



# Large Turf Areas Conversion to Native Plantings

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# WASHINGTON CONSERVATION DISTRICT

455 HAYWARD AVE N  
OAKDALE, MN 55128

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WWW.MNWCD.ORG

## Mission Statement

*To enhance, protect, and preserve the natural resources of Washington County through conservation projects, technical guidance, and educational services to citizens and local government*



**WCD Elected Board of Supervisors**



**The WCD is a special purpose local unit of government dedicated to the conservation of soil and water resources in Washington County  
*Created in 1942***

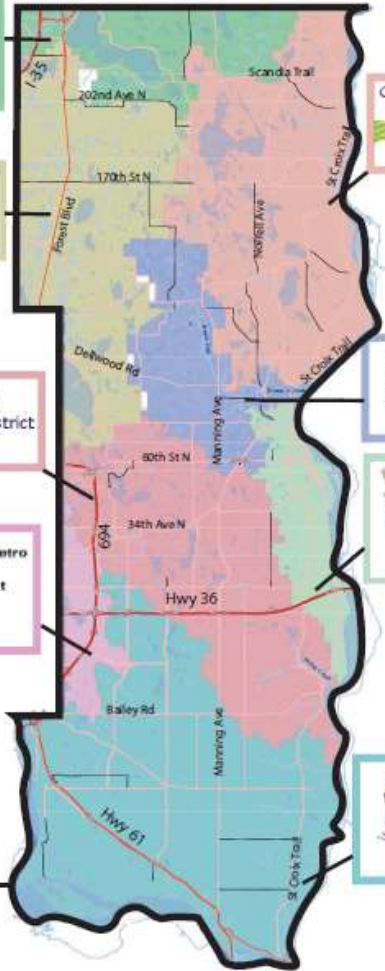


**WASHINGTON  
CONSERVATION  
DISTRICT**

Washington Conservation Center  
455 Hayward Avenue  
Oakdale, MN 55128  
phone: (651) 275-1236  
fax: (651) 275-1254

## WASHINGTON COUNTY WATERSHEDS

Eight partner watersheds in the Washington Conservation District





- Minnesota sales tax revenue from the Legacy Amendment in 2008.
- Dedicated to protecting, enhancing, and restoring water quality in lakes rivers and streams.
- Protects groundwater degradation and drinking water.



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## *WCD Activities*



- **Watershed Administration (BCWD, MSCWMO)**
- **Water & BMP Monitoring**
- **Education**
- **Natural Resource Planning and Prioritization**
- **Technical and Design Assistance for Conservation and Water Resource Management**



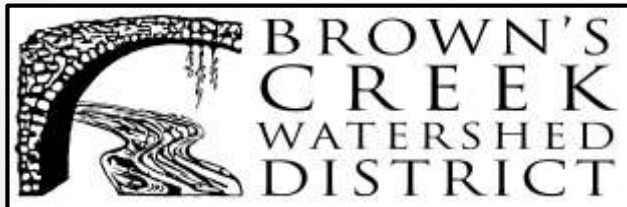
# Large Turf Areas Conversion to Native Plantings

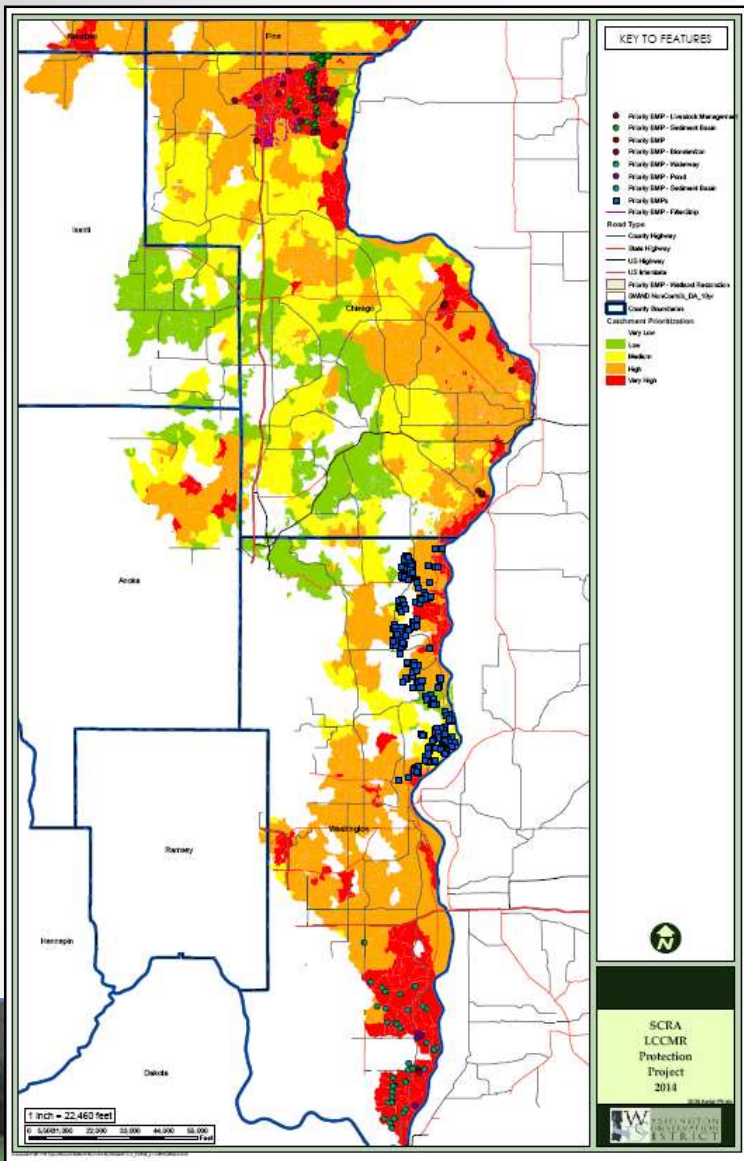
- Funding from the Clean Water Fund in FY 2013, 3 year term.
- Primary goal addresses phosphorus loading to the St Croix.
- Added benefit of habitat restoration.



# Large Turf Areas Conversion to Native Plantings

- \$123,930 in grant funds.
- \$30,983 in matching funds.





- Managed turf grass.
- At least 1 acre or more.
- Direct drainage to the St. Croix or tributaries of Lake St. Croix.





# CONVERT YOUR LAWN TO PRAIRIE



## SHORTGRASS PRAIRIE

Shortgrass prairies are dominated by short to mid-height grasses and flowering plants, adapted to growing in drier site conditions. Shortgrass prairies make excellent plantings where preserving viewsheds are important. For this program, seed mixes generally consist of 70% grasses and 30% flowering plants. A few examples of species characteristic to this mix are Little Bluestem, Blue and Sulr oats grass, Buffalo grass, Juncus grass, Dotted blazing star, Butterfly milkweed, Prairie coneflower, and Purple prairie-clover.

## TALLGRASS PRAIRIE

Tallgrass prairies are easily adapted to a wider range of site conditions. This particular plant community is known for its dense vegetation, taller plant heights, and supporting large variety of grasses and flowering plants - with an attractive four season quality. For this program, seed mixes generally consist of 50% grasses and 50% flowering plants. A few examples of species characteristic to this mix are Black-eyed susan, Anne hyacinth, Yellow coneflower, Big Bluestem, and switch grass, as well as many goldenrods and asters.

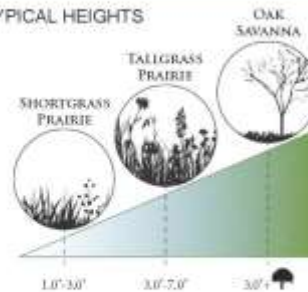
## OAK SAVANNA

Oak savannas are best defined in terms of the openness of the tree canopy. In contrast to a forest, which has a closed canopy, the oak savanna canopy is more open, ranging from 10% to 50%. For most, the essential character of this plant community is the presence of scattered "open-grown" oak trees. For this program, seed mixes will generally consist 80% grasses and 20% flowering plants, due to the expense of the Oak trees. A few examples of species characteristic to this mix are Big and Little Bluestem, Indian grass, and switch grass, along with a few goldenrods and asters.

For More Information: Contact Andy Schilling at 651-275-1136 x.43 or [aschilling@mrwod.org](mailto:aschilling@mrwod.org)

# WHAT KIND OF PRAIRIE ARE YOU...?

## TYPICAL HEIGHTS



## TYPICAL PROJECT TYPES (REFLECTS CONVERSION TABLES BELOW)

MAINTENANCE	LOW
PLANT DIVERSITY	LOW
EXISTING CONDITIONS - EASE OF CONVERSION	LOW
CONTRACTOR (REQ'D FOR INSTALL- 2YRS MTC)	LOW

## Cost Estimate for 1 acre Turf to Prairie Conversion over a 10 Year Period

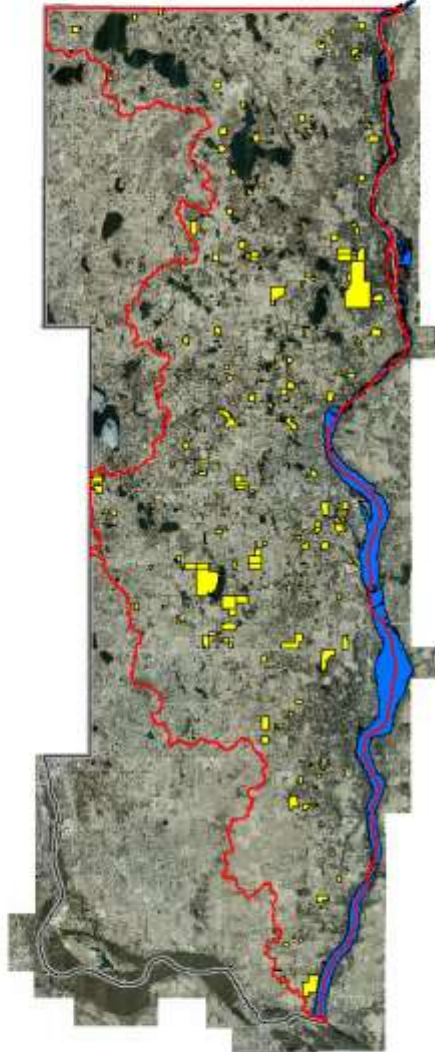
TIMELINE	CONTRACTOR PRICING	AMOUNT COVERED BY GRANT @ 75%	DESCRIPTION
Installation	\$3000 - \$5000	\$2250 - \$3750	Grass/Forb Prairie or Oak Savanna (predominantly grass); herbicide kill of existing turf; no-till drill seeding; if oak savanna - saplings or bare root Mow (6-8 inches) - every 30 days after planting until
Year 1	\$600	\$450	September 30 to help control annual weeds; Spot spray thistles.
Year 2	\$600	\$450	Mow (6-8 inches) one time between June 1 - August 15 before weeds set seed; Spot spray thistles, etc. Contractor recommends a burning of the prairie. <b>Alternative:</b> Sites usually do not require much maintenance beginning the third year; Mow only if necessary; Spot spray thistles, etc.
Year 3	\$1,350	\$0	Spot Spraying (if needed)
Year 4	\$600	\$0	Spot Spraying (if needed)
Year 5	\$400	\$0	Spot Spraying (if needed)
Year 6	\$1,150	\$0	Spot Spraying (if needed), burning or haying (if needed)
Year 7	\$400	\$0	Spot Spraying (if needed)
Year 8	\$400	\$0	Spot Spraying (if needed)
Year 9	\$1,150	\$0	Spot Spraying (if needed) plus burning or haying (if needed)
Year 10	\$400	\$0	Spot Spraying (if needed)
<b>Total</b>	<b>\$10050 - \$12050</b>	<b>\$3150 - \$4650</b>	

Timeline	Project Installation and Maintenance Cost	Cost covered by Grant	Cost to Landowner
0 - 2 years	\$4200 - 6200	\$3150 - 4200	\$1050 - \$2000*
3 - 10 years	\$0 - \$5850**	\$0	\$0 - \$5850**

\*Any additional watershed district/watershed management organization cost share funding can be used as a match to the project installation cost

\*\*Landowners can provide their own maintenance in years 3-10 (Washington Conservation District can provide further technical assistance during this time).

# Turf to Native Planting Grant: Parcels Selected for Restoration



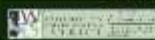
**KEY TO FEATURES**

- St. Croix River Basin
- Selected Parcels
- St. Croix River
- County Boundary



NAME  
ADDRESS  
CITY

PIN:



## Convert Your Lawn to Prairie



### Turf to Native Planting Grant

The Washington Conservation District currently has funds through the Minnesota Board of Water and Soil Resources to help landowners in the county convert turf to native plantings.

#### Eligibility:

Grant funds are available for people who have 1 acre or more of lawn and drain to the St. Croix River or to a lake or stream within the St. Croix River basin in Washington County. Adjacent landowners can combine lawn areas to meet the 1 acre minimum.

#### Funding Detail:

The program grant will pay for 75% of the cost for establishing a **prairie or oak savanna**, as well as 75% of the cost for 2 years of maintenance from the time of planting and seeding. Priority will be given to projects located closest to the St. Croix river and its tributaries.

#### For More Information:

Contact Andy Schilling at 651-275-1136 x.43 or [aschilling@mnwcd.org](mailto:aschilling@mnwcd.org)

### Go Prairie!

- Mow less and enjoy your land more
- Help protect local water resources
- Bring wildlife to your backyard
- Beautify your land

### How is an Oak Savanna Different than a Prairie?

Like prairies, grasses and flowers dominate the landscape. However, oak savannas are also comprised of oak trees where mature canopies cover between 10% and 50% of the land area.



MN oak savanna - DNR

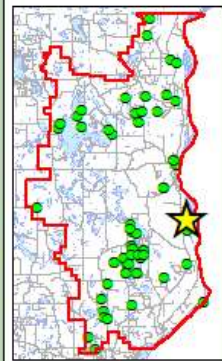




**KEY TO FEATURES**

-  Prairie
-  Subwatersheds (EOR)
-  2 ft Contours (LIDAR)

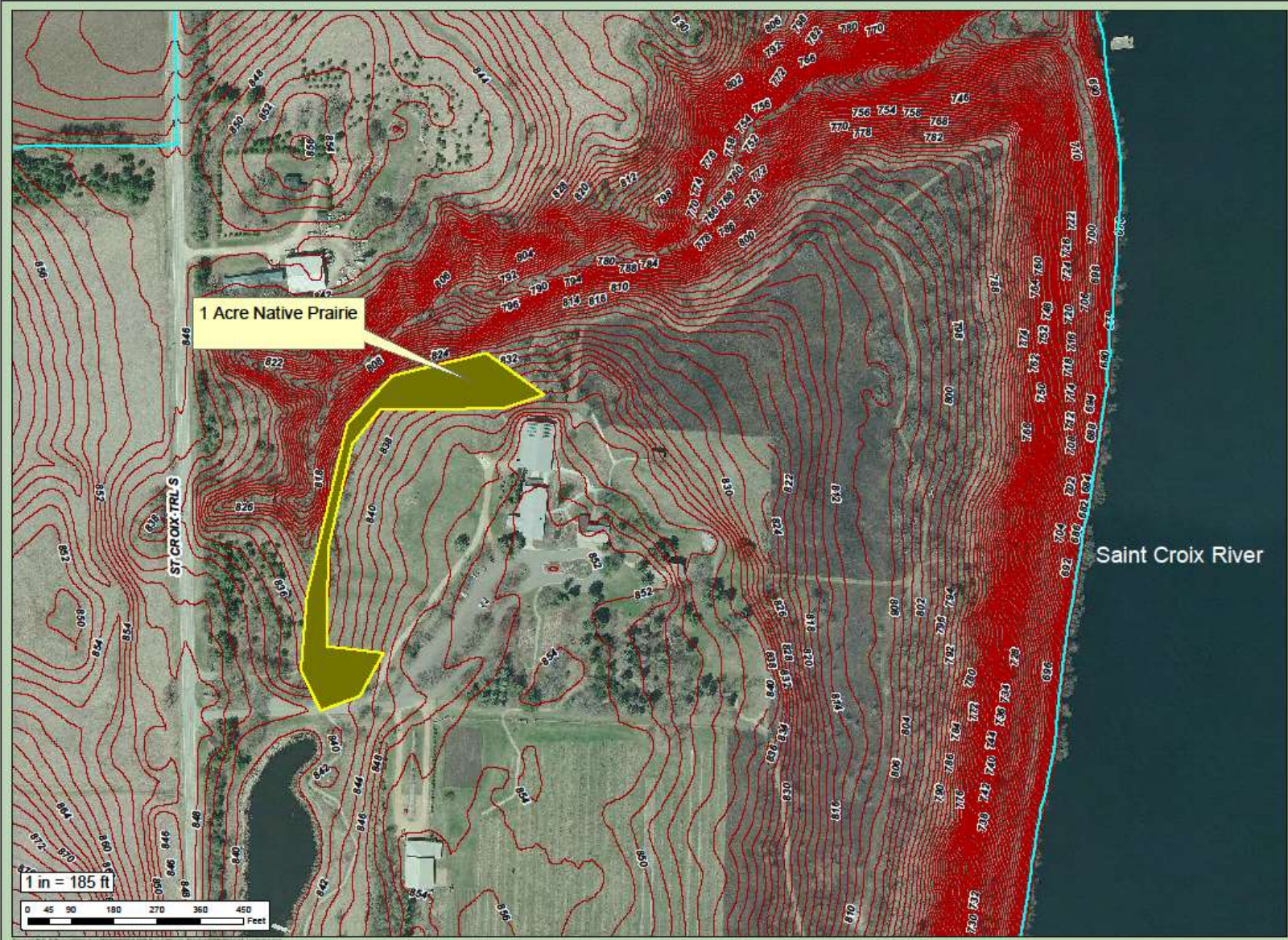
Turf to Native Prairie Conversion  
 Pollutant Load Reductions:  
 TP 3.41 lbs/yr  
 TSS =2.39 Tons/yr



1.03 acres Turf Conversion to Prairie  
 Subwatershed: St Croix 10

2013 Aerial Photo





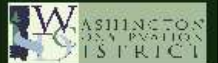
**KEY TO FEATURES**

-  Parcels
-  2 ft Contours (LIDAR)

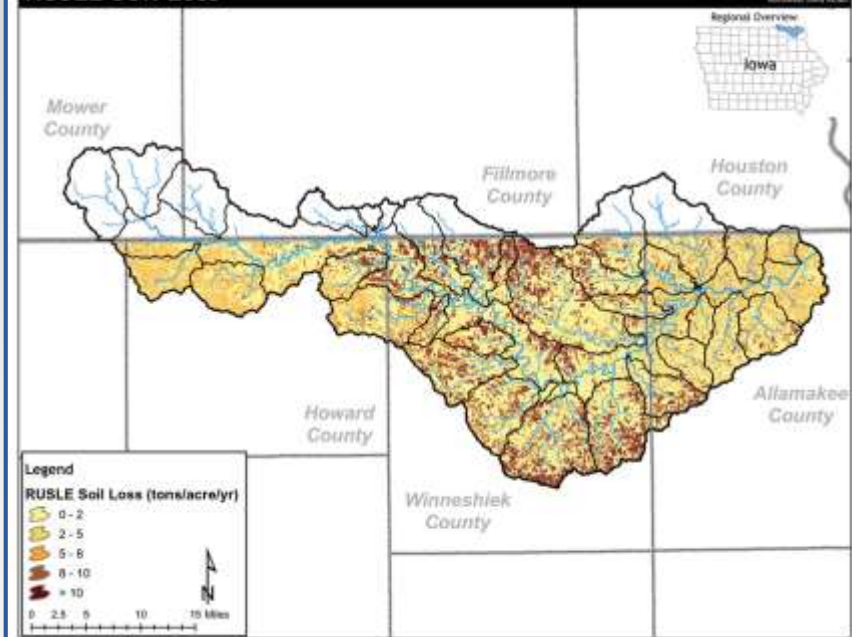


Carpenter  
Nature Center

2013 Aerial Photo



## RUSLE Soil Loss



## RUSLE Factors

**B**oth RUSLE and USLE can be expressed as follows:

$$A = R * K * LS * C * P$$

Where

**A** = estimated average soil loss in tons per acre per year

**R** = rainfall-runoff erosivity factor

**K** = soil erodibility factor

**L** = slope length factor

**S** = slope steepness factor

**C** = cover-management factor

**P** = support practice factor

### RUSLE Calculator

Inputs (Required)	
County	Washington
Assigned Soil Erodability Factor (K)	0.27
Land Use	Pasture & Rangeland
Percent Slope (ps)	10 %
Slope Length (L) (feet)	60 Feet
Cover & Management Factor (C)	0.14
Support Practice Factor (P)	1.00

Calculated Values	
Rainfall & Runoff Factor (R)	120
Corrected Soil Erodability Factor (K)	0.25
Slope Length & Steepness (LS)	1.10

Result	
Predicted Annual Soil Loss	4.62 Tons/Acre/Year

### RUSLE Calculator

Inputs (Required)	
County	Washington
Assigned Soil Erodability Factor (K)	0.27
Land Use	Pasture & Rangeland
Percent Slope (ps)	10 %
Slope Length (L) (feet)	60 Feet
Cover & Management Factor (C)	0.01
Support Practice Factor (P)	1.00

Calculated Values	
Rainfall & Runoff Factor (R)	120
Corrected Soil Erodability Factor (K)	0.25
Slope Length & Steepness (LS)	1.10

Result	
Predicted Annual Soil Loss	0.40 Tons/Acre/Year



### Sheet & Rill Erosion Control

SLBpa  
Soil Loss Before per acre  
(T/Ac/yr)

SLApa  
Soil Loss After per acre  
(T/Ac/yr)

D  
distance to surface water  
(feet)

SLRpa  
Soil Loss Reduction per acre  
= SLBpa - SLApa (T/Ac/yr)

SLR = (SLRpa)(Ac)  
Soil Loss Reduction (T/yr)

SOIL = sand (1), silt (2),  
clay(3), Peat(4)

AC = units applied (acres)

CA = contributing acres (acres)

SEDBpa (T/A/Y)  
= SLBpa \* SCR  
sed before/ acre

SEDApa (T/A/Y)  
= SLApa \* SCR  
sed after /acre

SDR = 0.25

Filter Strip present  
before installation  
Y/N  
  
  
Filter  
Strip  
Factor

SEDBpa  
= FS \* SEDBpa  
(T/A/Y)

SEDApa  
= FS \* SEDApa  
(T/A/Y)

SEDR  
= (SEDBpa - SEDApa) / CA  
Sediment Reduction (T/yr)

PEBpa  
P before/acre  
(lbs/A/yr)

PApa  
P after/acre  
(lbs/A/yr)

PR  
= (PEBpa - PApa) / CA  
P reduction (lbs/yr)

- input  
 - calculated value  
 - result

ENTER THIS DATA ON eLINK INDICATORS TAB	
SEDIMENT (TSS) T/yr:	1.10
SOIL (estimated savings) T/yr:	4.25
PHOSPHORUS (est. reduction) lbs/yr:	1.60

# Ecological Considerations

- Size
- Shape
- Aspect
- Slope
- Topography
- Hydrology
- Soil Type
- Wildlife
- Existing vegetation
- Canopy cover
- Land Use History
- Surrounding Land Use





# Materials and Implementation

- Restoration goal
- Site preparation
- Plant selection and installation
- Erosion control
- Management



WASHINGTON COUNTY  
LAND & WATER LEGACY  
PROGRAM- CONSERVATION PLAN

PRIORITY LAND  
PROTECTION AREAS

JULY 2010

KEY TO FEATURES

PRIORITY RANKING FOR LAND PROTECTION

- 5 - 8 Low
- 6 - 9 Medium
- 9 - 15 High
- 16 - 30 Very High

STREAMS

Blue line

LAKES

Blue area

MUNICIPALITIES

Black outline

US Interstate Highway

US Highway

County Road

Digital Elevation Model

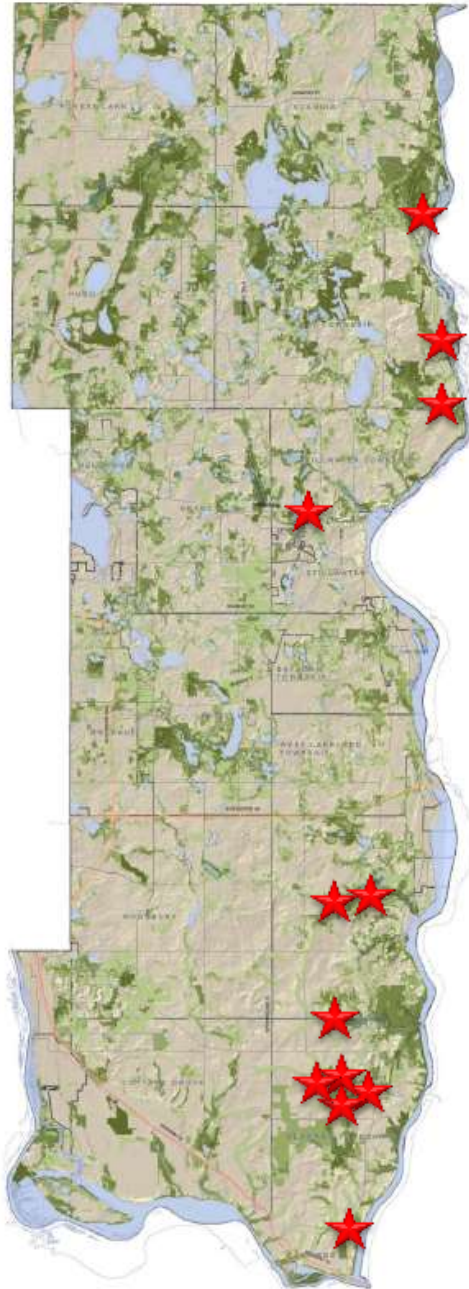
High: 264

Low: 0

CRITERIA LAYERS:

1. Surface Water Module
2. Drinking Water (Ground Water) Module
3. Ecological Patches Module
4. Connectivity Module

Map Prepared By:



- 12 projects
- 19.8 acres of prairie
- 28.9 lb/year Phosphorus reduction







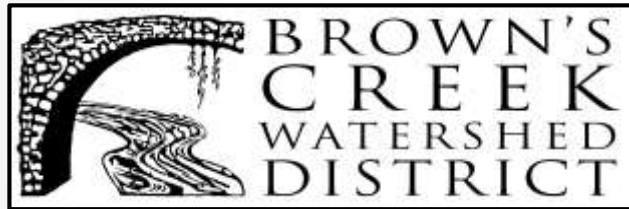












A wide-angle photograph of a lush, green field filled with tall grasses and various wildflowers, including purple and yellow blooms. The field extends to a distant treeline under a bright blue sky with scattered white clouds. The text "Questions?" is centered in the upper portion of the image.

Questions?

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