs & Plots)

(for Wet-Moist Soils-raingarden bottom) (_____" spacing)
 (for Moist Soils-raingarden bottom/sides) (18" spacing) .45
 (for Dry Soils-raingarden sides/border) (15" spacing) .65
 for _____ Soils) (_____" spacing)
 (for Moist Soils-Inlet Filter grass) (12" spacing) (Sweetgrass)

	Qty	Unit	Unit Cost	Amount
	—	each	\$	\$
	150 Sq Ft	each	\$.45	\$ 67.50
	180 Sq Ft	each	\$.65	\$ 117-
	—	each	\$	\$
	—	each	\$	\$
	—	delivery	\$	\$

PLANT MATERIALS COSTS

80 -
 80 -
 \$ 264.50

Total: 614.50



SWCD Community Programs

- Balance of rural and agricultural interests
- Look for innovative ways to engage the public in resource management
- Promote programming that is useful to the community
- Funding is great, but technical assistance is also appreciated





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QUESTIONS??

DAKOTA COUNTY



— SOIL & WATER —
CONSERVATION DISTRICT