

RURAL SUBWATERSHED ANALYSIS



RUSH LAKE WATERSHED

**PREPARED BY THE CHISAGO SOIL & WATER CONSERVATION DISTRICT IN
PARTNERSHIP WITH THE METRO CONSERVATION DISTRICTS**

This report details a rural sub-watershed analysis resulting in recommended locations for implementation of Best Management Practices to address the goals of the LGU (local government unit) within the highest priority sub-watersheds. This document should be considered one part of an overall watershed restoration plan, including educational outreach, stream restoration, riparian zone management, discharge prevention, upland native plant community restoration, pollutant source control and rural best management practices.

The methods and analysis behind this document attempt to provide a sufficient level of detail to rapidly assess sub-watersheds of variable scales and land uses to identify the highest priority sub-watersheds within a given watershed, and to identify optimal locations for the installation of rural best management practices. This report is a vital part of overall watershed restoration and should be considered in light of forecasting pollutant hot-spot treatment, agricultural and pasture management, riparian and upland habitat restoration, good housekeeping outreach and education, and others, within existing or future watershed restoration planning.

The analysis's background information is discussed, followed by a summary of the analysis's results, the methods used, and project profile sheets of the highest ranking sites for various best management practices. Lastly, the ranking criteria and results are discussed and source references are provided.

Results of this analysis are based on the development of project-specific conceptual best management practices that provide quality and volume treatment where none currently exists. Relative comparisons are then made between projects of a certain best management practice to determine where best to initialize design and implementation efforts. Final, site-specific designs will need to be developed to determine a more refined estimate of the reported pollution removal amounts reported herein. This typically occurs after the procurement of committed partnerships relative to the specific target project slated for the placement of best management practices.



FUNDING PROVIDED BY THE CLEAN WATER FUND (FROM THE CLEAN WATER, LAND, AND LEGACY AMENDMENT)

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Executive Summary

The Rush Lake Watershed (22,556 acres) was broken down into 20 subwatersheds. These subwatersheds were then lumped together into three sections based on estimates of annual pollutant load. Each section will be analyzed to a field specific level to prioritize locations that require Best Management Practices to reduce pollutant loading. Section 1 was analyzed first in 2013.

The landscape was reviewed via aerial photography and GIS as well as through field verification to locate and identify problem areas, such as concentrated flow areas (areas within an agricultural field or pasture where water flows) or drainage ditches (man-made channels within or adjacent to a field that cannot be farmed through). Animal operations and pastured wetlands were also marked for BMP consideration. Annual pollution loading of Total Phosphorus (TP) and Sediment (TSS) was modeled for identified concentrated flow areas and areas that need a filter strip. The other BMP locations were simply identified and listed with a project profile, but were not prioritized. Annual pollutant loading could not be determined for these BMPs due to lack of appropriate modeling software and wide variation of circumstances for the sites.

Section 1 is relatively flat and very heavily ditched. There are a few animal operations in the section. A common theme of nutrient management, whole farm planning, and conservation tillage is important for this section. Since these BMPs were determined to be necessary throughout the section, they were not discretely identified in the project profiles. However, they will be a focus when the implementation phase begins.

There are many possible locations for wetland restorations within this section. Individual sites were not identified here, but restoration potential should be considered in conjunction with other BMPs during site visits with landowners. It is not clear whether the wetlands in this section are acting as sinks or sources of phosphorus.

Erosion stabilization via grassed waterways or water and sediment control basins (WASCOBs) was the next most widely identified practice in this section. Due to the large network of drainage ditching, filter strips are also a high priority in the section.

This document will be modified to include updates as needed.

In the table on the following page, the fields with identified BMPs including water and sediment control basins, grassed waterways, and filter strips are listed by priority. In the BMP column, the W indicates Water and Sediment Control Basin, GW means a Grassed Waterway, and FS stands for Filter Strip.

Project	BMP	TP (Lb/yr)	TSS (Ton/yr)	Cost/Lb TP
Field 232	GW, FS	198	185	\$111
Field 151	GW, FS	197	182	\$121
Field 178	GW, FS	108	104	\$167
Field 8	W, GW	87	87	\$157
Field 231	GW, FS	75	67	\$125
Field 42	GW, FS	70	65	\$202
Field 2	GW	65	65	\$123
Field 134	W, GW	62	62	\$366
Field 96	GW, FS	59	51	\$130
Field 36	GW, FS	57	56	\$136
Field 133	W, GW	53	53	\$417
Field 280	GW	50	50	\$159
Field 150	GW, FS	50	45	\$290
Field 196	GW	49	49	\$113
Field 27	GW, FS	49	44	\$123
Field 256	GW	47	47	\$101
Field 333	GW, FS	45	42	\$154
Field 263	W, FS	44	35	\$370
Field 212 & 206	GW, FS	43	37	\$161
Field 4	W	42	42	\$312
Field 255	GW, FS	36	35	\$238
Field 353	GW	31	31	\$115
Field 103	W, GW, FS	30	29	\$502
Field 90	FS	30	22	\$88
Field 213	GW, FS	30	28	\$194
Field 292	GW	30	30	\$238
Field 124	FS	26	21	\$96
Field 300	GW	26	26	\$113
Field 29	FS	26	22	\$127
Field 222	GW, FS	25	20	\$279
Field 224	GW	24	24	\$141
Field 276	GW, FS	23	21	\$204
Field 250	GW	22	22	\$165
Field 281	GW	20	20	\$154
Field 180	GW, FS	19	17	\$470
Field 116	W, GW	17	17	\$732
Field 35	FS	17	12	\$129
Field 97	FS	17	13	\$138
Field 359	FS	17	11	\$153

Project	BMP	TP (Lb/yr)	TSS (Ton/yr)	Cost/Lb TP
Field 272, 274, 275	FS	16	12	\$150
Field 230	FS	15	10	\$143
Field 19 & 20	FS	14	12	\$204
Field 126	FS	14	10	\$207
Field 214	FS	13	11	\$188
Field 169	GW, FS	12	10	\$428
Field 172	FS	12	8	\$242
Field 163	FS	11	7	\$227
Field 238 & 239	FS	10	8	\$219
Field 99	FS	10	6	\$239
Field 205	FS	10	6	\$367
Field 18	FS	9	7	\$232
Field 40	GW	8	8	\$427
Field 135	W	8	8	\$2,451
Field 56	FS	8	6	\$338
Field 358	FS	7	4	\$327
Field 234 & 241	FS	7	4	\$298
Field 65 & 66	FS	6	3	\$374
Field 82	FS	6	4	\$374
Field 127	FS	6	4	\$323
Field 165 & 167	FS	5	3	\$469
Field 37	FS	4	3	\$548
Field 129	FS	4	3	\$497
Field 239 & 244	FS	4	2	\$548
Field 16	FS	3	2	\$866
Field 51 & 52	FS	3	2	\$866
Field 79	FS	3	2	\$730
Field 166 & 168	FS	3	2	\$679
Field 216	FS	3	2	\$679
Field 218	FS	3	2	\$866
Field 273	FS	3	0	\$747
Field 17	FS	2	1	\$942
Field 176	FS	2	1	\$942
Field 139	FS	2	1	\$891
Field 142	FS	2	1	\$942
Field 175	FS	2	1	\$968
Field 193	FS	2	1	\$993
Field 221	FS	2	0	\$942
Field 258	FS	2	1	\$942

Project	BMP	TP (Lb/yr)	TSS (Ton/yr)	Cost/Lb TP
Field 45 & 47	FS	2	1	\$1,019
Field 61	FS	1	0	\$1,782
Field 119	FS	1	0	\$1,782
Field 173	FS	1	0	\$1,833
Field 219	FS	1	0	\$2,343
Field 243	FS	1	0	\$1,782

About this Document

Document Overview

This subwatershed analysis is a watershed management tool to help prioritize rural retrofit projects by performance and cost effectiveness. This process helps maximize the value of each dollar spent.

This document is organized into four major sections that describe the general methods used, individual catchment profiles, a project ranking table, references used in this analysis protocol, and an appendix to provide additional information relevant to the analysis.

Methods

The methods section outlines general procedures used when assessing the Subwatershed. It is an overview of the processes of retrofit scoping, desktop analysis, field review, cost/treatment analysis, and project ranking. Any specific details of our process that differ from the standard protocol will be outlined here.

Project Profiles

Each site that was identified through the analysis will be given its own unique ID to coincide with the Subwatershed name and the land cover identification number (e.g. Rush Lake Watershed – Field 1). This ID will be used to describe each project identified in a particular location. Additional modifiers will be added to the ID to describe the type of project identified (e.g. Rush Lake Watershed – Wetland 1).

Project Summary/Description

Within each project summary is a table. Depending on the BMP type (WASCOB, Grassed Waterway, Filter Strip, Pastured Wetlands, or Animal Operation), pertinent information for modeling and watershed information is included in the table. Examples include watershed size, field acres, soil type, and number of landowners. An estimated annual pollutant load is included for WASCOBs, Grassed Waterways, and Filter Strips only due to difficulty in estimating these numbers for the other types of BMPs.

A brief description of the project area, ditching, and wetland conditions is also included.

Retrofit Recommendation

The recommendation section describes the conceptual BMP retrofit action that could be implemented in the identified location. This recommendation is subject to change when actual on-the-ground planning takes place.

Cost/Treatment Analysis

A summary table provides for direct comparison of the expected amount of treatment within a field that can be expected per invested dollar. In addition, the results of each field can be cross-referenced to optimize available capital budgets versus load reduction goals.

Aerial Photography

An aerial photograph from 2013 is provided within each project profile. A legend explains any markings on the map.

Retrofit Ranking

Retrofit ranking is only provided for the BMPs with estimated annual pollutant loading numbers (WASCOB, Grassed Waterways, and Filter Strips). The ranking takes into account all of the information gathered during the assessment process to create a prioritized project list by field. There may be more than one BMP needed on a particular field. The list is sorted by pounds per year of phosphorus loading for all identified issues on the field.

The Animal operations and Pastured Wetlands sections are simply identified, but are not ranked in any particular order.

References

This section identifies various sources of information synthesized to produce the assessment protocol utilized in this analysis.

Appendices

This section provides supplemental information and/or data used at various points along the assessment protocol.

Methods

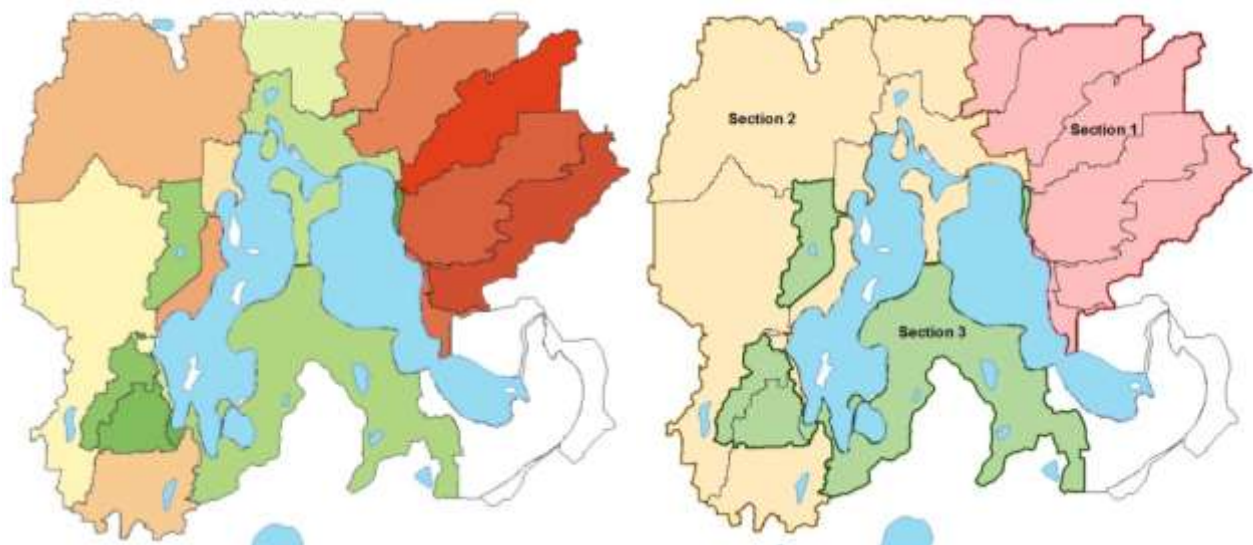
Selection of Subwatershed

Before the subwatershed analysis begins, a process of identifying a high priority waterbody as a target takes place. Many factors are considered when choosing which subwatershed to assess for stormwater retrofits. Water quality monitoring data, impaired water bodies, and TMDL studies are just a few of the resources available to help determine which water bodies are priorities. The availability of sufficient GIS data for review is crucial to the success of the project.

Rush Lake Subwatershed Selection

The watershed of East and West Rush Lake includes over 20 subwatersheds. To prioritize which of these subwatersheds should be assessed more closely for project prioritization, the protocol of the Washington Conservation District's Top 50P! program was used as a basis. Due to lack of vital data for Pine County, only the Chisago County portion of the watershed was analyzed.

The output of this protocol prioritized all the subwatersheds around Rush Lake by highest potential for pollutant loading (see figure below-red being the highest priority). This matched findings from stream monitoring completed by Rush Lake Improvement Association volunteers through a Chisago SWCD and Minnesota Pollution Control Agency grant in 2009 and 2010. Groups of like-ranked subwatersheds were grouped together into a "section". There are 3 sections identified, with 1 being the highest priority and 3 being the lowest priority (see figure below). The analysis method described below was carried out separately for each section.



Subwatershed Analysis Methods

The process used for this assessment is outlined below and was modified from the Washington Conservation District's Top50P! Protocol. Locally relevant design considerations were also included into the process.

Step 1: Scoping

Scoping includes determining the objective of the retrofit. It involves meeting with local staff to determine the issues in the subwatershed. This step also helps to define preferred treatment options and retrofit performance criteria. In order to create a manageable area to assess in large subwatersheds, a focus area may be determined.

Rush Lake Watershed Scoping

Pollutants of concern for this subwatershed were identified as Total Phosphorus (TP) and Total Suspended Solids (TSS). The Rush Lake Watershed was deemed an important watershed by the Chisago Soil & Water Conservation District Board and Staff and the Chisago County Water Resource Manager due to its listing on the impaired waters list.

Metric	Definition
Total Phosphorus (TP)	A nutrient essential to the growth of organisms, and is commonly the limiting factor in the primary productivity of surface water bodies. Total phosphorus included the amount of phosphorus in solution (reactive) and in particle form. Agricultural drainage, wastewater, and certain industrial discharges are typical sources of phosphorus, and can contribute to the eutrophication of surface water bodies. (MPCA Website)
Total Suspended Solids (TSS)	Very small particles remaining dispersed in a liquid due to turbulent mixing that can create turbid or cloudy conditions. (MPCA Website)

Step 2: Desktop Retrofit Analysis

The desktop analysis involves computer based scanning of the subwatershed for potential retrofit projects. Accurate GIS data is extremely valuable in conducting the desktop review. Some of the most important GIS layers include: 1-foot topography, soils, watershed boundaries, parcel boundaries, land cover, stream and ditch networks, wetland inventory, culverts, and high resolution aerial photography (all years that are available).

Rush Lake Desktop Retrofit Analysis

For this project, all potential projects were identified, regardless of current crop cover. The reasoning is that many of these fields are in a crop rotation and could become an issue when the cover type is changed. For example, contours may indicate a gully on a field that is currently in hay. Although the hay is likely to reduce the gully erosion, the field is included because if corn or beans is planted next year, a gully would likely form. The current crop cover at the time of this report is listed in the project profile.

Desktop Analysis Metrics an Potential Retrofit Project Sites	
Screening Metric	Potential Retrofit Project
Steep slopes (>6%)	Permanent vegetation, conservation tillage
Concentrated flow area	WASCOB, grassed waterway, lined waterway, diversion, sediment basin
Ditch system adjacent to agricultural land	Filter Strip
Animal operations	Use exclusion, fencing, manure management, rotational grazing
Pastured wetland	Use exclusion, fencing, rotational grazing
Altered/Ditched wetlands	Wetland restoration, permanent vegetation

In this report, the phrases “concentrated flow area” and “drainage ditch” are used. For the purposes of this analysis, a concentrated flow path is the path within the field where water is congregating and running where erosion is occurring. These are most often farmed through. For the purpose of this analysis, a drainage ditch is an excavated waterway that is not farmed through.

Step 3: Field review

After identifying potential project sites through desktop review, field review was conducted to evaluate each site. During this investigation, the potential projects were verified. All factors were taken into consideration to evaluate the feasibility of project installation options. Field review verified project locations and revealed additional retrofit opportunities.

Stormwater Treatment Options	
Best Management Practice	Definition
Filter Strip	Minimum of a 50 foot strip of perennial grasses and legumes planted along a stream, ditch, or wetland to capture sediment before it runs into the waterbody.
Grassed Waterway	A strip of grass in a crop field planted to reduce erosion where water concentrates.
Water & Sediment Control Basin (WASCOB)	An earthen embankment that traps water and sediment running off cropland upslope from the structure, and reduces gully erosion by controlling flow within the drainage area. The basin releases water slowly, usually through infiltration or a pipe outlet and tile line.
Animal Operation Improvements	Changes to animal operations that include animal operation improvements, use exclusion, fencing, and manure management.
Nutrient Management	Time and type of application and incorporation.
Conservation Tillage	Mulch till (partially incorporate residue), no till (maintain most of residue on soil surface year round).
Wetland Restoration	Restoring hydrology, often by plugging a drainage ditch. Plant native wetland species.
Permanent Vegetation	Planting of permanent hay or native grasses, usually on a field with steep slopes over 6%.

Lined Waterway	A waterway having an erosion-resistant lining of concrete, stone, synthetic turf reinforcement fabrics, or other permanent material.
Diversion	A channel generally constructed across the slope with a supporting ridge on the lower side to break up concentrations of water on long slopes.
Sediment Basin	A constructed basin designed to collect and store waterborne debris or sediment.
Use Exclusion/Access Control/Fencing	Temporarily or permanently excluding animals, people, or vehicles from an area. Usually achieved through fencing.
Rotational Grazing	A system of grazing animals in several areas for determined periods of time to prevent overgrazing and allow vegetation regeneration.
Critical Area Seeding	Planted vegetation such as trees, shrubs, vines, grasses, or legumes on highly erodible or critically eroding areas.
Grade Stabilization	A structure used to control the grade and head-cutting in natural or artificial channels.

Step 4: Treatment Analysis/Cost Estimates

All projects are conceptual at this point. Many of the practices will require the design assistance from a professional engineer. The reported treatment levels are based on the best case scenarios and may vary greatly from the project that is ultimately installed. Additional projects on the same field may also be discovered when meeting with the landowner.

Modeling of each project is done by one or more methods such as: BWSR Spreadsheet for Filter Strips and Gully Erosion and RUSLE2. Sediment and phosphorus loading information will be provided by these model outputs.

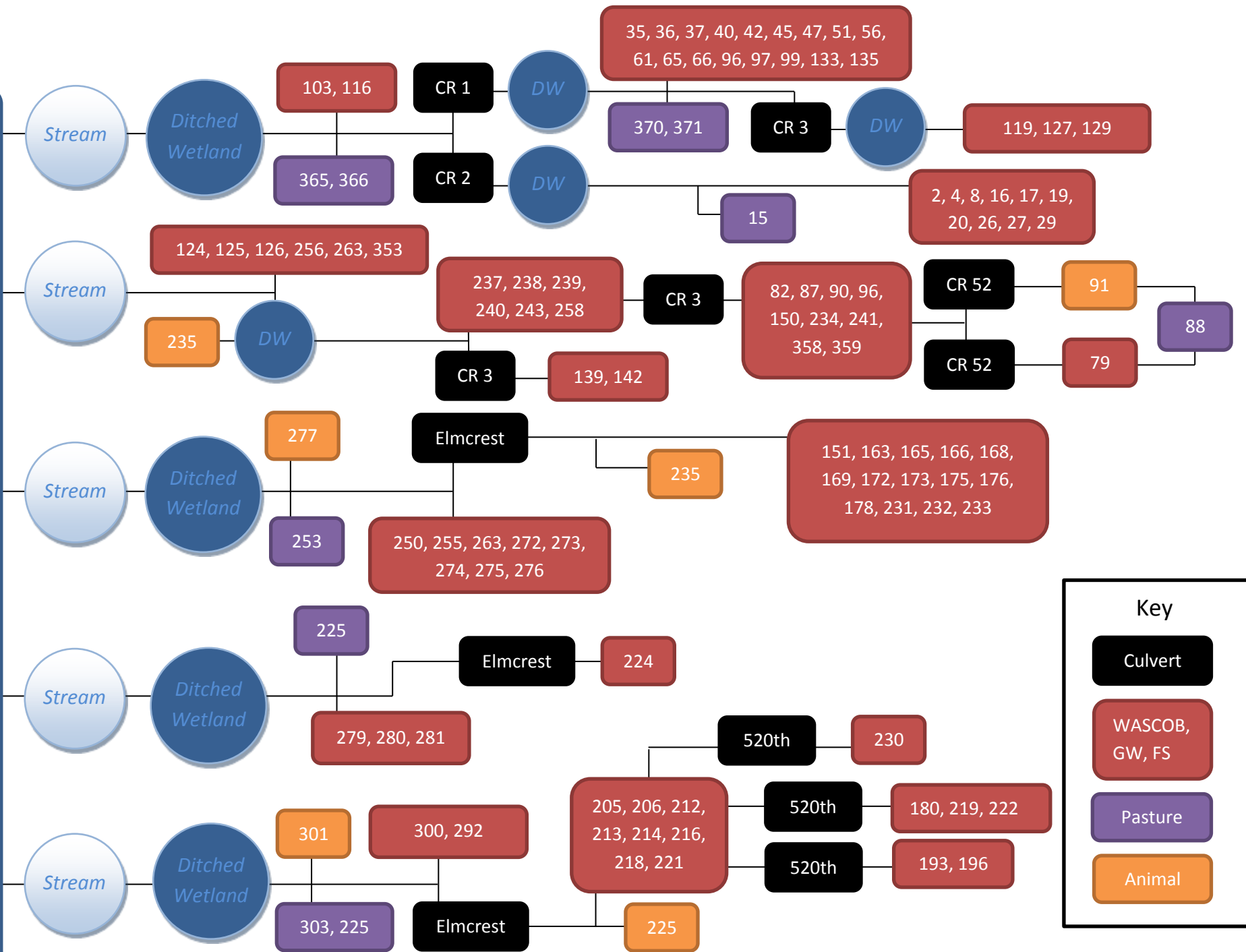
Rush Lake Watershed Treatment Analysis

Some identified projects (Animal Operations, Pastured Wetland) were not modeled for treatment analysis due to lack of appropriate modeling tools. These projects are identified in this report, but are not ranked.

Conservation tillage and nutrient management were practices that were identified for every agricultural field and pasture in the watershed. Due to the large number of fields and pastures, and the difficulty in modeling accurate potential treatment, these practices are considered a focus for the entire subwatershed and were not identified or ranked separately.

General Model Inputs	
Parameter	Method for Determining Value
WASCOB/Grassed Waterway	BWSR Spreadsheet-Gully
Filter Strip	BWSR Spreadsheet-Filter Strip; RUSLE2

Rush Lake



Key

Culvert

WASCOB,
GW, FS

Pasture

Animal

The diagram on the previous page shows the drainage network for the Rush Lake Section 1 Watershed. There are five main tributaries that directly enter Rush Lake. All of the major wetlands in the watershed have been altered by drainage ditches. The major road culverts are identified in the chart. All of the pastures, fields with WASCOBS, grassed waterways, or filter strips, and animal operations that are identified in the Project Profiles of this document are identified on this chart.

Cost Estimates

Each resulting BMP (for WASCOB, GW, and FS) was then assigned an estimated design, installation, and first-year establishment-related costs. The annual cost/TP removal for each BMP was calculated for the 10 year life-cycle for the BMP, which included promotional, administrative, and life-cycle operations and maintenance costs.

The following table provides the BMP cost estimates used to assist in cost analysis:

BMP	Initial Installation Cost (\$/unit)	Contracted Annual Maintenance Cost (\$/unit)	O & M Term (Years)	Design Cost (\$70/hr)	Installation Oversight Cost (\$70/hr)	Total Installation Cost (Including 1 year maintenance)
Grassed Waterway (Per 1,000 feet)	\$4.00	\$0.25	10	\$1,120.00	\$560.00	\$5,930.00
WASCOB (0-10 acres drainage area)	\$8,438.00	\$100.00	10	\$843.80	\$421.90	\$9,803.70
WASCOB (10-20 acres drainage area)	\$11,250.00	\$150.00	10	\$1,125.00	\$562.50	\$13,087.50
WASCOB (20-40 acres drainage area)	\$16,875.00	\$200.00	10	\$1,687.50	\$843.75	\$19,606.25
Filter Strip (Per 10 acres)	\$500.00	\$10.00	10	\$1,120.00	\$560.00	\$6,780.00
Diversion (Per 500 linear feet)	\$7.00	\$0.25	10	\$560.00	\$280.00	\$4,465.00
Grade Stabilization Structure (0-10 acres drainage area)	\$9,250.00	\$100.00	10	\$925.00	\$462.50	\$10,737.50
Grade Stabilization Structure (10-20 acres drainage area)	\$15,000.00	\$150.00	10	\$1,500.00	\$750.00	\$17,400.00

Grade Stabilization Structure (20-40 acres drainage area)	\$28,125.00	\$200.00	10	\$2,812.50	\$1,406.25	\$32,543.75
Grade Stabilization Structure (40-80 acres drainage area)	\$37,500.00	\$250.00	10	\$3,750.00	\$1,875.00	\$43,375.00
Grade Stabilization Structure (80-250 acres drainage area)	\$56,250.00	\$300.00	10	\$5,625.00	\$2,812.50	\$64,987.50
Grade Stabilization Structure (250-500 acres drainage area)	\$112,500.00	\$350.00	10	\$11,250.00	\$5,625.00	\$129,725.00
Grade Stabilization Structure (500+ acres drainage area)	\$150,000.00	\$400.00	10	\$15,000.00	\$7,500.00	\$172,900.00
Nutrient Management (Per 10 acres)	\$11.00	-----	10	\$560.00	\$280.00	\$950.00
Prescribed Grazing (Per 10 acres)	\$93.00	-----	10	\$560.00	\$280.00	\$1,770.00
Wetland Creation (Per 10 acres)	\$7,000.00	\$45.00	10	\$2,800.00	\$1,400.00	\$74,650.00
Wetland Enhancement (Per 10 acres)	\$3,000.00	\$45.00	10	\$2,800.00	\$1,400.00	\$34,650.00
Wetland Restoration (Per 10 acres)	\$3,000.00	\$45.00	10	\$2,800.00	\$1,400.00	\$34,650.00
Feedlot Fix-Pit (first 500,000 CF storage)	\$1.55	\$0.01	10	\$11,200.00	\$5,600.00	\$795,050.00
Feedlot Fix-Pit (additional above 500,000 CF storage)	\$1.13	\$0.01	10	\$11,200.00	\$5,600.00	\$585,050.00

Feedlot Fix-Treatment Swale (Per 1,000 SF)	\$4.00	\$0.25	10	\$2,800.00	\$1,400.00	\$8,450.00
Feedlot Fix-Relocation	\$50,000.00	-----	-----	\$11,200.00	\$5,600.00	\$66,800.00

Step 5: Evaluation and Ranking

The results of each project site were analyzed for the most pollutant reduction with Total Phosphorus as the most important factor. Total Phosphorus was determined to be the most important factor because Rush Lake is impaired for nutrients.

Rush Lake Watershed Evaluation and Ranking

In the Rush Lake Watershed, we recommend specific practices to be implemented. These practices vary widely in cost depending on site specific factors. The highest priority areas are fields that, when adding together all the needed practices identified on one field, provide the most pollution reduction. This ranking will be reported in the Executive Summary. These practices are based on the assumption of willing landowners. If landowners are not willing to implement projects, we will move to the next willing participant.

Project Profiles-Section 1

The following pages provide project specific information that was analyzed for BMP options on specific sites for Section 1 of the Rush Lake Watershed. A portion of the watershed in Section 1 extends into Pine County. Due to lack of important baseline information for Pine County, only the Chisago County portion of the watershed is included in this analysis.

The recommended treatment that is reported is the best option that is available for the site. The BMP reported in the ranking table is determined by the combination of all identified practices on one field and their combined annual reduction of total phosphorus.

Rush Lake Watershed Project Profiles

Project profiles are provided for all identified projects, including water and sediment control basins, grassed waterways, filter strips, animal operations, and pastured wetlands. The profiles for WASCOB, grassed waterways, and filter strips are in order of their rank of annual loading of Total Phosphorus, with the highest loading field first. The order follows that of the chart on Pages 8-10. The animal operations and pastures are not ranked in any order.

Project Profiles-WASCOB, Grassed Waterways, and Filter Strips

For each profile, a catchment summary is included to provide the field acres, current (2013) vegetative cover, the number of landowners that would be involved in installing the suggested BMPs, soil type, and whether the field contains slopes in excess of 6%. Also included are the TP, TSS, estimated cost, and cost/lb TP for the combination of all identified BMPs on the field.

In the second table, each BMP practice is broken down individually. The amount of TP and TSS reduction, as well as estimated cost and cost/lb TP are listed for each practice. The additional information varies slightly depending on the exact BMP practice.

Distance to surface water is included in the project profile for each concentrated flow path. In this report, “surface water” includes perennial streams, intermittent streams, and ditches that connect directly with a stream or outlet directly to Rush Lake. In this subwatershed, there has been heavy manipulation of the original stream channel. Many sections of the stream have been straightened or ditched. The vast network of adjacent ditching often directly connects to the original stream channel. In these cases, these ditches are considered surface water. Wetlands are also considered surface water because they outlet to a stream or to Rush lake. There are no isolated basins in this subwatershed.

Distance to surface water was measured as the distance between the outlet of a concentrated flow path to a surface water, such as a stream, ditch, or wetland.

Rush Lake Watershed-Field 232

Project Description

This is an agricultural field of about 47 acres that is planted in a corn-soybean rotation. Several concentrated flow paths drain off the field directly into the drainage ditch that surrounds nearly the entire field. This ditch eventually drains to Rush Lake.

BMP Recommendation

The erosion within the concentrated flow paths could be stabilized using grassed waterways. A 50-foot wide filter strip should be installed next to all ditches.



Catchment Summary	
Field Acres	47
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	198
Removed TSS (Ton/yr)	185
Estimated Cost	\$21,979
Cost/Lb TP	\$111
Model Inputs	
Soil Type	346; 292
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	27	27	6.1	1.2	0'	976'	\$5,828	\$216
GW 2	68	68	6.7	1.3	0'	588'	\$4,179	\$61
GW 3	17	17	2.0	1.1	0'	191'	\$2,492	\$147
GW 4	48	48	11.6	1.5	0'	672'	\$4,536	\$95
Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)			Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	38	25	<5			6.4	\$4,944	\$130

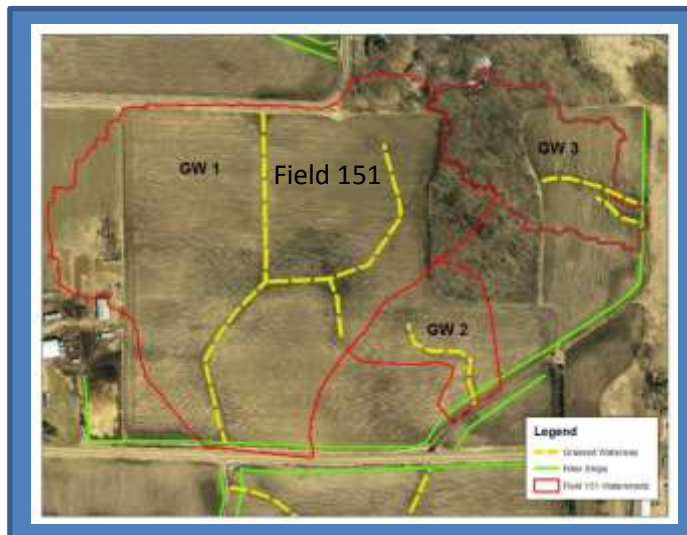
Rush Lake Watershed-Field 151

Project Description

This is a large agricultural field of about 46 acres. It is planted in a corn-soybean rotation. There is a large concentrated flow path running through the field and a drainage ditch runs alongside the field. The concentrated flow area drains to the ditch, which flows through more agricultural fields, pastures, and empties into Rush Lake.

BMP Recommendation

The concentrated flow areas should be converted to a grassed waterway. A 50-foot filter strip should be installed along the drainage ditch.



Catchment Summary	
Field Acres	45.6
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	197
Removed TSS (Ton/yr)	182
Estimated Cost	\$23,911
Cost/Lb TP	\$121
Model Inputs	
Soil Type	346;292;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	109	109	35.8	1.1	0'	2,525'	\$12,411	\$114
GW 2	27	27	4.3	2	0'	500'	\$3,805	\$141
GW 3	19	19	7.4	1.9	0'	576'	\$4,128	\$217
Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)			Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	42	27	<5'			3.7	\$3,567	\$85

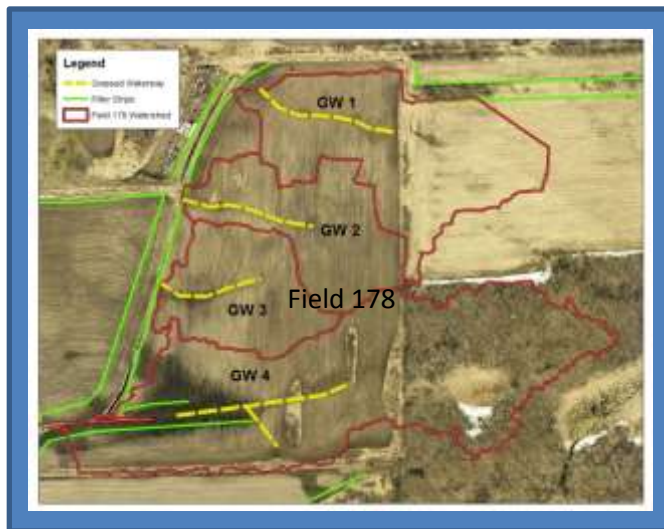
Rush Lake Watershed-Field 178

Project Description

This is a large agricultural field of about 23 acres. It is planted in a corn-soybean rotation. There is a ditch running along the west side of the field. Several concentrated flow paths run directly into the ditch, which drains to Rush Lake.

BMP Recommendation

A 50-foot filter strip should be installed along the drainage ditch. The erosion within the concentrated flow paths should be corrected with grassed waterways.



Catchment Summary	
Field Acres	22.9
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	108
Removed TSS (Ton/yr)	104
Estimated Cost	\$17,997
Cost/Lb TP	\$167
Model Inputs	
Soil Type	346; 75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	34	34	7.3	1.8	0'	460'	\$3,635	\$107
GW 2	29	29	4.3	1.3	0'	428'	\$3,499	\$120
GW 3	21	21	3.7	1.3	0'	339'	\$3,121	\$149
GW 4	12	12	13.8	1.9	0'	719'	\$4,736	\$395
Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)			Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	12	8	<5'			2.6	\$3,006	\$251

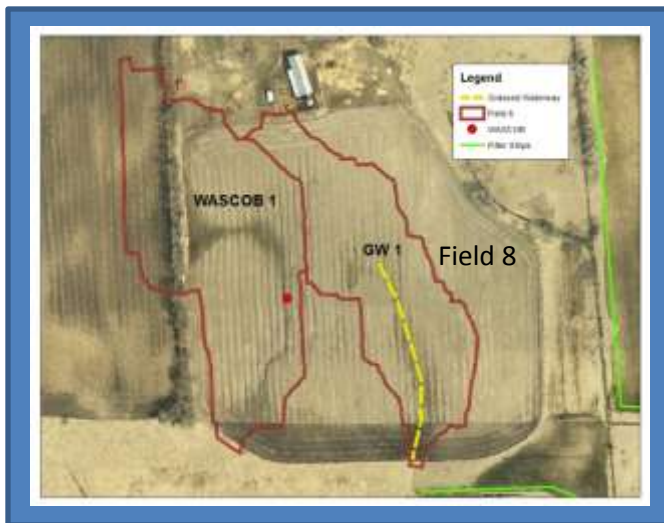
Rush Lake Watershed-Field 8

Project Description

This is an agricultural field of about 18 acres. It is planted in a corn-soybean rotation. The field is surrounded by ditched wetlands on two sides. Runoff from the field travels through two concentrated flow areas and empties into the drainage ditch, which empties into Rush Lake. There is a 150' filter strip of reed canary grass between the bottom of the concentrated flow areas and the drainage ditch.

BMP Recommendation

There is enough slope to install a WASCOB for the concentrated flow area on the left. The concentrated flow area on the right is not as steep and should be converted to a grassed waterway.



Catchment Summary	
Field Acres	18
Current Cover	Corn/Beans
# of Landowners	2
Removed TP (Lb/yr)	87
Removed TSS (Ton/yr)	87
Estimated Cost	\$13,690
Cost/Lb TP	\$157
Model Inputs	
Soil Type	204B;292;346;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	33	33	4.4	3.1	140'	519'	\$3,886	\$118
Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)		Estimated Cost	Cost/Lb TP
WASCOB 1	42	42	6.5	3.4	200'		\$9,804	\$233

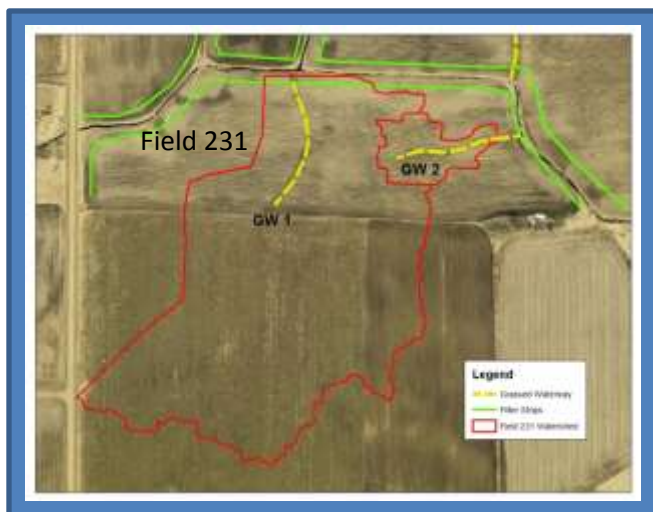
Rush Lake Watershed-Field 231

Project Description

This is an agricultural field of 12 acres. It is planted in a corn-soybean rotation. A significant amount of runoff runs through this field from a neighboring field, also planted in a corn-soybean rotation. This field is surrounded on three sides by a drainage ditch with no filter strip.

BMP Recommendation

The concentrated flow areas should be corrected with grassed waterways. A 50-foot wide filter strip should be installed along the drainage ditches.



Catchment Summary	
Field Acres	12.3
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	75
Removed TSS (Ton/yr)	67
Estimated Cost	\$9,401
Cost/Lb TP	\$125
Model Inputs	
Soil Type	346
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	31	31	15.7	2	0'	398'	\$3,372	\$109
GW 2	23	23	1.1	1	0'	376'	\$3,278	\$143
Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)			Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	21	13	<5'			2.1	\$2,751	\$131

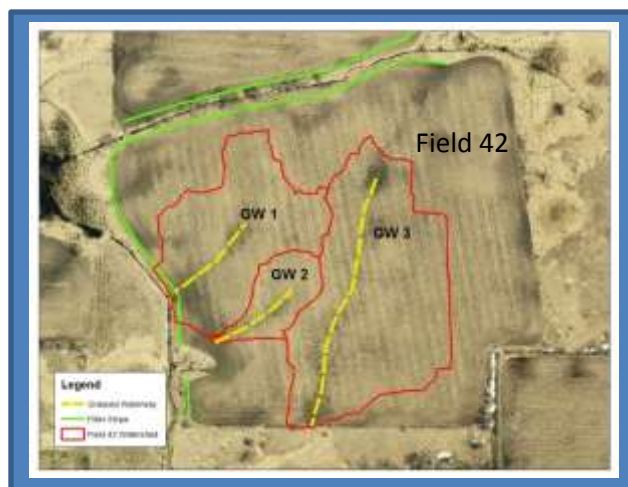
Rush Lake Watershed-Field 42

Project Description

This is an agricultural field of about 29 acres. It is planted in a corn-soybean rotation. The field is surrounded by ditched wetlands on two sides. Runoff from the field through several concentrated flow areas empties into the drainage ditch, which empties into Rush Lake.

BMP Recommendation

The erosion within the concentrated flow areas should be corrected with water grassed waterways. A 50 foot filter strip should be installed around all drainage ditches.



Catchment Summary	
Field Acres	29.3
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	70
Removed TSS (Ton/yr)	65
Estimated Cost	\$14,107
Cost/Lb TP	\$202
Model Inputs	
Soil Type	292;204C;346
Slopes >6%	Partially

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	20	20	4.7	2.2	0'	324'	\$3,057	\$153
GW 2	18	18	1.2	2.3	0'	303'	\$2,968	\$165
GW 3	12	12	7.6	2.8	120'	847'	\$5,280	\$440
Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)			Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	20	15	3-15'			2.2	\$2,802	\$140

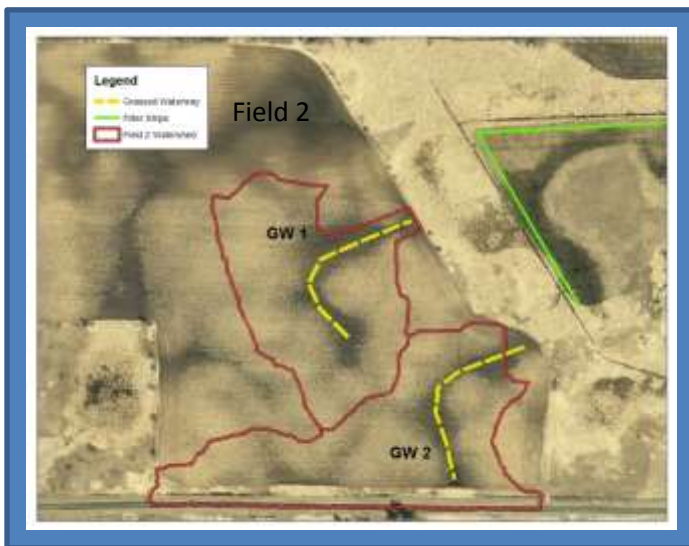
Rush Lake Watershed-Field 2

Project Description

This is an agricultural field of about 35 acres, but only about 19 acres is within the subwatershed of concern. It is planted in a corn-soybean rotation. This portion of the field drains to a drainage ditch. There is a large filter strip of reed canary grass between the field and the ditch.

BMP Recommendation

The concentrated flow areas could be corrected with grassed waterways.



Catchment Summary	
Field Acres	18.7
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	65
Removed TSS (Ton/yr)	65
Estimated Cost	\$8,001
Cost/Lb TP	\$123
Model Inputs	
Soil Type	204B;204C;75
Slopes >6%	Partially

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	38	38	5.6	3.3	230'	548'	\$4,009	\$106
GW 2	27	27	6.9	4.5	200'	544'	\$3,992	\$148

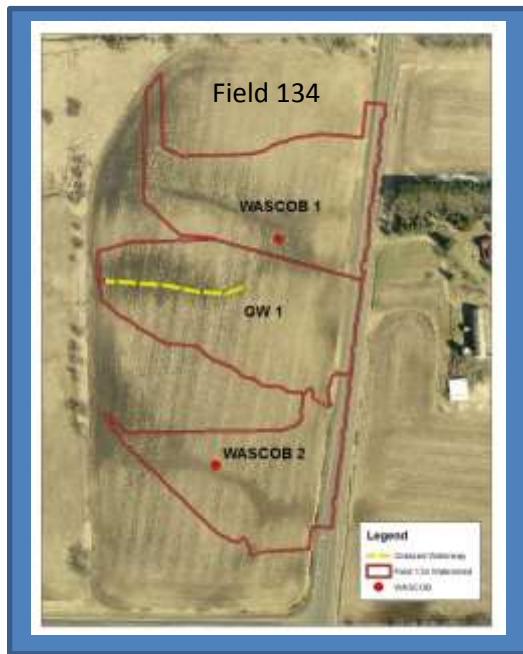
Rush Lake Watershed-Field 134

Project Description

This is an agricultural field of about 16 acres on a steep slope. A portion of the field has slopes in excess of 6%. The average slopes for the watershed of each concentrated flow area are between 4 and 5%. It is planted in a corn-soybean rotation. Three perennial concentrated flow areas run across the field and enter a ditched wetland that empties in Rush Lake.

BMP Recommendation

The steeply sloped portion of this field should be converted to permanent vegetative cover. The concentrated flow areas could be stabilized using water and sediment control basins or grassed waterways.



Catchment Summary	
Field Acres	16
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	62
Removed TSS (Ton/yr)	62
Estimated Cost	\$22,691
Cost/Lb TP	\$366
Model Inputs	
Soil Type	346;292;204C
Slopes >6%	Partially

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	19	19	3.3	1.1	253'	330'	\$3,083	\$162
Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)		Estimated Cost	Cost/Lb TP
WASCOB 1	20	20	3.1	5.1	252'		\$9,804	\$490
WASCOB 2	23	23	2.5	3.6	335'		\$9,804	\$426

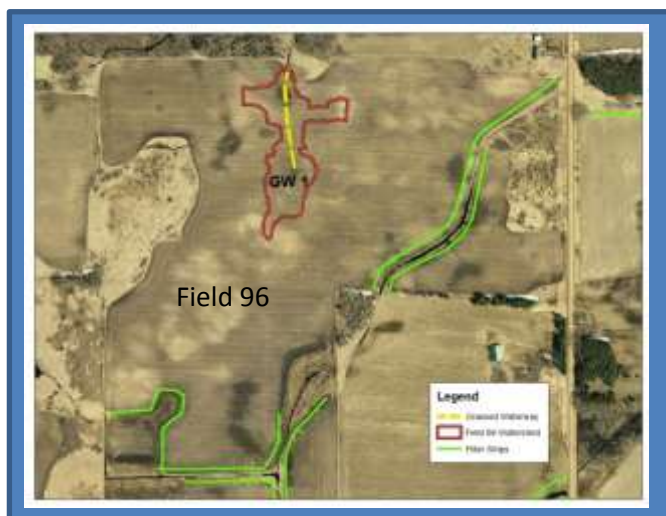
Rush Lake Watershed-Field 96

Project Description

This is an agricultural field of about 75 acres. It is planted in a corn-soybean rotation. About half of the field drains directly into a drainage ditch, which runs to Rush Lake. The remaining acres drain to a wetland or to a stream with a wooded filter strip. There is one large concentrated flow path on the field.

BMP Recommendation

The erosion within the concentrated flow area should be corrected with a grassed waterway. A 50-foot wide filter strip should be installed next to the ditch.



Catchment Summary	
Field Acres	74.6
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	59
Removed TSS (Ton/yr)	51
Estimated Cost	\$7,644
Cost/Lb TP	\$130
Model Inputs	
Soil Type	346;292;204B; 169B;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	35	35	4.3	1.5	390'	540'	\$3,975	\$114
Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)			Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	24	16	<5'			3.9	\$3,669	\$153

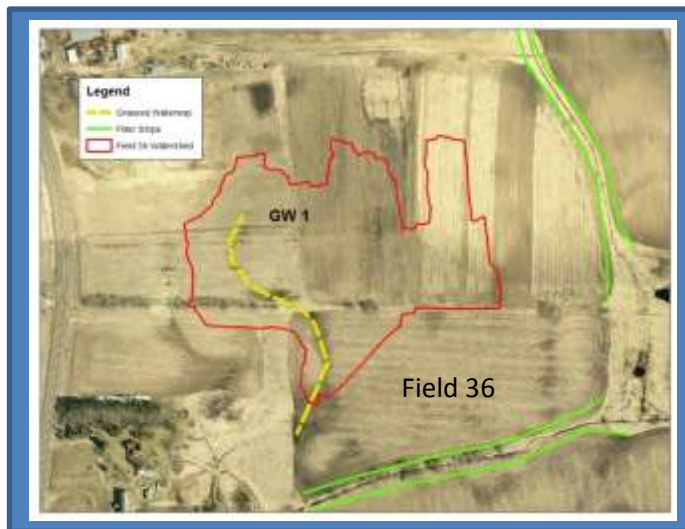
Rush Lake Watershed-Field 36

Project Description

This is an agricultural field of about 12 acres. It is planted in a corn-soybean rotation. Water from adjacent fields drains through this field to the drainage ditch to the south. The large watershed creates a concentrated flow path within the field that empties directly into the ditch. The ditch eventually empties into Rush Lake.

BMP Recommendation

The erosion within the concentrated flow path should be corrected with a grassed waterway. A 50-foot wide filter strip should be installed next to the ditch.



Catchment Summary	
Field Acres	11.6
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	57
Removed TSS (Ton/yr)	56
Estimated Cost	\$7,733
Cost/Lb TP	\$136
Model Inputs	
Soil Type	346;292;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	55	55	11.3	2.2	880'	885'	\$5,441	\$99
Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)			Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	2	1	<5'			1.2	\$2,292	\$1,146

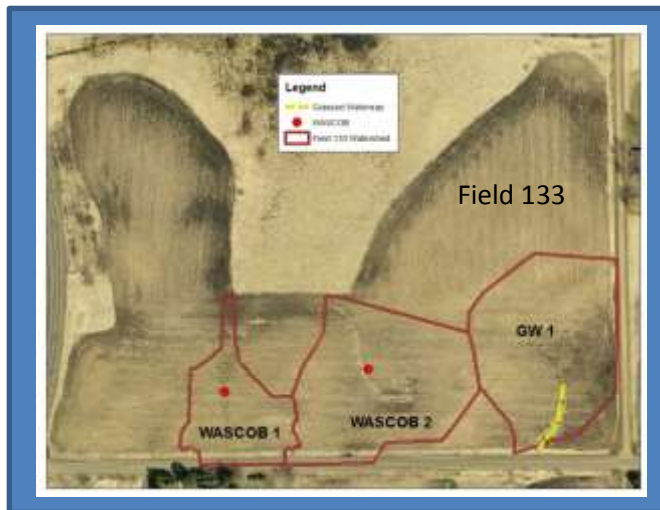
Rush Lake Watershed-Field 133

Project Description

This is an agricultural field of about 25 acres. It is planted in a corn-soybean rotation. Three concentrated flow paths run through the field. Two of the concentrated flow paths drain into a wetland, which has a stream that empties into Rush Lake. The other concentrated flow path drains into the road ditch.

BMP Recommendation

A grassed waterway or water and sediment control basin should be installed to correct the erosion within the concentrated flow paths.



Catchment Summary	
Field Acres	25.0
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	53
Removed TSS (Ton/yr)	53
Estimated Cost	\$22,079
Cost/Lb TP	\$417
Model Inputs	
Soil Type	346;292;75;204B
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	12	12	3.5	7.1	300'	186'	\$2,471	\$206
Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)		Estimated Cost	Cost/Lb TP
WASCOB 1	20	20	1.6	5.6	730'		\$9,804	\$490
WASCOB 2	21	21	3.5	3.1	880'		\$9,804	\$467

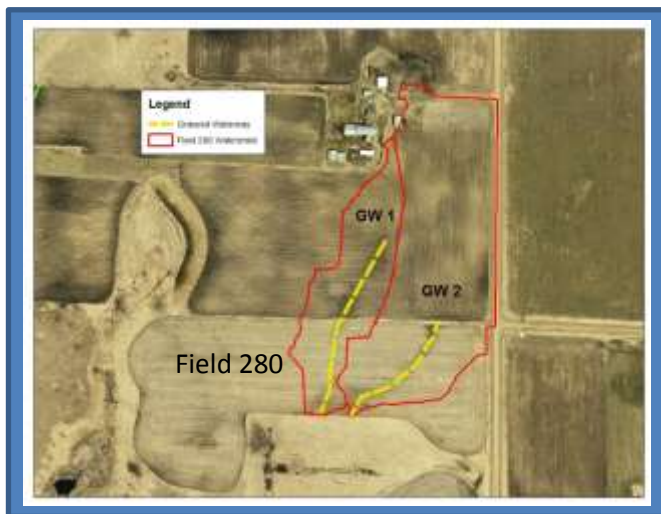
Rush Lake Watershed-Field 280

Project Description

This is an agricultural field of about 11 acres. It is planted in a corn-soybean rotation. Runoff water drains from the neighboring corn-soybean field to the north. There are two concentrated flow paths in the field that drain to a ditched wetland. The ditch eventually outlets to Rush Lake.

BMP Recommendation

The erosion within the concentrated flow paths should be corrected with grassed waterways.



Catchment Summary	
Field Acres	11.4
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	50
Removed TSS (Ton/yr)	50
Estimated Cost	\$7,925
Cost/Lb TP	\$159
Model Inputs	
Soil Type	346;204B;292
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	28	28	3.5	2.9	145'	630'	\$4,358	\$156
GW 2	22	22	8.3	1.4	280'	444'	\$3,567	\$162

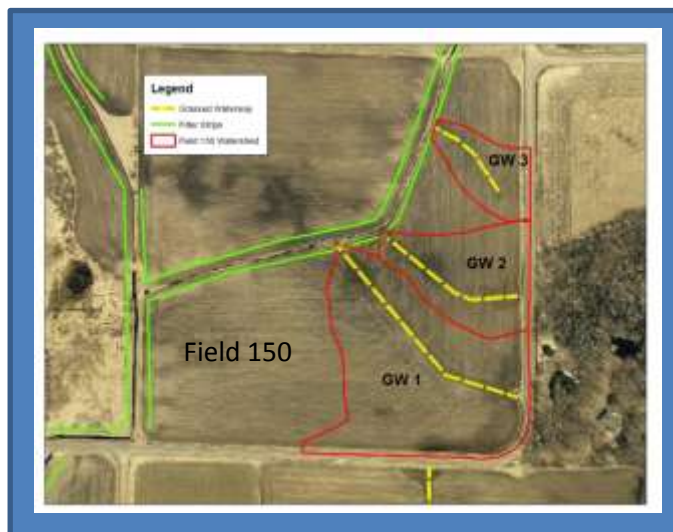
Rush Lake Watershed-Field 150

Project Description

This is an agricultural field of about 22 acres. It is currently planted in hay, but has been in a corn-soybean rotation in the recent past. A large drainage ditch borders the field on several sides. This ditch system eventually enters Rush Lake. Three concentrated flow paths drain from the field to the ditch system.

BMP Recommendation

If this field is converted to an annual row crop, grassed waterways should remain to reduce erosion within the concentrated flow paths. A filter strip of at least 50 feet should remain along all drainage ditches.



Catchment Summary	
Field Acres	22.3
Current Cover	Hay
# of Landowners	1
Removed TP (Lb/yr)	50
Removed TSS (Ton/yr)	45
Estimated Cost	\$14,511
Cost/Lb TP	\$290
Model Inputs	
Soil Type	346;292;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	17	17	7.5	0.5	0'	790'	\$5,038	\$296
GW 2	11	11	2.9	0.6	0'	493'	\$3,775	\$343
GW 3	6	6	1.5	0.9	0'	298'	\$2,947	\$491
Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)			Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	16	11	<5'			2.1	\$2,751	\$172

Rush Lake Watershed-Field 196

Project Description

This is an agricultural field of about 27 acres. It is currently planted in hay, but has been in a corn-soybean rotation in the past 3 years. A large concentrated flow path that is farmed through drains most of the field to a small wetland and the road ditch. The rest of the field drains to a ditched wetland complex.

BMP Recommendation

If the field is converted to an annual row crop, the concentrated flow path should remain a grassed waterway.



Catchment Summary	
Field Acres	27.3
Current Cover	Hay
# of Landowners	1
Removed TP (Lb/yr)	49
Removed TSS (Ton/yr)	49
Estimated Cost	\$5,518
Cost/Lb TP	\$113
Model Inputs	
Soil Type	346;292;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	49	49	14	1.2	0'	903'	\$5,518	\$113

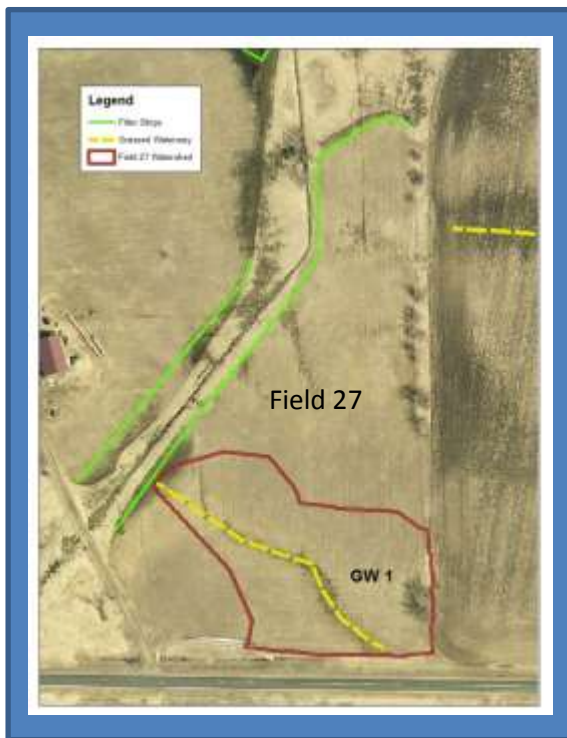
Rush Lake Watershed-Field 27

Project Description

This is an agricultural field of about 7 acres. It is currently planted in hay, and is likely to stay in hay. The landowner has several horses. There is a gully that runs through the field. The gully appears stable while in hay production, but could become active if the field is converted to another crop.

BMP Recommendation

The field should remain in hay production. If another crop is grown, a water and sediment control basin or grassed waterway should be installed.



Catchment Summary	
Field Acres	6.6
Current Cover	Hay
# of Landowners	1
Removed TP (Lb/yr)	49
Removed TSS (Ton/yr)	44
Estimated Cost	\$6,029
Cost/Lb TP	\$123
Model Inputs	
Soil Type	292;544;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	23	23	2	3.9	0'	496'	\$3,788	\$165
Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)			Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	26	21	25-30'			1.1	\$2,241	\$86

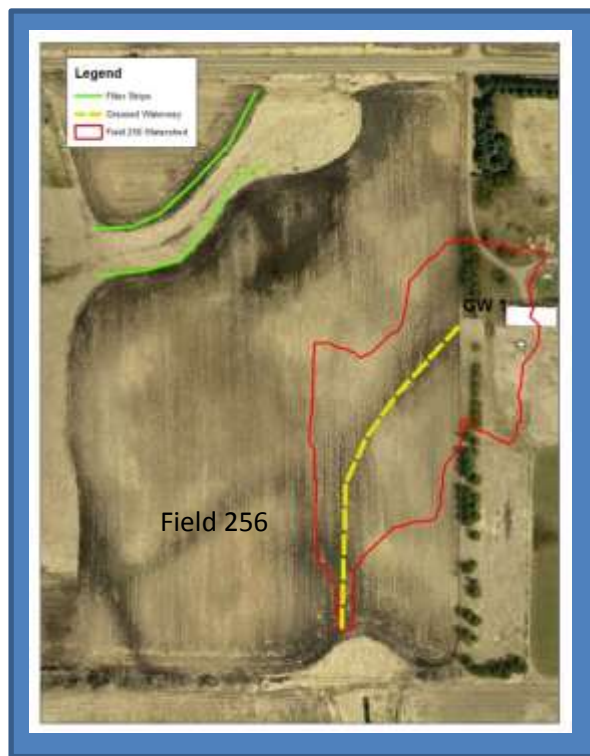
Rush Lake Watershed-Field 256

Project Description

This is an agricultural field of about 17 acres. It is planted in a corn-soybean rotation. One concentrated flow path runs through the field and drains directly into a ditched wetland. The ditch system empties to Rush Lake. The Filter Strip shown on the map is a part of a different field.

BMP Recommendation

A grassed waterway should be installed to correct the erosion within the concentrated flow path.



Catchment Summary	
Field Acres	16.8
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	47
Removed TSS (Ton/yr)	47
Estimated Cost	\$4770
Cost/Lb TP	\$101
Model Inputs	
Soil Type	346;292;204B
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	47	47	4.8	1.7	135'	727'	\$4,770	\$101

Rush Lake Watershed-Field 233

Project Description

This is an agricultural field of about 15 acres. It is planted in a corn-soybean rotation. Most of the field drains through a concentrated flow path to a drainage ditch. Ditching runs alongside the eastern and southern edge of the field. This drainage ditch empties into Rush Lake.

BMP Recommendation

A grassed waterway should be installed to correct the erosion within the concentrated flow path. There should be a 50-foot filter strip between the edge of the field and the ditches.



Catchment Summary	
Field Acres	15.6
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	45
Removed TSS (Ton/yr)	42
Estimated Cost	\$6,922
Cost/Lb TP	\$154
Model Inputs	
Soil Type	346;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	33	33	5.8	1.8	0'	562'	\$4,069	\$123
Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)			Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	12	9	<5'			2.3	\$2,853	\$238

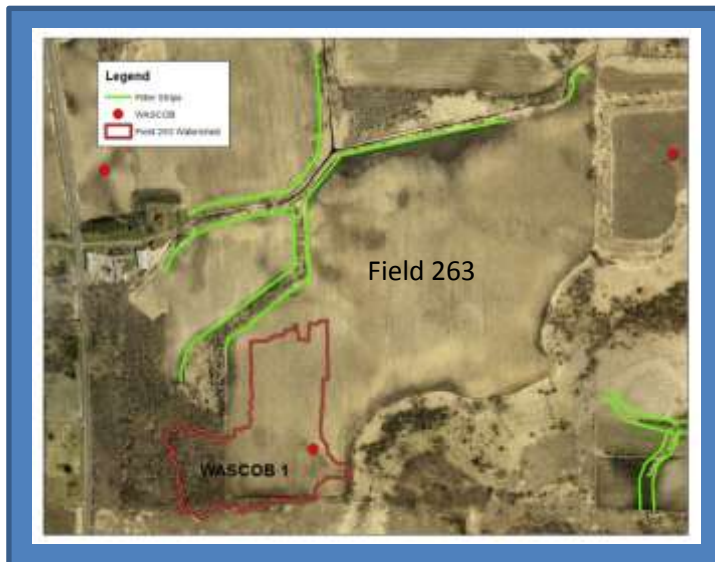
Rush Lake Watershed-Field 263

Project Description

This is a large agricultural field of about 62 acres with two owners. It is planted in a corn-soybean rotation. A small portion of the field has steep slopes in excess of 6%, including the portion that has a concentrated flow path on it. A drainage ditch runs along the north side of the field and eventually empties into Rush Lake.

BMP Recommendation

A water and sediment control basin should be installed to correct the erosion within the concentrated flow path. A 50-foot filter strip should be installed along the drainage ditch.



Catchment Summary	
Field Acres	62.5
Current Cover	Corn/Beans
# of Landowners	2
Removed TP (Lb/yr)	44
Removed TSS (Ton/yr)	35
Estimated Cost	\$16,247
Cost/Lb TP	\$370
Model Inputs	
Soil Type	346;292;204B; 204C;928B
Slopes >6%	Partially

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)		Estimated Cost	Cost/Lb TP
WASCOB 1	18	18	12.8	1.3	0'		\$13,088	\$727
Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)			Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	26	17	30-35'			2.9	\$3,159	\$122

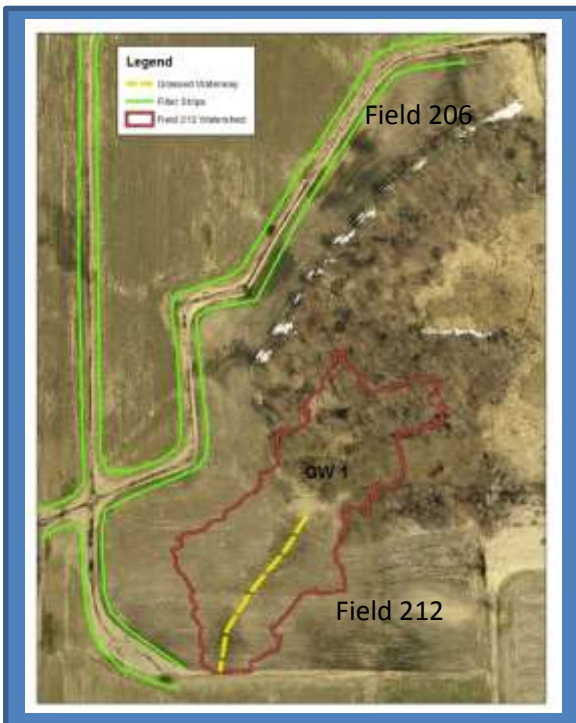
Rush Lake Watershed-Field 212 & 206

Project Description

This is an agricultural field of about 12 acres. It is planted in a corn-soybean rotation. A concentrated flow path runs through the field from the woods to the north to the drainage ditch to the south. The drainage ditch continues around the west side of the field.

BMP Recommendation

A grassed waterway or water should be installed to correct the gully erosion. A 50-foot filter strip should be installed along the drainage ditch.



Catchment Summary	
Field Acres	11.7
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	43
Removed TSS (Ton/yr)	37
Estimated Cost	\$6,905
Cost/Lb TP	\$161
Model Inputs	
Soil Type	346;292;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	21	21	6.4	1.8	0'	510'	\$3,848	\$183
Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)			Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	22	16	10-15'			2.7	\$3,057	\$139

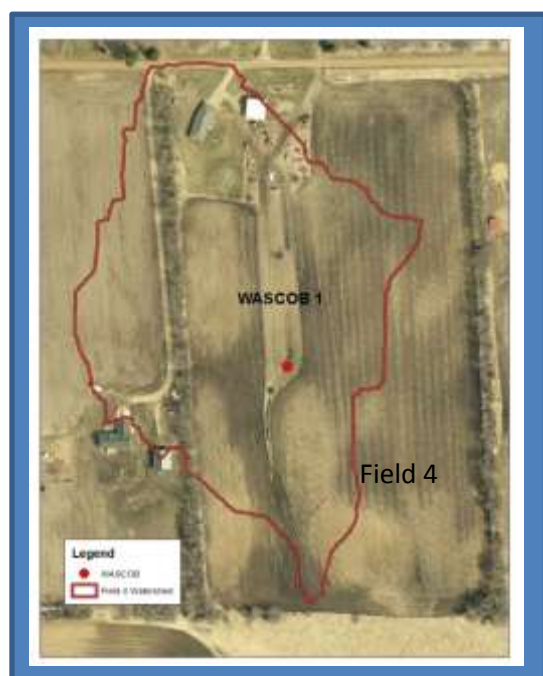
Rush Lake Watershed-Field 4

Project Description

This is an agricultural field of about 11 acres. It is planted in a corn-soybean rotation. A concentrated flow path runs through the field from the homestead to the north to the drainage ditch to the south. There is a large reed canary grass filter strip between the field and the drainage ditch.

BMP Recommendation

A sediment control basin should be installed to correct the erosion within the concentrated flow area.



Catchment Summary	
Field Acres	11.3
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	42
Removed TSS (Ton/yr)	42
Estimated Cost	\$13,088
Cost/Lb TP	\$312
Model Inputs	
Soil Type	346;204B;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Estimated Cost	Cost/Lb TP
WASCOB 1	42	42	11.3	5.6	315'	\$13,088	\$312

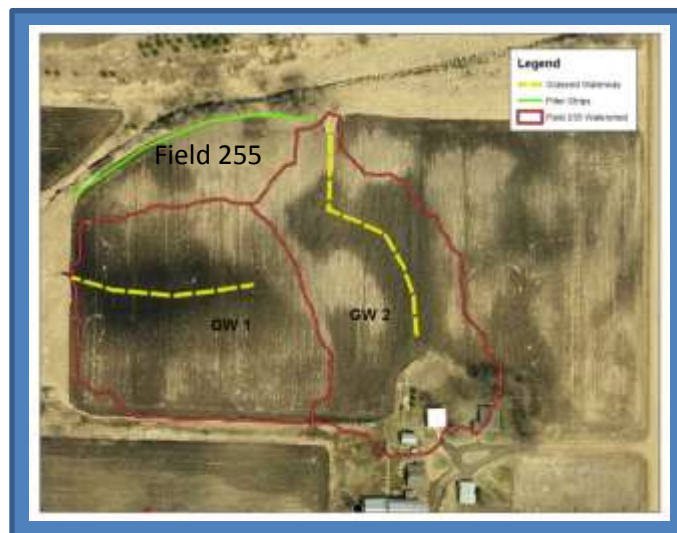
Rush Lake Watershed-Field 255

Project Description

This is an agricultural field of about 11 acres. It is currently planted in hay. Two concentrated flow paths run through the field. A stream runs right along the northern edge of the field and eventually empties into Rush Lake.

BMP Recommendation

If the field is converted to annual row crops, a grassed waterway should be left to prevent erosion within the concentrated flow path. The area along the stream should remain as a 50-foot filter strip.



Catchment Summary	
Field Acres	11.2
Current Cover	Hay
# of Landowners	1
Removed TP (Lb/yr)	36
Removed TSS (Ton/yr)	35
Estimated Cost	\$8,563
Cost/Lb TP	\$238
Model Inputs	
Soil Type	346;292;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	23	23	3.3	1.8	245'	325'	\$3,061	\$133
GW 2	10	10	3.2	2.3	50'	444'	\$3,567	\$357
Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)			Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	3	2	20'			0.5	\$1,935	\$645

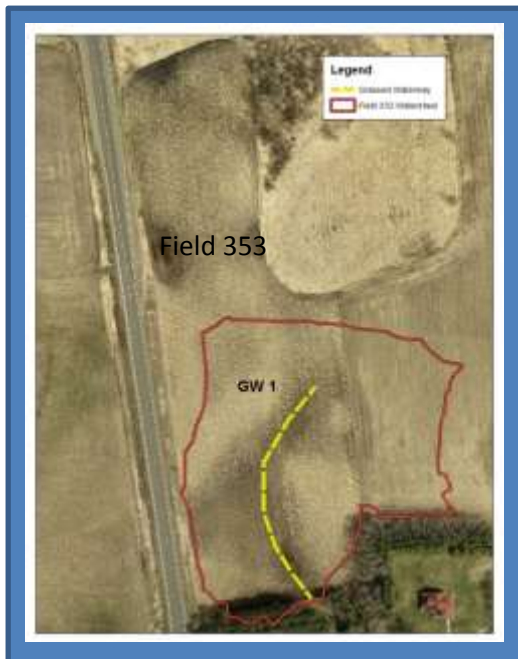
Rush Lake Watershed-Field 353

Project Description

This is an agricultural field of about 6 acres. It is planted in a corn-soybean rotation. A concentrated flow path drains off the field, through the farmstead, and into a small stream. The stream enters Rush Lake in less than 700 feet.

BMP Recommendation

A grassed waterway should be installed to correct the erosion within the concentrated flow path.



Catchment Summary	
Field Acres	6.4
Current Cover	Corn/Bean
# of Landowners	2
Removed TP (Lb/yr)	31
Removed TSS (Ton/yr)	31
Estimated Cost	\$3,550
Cost/Lb TP	\$115
Model Inputs	
Soil Type	204B;544
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	31	31	4.5	3.4	470'	440'	\$3,550	\$115

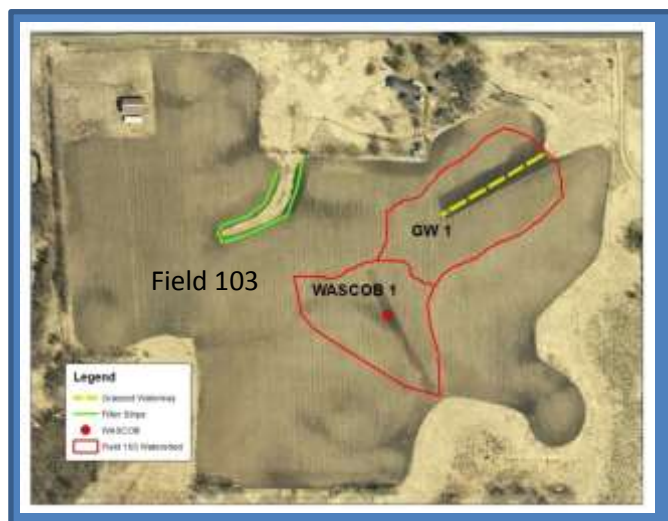
Rush Lake Watershed-Field 103

Project Description

This is an agricultural field of about 24 acres. It is planted in a corn-soybean rotation. There are two concentrated flow paths on the field. They both drain to a wetland. The wetland drains directly into Rush Lake.

BMP Recommendation

Grassed waterways or water and sediment control basins should be installed to correct the erosion within the concentrated flow path.



Catchment Summary	
Field Acres	24.2
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	30
Removed TSS (Ton/yr)	29
Estimated Cost	\$15,052
Cost/Lb TP	\$502
Model Inputs	
Soil Type	292;204B
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	12	12	2.3	5.1	525'	353'	\$3,180	\$265
Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)		Estimated Cost	Cost/Lb TP
WASCOB 1	12	12	3	3.9	600'		\$9,804	\$817
Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)			Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	6	5	10-20'			0.76	\$2,068	\$345

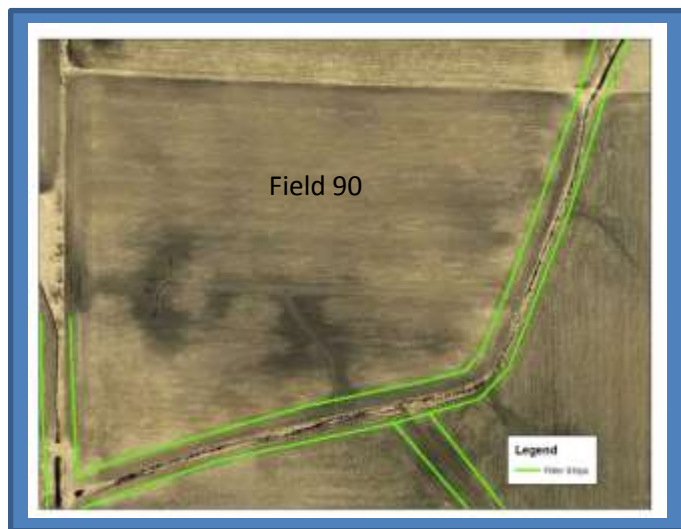
Rush Lake Watershed-Field 90

Project Description

This is an agricultural field of about 13 acres. It is planted in a corn-soybean rotation. A drainage ditch runs along the south and east sides of the field. This ditch empties into Rush Lake.

BMP Recommendation

A 50-foot filter strip should be installed between the edge of the field and the drainage ditch.



Catchment Summary	
Field Acres	13.1
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	30
Removed TSS (Ton/yr)	22
Estimated Cost	\$2,649
Cost/Lb TP	\$88
Model Inputs	
Soil Type	346;292;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	30	22	<5'	1.9	\$2,649	\$88

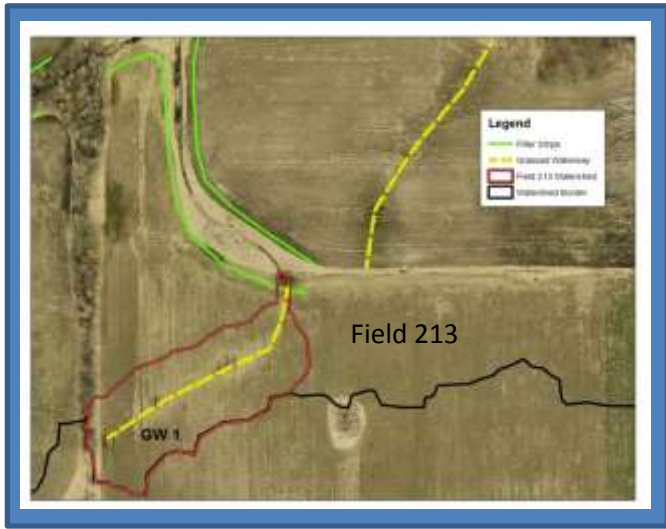
Rush Lake Watershed-Field 213

Project Description

This is an agricultural field of about 47 acres, but only about 10 acres is within the watershed. It is currently planted in hay, but has been in a corn-soybean rotation in the recent past. A concentrated flow path drains through the field into a drainage ditch, which eventually outlets at Rush Lake.

BMP Recommendation

If the field is converted to an annual row crop, a grassed waterway should be left to stabilize erosion within the concentrated flow path. A 50-foot filter strip should be maintained between the edge of the field and the drainage ditch.



Catchment Summary	
Field Acres	46.7
Current Cover	Hay
# of Landowners	1
Removed TP (Lb/yr)	30
Removed TSS (Ton/yr)	28
Estimated Cost	\$5,829
Cost/Lb TP	\$194
Model Inputs	
Soil Type	346;292;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	21	21	1.8	2.7	0'	485'	\$3,741	\$178
Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)			Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	9	7	15-40'			0.8	\$2,088	\$232

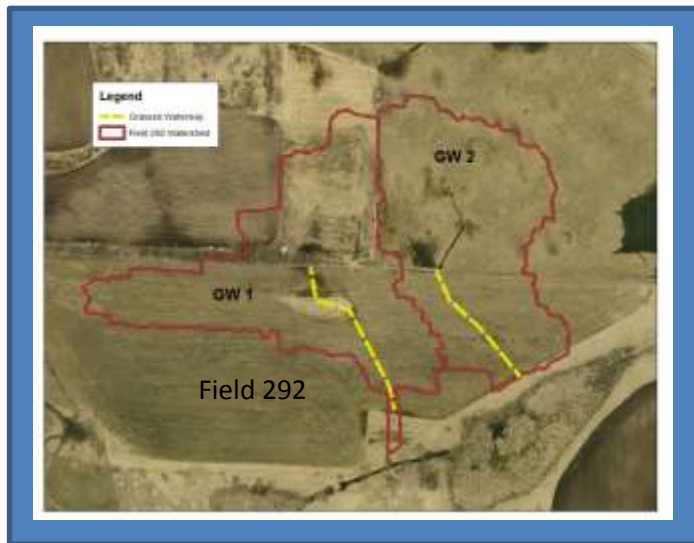
Rush Lake Watershed-Field 292

Project Description

This is an agricultural field of about 17 acres. It is currently planted in hay, but has been in a corn-soybean rotation in the recent past. Two concentrated flow paths drain through the field into a ditched wetland, which eventually outlets at Rush Lake. The watershed of each concentrated flow path extends to the north of the field itself and includes another field and a heavily pastured area.

BMP Recommendation

If this field is converted to annual row crops, a grassed waterway should be installed to stabilize erosion within the concentrated flow paths in the field.



Catchment Summary	
Field Acres	16.5
Current Cover	Hay
# of Landowners	1
Removed TP (Lb/yr)	30
Removed TSS (Ton/yr)	30
Estimated Cost	\$7,126
Cost/Lb TP	\$238
Model Inputs	
Soil Type	292;169B
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	17	17	7.6	2.0	130'	502'	\$3,814	\$224
GW 2	13	13	6.8	1.6	40'	384'	\$3,312	\$255

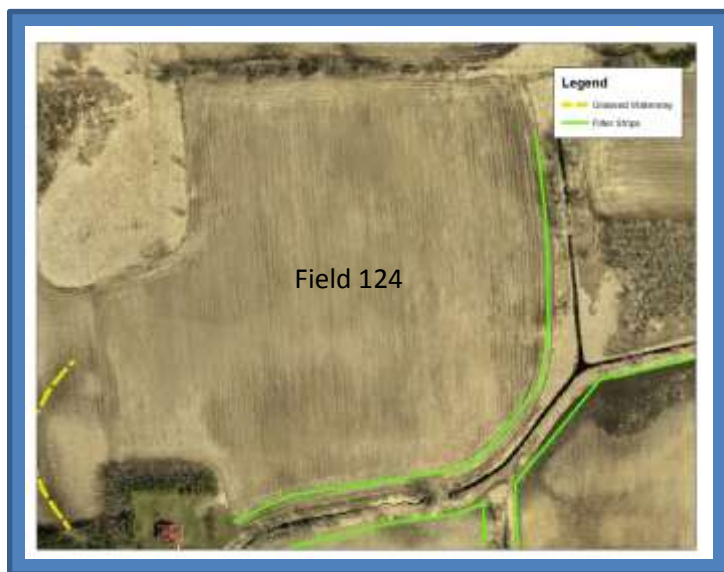
Rush Lake Watershed-Field 124

Project Description

This is an agricultural field of about 16 acres. It is planted in a corn-soybean rotation. There is a drainage ditch running along the southern edge of the field. This ditch drains to Rush Lake.

BMP Recommendation

A 50-foot filter strip should be installed between the edge of the field and the drainage ditch.



Catchment Summary	
Field Acres	16.3
Current Cover	Corn/Beans
# of Landowners	2
Removed TP (Lb/yr)	26
Removed TSS (Ton/yr)	21
Estimated Cost	\$2,496
Cost/Lb TP	\$96
Model Inputs	
Soil Type	928;204B
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	26	21	10-35'	1.6	\$2,496	\$96

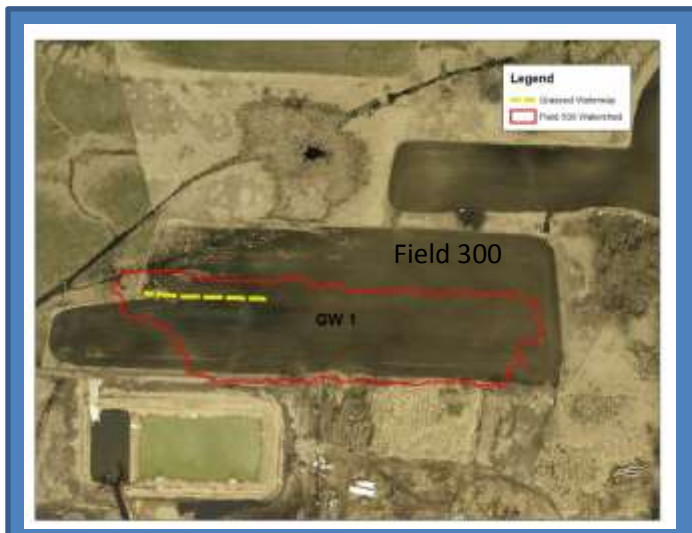
Rush Lake Watershed-Field 300

Project Description

This is an agricultural field of about 4 acres. It is planted in a corn-soybean rotation and is directly adjacent to another corn-soybean field. A concentrated flow path runs from the adjacent field, through the identified field, and empties directly into a stream/ditch system that outlets at Rush Lake.

BMP Recommendation

A grassed waterway should be installed to stabilize field erosion within the concentrated flow path.



Catchment Summary	
Field Acres	4.4
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	26
Removed TSS (Ton/yr)	26
Estimated Cost	\$2,938
Cost/Lb TP	\$113
Model Inputs	
Soil Type	346;292
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	26	26	4.8	1.7	65'	296'	\$2,938	\$113

Rush Lake Watershed-Field 29

Project Description

This is an agricultural field of about 14 acres. It is currently planted in hay. It is surrounded on the north, east, and west sides by drainage ditches that run to Rush Lake.

BMP Recommendation

If this field is converted to an annual row crop, a 50-foot filter strip should remain between the field edge and all ditches.



Catchment Summary	
Field Acres	13.6
Current Cover	Hay
# of Landowners	1
Removed TP (Lb/yr)	26
Removed TSS (Ton/yr)	22
Estimated Cost	\$3,312
Cost/Lb TP	\$127
Model Inputs	
Soil Type	346;75;544
Slopes >6%	Partially

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	26	22	50'	3.2	\$3,312	\$127

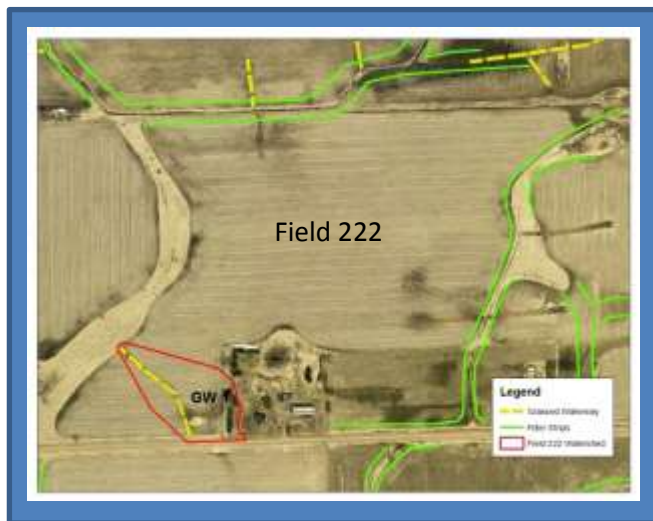
Rush Lake Watershed-Field 222

Project Description

This is an agricultural field of about 35 acres. It is planted in a corn-soybean rotation. There is a drainage ditch along the north and east side of the field. A concentrated flow path runs off the field into a ditch on the west side of the field.

BMP Recommendation

A grassed waterway should be installed to stabilize erosion occurring within the concentrated flow path. A 50-foot filter strip should be installed between the drainage ditches and the edge of the field.



Catchment Summary	
Field Acres	35.6
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	25
Removed TSS (Ton/yr)	20
Estimated Cost	\$6,964
Cost/Lb TP	\$279
Model Inputs	
Soil Type	292;346;75;204B
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	10	10	2.7	2.0	75'	464'	\$3,652	\$365
Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)			Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	15	10	5-30'			3.2	\$3,312	\$221

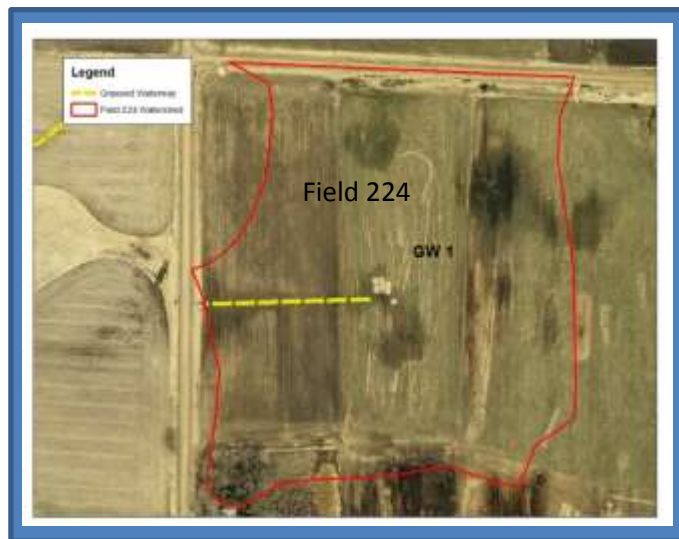
Rush Lake Watershed-Field 224

Project Description

This is an agricultural field of about 12 acres. It is planted in a corn-soybean rotation. There is a concentrated flow path that drains from the field and travels through a culvert to a drained wetland. The ditching system in this wetland empties into Rush Lake.

BMP Recommendation

A grassed waterway should be installed to stabilize field erosion within the concentrated flow path.



Catchment Summary	
Field Acres	12.6
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	24
Removed TSS (Ton/yr)	24
Estimated Cost	\$3,380
Cost/Lb TP	\$141
Model Inputs	
Soil Type	346;292;204B
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	24	24	18.4	0.9	430'	400'	\$3,380	\$141

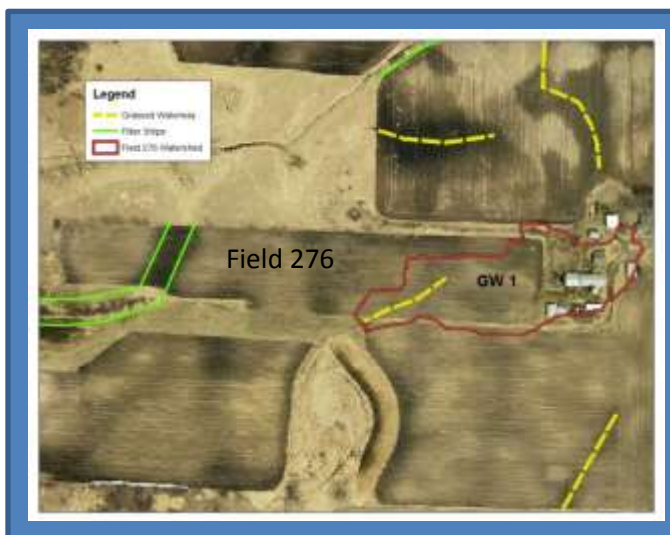
Rush Lake Watershed-Field 276

Project Description

This is an agricultural field of about 6 acres. It is planted in a corn-soybean rotation. A concentrated flow path that starts in the adjacent animal operation runs through the field into a wetland. There is also a concentrated flow path that is currently farmed in the field. This flow path empties into a drainage ditch.

BMP Recommendation

A grassed waterway should be installed to stabilize erosion within the concentrated flow path that begins in the animal operation. There should be a 50-foot filter strip installed where the ditch crosses the field as a concentrated flow path.



Catchment Summary	
Field Acres	6.2
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	23
Removed TSS (Ton/yr)	21
Estimated Cost	\$4,699
Cost/Lb TP	\$204
Model Inputs	
Soil Type	544;346;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	15	15	3.2	2.5	0'	255'	\$2,764	\$184
Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)			Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	8	6	0'			0.5	\$1,935	\$242

Rush Lake Watershed-Field 250

Project Description

This is an agricultural field of about 17 acres. It is planted in a corn-soybean rotation. There is a concentrated flow path that drains from the field to a wetland complex.

BMP Recommendation

A grassed waterway should be installed to stabilize erosion within the concentrated flow path.



Catchment Summary	
Field Acres	16.6
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	22
Removed TSS (Ton/yr)	22
Estimated Cost	\$3,635
Cost/Lb TP	\$165
Model Inputs	
Soil Type	292;346;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	22	22	8.3	2.2	145'	460'	\$3,635	\$165

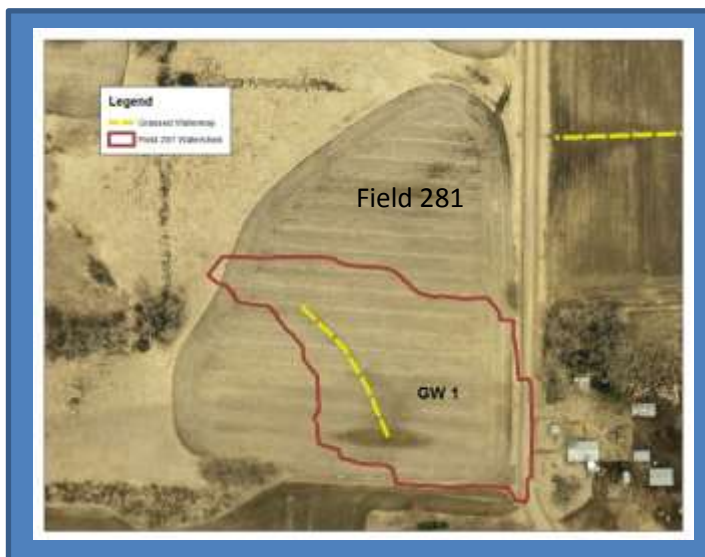
Rush Lake Watershed-Field 281

Project Description

This is an agricultural field of about 10 acres. It is planted in a corn-soybean rotation. A concentrated flow path runs through the field into a ditched wetland complex.

BMP Recommendation

A grassed waterway should be installed to stabilize erosion within the concentrated flow area.



Catchment Summary	
Field Acres	9.8
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	20
Removed TSS (Ton/yr)	20
Estimated Cost	\$3,047
Cost/Lb TP	\$154
Model Inputs	
Soil Type	292;346;204B
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	20	20	4.5	2	125'	328'	\$3,074	\$154

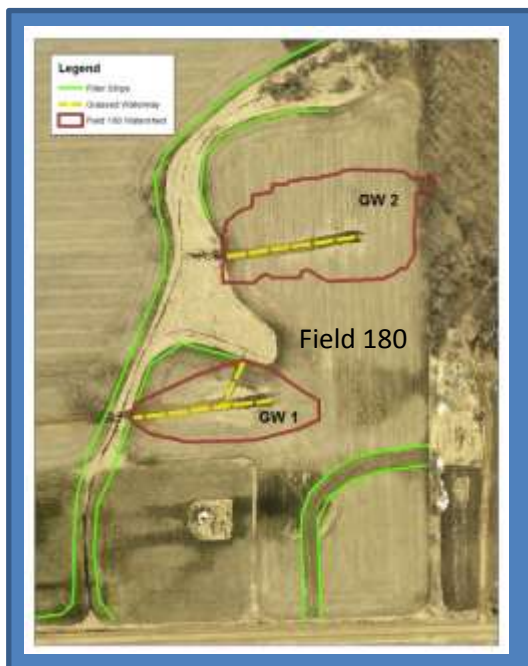
Rush Lake Watershed-Field 180

Project Description

This site is an agricultural field of about 11 acres. It is planted in a corn-soybean rotation. A drainage ditch system runs along the west side of the field. A new drainage ditch was recently installed within the field itself.

BMP Recommendation

A 50-foot filter strip should be installed along all drainage ditches. Grassed waterways should be installed to stabilize erosion within the concentrated flow paths.



Catchment Summary	
Field Acres	10.7
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	19
Removed TSS (Ton/yr)	17
Estimated Cost	\$8,929
Cost/Lb TP	\$470
Model Inputs	
Soil Type	75;346
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	8	8	1.0	0.9	0'	395'	\$3,359	\$420
GW 2	6	6	1.8	1.5	0'	280'	\$2,870	\$478
Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)			Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	5	3	0-20'			2.0	\$2,700	\$540

Rush Lake Watershed-Field 116

Project Description

This site is an agricultural field. The drainage from the field is divided into two different watersheds. It is planted in a corn-soybean rotation. There are two concentrated flow areas that empty directly into a ditched wetland.

BMP Recommendation

A grassed waterway and a water and sediment control basin should be installed to correct the erosion within the concentrated flow areas.



Catchment Summary	
Field Acres	10.6
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	17
Removed TSS (Ton/yr)	17
Estimated Cost	\$12,445
Cost/Lb TP	\$732
Model Inputs	
Soil Type	292;204C;75
Slopes >6%	Partially

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	12	12	1.0	1.7	0'	226'	\$2,641	\$132
Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)		Estimated Cost	Cost/Lb TP
WASCOB 1	5	5	1.5	2.9	0'		\$9,804	\$1,960

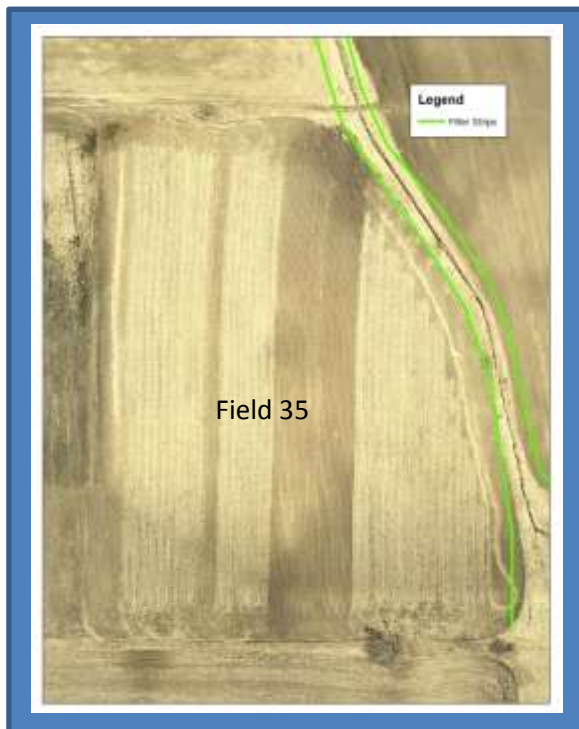
Rush Lake Watershed-Field 35

Project Description

This is an agricultural field of about 9 acres. It is currently planted in hay, but has been in a corn-soybean rotation recently. There is a drainage ditch along the east side of the field.

BMP Recommendation

If this field is converted to an annual row crop, a 50-foot filter strip should be installed between the drainage ditch and the edge of the field.



Catchment Summary	
Field Acres	9.3
Current Cover	Hay
# of Landowners	1
Removed TP (Lb/yr)	17
Removed TSS (Ton/yr)	12
Estimated Cost	\$2,190
Cost/Lb TP	\$129
Model Inputs	
Soil Type	292;346
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	17	12	15-20'	1.0	\$2,190	\$129

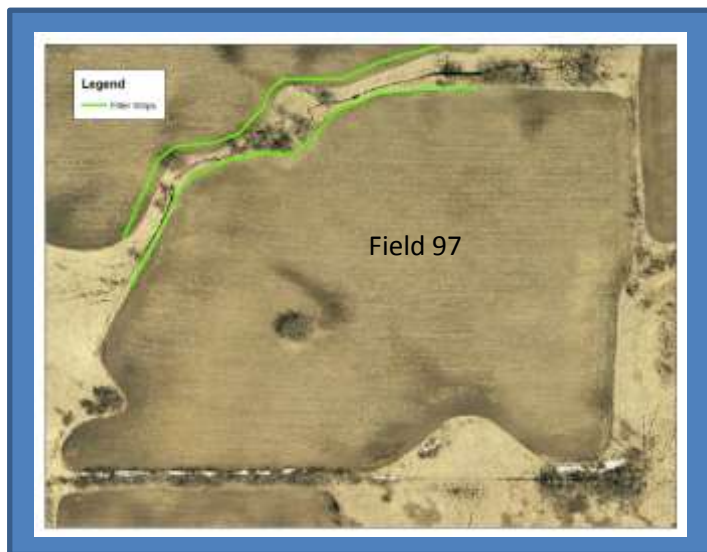
Rush Lake Watershed-Field 97

Project Description

This is an agricultural field of about 26 acres. It is planted in a corn-soybean rotation. There is a stream along the north side of the field.

BMP Recommendation

A 50-foot filter strip should be installed between the stream and the edge of the field.



Catchment Summary	
Field Acres	26.3
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	17
Removed TSS (Ton/yr)	13
Estimated Cost	\$2,343
Cost/Lb TP	\$138
Model Inputs	
Soil Type	292;346;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	17	13	0-20'	1.3	\$2,343	\$138

Rush Lake Watershed-Field 359

Project Description

This is an agricultural field of about 19 acres. It is planted in a corn-soybean rotation. There is a drainage ditch along the north and east side of the field.

BMP Recommendation

A 50-foot filter strip should be installed between the drainage ditch and the edge of the field.



Catchment Summary	
Field Acres	18.9
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	17
Removed TSS (Ton/yr)	11
Estimated Cost	\$2,598
Cost/Lb TP	\$153
Model Inputs	
Soil Type	292;346;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	17	11	<5'	1.8	\$2,598	\$153

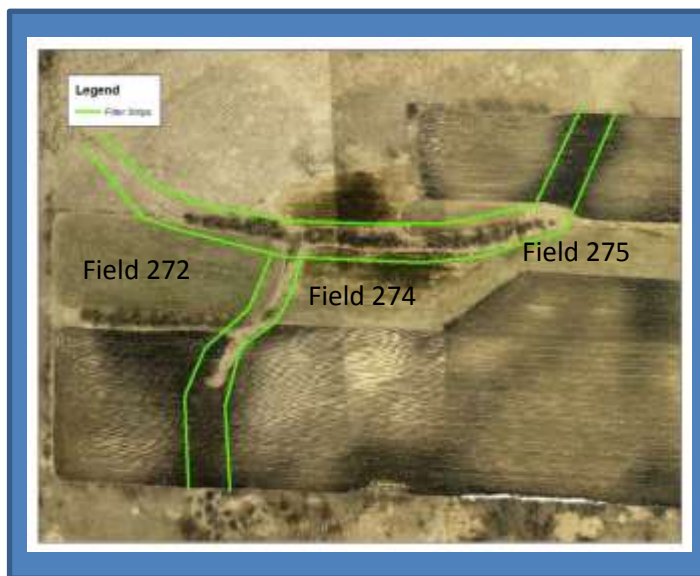
Rush Lake Watershed-Field 272, 274, 275

Project Description

This site is two fields and an area that appears to be farmed in dry years only. During wet years, these three sites function as one field. The fields are in a corn-soybean rotation. There is a drainage ditch along the north side of these fields. The drainage ditch empties into a wetland complex.

BMP Recommendation

A 50-foot filter strip should be installed between the drainage ditches and the edge of the field.



Catchment Summary	
Field Acres	5.4
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	16
Removed TSS (Ton/yr)	12
Estimated Cost	\$2,394
Cost/Lb TP	\$150
Model Inputs	
Soil Type	292;346
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	16	12	5-15'	1.4	\$2,394	\$150

Rush Lake Watershed-Field 230

Project Description

This is an agricultural field of about 37 acres. It is currently planted in hay, but has been in a corn-soybean rotation recently. There is a ditch that empties into the road ditch, which then empties into a drainage ditch. This ditch system eventually outlets to Rush Lake.

BMP Recommendation

If the field is converted to an annual row crop, a 50-foot filter strip should be left around the drainage ditch.



Catchment Summary	
Field Acres	37.0
Current Cover	Hay
# of Landowners	1
Removed TP (Lb/yr)	15
Removed TSS (Ton/yr)	10
Estimated Cost	\$2,139
Cost/Lb TP	\$143
Model Inputs	
Soil Type	292;346;204B
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	15	10	<5'	0.9	\$2,139	\$143

Rush Lake Watershed-Field 19 & 20

Project Description

This is two adjacent agricultural fields of about 5 acres combined. They are currently planted in hay. The eastern field has very steep slopes. A new ditch was recently added between the two fields. Older ditching runs along the north and west sides of Field 19.

BMP Recommendation

If the field is converted to an annual row crop, a 50-foot filter strip should be left around the drainage ditches.



Catchment Summary	
Field Acres	4.8
Current Cover	Hay
# of Landowners	1
Removed TP (Lb/yr)	14
Removed TSS (Ton/yr)	12
Estimated Cost	\$2,853
Cost/Lb TP	\$204
Model Inputs	
Soil Type	292;346;204C
Slopes >6%	Yes

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	14	12	50'	2.3	\$2,853	\$204

Rush Lake Watershed-Field 126

Project Description

This is an agricultural field of about 8 acres. It is planted in a corn-soybean rotation. There is a drainage ditch surrounding most of the field

BMP Recommendation

A 50-foot filter strip should be installed between the drainage ditches and the edge of the field.



Catchment Summary

Field Acres	8.1
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	14
Removed TSS (Ton/yr)	10
Estimated Cost	\$2,904
Cost/Lb TP	\$207
Model Inputs	
Soil Type	292;346;75;204B
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	14	10	20-30'	2.4	\$2,904	\$207

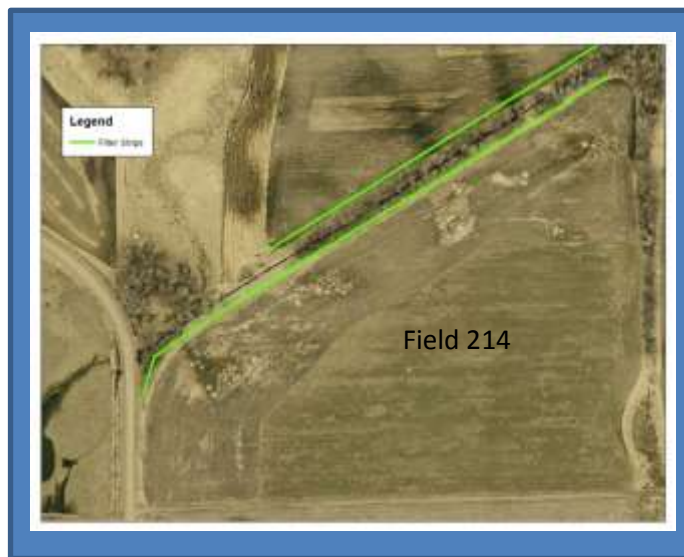
Rush Lake Watershed-Field 214

Project Description

This site is an agricultural field of about 17 acres. It is planted in a corn-soybean rotation. There is a drainage ditch along the north side of the field.

BMP Recommendation

A 50-foot filter strip should be installed between the drainage ditch and the edge of the field.



Catchment Summary	
Field Acres	17.5
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	13
Removed TSS (Ton/yr)	11
Estimated Cost	\$2,445
Cost/Lb TP	\$188
Model Inputs	
Soil Type	292;346;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	13	11	30'	1.5	\$2,445	\$188

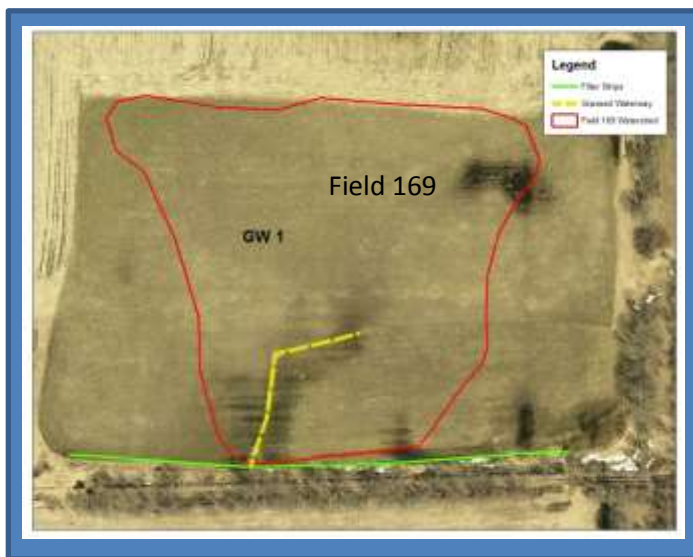
Rush Lake Watershed-Field 169

Project Description

This site is an agricultural field of about 10 acres. It is planted in hay. There is a drainage ditch along the south side of the field. One concentrated flow path drains most of the field into the drainage ditch.

BMP Recommendation

If this field is converted to an annual row crop, a 50-foot filter strip should remain between the drainage ditch and the edge of the field. A grassed waterway should be installed to prevent erosion within the concentrated flow path.



Catchment Summary	
Field Acres	10.1
Current Cover	Hay
# of Landowners	1
Removed TP (Lb/yr)	12
Removed TSS (Ton/yr)	10
Estimated Cost	\$5,132
Cost/Lb TP	\$428
Model Inputs	
Soil Type	292;346;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	7	7	5.7	0.8	25'	309'	\$2,993	\$428
Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)			Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	5	3	50'			0.9	\$2,139	\$428

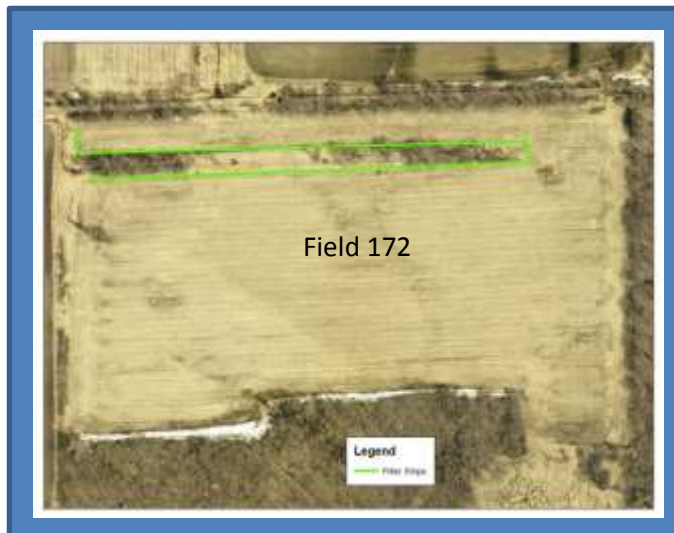
Rush Lake Watershed-Field 172

Project Description

This site is an agricultural field of about 19 acres. It is planted in a corn-soybean rotation. There is a drainage ditch in the field. This ditch connects to a larger ditching complex that eventually outlets to Rush Lake.

BMP Recommendation

A 50-foot filter strip should be installed around the drainage ditch.



Catchment Summary	
Field Acres	18.7
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	12
Removed TSS (Ton/yr)	8
Estimated Cost	\$2,904
Cost/Lb TP	\$242
Model Inputs	
Soil Type	346;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	12	8	20-35'	2.4	\$2,904	\$242

Rush Lake Watershed-Field 163

Project Description

This site is an agricultural field of about 6 acres. This field is planted in corn-soybean rotation. The southern part of the field is bordered by a drainage ditch.

BMP Recommendation

A 50-foot filter strip should be installed between the ditch and the edge of the field.



Catchment Summary	
Field Acres	6.2
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	11
Removed TSS (Ton/yr)	7
Estimated Cost	\$2,496
Cost/Lb TP	\$227
Model Inputs	
Soil Type	75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	11	7	<5'	1.6	\$2,496	\$227

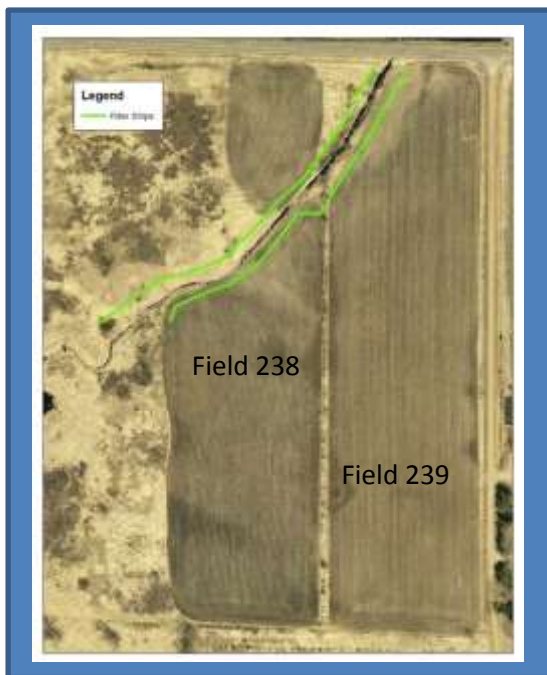
Rush Lake Watershed-Field 238 & 239

Project Description

This site is two adjacent agricultural fields of about 17 acres combined. Both fields are currently planted in hay. A drainage ditch runs along the north side of both fields.

BMP Recommendation

If this field is converted to an annual row crop, a 50-foot filter strip should remain along all drainage ditches.



Catchment Summary	
Field Acres	17.1
Current Cover	Hay
# of Landowners	1
Removed TP (Lb/yr)	10
Removed TSS (Ton/yr)	8
Estimated Cost	\$2,190
Cost/Lb TP	\$219
Model Inputs	
Soil Type	75;346;292
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	10	8	<5'	1.0	\$2,190	\$219

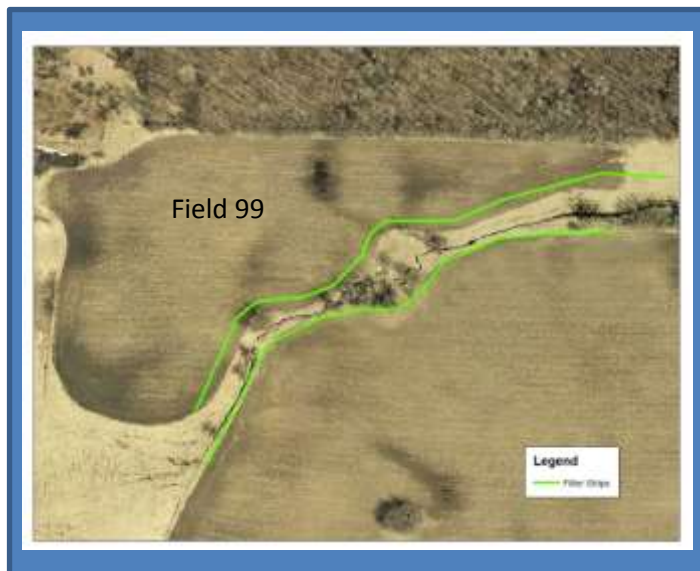
Rush Lake Watershed-Field 99

Project Description

This site is an agricultural field of about 9 acres. It is planted in a corn-soybean rotation. The southeastern edge of the field is bordered by a stream.

BMP Recommendation

A 50-foot filter strip should be installed between the stream and the edge of the field.



Catchment Summary	
Field Acres	9.4
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	10
Removed TSS (Ton/yr)	6
Estimated Cost	\$2,394
Cost/Lb TP	\$239
Model Inputs	
Soil Type	75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	10	6	10-40'	1.4	\$2,394	\$239

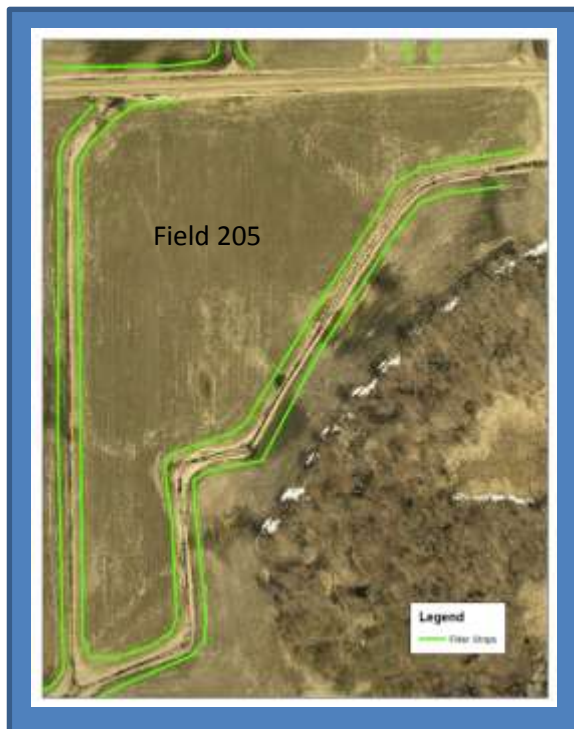
Rush Lake Watershed-Field 205

Project Description

This site is an agricultural field of about 18 acres. It is planted in a corn-soybean rotation. The field is surrounded on nearly all sides with drainage ditches.

BMP Recommendation

A 50-foot filter strip should be installed between the drainage ditches and the edge of the field.



Catchment Summary	
Field Acres	18.0
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	10
Removed TSS (Ton/yr)	6
Estimated Cost	\$3,669
Cost/Lb TP	\$367
Model Inputs	
Soil Type	346;292
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	10	6	<5'	3.9	\$3,669	\$367

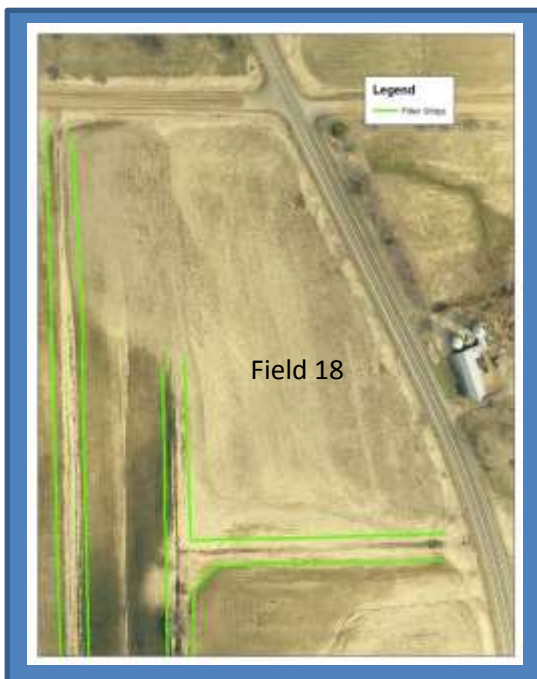
Rush Lake Watershed-Field 18

Project Description

This site is an agricultural field of about 5 acres. Most of the field is on steep slopes. At the bottom of the field is a drainage ditch. The field is currently planted in hay.

BMP Recommendation

This field should remain permanently in hay production. If the field is converted to an annual row crop, a 50-foot filter strip should remain between the drainage ditches and the edge of the field.



Catchment Summary	
Field Acres	4.6
Current Cover	Hay
# of Landowners	1
Removed TP (Lb/yr)	9
Removed TSS (Ton/yr)	7
Estimated Cost	\$2,088
Cost/Lb TP	\$232
Model Inputs	
Soil Type	204C;292;346
Slopes >6%	Yes

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	9	7	50'	0.8	\$2,088	\$232

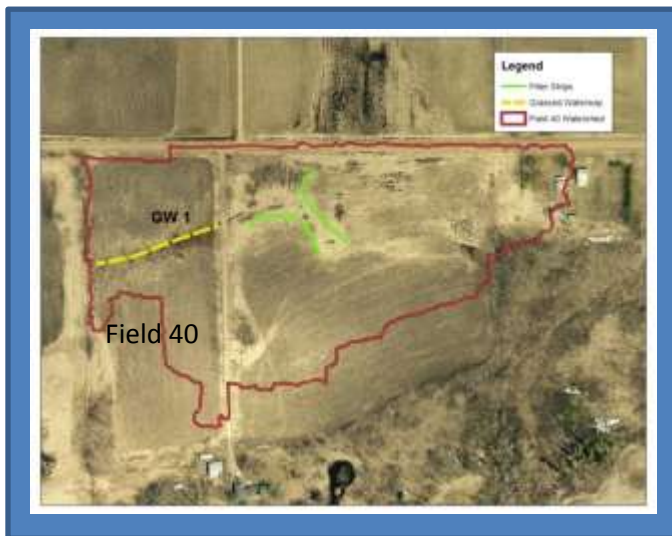
Rush Lake Watershed-Field 40

Project Description

This site is an agricultural field of about 8 acres. It is planted in a corn-soybean rotation. The watershed is large and includes much of the fields on the other side of a driveway. The concentrated flow path empties directly into a wetland.

BMP Recommendation

A grassed waterway should be installed to stabilize erosion occurring within the concentrated flow path. The filter strips shown on the map are part of the BMP Recommendation for Fields 45 and 47.



Catchment Summary	
Field Acres	8.0
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	8
Removed TSS (Ton/yr)	8
Estimated Cost	\$3,414
Cost/Lb TP	\$427
Model Inputs	
Soil Type	292;346
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Length (Feet)	Estimated Cost	Cost/Lb TP
GW 1	8	8	19.8	2.1	0'	408'	\$3,414	\$427

Rush Lake Watershed-Field 135

Project Description

This site is an agricultural field of about 32 acres. It is planted in a corn-soybean rotation. There are two concentrated flow paths running across the field and emptying into the adjacent wetland.

BMP Recommendation

A water and sediment control basin should be installed to stabilize erosion occurring within the concentrated flow paths.



Catchment Summary	
Field Acres	31.6
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	8
Removed TSS (Ton/yr)	8
Estimated Cost	\$19,608
Cost/Lb TP	\$2,451
Model Inputs	
Soil Type	292;346;928C
Slopes >6%	Partially

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Watershed Size (Acres)	Average Watershed Slope	Distance to Surface Water (Feet)	Estimated Cost	Cost/Lb TP
WASC OB 1	3	3	1.8	4.1	304'	\$9,804	\$3,268
WASC OB 2	5	5	3.6	4.0	307'	\$9,804	\$1,961

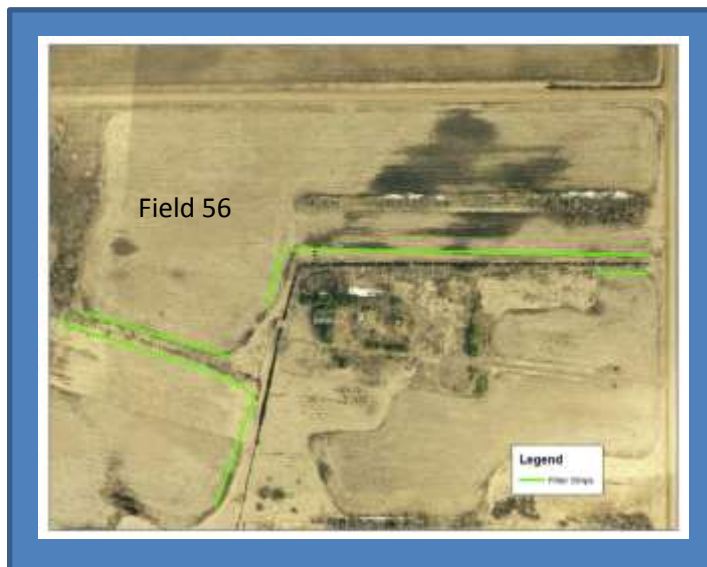
Rush Lake Watershed-Field 56

Project Description

This site is an agricultural field of about 22 acres. It is planted in a corn-soybean rotation. There is a drainage ditch along the south side of the field.

BMP Recommendation

A 50-foot filter strip should be installed between the drainage ditch and the edge of the field.



Catchment Summary	
Field Acres	21.7
Current Cover	Corn/Beans
# of Landowners	2
Removed TP (Lb/yr)	8
Removed TSS (Ton/yr)	6
Estimated Cost	\$2,700
Cost/Lb TP	\$338
Model Inputs	
Soil Type	292;75;169B
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	8	6	15-30'	2.0	\$2,700	\$338

Rush Lake Watershed-Field 358

Project Description

This site is an agricultural field of about 5 acres. It is planted in a corn-soybean rotation. There is a drainage ditch along the west side of the field.

BMP Recommendation

A 50-foot filter strip should be installed between the drainage ditch and the edge of the field.



Catchment Summary	
Field Acres	5.1
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	7
Removed TSS (Ton/yr)	4
Estimated Cost	\$2,292
Cost/Lb TP	\$327
Model Inputs	
Soil Type	75;346
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	7	4	10-15'	1.2	\$2,292	\$327

Rush Lake Watershed-Field 234 & 241

Project Description

This site has recently been cleared of the scrub shrub vegetation that previously grew there. It appears the field has been farmed in the past and may be farmed again in the near future. There is a drainage ditch along the east side of the field.

BMP Recommendation

If this field is converted to annual row crops, a 50-foot buffer should remain between the edge of the field and the drainage ditch.



Catchment Summary	
Field Acres	10.6
Current Cover	Scrub Shrub
# of Landowners	1
Removed TP (Lb/yr)	7
Removed TSS (Ton/yr)	4
Estimated Cost	\$2,088
Cost/Lb TP	\$298
Model Inputs	
Soil Type	75;346;292
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	7	4	50'	0.8	\$2,088	\$298

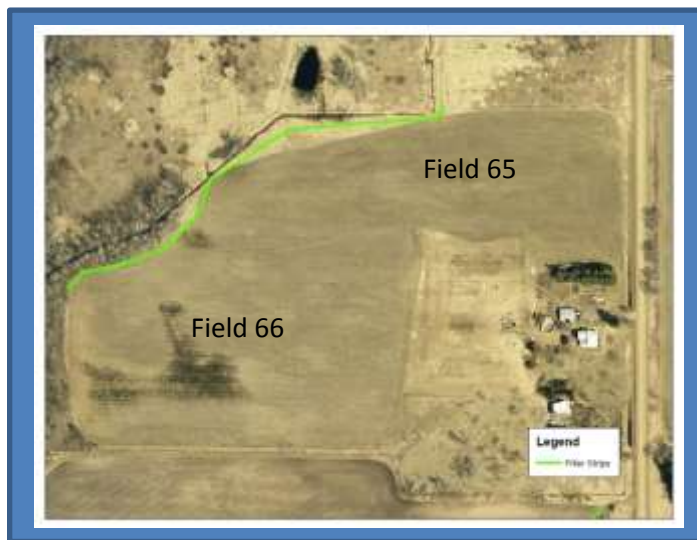
Rush Lake Watershed-Field 65 & 66

Project Description

This site is two agricultural fields of about 14 acres combined. They are both planted in a corn-soybean rotation. There is a drainage ditch along the north and west sides of the field. This ditching complex eventually outlets at Rush Lake.

BMP Recommendation

A 50-foot filter strip should be installed between the drainage ditch and the edge of the field.



Catchment Summary	
Field Acres	14.1
Current Cover	Corn/Beans
# of Landowners	2
Removed TP (Lb/yr)	6
Removed TSS (Ton/yr)	3
Estimated Cost	\$2,241
Cost/Lb TP	\$374
Model Inputs	
Soil Type	75;346;292
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	6	3	20-40'	1.1	\$2,241	\$374

Rush Lake Watershed-Field 82

Project Description

This site is an agricultural field of about 7 acres. It is planted in a corn-soybean rotation. There is a drainage ditch along the west side of the field.

BMP Recommendation

A 50-foot filter strip should be installed between the drainage ditch and the edge of the field.



Catchment Summary	
Field Acres	7.3
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	6
Removed TSS (Ton/yr)	4
Estimated Cost	\$2,241
Cost/Lb TP	\$374
Model Inputs	
Soil Type	75;346
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	6	4	5-15'	1.1	\$2,241	\$374

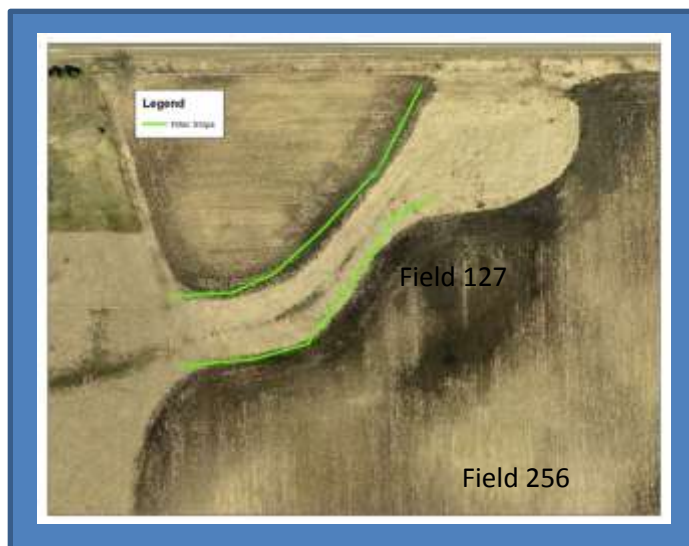
Rush Lake Watershed-Field 127

Project Description

This site is an agricultural field of about 2 acres. It appears to be farmed in dry years and is planted in a corn-soybean rotation. During dry years, this field is a part of Field 256, but because it is only farmed occasionally, it was given a separate polygon and field identification. There is a ditched wetland along the north side of the field.

BMP Recommendation

In years that this field is farmed, a 50-foot filter strip should be left between the ditch and the edge of the field.



Catchment Summary	
Field Acres	1.8
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	6
Removed TSS (Ton/yr)	4
Estimated Cost	\$1,935
Cost/Lb TP	\$323
Model Inputs	
Soil Type	75;292;204B
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	6	4	30-35'	0.5	\$1,935	\$323

Rush Lake Watershed-Field 165 & 167

Project Description

This site is two adjacent agricultural fields of about 10 acres combined. Both fields are planted in a corn-soybean rotation. A drainage ditch runs along the north side of both fields. There is another ditch along the south side of the field, but there is currently a 50-foot filter strip in place.

BMP Recommendation

A 50-foot filter strip should be installed between the drainage ditch and the edge of the field.



Catchment Summary	
Field Acres	9.8
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	5
Removed TSS (Ton/yr)	3
Estimated Cost	\$2,343
Cost/Lb TP	\$469
Model Inputs	
Soil Type	75;292;346
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	5	3	5-30'	1.3	\$2,343	\$469

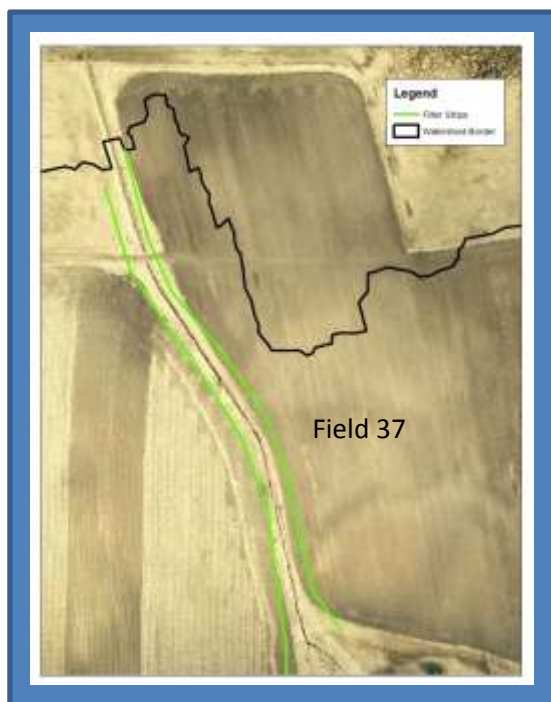
Rush Lake Watershed-Field 37

Project Description

This site is an agricultural field of about 8 acres. It is currently planted in hay. Only about half of the field is included in this subwatershed. A drainage ditch system runs along the west side of the field.

BMP Recommendation

If this field is converted to an annual row crop, a 50-foot filter strip should be installed along the drainage ditch.



Catchment Summary	
Field Acres	7.8
Current Cover	Hay
# of Landowners	1
Removed TP (Lb/yr)	4
Removed TSS (Ton/yr)	3
Estimated Cost	\$2,190
Cost/Lb TP	\$548
Model Inputs	
Soil Type	292;346
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	4	3	5-20'	1.0	\$2,190	\$548

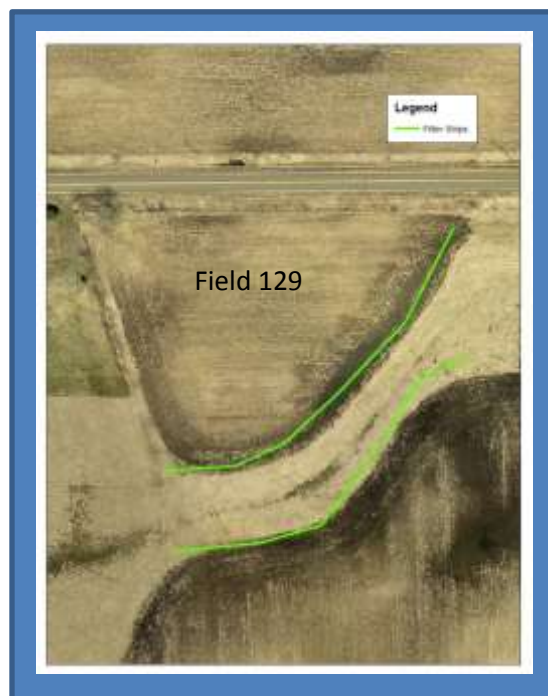
Rush Lake Watershed-Field 129

Project Description

This site is an agricultural field of about 2 acres. It is planted in a corn-soybean rotation. The south edge of the field borders a ditched wetland system.

BMP Recommendation

A 50-foot filter strip should be installed between the ditch and edge of the field.



Catchment Summary	
Field Acres	2.2
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	4
Removed TSS (Ton/yr)	3
Estimated Cost	\$1,986
Cost/Lb TP	\$497
Model Inputs	
Soil Type	204B
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	4	3	35-45'	0.6	\$1,986	\$497

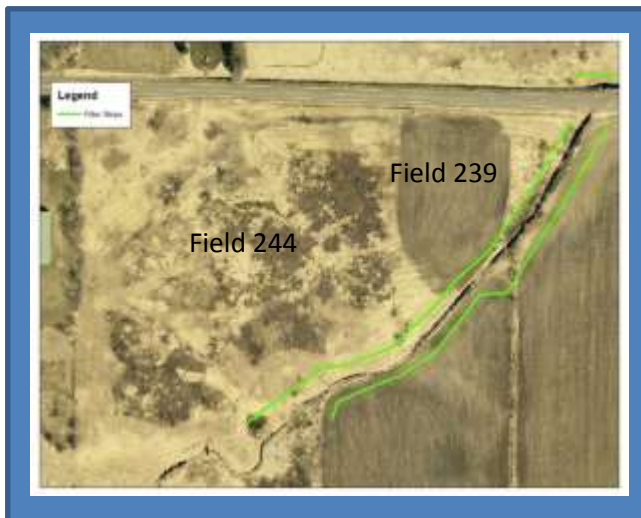
Rush Lake Watershed-Field 239 & 244

Project Description

This site is a mixture of a currently farmed field of about 1.5 acres and scrub-shrub that appears to have recently been at least partially cleared. It appears the area has been farmed in the past and there is potential it could be placed back into production. A ditch runs along the south edge of the site.

BMP Recommendation

If this site is converted to annual row crops, a 50-foot filter strip should remain between the edge of the field and the ditch.



Catchment Summary	
Field Acres	10.0
Current Cover	Corn/Beans/Cleared
# of Landowners	1
Removed TP (Lb/yr)	4
Removed TSS (Ton/yr)	2
Estimated Cost	\$2,190
Cost/Lb TP	\$548
Model Inputs	
Soil Type	346;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	4	2	50'	1.0	\$2,190	\$548

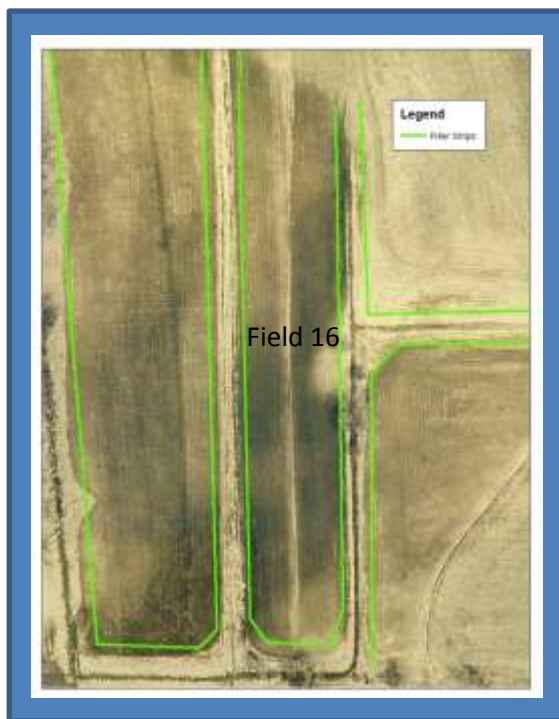
Rush Lake Watershed-Field 16

Project Description

This site is an agricultural field of about 10 acres. It is a wet area that is currently used for hay production. There are a series of drainage ditches in and around the field.

BMP Recommendation

The field should remain in hay production. If the field is converted to an annual row crop, a 50-foot filter strip should remain between the ditches and edge of the field.



Catchment Summary	
Field Acres	9.9
Current Cover	Hay
# of Landowners	1
Removed TP (Lb/yr)	3
Removed TSS (Ton/yr)	2
Estimated Cost	\$2,598
Cost/Lb TP	\$866
Model Inputs	
Soil Type	346;544;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	3	2	50'	1.8	\$2,598	\$866

Rush Lake Watershed-Field 51 & 52

Project Description

This site is two adjacent agricultural fields of about 20 acres combined. One field is currently used for hay production, while the other field is planted in a corn-soybean rotation. There is a drainage ditch to the north and east of the fields.

BMP Recommendation

If the hay field is converted to an annual row crop, a 50-foot filter strip should remain between the ditches and edge of the field. On the corn-soybean field, a 50-foot filter strip should be installed between the ditch and the edge of the field.



Catchment Summary	
Field Acres	19.8
Current Cover	Hay/Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	3
Removed TSS (Ton/yr)	2
Estimated Cost	\$2,598
Cost/Lb TP	\$866
Model Inputs	
Soil Type	346;544;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	3	2	50'	1.8	\$2,598	\$866

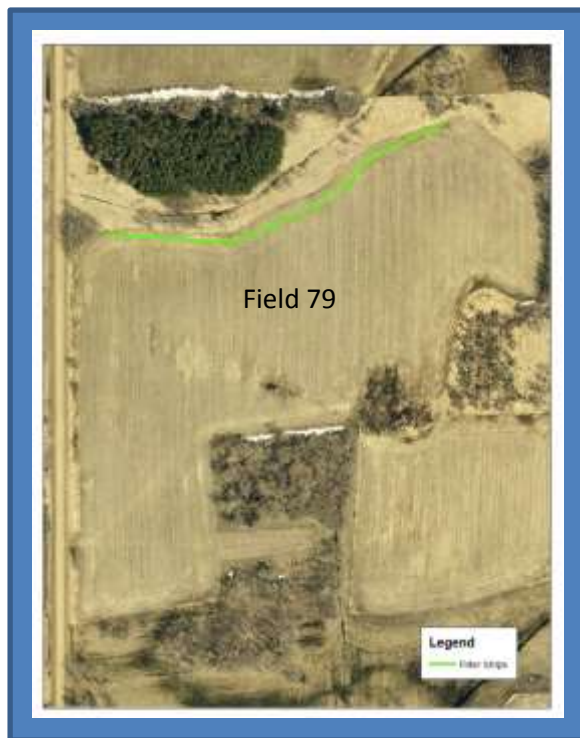
Rush Lake Watershed-Field 79

Project Description

This site is an agricultural field of about 22 acres. It is planted in a corn-soybean rotation. A ditch runs along the north edge of the field.

BMP Recommendation

A 50-foot filter strip should be installed between the ditch and edge of the field.



Catchment Summary	
Field Acres	22.0
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	3
Removed TSS (Ton/yr)	2
Estimated Cost	\$2,190
Cost/Lb TP	\$730
Model Inputs	
Soil Type	346;292;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	3	2	40'	1.0	\$2,190	\$730

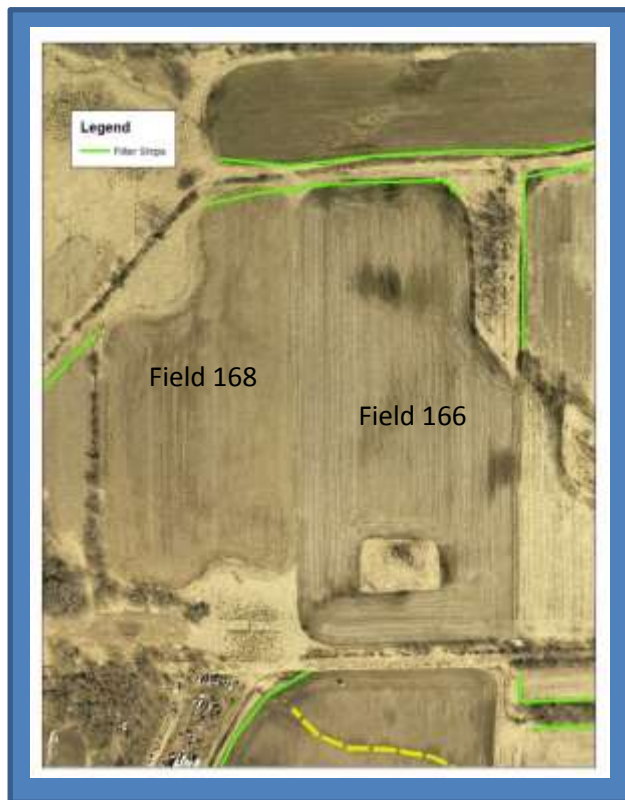
Rush Lake Watershed-Field 166 & 168

Project Description

This site is two adjacent agricultural fields of about 20 acres combined. They are both planted in a corn-soybean rotation. A stream and ditch system runs along the north edge of the fields.

BMP Recommendation

A 50-foot filter strip should be installed between the ditch and edge of the field.



Catchment Summary	
Field Acres	19.8
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	3
Removed TSS (Ton/yr)	2
Estimated Cost	\$2,037
Cost/Lb TP	\$679
Model Inputs	
Soil Type	346;292;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	3	2	5-30'	0.7	\$2,037	\$679

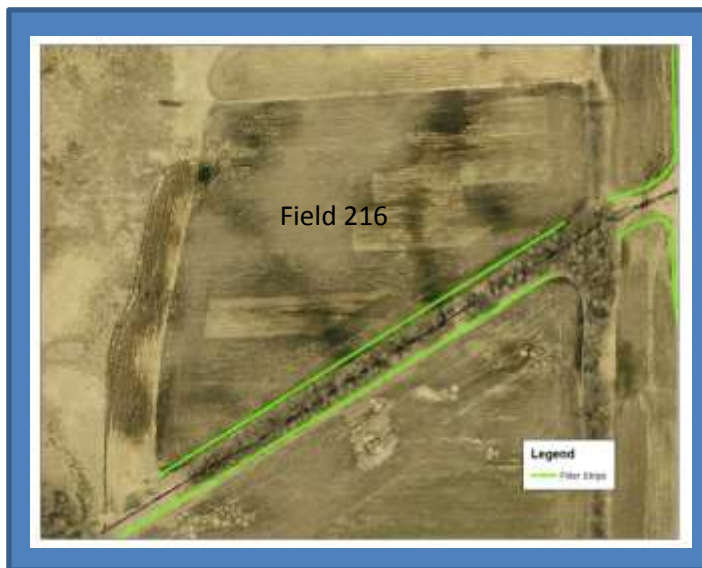
Rush Lake Watershed-Field 216

Project Description

This site is an agricultural field of about 9 acres. The field is currently planted in hay. A drainage ditch runs along the south side of the field.

BMP Recommendation

If this field is converted to an annual row crop, a 50-foot filter strip should remain between the ditch and edge of the field.



Catchment Summary	
Field Acres	9.0
Current Cover	Hay
# of Landowners	1
Removed TP (Lb/yr)	3
Removed TSS (Ton/yr)	2
Estimated Cost	\$2,037
Cost/Lb TP	\$679
Model Inputs	
Soil Type	292;346
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	3	2	5-30'	0.7	\$2,037	\$679

Rush Lake Watershed-Field 218

Project Description

This site is an agricultural field of about 5 acres. It is planted in a corn-soybean rotation. A drainage ditch runs along the entire east and south sides of the field.

BMP Recommendation

A 50-foot filter strip should be installed between the ditch and edge of the field.



Catchment Summary	
Field Acres	5.2
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	3
Removed TSS (Ton/yr)	2
Estimated Cost	\$2,598
Cost/Lb TP	\$866
Model Inputs	
Soil Type	346
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	3	2	<5'	1.8	\$2,598	\$866

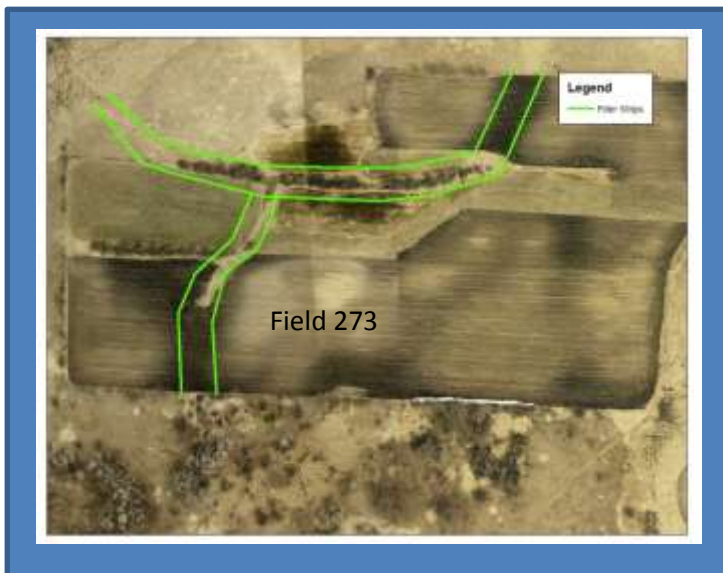
Rush Lake Watershed-Field 273

Project Description

This site is an agricultural field of about 8 acres. It is planted in a corn-soybean rotation. There is a drainage swale or ditch that runs through the field and empties into a drainage ditch system.

BMP Recommendation

A 50-foot filter strip should be installed between the ditch and edge of the field.



Catchment Summary	
Field Acres	8.1
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	3
Removed TSS (Ton/yr)	0
Estimated Cost	\$2,241
Cost/Lb TP	\$747
Model Inputs	
Soil Type	346;292
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	3	0	<5'	1.1	\$2,241	\$747

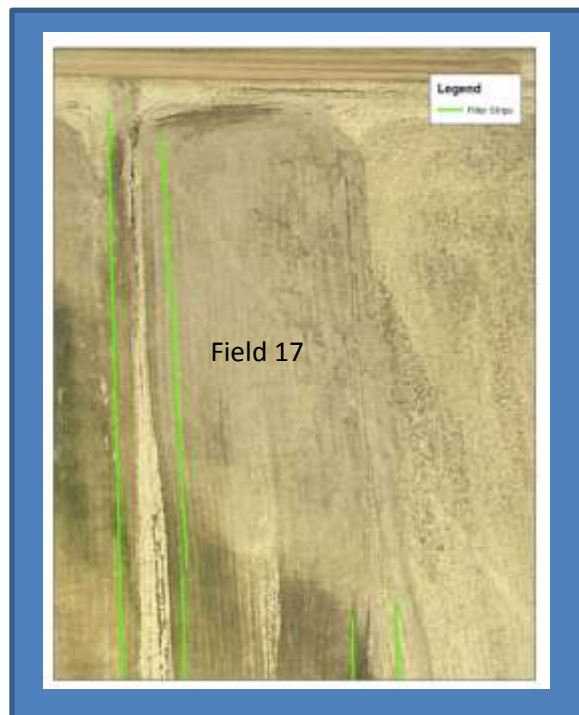
Rush Lake Watershed-Field 17

Project Description

This site is a wet area that is used for hay production. The field is surrounded by drainage ditches.

BMP Recommendation

The field should remain in hay production. If the field is converted to an annual row crop, a 50-foot filter strip should remain between the ditch and edge of the field.



Catchment Summary	
Field Acres	1.3
Current Cover	Hay
# of Landowners	1
Removed TP (Lb/yr)	2
Removed TSS (Ton/yr)	1
Estimated Cost	\$1,884
Cost/Lb TP	\$942
Model Inputs	
Soil Type	346
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	2	1	<5'	0.4	\$1,884	\$942

Rush Lake Watershed-Field 176

Project Description

This site is an agricultural field that is planted in a corn-soybean rotation. There is a drainage ditch to the north of the field.

BMP Recommendation

A 50-foot filter strip should be installed between the ditch and edge of the field.



Catchment Summary	
Field Acres	2.0
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	2
Removed TSS (Ton/yr)	1
Estimated Cost	\$1,884
Cost/Lb TP	\$942
Model Inputs	
Soil Type	292;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	2	1	<5'	0.4	\$1,884	\$942

Rush Lake Watershed-Field 139

Project Description

This is an agricultural field of about 8 acres. It is currently in hay production. There is a ditch that runs on the very eastern edge of the field.

BMP Recommendation

If this field is converted to an annual row crop, a 50-foot filter strip should remain between the ditch and edge of the field.



Catchment Summary	
Field Acres	7.9
Current Cover	Hay
# of Landowners	1
Removed TP (Lb/yr)	2
Removed TSS (Ton/yr)	1
Estimated Cost	\$1,782
Cost/Lb TP	\$891
Model Inputs	
Soil Type	346;292
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	2	1	<5'	0.2	\$1,782	\$891

Rush Lake Watershed-Field 142

Project Description

This is an agricultural field of about 30 acres. It is planted in a corn-soybean rotation. There is a ditch that runs on the very western edge of the field.

BMP Recommendation

A 50-foot filter strip should be installed between the ditch and edge of the field.



Catchment Summary	
Field Acres	29.9
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	2
Removed TSS (Ton/yr)	1
Estimated Cost	\$1,833
Cost/Lb TP	\$942
Model Inputs	
Soil Type	346;292
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	2	1	<5'	0.3	\$1,833	\$942

Rush Lake Watershed-Field 175

Project Description

This is an agricultural field of about 2 acres. It is planted in a corn-soybean rotation. There is a drainage ditch that runs along the north and west side of the field.

BMP Recommendation

A 50-foot filter strip should be installed between the ditch and edge of the field.



Catchment Summary	
Field Acres	2.1
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	2
Removed TSS (Ton/yr)	1
Estimated Cost	\$1,935
Cost/Lb TP	\$968
Model Inputs	
Soil Type	346;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	2	1	<5'	0.5	\$1,935	\$968

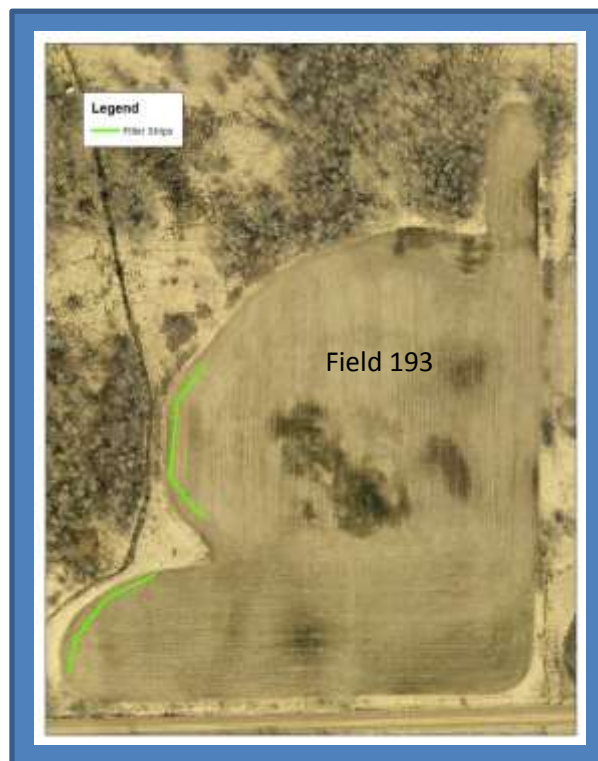
Rush Lake Watershed-Field 193

Project Description

This is an agricultural field of about 11 acres. It is currently planted in hay. There is a ditch that runs on the east side of the field. In most locations, there is an adequate filter strip, but there are two sections that have less than 50 feet of filter strip to the stream.

BMP Recommendation

A filter strip should be installed to enhance the existing filter strip so that the width is 50 feet in all places.



Catchment Summary	
Field Acres	10.9
Current Cover	Hay
# of Landowners	1
Removed TP (Lb/yr)	2
Removed TSS (Ton/yr)	1
Estimated Cost	\$1,986
Cost/Lb TP	\$993
Model Inputs	
Soil Type	346;292;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	2	1	15-25'	0.6	\$1,986	\$993

Rush Lake Watershed-Field 221

Project Description

This is an agricultural field of about 10 acres. It is planted in a corn-soybean rotation. There is a ditch on the west side of the field.

BMP Recommendation

A 50-foot filter strip should be installed between the ditch and the edge of the field.



Catchment Summary	
Field Acres	10.0
Current Cover	Corn/Bean
# of Landowners	1
Removed TP (Lb/yr)	2
Removed TSS (Ton/yr)	0
Estimated Cost	\$1,884
Cost/Lb TP	\$942
Model Inputs	
Soil Type	292;204B;346
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	2	0	25-45'	0.4	\$1,884	\$942

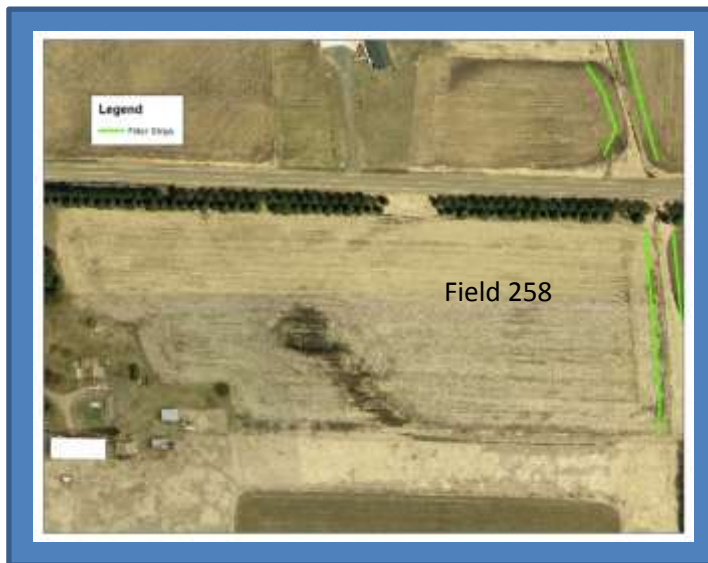
Rush Lake Watershed-Field 258

Project Description

This is an agricultural field of about 9 acres. It is planted in a corn-soybean rotation. There is a stream running along the east side of the field.

BMP Recommendation

A 50-foot filter strip should be installed between the stream and the edge of the field.



Catchment Summary	
Field Acres	9.2
Current Cover	Corn/Bean
# of Landowners	1
Removed TP (Lb/yr)	2
Removed TSS (Ton/yr)	1
Estimated Cost	\$1,884
Cost/Lb TP	\$942
Model Inputs	
Soil Type	292;75;346
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	2	1	<5'	0.4	\$1,884	\$942

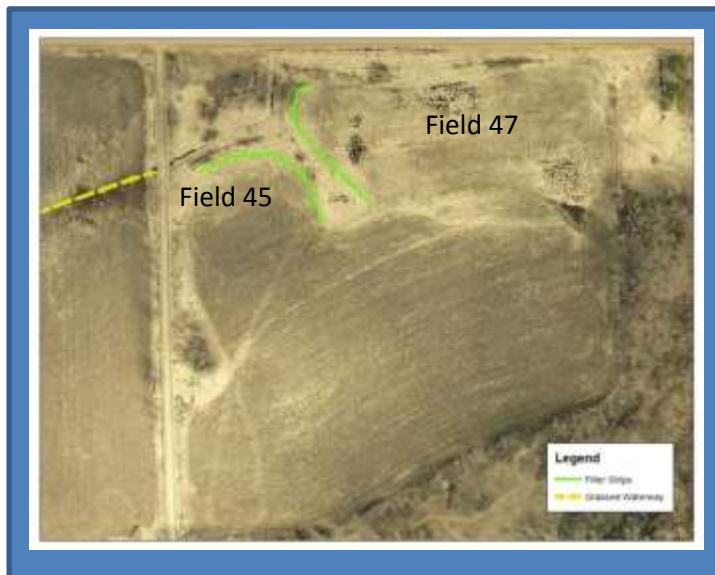
Rush Lake Watershed-Field 45 & 47

Project Description

This is two agricultural fields of about 4 acres combined. They are separated by a drainage ditch. They are both planted in a corn-soybean rotation. They appear to only be farmed in dry years.

BMP Recommendation

A 50-foot filter strip should be installed on both sides of the ditch.



Catchment Summary	
Field Acres	3.9
Current Cover	Corn/Bean
# of Landowners	1
Removed TP (Lb/yr)	2
Removed TSS (Ton/yr)	1
Estimated Cost	\$2,037
Cost/Lb TP	\$1,019
Model Inputs	
Soil Type	346
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	2	0	20-25'	0.7	\$2,037	\$1,019

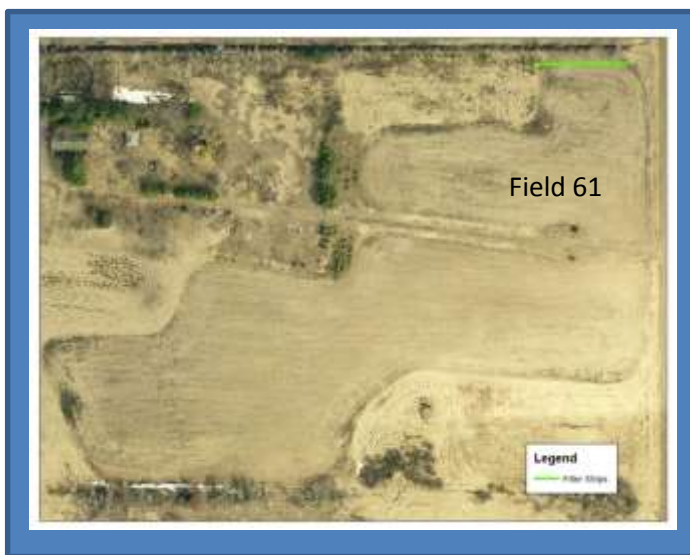
Rush Lake Watershed-Field 61

Project Description

This is an agricultural field of about 10 acres. The field is planted in hay. A small portion of the field at the northern most reach borders a drainage ditch.

BMP Recommendation

If this field is converted to an annual row crop, a 50-foot filter strip should remain between the ditch and field edge.



Catchment Summary	
Field Acres	9.8
Current Cover	Hay
# of Landowners	1
Removed TP (Lb/yr)	1
Removed TSS (Ton/yr)	0
Estimated Cost	\$1,782
Cost/Lb TP	\$1,782
Model Inputs	
Soil Type	346;292;169B
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	1	0	15-20'	0.2	\$1,782	\$1,782

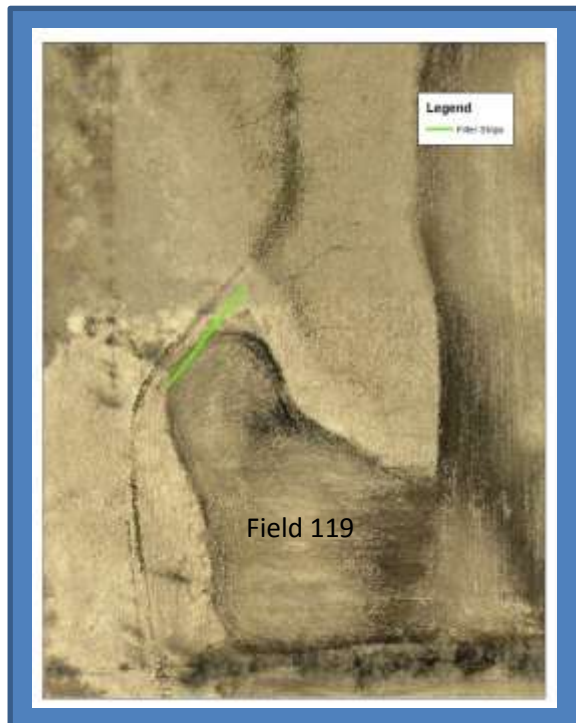
Rush Lake Watershed-Field 119

Project Description

This is an agricultural field of about 2 acres. A deep drainage ditch runs through the field and empties into Rush Lake. The small portion of field on the west side appears to only be farmed in some years. The field is currently planted in hay.

BMP Recommendation

If the field is converted to an annual row crop, a 50-foot filter strip should remain between the edge of the field and the ditch.



Catchment Summary	
Field Acres	2.0
Current Cover	Hay
# of Landowners	1
Removed TP (Lb/yr)	1
Removed TSS (Ton/yr)	0
Estimated Cost	\$1,782
Cost/Lb TP	\$1,782
Model Inputs	
Soil Type	928B;75
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	1	0	15'	0.2	\$1,782	\$1,782

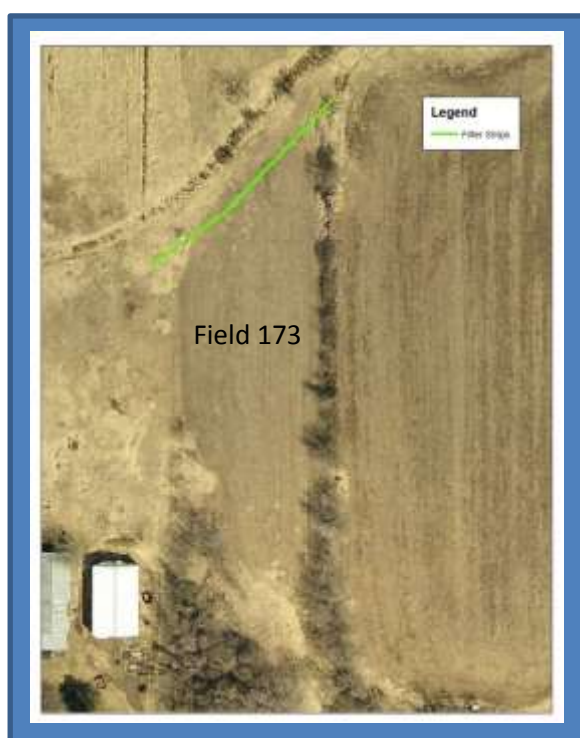
Rush Lake Watershed-Field 173

Project Description

This is an agricultural field of about 1 acre. The field is currently planted in hay. A drainage ditch runs along the north end of the field.

BMP Recommendation

If this field is converted to an annual row crop, a 50-foot filter strip should remain between the edge of the field and the ditch.



Catchment Summary	
Field Acres	1.0
Current Cover	Hay
# of Landowners	1
Removed TP (Lb/yr)	1
Removed TSS (Ton/yr)	0
Estimated Cost	\$1,833
Cost/Lb TP	\$1,833
Model Inputs	
Soil Type	292
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	1	0	10-15'	0.3	\$1,833	\$1,833

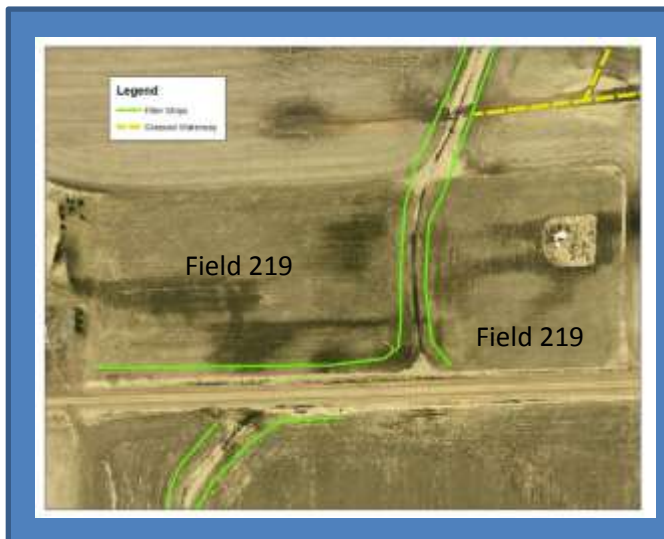
Rush Lake Watershed-Field 219

Project Description

This is an agricultural field of about 7 acres. The field is currently planted in hay. A drainage ditch runs through the field.

BMP Recommendation

If the field is converted to an annual row crop, a 50-foot filter strip should remain on both sides of the ditch.



Catchment Summary	
Field Acres	6.7
Current Cover	Hay
# of Landowners	1
Removed TP (Lb/yr)	1
Removed TSS (Ton/yr)	0
Estimated Cost	\$2,343
Cost/Lb TP	\$2,343
Model Inputs	
Soil Type	346;75;292
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	1	0	<5'	1.3	\$2,343	\$2,343

Rush Lake Watershed-Field 243

Project Description

This is an agricultural field of about 8 acres. The field is planted in a corn-soybean rotation. A drainage ditch runs along the western edge of the field.

BMP Recommendation

A 50-foot filter strip should be installed between the ditch and the edge of the field.



Catchment Summary	
Field Acres	8.5
Current Cover	Corn/Beans
# of Landowners	1
Removed TP (Lb/yr)	1
Removed TSS (Ton/yr)	0
Estimated Cost	\$1,782
Cost/Lb TP	\$1,782
Model Inputs	
Soil Type	346;292
Slopes >6%	No

Practice	Removed TP (Lb/yr)	Removed TSS (Ton/yr)	Existing Filter Strip (Feet)	Area (Acres)	Estimated Cost	Cost/Lb TP
Filter Strip	1	0	20'	0.2	\$1,782	\$1,782

Project Profiles-Animal operations

For this assessment, animal operations were identified, but not ranked. No exact BMP practices or potential pollution reduction numbers were assigned. Each identified animal operation should be visited individually and on-farm evaluation performed to determine the possible BMPs for the site.

Animal operations were identified by aerial photography and/or a windshield survey. Number of animals is an estimate based on what was observed on the day of the field verification. The number of animals is identified as one of the following categories: 0-10, 11-100, 101-250, or more than 250 animals. Exact animal numbers is not listed.

In the catchment summary table, information such as acres, number and type of animal, number of landowners involved, soil types, the presence of wetlands, streams, or ditches, and the distance to surface water is included. This gives a basic overview of the animal operation.

Some common BMP practices that are used to reduce excess nutrients from leaving a farmstead include nutrient management planning, rotational grazing, use-exclusion fencing around wetlands, ag-waste structures, and manure incorporation.

Nutrient management includes managing the amount, source, placement, form, and timing of the application of plant nutrients and soil amendments, including manure. Each animal operation should have a nutrient management plan approved by the Natural Resource Conservation Service (NRCS).

Rotational grazing of animals, especially large herds, helps reduce the impact of the animals to a single site. Some of the animal operations identified in this report are also identified as wetlands by the National Wetland Inventory. The locations where animal operations and wetlands combine are a potential source of excess nutrients in surface water. Fencing animals out of the wetlands, drainage ditches, and streams, and allowing a buffer to grow between the water body and the animals is a potential solution.

In some cases, a structure may be the best solution for manure storage. Ag-waste systems help store waste until it can be spread or incorporated over land. An approved manure management plan through NRCS may require an ag-waste system in some cases.

These are just a few of the more common practices used for control of nutrients from animal operations and animal operations. Each site is unique and should be evaluated as such.

Rush Lake Watershed-Animal operation 301

Project Description

This is a farm with multiple animal operation locations with over 700 animals. The closest animal operation is less than 500 feet from a stream that drains to Rush Lake. The two southern animal operations are in a neighboring watershed.



Catchment Summary	
Animal operation Acres	3.4
#/Type Animal	250+ Bovine
# of Landowners	1
Soil Type	292;204B
Wetlands Present	No
Streams Present	No
Ditching Present	No
Distance to Surface Water	485'

Rush Lake Watershed-Animal operation 225

Project Description

This is an animal operation of about 7 acres used for approximately 300 replacement animals. The animal operation drains to the road ditch on the south side, which empties into a stream less than 750 feet away.



Catchment Summary	
Animal operation Acres	6.9
#/Type Animal	250+ Bovine
# of Landowners	1
Soil Type	292;204B;346;75
Wetlands Present	No
Streams Present	No
Ditching Present	Yes
Distance to Surface Water	745'

Rush Lake Watershed-Animal operation 190

Project Description

This is an animal operation of about 15 acres. A ditch runs from across the road through a culvert through the middle of the animal operation. A portion of the animal operation is also classified as a wetland.

Catchment Summary	
Animal operation Acres	15.2
#/Type Animal	11-100 Bovine
# of Landowners	1
Soil Type	346;75
Wetlands Present	Yes
Streams Present	No
Ditching Present	Yes
Distance to Surface Water	0'



Rush Lake Watershed-Animal operation 277

Project Description

This is an animal operation of about 1 acre. Most of the animal operation drains through the adjacent agricultural field, through a gully, and into a wetland. It appears that this site has recently been taken out of operation.

Catchment Summary	
Animal operation Acres	0.9
#/Type Animal	Unknown
# of Landowners	1
Soil Type	346
Wetlands Present	No
Streams Present	No
Ditching Present	No
Distance to Surface Water	580'



Rush Lake Watershed-Animal operation 22

Project Description

This is a small animal operation of about 0.5 acres with a few horse and bovine animals. The animal operation is surrounded on two sides by road ditching, which drains the animal operation runoff to a series of drainage ditches.

Catchment Summary	
Animal operation Acres	0.6
#/Type Animal	1-10 Mixture
# of Landowners	1
Soil Type	292;204B;346
Wetlands Present	No
Streams Present	No
Ditching Present	Yes
Distance to Surface Water	0'



Rush Lake Watershed-Animal operation 91

Project Description

This is a large animal operation of about 7 acres with bovine animals. The animal operation drains to a drainage ditch.

Catchment Summary	
Animal operation Acres	6.8
#/Type Animal	101-250 Bovine
# of Landowners	1
Soil Type	292;346
Wetlands Present	No
Streams Present	No
Ditching Present	No
MPCA Registered?	Yes
Distance to Surface Water	540'



Rush Lake Watershed-Animal operation 236

Project Description

This is an animal operation of about 3 acres with bovine animals. The animal operation drains to drainage ditches.



Catchment Summary	
Animal operation Acres	2.6
#/Type Animal	11-100 Bovine
# of Landowners	1
Soil Type	292;346
Wetlands Present	No
Streams Present	No
Ditching Present	Yes
Distance to Surface Water	0'

Project Profiles-Pastured Wetlands

For this assessment, pastures with wetlands were identified, but not ranked. No exact BMP practices or potential pollution reduction numbers were assigned. Each identified pasture should be visited individually and on-farm evaluation performed to determine the possible BMPs for the site.

Pastured wetlands were identified by aerial photography and/or a windshield survey. Number of animals is an estimate based on what was observed on the day of the field verification. The number of animals is identified as one of the following categories: 0-10, 11-100, 101-250, or more than 250 animals. Exact animal numbers is not listed.

In the catchment summary table, information such as acres, number and type of animal, number of landowners involved, soil types, and the presence of National Wetland Inventory recorded wetlands, streams, or ditches is included. This gives a basic overview of the pasture. Some pastures have wetlands that are not recorded on the National Wetland Inventory. These sites were included in this report.

Pastured wetlands are a potential source of excess nutrients reaching surface waters. Often farmers used the best land for crops and pastured the rest of their property, which was usually the wet or low areas. Therefore, many wetlands in the area have at some point been pastured. Only those pastures that appear active and have evident wetlands within them were identified here.

Potential BMPs for pastured wetlands include use-exclusion fencing, filter strips, rotational grazing, and taking a pasture out of use.

Use-exclusion fencing is used to keep animals away from wetlands, ditches, or streams within the pasture. This is often paired with a buffer of at least 50-feet width to help filter nutrients out of runoff water coming off the pasture.

Rotational grazing can be used to allow vegetation to remain healthy, which helps take up or filter out excess nutrients. In extreme cases, such as where an entire pasture is a wetland and is directly connected to surface water (lake, stream, ditch), the best practice may be to take the pasture out of use and restore the wetland.

Rush Lake Watershed-Pasture 303

Project Description

This is a pasture of about 22 acres. Within this pasture are four small wetlands. Each has been drained or partially drained with ditching to the nearby stream. This stream also runs through the pasture and empties into Rush Lake.



Catchment Summary	
Pasture Acres	22.0
#/Type Animal	250+ Bovine
# of Landowners	1
Soil Type	346;75
NWI Wetlands Present	Yes
Streams Present	Yes
Ditching Present	Yes

Rush Lake Watershed-Pasture 225

Project Description

This is a pasture of about 20 acres. Within this pasture are several small wetlands. Each has been drained or partially drained with ditching to the nearby stream. The stream also runs through the pasture and empties into Rush Lake.

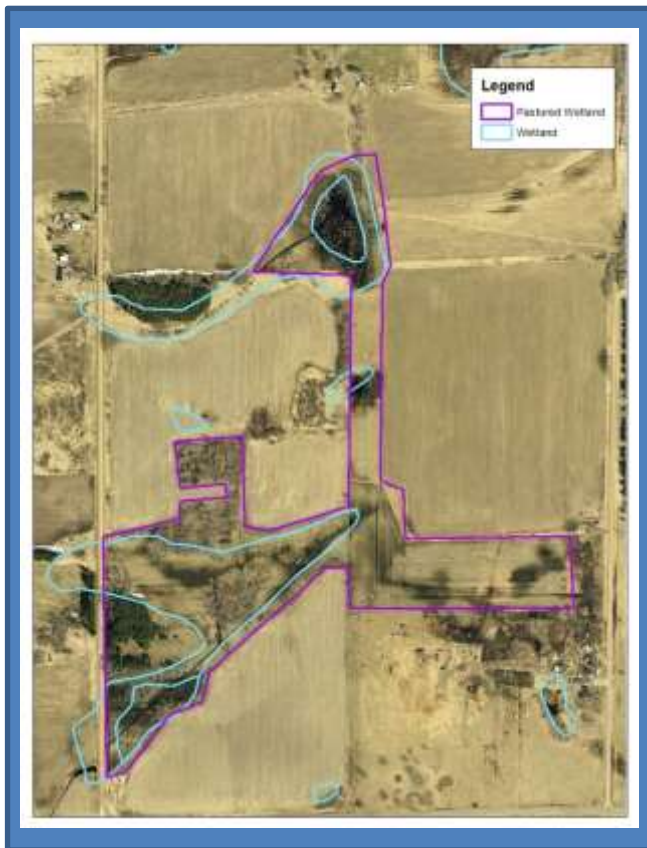
Catchment Summary	
Pasture Acres	20.3
#/Type Animal	250+ Bovine
# of Landowners	2
Soil Type	346;75
NWI Wetlands Present	Yes
Streams Present	Yes
Ditching Present	Yes



Rush Lake Watershed-Pasture 75

Project Description

This is a pasture of about 40 acres. Most of this pasture is wetland. The large wetland is ditched to a stream/ditch system that empties to Rush Lake.



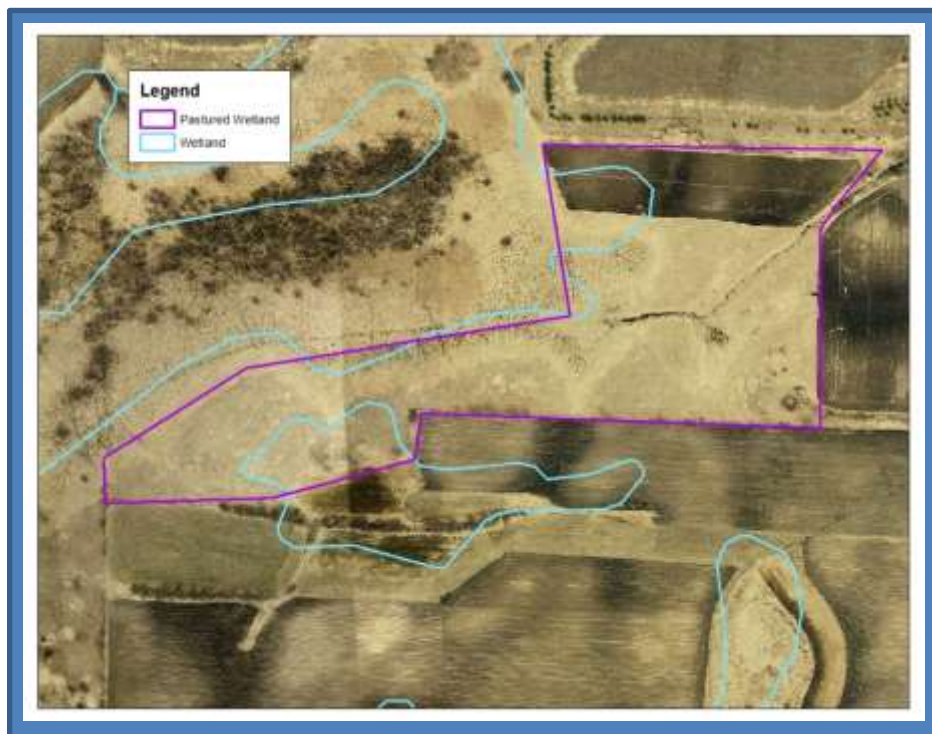
Catchment Summary	
Pasture Acres	40.5
#/Type Animal	11-100 Bovine
# of Landowners	1
Soil Type	292;75
NWI Wetlands Present	Yes
Streams Present	No
Ditching Present	Yes

Rush Lake Watershed-Pasture 253

Project Description

This is a pasture of about 13 acres. Within this pasture are several small wetlands and drainage ditches. The ditches drain to and from a large wetland complex that borders the pasture.

Catchment Summary	
Pasture Acres	12.7
#/Type Animal	Unknown
# of Landowners	1
Soil Type	544;292;75
NWI Wetlands Present	Yes
Streams Present	No
Ditching Present	Yes



Rush Lake Watershed-Pasture 371

Project Description

This is a pasture of about 1 acre. This pasture borders a large open-water wetland that has been ditched.

Catchment Summary	
Pasture Acres	0.9
#/Type Animal	0-10 Horse
# of Landowners	1
Soil Type	346;75
NWI Wetlands Present	No
Streams Present	No
Ditching Present	Yes



Rush Lake Watershed-Pasture 366 & 365

Project Description

This is a pasture of about 6 acres. Within this pasture are four small wetlands. Each has been drained or partially drained with ditching to the nearby stream. This stream also runs through the pasture and empties into Rush Lake.

Catchment Summary	
Pasture Acres	5.8
#/Type Animal	0-10 Horse
# of Landowners	1
Soil Type	346;75;292
NWI Wetlands Present	Yes
Streams Present	No
Ditching Present	No



Rush Lake Watershed-Pasture 15

Project Description

This is a pasture of about 8 acres. About half of this pasture is wetland. The wetland is ditched and eventually outlets to Rush Lake.

Catchment Summary	
Pasture Acres	7.8
#/Type Animal	0-10 Bovine
# of Landowners	1
Soil Type	544;75
NWI Wetlands Present	Yes
Streams Present	No
Ditching Present	Yes



Rush Lake Watershed-Pasture 23

Project Description

This is a pasture of about 5 acres. Within this pasture is a wetland that is wet most of the time. When this wetland overflows, it runs to the west, through a culvert under the road, and contributes to a large gully in the neighboring field. This pasture contains both horses and bovines.

Catchment Summary	
Pasture Acres	5.0
#/Type Animal	0-10 Mixed
# of Landowners	1
Soil Type	346;292;204B
NWI Wetlands Present	Yes
Streams Present	No
Ditching Present	No



References

Washington Conservation District. Rural Subwatershed Analysis Protocol-2013. <http://www.mnwcd.org/>

BWSR Water Erosion Pollution Reduction Estimator. Available for download at <http://www.bwsr.state.mn.us/outreach/eLINK/index.html>.

Revised Universal Soil Loss Equation 2 (RUSLE2). United States Department of Agriculture Natural Resources Conservation Service.

Appendices

Appendix 1-Fields not included in the Project Profiles

Fields that were not identified as needing any BMPs were not included in the Project Profiles section of this assessment. For example, fields that did not have any apparent erosion were left out. Pastures that did not include any wetlands and that didn't appear to be over-grazed were not included. However, there may be fields and pastures that were missed in the assessment, or that may need to be added when their land cover or land use is converted. This assessment will be updated as needed to incorporate these additions.

Those fields and pastures not included in this report are still included in the overall focus of conservation tillage and nutrient management for this watershed.