



Grant Project Summary

Project title: Cottonwood River Watershed Non-point Pollution Reduction Project (319-07)

Organization (Grantee): REDWOOD-COTTONWOOD RIVERS CONTROL AREA (RCRCA)

Project start date: February 1, 2007 Project end date: JUNE 30, 2011 Report submittal date: 08-01-2011

Grantee contact name: DOUG GOODRICH Title: EXECUTIVE DIRECTOR

Address: 1241 E Bridge Street, Suite B

City: Redwood Falls State: MN Zip: 56283

Phone number: (507) 637-2142 X4 Fax: (507) 637-2134 E-mail: Douglas.goodrich@racgroup.net

Basin (Red, Minnesota, St. Croix, etc.): Minnesota River Basin County:

Project type (check one):

- Clean Water Partnership (CWP) Diagnostic
CWP Implementation
Total Maximum Daily Load (TMDL) Development
319 Implementation
319 Demonstration, Education, Research
TMDL Implementation

Grant Funding

Final grant amount: \$184,657.00 Final total project costs: \$369,314.00

Matching funds: Final cash: \$0.00 Final in-kind: \$0.00 Final Loan: \$184,657.00

Contract number: B10249 MPCA project manager: Mark Hanson

Executive Summary of Project (300 words or less)

This summary will help us prepare the Watershed Achievements Report to the Environmental Protection Agency. (Include any specific project history, purpose, and timeline.)

The Cottonwood River Watershed Non-point Pollution Reduction grant was a total award of \$184,657.00. This grant award was given to the Redwood-Cottonwood Rivers Control Area (RCRCA) Joint Powers Organization under MN Statute: 471.59 as Project Sponsor to address the narrative goals listed in the CWP Phase I Cottonwood River Restoration Project /Diagnostic Study published in the year 1999 as well as the Minnesota River Dissolved Oxygen TMDL. Following a successful six year implementation plan, this grant was to accomplish the implementation activities in the continuing goal of phosphorus reduction. The grant was matched with a low interest loan awards for Cottonwood River Counties SRF0179 -0183 of \$184,657.00. According to the work plan, the grant portion was broken down into \$116,257.00 for technical assistance, monitoring, and administration; and \$68,400.00 for 75% cost share of best management practices. By the end of the project, \$112,524.12 for technical assistance, monitoring, and administration; \$72,132.88 for 75% cost share of best management practices. A quick grant dollar per pound reduction summary shows that it took \$19.89 of cost share to reduce one pound of phosphorus over a 10 year period. Using the total cost analysis, the cost to reduce a pound of phosphorus was \$27.54. This cost is a conservative estimate as many projects exist and function well after the prescribed 10 years.

The Cottonwood River Watershed Non-point Pollution Reduction project implemented 11 BMP contracts consisting of 16 various best management practices (BMPs) in the Cottonwood River Watershed to reduce direct sediment and phosphorus delivery to the Cottonwood River and the Minnesota River. The 16 BMPs consisted of 1 multi-purpose dam repair, 750 feet of shoreland and streambank protection (streambank restoration), 1 water control structure, 9 subsurface drain replacements (alternative tile inlets), and 2 Water and Sediment Control Basins (sediment

control basins). These projects have the potential to reduce phosphorus losses by 362.61 pounds per year and reduce net sediment in surface water by 351.1 tons per year. Over the ten year life expectancy of each BMP, a potential reduction of 1.81 tons of phosphorus or 724 tons of algae can be reduced. The project also accomplished the replacement of **24 non-compliant septic systems** reducing an estimated 1,068 pounds of phosphorus/yr from the Cottonwood River and ultimately the Minnesota River.

Goals (Include three primary goals for this project.)

- 1st Goal: Help the effort in the efforts of reducing phosphorus in the Cottonwood and Minnesota River Basins through the replacement of non-compliant septic systems and implementation of BMP projects.
- 2nd Goal: Implement BMP projects of approximately 2,341.33 feet of grassed waterways, 1 multi-purpose dam repair, 290 feet of Shoreland and Streambank Protection, 1 water control structure, 10 subsurface drain replacements, and 3 Water and Sediment Control Basins.
- 3rd Goal: Continue to identify problem areas and implement additional non-point pollution controls utilizing state and federal programs.

Results that count (Include the results from your established goals.)

- 1st Result: Brought 24 non-compliant septic systems in to compliance reducing 1,068 pounds of phosphorus/yr from the Cottonwood River and ultimately the Minnesota River and Lake Pepin.
- 2nd Result: Implemented projects including 1 multi-purpose dam repair project, 750 feet of shoreland and streambank stabilization, 1 water control structure, 9 subsurface drain replacements, and 2 Water and Sediment Control Basins saving an estimated 351.1 tons of sediment and 362.61 pounds of phosphorus per year from entering the Cottonwood River system.
- 3rd Result: Continued monitoring and analysis of waters in the Cottonwood River watershed have aided in listing and prioritizing sub-watersheds to be targeted in forthcoming TMDL Projects.

Picture (Attach at least one picture, do not imbed into this document.)

Description/location:

Cottonwood_Canoes.jpg: This picture shows citizens in canoes on the Cottonwood River in Milford Township near Flandreau State Park in New Ulm, Brown County. Part of the RCRCA canoe trip week.

Acronyms (Name all project acronyms and their meanings.)

RCRCA – Redwood Cottonwood Rivers Control Area
SWCD – Soil and Water Conservation District
MPCA – Minnesota Pollution Control Agency
TMDL – Total Maximum Daily Load
CRP – Conservation Reserve Program
EQIP – Environmental Quality Incentive Program
NRCS – Natural Resources Conservation Service
BMP – Best Management Practice
BWSR – Board of Water and Soil Resources
FLUX – Modeling program to determine pollutant loading (Army Corps of Engineers)
SRF – State Revolving Fund
WHIP – Wildlife Habitat Incentive Program
STORET – STOrage and RETrieval (Database System for Environmental Data)
CWP – Clean Water Partnership
Mn(DNR) – Minnesota Department of Natural Resources
QAPP – Quality Assurance Project Plan
GIS - Geographical Information System
SSTS – Subsurface Sewage Treatment System
Ortho-P – Ortho-phosphorus or phosphate
TP – Total Phosphorus
TSS – Total Suspended Solids
TSVS – Total Suspended Volatile Solids
TKN – Total Kjeldahl Nitrogen (Organic Nitrogen including Ammonia)
NTU – Nephelometric Turbidity Unit (a measure of cloudiness)
NO₂-NO₃ – Nitrite/ Nitrate as Nitrogen in testing
YSI – Yellow Springs Instruments (environmental instrument company)

Partnerships (Name all partners and indicate relationship to project)

Cottonwood Watershed County Governments and Environmental Offices

County government offices of the five counties (Brown, Cottonwood, Murray, Lyon, and Redwood) in the Cottonwood River watershed assist with annual planning activities by participating on an inter-agency/citizen advisory team and septic loan programs. Also, one county commissioner from each county has a seat on the RCRCA board.

Cottonwood Watershed County Soil and Water Conservation Districts (SWCD)s

The soil and water districts of the five counties (Brown, Cottonwood, Murray, Lyon, and Redwood) in the Cottonwood River watershed assist with annual planning activities by participating on an inter-agency/citizen advisory team. Also, one Soil and Water District Supervisor from each county has a seat on the RCRCA board.

USDA Natural Resources Conservation Service (NRCS)

The NRCS of the five counties (Brown, Cottonwood, Murray, Lyon, and Redwood) and area office in the Cottonwood River watershed assist with technical oversight, design, and promotion of BMP project implementation.

Area II Minnesota River Basin Projects, Inc. (Area II)

Responsibilities include: Technical and Engineering Assistance

Minnesota Department of Natural Resources (DNR)

DNR staff were involved with the advisory team, and assisted in project evaluation activities. The DNR also has permitting authority over in-stream/lake restoration work.

I. General Report Information			
1.	Project Title:	Cottonwood River Watershed Non-point Source Reduction Project	
2.	Project Sponsor:	Redwood-Cottonwood Rivers Control Area (RCRCA)	
3.	Project Representative:	Douglas A. Goodrich, Director, RCRCA	
4.	Email Address:	Douglas.goodrich@racgroup.net	
5.	Loan Sponsor (if applicable):	Brown, Cottonwood, Lyon, Murray and Redwood counties	
6.	Contract Number:	B10249	Loan Number: SRF0179 – SRF0183
7.	MPCA Project Manager:	Mark Hanson	
8.	Contract Start Date:	February 01, 2007	Contract End Date: June 30, 2011
9.	Best Management Practice (BMP) Name (Refer to BMP List):	Stream and Shoreline Protection, Grassed Waterway, Water and Sediment Control Basin, Subsurface Drain, Dam-Multi Purpose repair, Water Control Structures	
10.	319/Clean Water Partnership (CWP) only - Nonpoint Source (NPS) Category (Refer to NPS Definition of Categories):		
		Primary	Secondary
	Category	Agriculture	Non-Irrigated Crop Production
			Others
			Channelization
11.	319/CWP only - NPS Functional Category (Refer to NPS Definition of Categories):		
		Primary	Secondary
	Category	BMP Design/Implementation	Technical Assistance
			Others
			Effectiveness Monitoring
12.	Waterbody type (refer to NPS Waterbody Type):	Rivers and Streams	
13.	Hydrologic unit code (12 digits):	07020008(0000-9999)	Latitude-longitude: Lat. 44°17'29" Long. 99°26'24
14.	319/ CWP only: Type of pollutant(s) addressed (refer to NPS Pollutants):	Excess Nutrients, Sediment, Pathogens (E.Coli)	
15.	Ecoregion (refer to NPS Ecoregion):	Western Corn Belt Plains	
16.	Basin name (check all that apply): Cottonwood River Watershed		
	<input type="checkbox"/> Lake Superior <input type="checkbox"/> Lower Mississippi/Cedar <input type="checkbox"/> Upper Mississippi <input checked="" type="checkbox"/> Minnesota <input type="checkbox"/> Rainy <input type="checkbox"/> Red River <input type="checkbox"/> Des Moines <input type="checkbox"/> Missouri <input type="checkbox"/> St. Croix		
B. Project Description			
1.	Project Description Summary (taken from work plan summary) – Include at least two paragraphs that briefly summarize the project scope, the processes and the events that occurred before this reporting period. The Cottonwood River Watershed encompasses 1,312.23 square miles and is one of thirteen major watersheds in the Minnesota River Basin. The River originates on the Coteau des Prairies, flowing eastward approximately 152 miles to the Minnesota River with a drop in elevation of about 750 feet. This topography results in periodic spring and summer flooding in the central portion of the watershed. At times, damages are severe. A related implication is rapid transport of sediment and attached nutrients from inadequately treated cropland during spring snowmelt and spring and summer rainfall events.		

The purpose of the Implementation phase of the Cottonwood River Restoration Project is to facilitate watershed land-use changes that will lead to reductions necessary to meet both main stem and tributary goals. The 1999 Diagnostic Study defined characteristics of specific pollutants, the processes affecting their transport, and appropriate measures to reduce their delivery to the Cottonwood River. Priority management areas were selected based on relative contributions to the total sediment and nutrient load in the River. Attitudes and opinions of watershed residents were explored as they relate to water quality and measures for its protection. As a result of the Resource Investigation, a locally developed Implementation Plan was created to direct restoration activities in the Cottonwood River Watershed over the next ten years.

The Cottonwood River Restoration Project is administered by the Redwood-Cottonwood Rivers Control Area (RCRCA). RCRCA, established in 1983, is a Joint Powers Organization of eight counties and their Soil and Water Conservation Districts. (For additional information, go to www.rcrca.com/cr_home.htm) RCRCA has a proven history backed with an extensive database, a long-term monitoring program, and an organizational structure that remains supportive and flexible to ensure that projects such as the Redwood River Clean Water Project and the Cottonwood River Restoration Project are successful. This success can be viewed in the 2001 Final Report, "Evolution of Watershed Restoration", which can be found at www.rcrca.com.

Annual sediment (TSS) loading from the Cottonwood River in 1997 was estimated at over 330,000 tons, or 252 tons per square mile. Total phosphorus (TP) was estimated at 505 tons. These are much higher figures than reported in earlier studies of the Cottonwood River. Highwater and Dutch Charley Creeks exhibited the largest sediment yield of all sampled tributaries, annually delivering approximately 136 tons per square mile based on data collected in 1997 and 1998. Additionally, highest flow-weighted mean concentrations of total suspended solids and total phosphorus of all sampling stations, including those on the main stem, were recorded on these two tributaries. Sleepy Eye Creek contributed a high nitrate nitrogen load during the study period, but a much lower sediment load than expected. Throughout the study period, flow weighted mean concentrations of sediment and nutrients on the main stem and most tributaries exceeded expected values for minimally impacted ecoregion streams.

From 1997 to 2006, annual FLUX calculations from the Cottonwood River sampling site at New Ulm showed an average total phosphorus delivery of 222.26 tons annually to the Minnesota River. This is equal to .17 tons per square mile loss of phosphorus included with 231.95 tons per square mile loss of sediment. This is directly related to the turbidity impairment and contributes to the Minnesota River phosphorus loading.

Recreational opportunities on the Cottonwood River were limited by degraded water quality, channel obstructions, limited access, and a general lack of awareness by watershed residents. Potentially, the river is a major recreational resource.

Long term monitoring efforts from 1997 to present have identified TMDL impairments and the current/pending (2006) listings show that the work is not finished. With the TMDL plan approved on the lower Minnesota River for phosphorus reduction, it is important to continue the implementation of best management practices that will reduce the total phosphorus contribution from the Cottonwood River Major Watershed (3rd largest) and work to de-list the lower Minnesota River Dissolved Oxygen TMDL impairment.

2. Specific Project Goals – Include numeric, quantifiable goals for environmental improvement, the number of Best Management Practices to be installed, **pollutant reductions** as well as programmatic and social goals.

The goal of this project is to continue best management implementation according to the Cottonwood River Phase I Implementation Plan approved in 1999 and implement phosphorus reducing conservation practices that will help achieve the Lower Minnesota River dissolved oxygen TMDL. This work plan is projected to reduce phosphorus reaching the Minnesota River by 1.58 tons annually or 1,263,268 pounds of aquatic plant growth annually (plus 1,250.05 tons of sediment). This work plan will administer grant funds from 2008 through 2011 to achieve the implementation goals through these objectives:

1. BMP and ISTS Implementation:

- Replace 25 non-compliant (EMHT) ISTS systems -~~\$184,657.00~~ Loan Match
- Provide ~~\$68,400.00~~ \$72,132.88 in cost share up to 75% installing BMPs in the watershed reducing 3,158 pounds of phosphorus annually for an average life expectancy of 10 years (31,580 pounds)
- Provide ~~\$36,600.00~~ 326.37 in technical assistance to install ISTS and BMPs watershed wide

Total Budget: ~~\$105,000.00~~ \$108,459.25 Grant; \$184,657.00 Loan Match

2. Monitoring (Sampling Analysis)

- Provide ~~\$34,657.00~~ \$30,653.28 in technical assistance and water quality evaluation
- Provide ~~\$9,000.00~~ \$11,501.08 in sample analysis of TSS, TP, TN, TSVS, Turbidity and Ecoli

Total Budget: ~~\$43,657.00~~ \$42,154.36 Grant

3. Administration:

- Provide ~~\$36,000.00~~ \$34,043.39 in grant facilitation and administration over 3 years by adhering to all grant agreement requirements, submitting semi-annual and annual reports, water quality modeling, outreach and final report generation

Total Budget: ~~\$36,000.00~~ \$34,043.39 Grant (18.4% of grant)

3. Methods to achieve goals:

The Cottonwood River, as a result of the nine years of continuous monitoring, has been divided into priority areas that have been identified as contributing a disproportionate share of sediment and nutrients. With this prioritization, a ranking sheet has been developed to rank each project application to ensure that it will provide a substantial reduction of pollutants. Since 2000, the projects that have been implemented have been tracked by total cost of the project, the landowners' share of the cost, and the reductions achieved by each project. With this data, a matrix has been developed to estimate the total cost per pollutant reduction. This matrix is used to estimate the number of projects needed and the pollutant reductions that can be achieved. By implementing projects in priority areas selected by a long-term monitoring program and using implemented project information to estimate cost and effectiveness of each type of BMP, the project can ensure that the goals and objectives will be met and the efficiency and pollutant reduction benefits of each BMP will be maximized.

Several evaluation methods, in addition to the monitoring program are necessary to measure Project success. Methods used in the implementation plan have been selected to evaluate different components and outcomes of the plan in different ways.

An established best management practice (BMP) tracking system will be used to measure BMP adoption rates within this project area. Information contained in this system will include records of initial contacts with landowners or operators; the status of each BMP from initial sign-up to construction; and the potential sediment and nutrient reduction obtained as a result of the BMP, using the BWSR/MPCA e-link program. This information will be entered into the watershed GIS system maintained by RCRC. Other program evaluation tools will be developed to evaluate other key activities within each objective of the implementation plan as needed.

C. Final Report Information

SECTION I - Work Plan Review

Please list and give a brief report on each activity/task identified in your work plan (Attachment A of the 319 Grant Agreement, contract, or work order) or most recently approved work plan amendment. For each task, briefly summarize the activities completed and describe any problems, delays, or difficulties that have occurred in completing the project work. Explain how problems were resolved or list any activities that were not completed:

I. BMP Technical Assistance/Resource Implementation

- a. **Promotion/Technical Assistance:** Activities carried out in this element included design, surveying, and inspection of the Best Management Practices conceived and completed as part of this grant. Other activities included mapping and prioritization within the watershed for better placement of BMPs.
- b. **BMP Installation:** Work plan goals for this continuation grant was to implement BMP projects of approximately 2,341.33 feet of grassed waterways, 1 multi-purpose dam repair, 290 feet of shoreland/streambank stabilization, 1 water control structure, 10 Subsurface drain replacements, and 3 Water and Sediment Control Basins at a cost of \$68,400.00. Projects put on the ground included 1 multi-purpose dam repair, 750 feet of shoreland/streambank stabilization, 1 water control structure, 9 Subsurface drain replacements, and 2 Water and Sediment Control Basins (see Appendix A). Fuel costs during the course of this grant drove up prices of BMP installation and maintenance since the work plan was developed. Also, the MPCA's requirements to have all the projects constructed by the end of the grant versus encumbered requires an aggressive push for construction at the end of the grant. EQIP and State BWSR cost share programs allow for an 18 month start and completion within 24 months regardless of when the project is signed up. A system should be developed to identify outstanding construction projects for the final report and allow a minimum of two construction seasons to finish. Outstanding projects after that time frame would be cancelled and the encumbered funds returned to MPCA.
- c. **Promotion:** This program set out to effectively increase watershed awareness and has accelerated BMP implementation either through individual participation in the project's cost share program or landowner usage of the Federal EQIP, CRP, Continuous CRP and WHIP programs.
- d. **Program Evaluation:** Monitoring data and BMP placements were tracked in spreadsheets as well as the E-Link system and STORET. Pollution reductions are calculated for wastewater exclusion in septic

upgrades (see Appendix B) and estimated for BMP projects and nutrient management activities.

- e. **Septic System Installation:** Work plan goals were to replace non-compliant septic systems in portions of the Cottonwood River Watershed using \$184,657.00 of Minnesota's revolving funds for low interest loans. 24 loans were dispersed in the amount of \$184,657. 00 (see Appendix B).

II. Monitoring

- a. **Monitoring Analysis:** This grant set out to establishment and maintenance of sites and maintain a sampling program in accordance to the QAPP throughout the Cottonwood River watershed to realize progress and target implementation of BMPs.
- b. **Analysis of Samples and Field Measurements:** Samples taken in the field were to be analyzed at a state certified lab for the parameters: TSS, TP, ortho-P, NO2-NO3, *E. coli* bacteria, TSVS, and Turbidity in NTUs. Field measurements for water depth, water flow, water temperature, dissolved oxygen, pH, and water clarity were taken as part of site monitoring. This portion of the grant also serves to fund the creation of graphics, reports, and handouts showing trends and statistics of pollutant loadings as analyzed by technicians at RCRCA.

III. Administration

- a. **Agreement Requirements and Report Preparation:** Reporting requirements and budgeting tabulation/tracking were performed by RCRCA through the course of this grant.

SECTION II - Grant Results

1. **Measurements:** Please describe your evaluation plan and its results. If you have measurable environmental results, such as pounds of chemicals reduced, best management practices installed, pollutants prevented, waste eliminated, changes in water quality, resources conserved, etc., also include those here:

Using the 319 CWP cost share funds in this grant, construction of 11 BMP cost share contracts consisting of 16 various best management practices were installed in the Cottonwood River Watershed to reduce direct sediment and phosphorus delivery to the Minnesota River from the receiving tributaries and main stem of the Cottonwood River. These projects have the potential to reduce phosphorus losses by 362.61 pounds per year and reduce net sediment in surface water by 351.1 tons per year. Over the ten year life expectancy of each BMP a potential reduction of 1.81 tons of phosphorus or 724 tons of algae.

Participants in the Cottonwood River low interest loan program implemented 24 septic loan systems with Grant Agreement A10249 and Loan Numbers SRF0179 – SRF0183. These systems have the ability to reduce phosphorus loading by 16.02 tons over their 30-year lifespan or 12,816,000.00 pounds of algae reduction. (See Appendix B).

Watershed Monitoring Technicians maintained a conditions monitoring program at five sites in the watershed. Annually, a minimum of two flow based storm events were sampled and base flow samples were taken throughout the six month open water season. Additional data was also collected at each visit including: transparency tube readings, YSI dissolved oxygen, temperature, and climatological conditions. Each site included a Campbell Scientific CR10x data recorder for stage tracking. These monitoring sites have been in place since 1997 and we now have the luxury of having contiguous monitoring data of 12 years to base our evaluations on. Project staff conducted a minimum of five flow measurements at each site annually to develop flow rating curves for accurate pollutant loading calculations. All sampling data generated has been sent to MPCA for inclusion into STORET and Hydstra modeling program.

Monitoring Results- Sampling done throughout the watershed continues to reflect a general reduction trend of phosphorus and Total Suspended Solids from 2004 to 2006 and stabilization through 2009. Nitrogen amounts in the tributaries and reaches of the Cottonwood River sampled appear to be trending upwards in the past couple of years. Data and graphics for the period of the grant as well as a data summary are shown in Appendix "C".

2. **Products:**

A multitude of spreadsheets, word documents, and PowerPoint presentations have been created in relation to the tracking of costs, implementation of BMP projects, and analysis of water quality and hydrologic data as part of this grant. Examples of these products are included on the CD in which this report is contained. Data collected during this period were conducted by the agencies of the MnDNR Waters and RCRCA. These examples can be found in Appendix "C", as well as trending graphics.

3. **Public outreach and education:**

Various newspaper ads, brochures, and flyers were created to promote activities, BMP's, and the Septic Loan program associated with this grant. Examples of these materials can be found in Appendix "D" and a summary of outreach contacts are listed in Appendix "E". GIS maps were created to enhance the brochures for public recognition.

4. Long-term results:

This project helps to make clear the importance of agencies working together to accomplish pollutant reduction within political boundaries. Through this project RCRCA has continued its relationship with County Soil and Water Conservation Districts as well as the Natural Resources and Conservation Service. The alliance of RCRCA and these entities will help to get needed water retention and pollution reduction projects on the ground in the Cottonwood River Watershed. These agencies will have an integral part of the Cottonwood River watershed's Fecal Coliform and Turbidity TMDL's Implementation plans and will likely be needed in MPCAs 10 year watershed based assessments cycle plan, currently underway.

Major land use changes made by this project come from the treatment of gullies with a structural practice and requiring mulch tillage in the contributing watershed. Project staff under grant B10249 actively promoted all conservation programs during the life of the project and assisted the Federal FSA, NRCS and local Soil and Water Conservation Districts implement additional BMPs utilizing CREP, CRP, Continuous CRP, EQIP and BWSR state cost share projects.

Activities undertaken in this project were intended to maintain the treatment and monitoring efforts of the Cottonwood River watershed set forth by original diagnostic studies of the Cottonwood River watershed and Minnesota River Dissolved Oxygen TMDL. These actions also had intentions to assist in meeting TMDL standards in portions of the Cottonwood River and, in turn, lowering pollutants in the Minnesota River. Monitoring data in the Cottonwood River watershed show that sediment and phosphorus trends appear to have stabilized. It may be too early to know whether the reductions due to the replacement of septic systems and other non-point reduction practices have been fully realized on this system. There are indications in recent studies and reports of sensitive species being found once again in the waters of the Minnesota River where they hadn't been thought to be for some time.

Currently the Cottonwood River Watershed has had numerous TMDL impairment listings bestowed upon it due to monitoring data generated from projects such as this one. In order to develop TMDLs and to address each impairment, new implementation plans will have to be written. Work will continue on the watershed in order to meet and delist TMDL impairments. New BMPs focusing on water quantity reductions from reaching the river in order to stabilize flows are recommended. Minnesota River sediment coring results combined with monitoring evaluations show that between 50-70% of the TSS and Turbidity is caused by stream bank and bed scour. A shift in the types of BMPs installed will have to take place to reduce pollutants in the future. BMPs that store water and then meter it out slowly to reduce peak flows, along with BMPs that store water and allow for ground water recharge should be used rather than the current structural practices that primarily address sheet and rill erosion. A continuation of this grant to accomplish said BMPs and to continue monitoring efforts in the Cottonwood River watershed will be sought.

5. Have all monitoring stations been established in STORET? Yes No
6. Is the data being routinely submitted for storage into STORET? Yes No Last submittal date: 12/31/10
7. Is the data being annually entered into E-Link? Yes No Date last entered: 6/28/11

SECTION III - Final Expenditures

CWP, 319, and TMDL - Complete the table below:

	Amount
Total Grant Amount:	\$184,657.00
Total Match Amount (if applicable)	\$184,657.00
Total Project Amount:	\$369,314.00
Cumulative Grant Expenditures through this period:	\$184,657.00
Cumulative Match Expenditures through this period:	\$184,657.00
Total Cumulative Expenditures through this period:	\$369,314.00
Date form completed: 8-01-2011	
Please submit to:	Your project manager: MARK HANSON

PROJECT TITLE: Cottonwood River Watershed Non-point Source Reduction Project; Contract Agreement #B10249
 BUDGET/EXPENDITURES AS OF June 30, 2011 (FINAL EXPENSES)

Objectives	unit cost	unit	Quantity Exp/budget	Cash Budgeted	Loan Budgeted	Total Budgeted	Cumulative Cash Expended	Cumulative Loan Expended	Cumulative Total Expended	Cash Budget Balance	Loan Budget Balance	Total Budget Balance
Objective 1: BMP Technical Assistance and Implementation-Fund 037						\$0.00			\$0.00	\$0.00	\$0.00	\$0.00
Task A-Technical Assistance	\$24.00	504.53 hrs/yr	\$36,326.37	\$36,326.37		\$36,326.37	\$36,326.37		\$36,326.37	\$0.00	\$0.00	\$0.00
Task B- BMP Cost Share @75%- Fund 038			\$72,132.88	\$72,132.88		\$72,132.88	\$72,132.88		\$72,132.88	\$0.00	\$0.00	\$0.00
Task C- SSTS Loans to Contributing Sponsors	\$7,500.00	25	\$184,657.00		\$184,657.00	\$184,657.00		\$184,657.00	\$184,657.00	\$0.00	\$0.00	\$0.00
Total Element 1			\$ 293,116.25	\$ 108,459.25	\$ 184,657.00	\$ 293,116.25	\$ 108,459.25	\$ 184,657.00	\$ 293,116.25	\$ -	\$ -	\$ -
Objective 2): Maintain Continuous Water Quality Monitoring-Fund 039						\$0.00			\$0.00	\$0.00	\$0.00	\$0.00
Task A- Water Quality Tech. Asst.	\$19.00	537.78 hrs/yr	\$30,653.28	\$30,653.28		\$30,653.28	\$30,653.28		\$30,653.28	\$0.00	\$0.00	\$0.00
Task B- Water Monitoring Analysis	\$3,833.69	Per year (3)	\$11,501.08	\$11,501.08		\$11,501.08	\$11,501.08		\$11,501.08	\$0.00	\$0.00	\$0.00
Total Element 2			\$42,154.36	\$42,154.36	\$0.00	\$42,154.36	\$42,154.36	\$0.00	\$42,154.36	\$0.00	\$0.00	\$0.00
Objective 3): Grant Administration and Facilitation-Fund 040						\$0.00			\$0.00	\$0.00	\$0.00	\$0.00
Executive Director	\$32.74	77.3 hrs/yr	\$2,530.57	\$2,530.57		\$2,530.57	\$2,530.57		\$2,530.57	\$0.00	\$0.00	\$0.00
Support Staff	\$22.54	523.19 hrs/yr	\$11,792.65	\$11,792.65		\$11,792.65	\$11,792.65		\$11,792.65	\$0.00	\$0.00	\$0.00
Office Supplies	\$1,616.51	Per year (3)	\$4,849.52	\$4,849.52		\$4,849.52	\$4,849.52		\$4,849.52	\$0.00	\$0.00	\$0.00
Misc. Services/expenses	\$4,956.88	Per year (3)	\$14,870.65	\$14,870.65		\$14,870.65	\$14,870.65		\$14,870.65	\$0.00	\$0.00	\$0.00
Total Element 3			\$34,043.39	\$34,043.39	\$0.00	\$34,043.39	\$34,043.39	\$0.00	\$34,043.39	\$0.00	\$0.00	\$0.00
ITEMIZED PROGRAM ELEMENT BUDGET												
Total Element 1			\$293,116.25	\$108,459.25	\$184,657.00	\$293,116.25	\$108,459.25	\$184,657.00	\$293,116.25	\$0.00	\$0.00	\$0.00
Total Element 2			\$42,154.36	\$42,154.36	\$0.00	\$42,154.36	\$42,154.36	\$0.00	\$42,154.36	\$0.00	\$0.00	\$0.00
Total Element 3			\$34,043.39	\$34,043.39	\$0.00	\$34,043.39	\$34,043.39	\$0.00	\$34,043.39	\$0.00	\$0.00	\$0.00
Project Grand Total			\$369,314.00	\$184,657.00	\$184,657.00	\$369,314.00	\$184,657.00	\$184,657.00	\$369,314.00	\$0.00	\$0.00	\$0.00

Appendices

Appendix A. BMP Implementation Contract and Payment History Chart

Appendix B: Septic System Pollution Reductions and Disbursement History

Appendix C. Monitoring Summary Information

Appendix D. Promotional Materials

Appendix E. Outreach Summaries from 2007 to Present

Appendix A. BMP Implementation Contract and Payment History Chart

GRANT: B10249 "Cottonwood 4"

Grant to Expire 6-30-11

SPOKEN FOR/NOT SPENT: \$ (0.00)

Grant Value \$72,132.88

SPENT: \$ 72,132.88

LEFT TO SPEND: \$ 0.00

grant_id	cont_num	coop_l_name	coop_f_name	coop_adrss	city	state	zip	t_r_s	ws_id	init_date	est_cost	actual_cost	cost_share	final_pay	final_pay_date	bmp	num_install	elink_soil	elink_sed	elink_phos	bmp_length	
B10249	CP319-01-04	Dorow	David	33581 US Hwy 14	Sleepy Eye	MN	56085	T109 R34 S19	29020	12/17/2007	\$ 32,000.00	\$ 31,003.50	\$ 24,000.00	\$23,252.63	1/28/2008	580	1	82	82	82	300	
B10249	CP319-02-04	Johnsonville TWP		17415 Frontier Ave	Walnut Grove	MN	56180	T110 R38 S29	29034	12/17/2007	\$ 17,950.00	\$ 16,200.00	\$ 13,462.50	\$12,150.00	9/15/2008	580	1	31.6	31.6	31.6	200	
B10249	CP319-03-04	Steffens	Don	31382 120th St	Sanborn	MN	56083	T109 R36 S27	29016	2/25/2008	\$ 42,555.00		\$ 2,386.65	\$ -	EQIP Covered	580						
B10249	CP319-04-04	Jans	Steve	2664 121st Street	Westbrook	MN	56183	T107 R38 S20	29075	5/19/2008	\$ 750.00	\$ 600.00	\$ 450.00	\$ 450.00	12/15/2008	620	2	2	2	3.4		
											\$ 4,500.00	\$ 4,500.00	\$ 4,500.00	\$ 4,500.00	2/25/2008							
B10249	CP319-05-04	Geis	David					T108 R36 S35		8/18/2008						412	0					
B10249	CP319-06-04	Hanson	Sharon	1640 Suhr Drive	Hendricks	MN	56136	T109 R32 S31	29033	8/18/2008	\$ 6,130.00	\$ 6,033.16	\$ 4,597.50	\$ 4,524.87	12/15/2008	638	2	30.4	30.4	35		
B10249	Amend-1_06-04	Hanson	Sharon	1640 Suhr Drive	Hendricks	MN	56136	T109 R32 S31	29033	8/18/2008	\$ 3,245.00	\$ 3,245.00	\$ 1,622.50	\$ 1,622.50	1/26/2009							
B10249	CP319-07-04	Hanson	Sharon	1640 Suhr Drive	Hendricks	MN	56136	T109 R32 S31	29033	8/18/2008	\$ 1,200.00	\$ 2,015.61	\$ 900.00	\$ 900.00	12/15/2008	620	4	4	4	6.8		
B10249	CP319-08-04	Johnson	Brent	1810 Co. Rd 5	Balaton	MN	56115	T110 R42 S28		4/20/2009												
B10249	CP319-09-04	Ziemke	Elvurne	101 Hollett Street	Tracy	MN	56175	T108 R39 S09	29046	5/18/2009	\$ 900.00	\$ 900.00	\$ 675.00	\$ 675.00	5/17/2010	620	3	3	3	5.1		
B10249	CP319-10-04	Platz	Gloria	208 S. Range Street	Springfield	MN	56087	T110 R34 S29	29012	9/21/2009	\$ 4,300.00	\$ 4,300.00	\$ 3,225.00	\$ 3,225.00	11/16/2009	410	1	8.16	4.08	4.69		
B10249	CP319-10-04	Platz	Gloria	208 S. Range Street	Springfield	MN	56087	T110 R34 S29	29012	11/16/2009	\$ 1,368.30	\$ 1,368.30	\$ 1,026.23	\$ 1,026.23	11/16/2009	410						
B10249	CP319-11-04 CP319-12-04 (combined with CP319-09-05)	Roiger	Duane	16839 Cty Rd 3	Springfield	MN	56087	T109 R35 S36	29020	5/17/2010	\$ 1,000.00	\$ 1,232.50	\$ 750.00	\$ 750.00	9/20/2010	587	1	Nitrate-Nitrite reduction 402 # of N				
B10249	CP319-13-04 CP319-10-05) (combined with	Sanborn Golf Club		698 Central Street	Sanborn	MN	56083	T109 R36 S26	29016	1/15/2011	\$ 25,408.87	\$ 23,720.00	\$ 19,056.65	\$17,790.00	4/18/2011	580	1	85	85	85	250	
B10249	CP319-10-05)	Pagel	Duane	2275 Hwy 19	Marshall	MN	56258	T111 R42 S35	29098	4/18/2011	\$ 4,000.00	\$ 4,727.84	\$ 1,266.65	\$ 1,266.65	6/29/2011	410	0.091	109.02	109.02	109.02		

Appendix B: Septic System Pollution Reductions and Disbursement History

Cottonwood River Septics SRF0179-183

Original \$500,000
Spent \$436,364.12

Pollutant	Daily Output	Out put per year x 365	Gallons-Liters	Kilograms per year	Pounds per year	Bedrooms 144
Gallons per day	21600	7,884,000.00	29,863,636.36			
			Daily Load in grams			
BOD = 200mg/L			5,972,727.27	5,972.73	13,140.00	
TSS = 65 mg/L			1,941,136.36	1,941.14	4,270.50	
N = 55 mg/L			1,642,500.00	1,642.50	3,613.50	
TP=30 mg/L			895,909.09	895.91	1,971.00	

Reduction in Plant yield (lbs) per system

788,400.00

N Bedrooms		TN	TP	BOD	TSS
Yield in Tons Per Year		1.81	0.99	6.57	2.14
30 year usefulness reduction over 30 years		54.20	29.57	197.10	64.06

*Reduction in Plant yield (lbs) per *N* bedrooms over 30 yrs

23,652,000.00

Per person per day water usage is 45 gallons.

Multiply 2 times the number of bedrooms for total number of persons in the household.

When designing, a safety facotor of 75 gallons per day per person is used.

Typical Septic Tank Effluent Discharge

	mg/L
BOD	200
TSS	65
TN	55
TP	30

Loan Disbursement Voucher SRF/CWP Loan Program

Date: 7/20/2011
Project Name: Cottonwood River Watershed
Project Number: SRF0179
Vendor Name: **Brown County**
Vendor Address: -
Vendor Number: 034056001 00
Allotment ID #: 07 050 R32 F210 W74
BS Account: E322
Order #: 00000001432
Original Loan Amount: \$ 110,000.00
Disbursement Request Amount: _____

Disb. Request #	FY	Date Disb.	Disb. Amount	Loan Rate	Cumm Interest Owed	Total Disb. to Date	% Disb.	Loan Balance to Date	Loan Amount Owed
1	08	10/19/2007	\$ 6,261.00	2%	\$ -	\$ 6,261.00	5.69%	\$ 103,739.00	\$ 6,261.00
2	08	10/30/2007	\$ 7,787.60	2%	\$ 3.83	\$ 14,048.60	12.77%	\$ 95,951.40	\$ 14,052.43
3	08	10/30/2007	\$ 7,205.00	2%	\$ 3.83	\$ 21,253.60	19.32%	\$ 88,746.40	\$ 21,257.43
4	08	11/29/2007	\$ 5,846.33	2%	\$ 38.07	\$ 27,099.93	24.64%	\$ 82,900.07	\$ 27,138.00
5	08	11/29/2007	\$ 7,911.67	2%	\$ 38.07	\$ 35,011.60	31.83%	\$ 74,988.40	\$ 35,049.67
6	08	12/5/2007	\$ 7,224.00	2%	\$ 49.76	\$ 42,235.60	38.40%	\$ 67,764.40	\$ 42,285.36
FY Totals	08	6/30/2008	\$ 42,235.60	2%	\$ 531.34	\$ 42,235.60	38.40%	\$ 67,764.40	\$ 42,766.94
7	09	9/8/2008	\$ 11,982.06	2%	\$ 692.90	\$ 54,217.66	49.29%	\$ 55,782.34	\$ 54,910.56
8	09	9/8/2008	\$ 5,850.00	2%	\$ 692.90	\$ 60,067.66	54.61%	\$ 49,932.34	\$ 60,760.56
9	09	9/8/2008	\$ 8,118.00	2%	\$ 692.90	\$ 68,185.66	61.99%	\$ 41,814.34	\$ 68,878.56
10	09	9/8/2008	\$ 5,350.00	2%	\$ 692.90	\$ 73,535.66	66.85%	\$ 36,464.34	\$ 74,228.56
11	09	9/23/2008	\$ 7,639.97	2%	\$ 754.76	\$ 81,175.63	73.80%	\$ 28,824.37	\$ 81,930.39
12	09	9/23/2008	\$ 7,685.00	2%	\$ 754.76	\$ 88,860.63	80.78%	\$ 21,139.37	\$ 89,615.39
13	09	9/23/2008	\$ 7,711.50	2%	\$ 754.76	\$ 96,572.13	87.79%	\$ 13,427.87	\$ 97,326.89
14	09	10/2/2008	\$ 7,524.65	2%	\$ 803.43	\$ 104,096.78	94.63%	\$ 5,903.22	\$ 104,900.21
15	09	12/12/2008	\$ 5,903.22	2%	\$ 1,211.37	\$ 110,000.00	100.00%	\$ -	\$ 111,211.37
FY Totals	09	6/30/2009	\$ 67,764.40	2%	\$ 2,434.70	\$ 110,000.00	100.00%	\$ -	\$ 112,434.70
FY Totals	10	6/30/2010	\$ -	2%	\$ 4,683.39	\$ 110,000.00	100.00%	\$ -	\$ 114,683.39

Loan Disbursement Voucher SRF/CWP Loan Program

Date: 7/20/2011
Project Name: Cottonwood River Watershed
Project Number: SRF0180
Vendor Name: **Cottonwood County**
Vendor Address: -
Vendor Number: 034063001 00
Allotment ID #: 07 050 R32 F210 W74
BS Account: E322
Order #: 00000001433
Original Loan Amount: \$ 110,000.00
Loan Balance (after this request): See Table
Disbursement Request Number: See Table
Disbursement Request Amount: _____

Disb. Request #	FY	Date Disb.	Disb. Amount	Loan Rate	Cumm Interest Owed	Total Disb. to Date	% Disb.	Loan Balance to Date	Loan Amount Owed
1	08	10/18/2007	\$ 8,585.79	2%	\$ -	\$ 8,585.79	7.81%	\$ 101,414.21	\$ 8,585.79
2	08	10/29/2007	\$ 8,800.00	2%	\$ 5.25	\$ 17,385.79	15.81%	\$ 92,614.21	\$ 17,391.04
3	08	11/8/2007	\$ 9,915.85	2%	\$ 13.94	\$ 27,301.64	24.82%	\$ 82,698.36	\$ 27,315.58
4	08	11/29/2007	\$ 8,270.00	2%	\$ 45.81	\$ 35,571.64	32.34%	\$ 74,428.36	\$ 35,617.45
FY Totals	08	6/30/2008	\$ 35,571.64	2%	\$ 463.33	\$ 35,571.64	32.34%	\$ 74,428.36	\$ 36,034.97
5	09	9/23/2008	\$ 35,641.83	2%	\$ 629.49	\$ 71,213.47	64.74%	\$ 38,786.53	\$ 71,842.96
6	09	10/17/2008	\$ 19,120.47	2%	\$ 725.28	\$ 90,333.94	82.12%	\$ 19,666.06	\$ 91,059.22
7	09	12/12/2008	\$ 3,150.00	2%	\$ 1,003.51	\$ 93,483.94	84.99%	\$ 16,516.06	\$ 94,487.45
FY Totals	09	6/30/2009	\$ 57,912.30	2%	\$ 2,042.88	\$ 93,483.94	84.99%	\$ 16,516.06	\$ 95,526.82
FY Totals	10	6/30/2010	\$ -	2%	\$ 3,953.41	\$ 93,483.94	84.99%	\$ 16,516.06	\$ 97,437.35
8	11	8/9/2010	\$ 10,350.00	2%	\$ 4,164.53	\$ 103,833.94	94.39%	\$ 6,166.06	\$ 107,998.47
9	11	9/17/2010	\$ 6,166.06	2%	\$ 4,392.52	\$ 110,000.00	100.00%	\$ (0.00)	\$ 114,392.52

Loan Disbursement Voucher SRF/CWP Loan Program

Date: 7/20/2011
Project Name: Cottonwood River Watershed
Project Number: SRF0181
Vendor Name: **Lyon County**
Vendor Address: -
Vendor Number: 034077001 00
Allotment ID #: 07 050 R32 F210 W74
BS Account: E322
Order #: 00000001434
Original Loan Amount: \$ 110,000.00
Disbursement Request Amount: _____

Disb. Request #	FY	Date Disb.	Disb. Amount	Loan Rate	Cumm Interest Owed	Total Disb. to Date	% Disb.	Loan Balance to Date	Loan Amount Owed
1	08	11/26/2007	\$ 8,226.72	2%	\$ -	\$ 8,226.72	7.48%	\$ 101,773.28	\$ 8,226.72
2	08	12/4/2007	\$ 8,600.00	2%	\$ 3.66	\$ 16,826.72	15.30%	\$ 93,173.28	\$ 16,830.38
3	08	6/9/2008	\$ 9,200.00	2%	\$ 176.64	\$ 26,026.72	23.66%	\$ 83,973.28	\$ 26,203.36
FY Totals	08	6/30/2008	\$ 26,026.72	2%	\$ 207.21	\$ 26,026.72	23.66%	\$ 83,973.28	\$ 26,233.93
4	09	10/7/2008	\$ 6,314.00	2%	\$ 348.58	\$ 32,340.72	29.40%	\$ 77,659.28	\$ 32,689.30
5	09	10/7/2008	\$ 9,000.00	2%	\$ 348.58	\$ 41,340.72	37.58%	\$ 68,659.28	\$ 41,689.30
6	09	10/13/2008	\$ 8,950.00	2%	\$ 362.47	\$ 50,290.72	45.72%	\$ 59,709.28	\$ 50,653.19
7	09	11/24/2008	\$ 14,500.00	2%	\$ 477.85	\$ 64,790.72	58.90%	\$ 45,209.28	\$ 65,268.57
FY Totals	09	6/30/2009	\$ 38,764.00	2%	\$ 1,261.07	\$ 64,790.72	58.90%	\$ 45,209.28	\$ 66,051.79
8	10	9/14/2009	\$ 8,500.00	2%	\$ 1,532.62	\$ 73,290.72	66.63%	\$ 36,709.28	\$ 74,823.34
9	10	10/23/2009	\$ 7,700.00	2%	\$ 1,694.74	\$ 80,990.72	73.63%	\$ 29,009.28	\$ 82,685.46
10	10	12/10/2009	\$ 7,900.00	2%	\$ 1,910.64	\$ 88,890.72	80.81%	\$ 21,109.28	\$ 90,801.36
11	10	12/9/2009	\$ 13,485.00	2%	\$ 1,905.59	\$ 102,375.72	93.07%	\$ 7,624.28	\$ 104,281.31
12	10	5/17/2010	\$ 7,624.28	2%	\$ 2,820.95	\$ 110,000.00	100.00%	\$ -	\$ 112,820.95
FY Totals	10	6/30/2010	\$ 45,209.28	2%	\$ 3,090.47	\$ 110,000.00	100.00%	\$ -	\$ 113,090.47

Loan Disbursement Voucher SRF/CWP Loan Program

Date: 7/20/2011
Project Name: Cottonwood River Watershed
Project Number: SRF0182
Vendor Name: **Redwood County**
Vendor Address: -
Vendor Number: 034118001 00
Allotment ID #: 07 050 R32 F210 W74
BS Account: E322
Order #: 00000001436
Original Loan Amount: \$ 110,000.00
Loan Balance (after this request): See Table
Disbursement Request Number: See Table
Disbursement Request Amount: _____

Disb. Request #	FY	Date Disb.	Disb. Amount	Loan Rate	Cumm Interest Owed	Total Disb. to Date	% Disb.	Loan Balance to Date	Loan Amount Owed
1	08	9/24/2007	\$ 4,275.33	2%	\$ -	\$ 4,275.33	3.89%	\$ 105,724.67	\$ 4,275.33
2	08	10/26/2007	\$ 16,026.24	2%	\$ 7.60	\$ 20,301.57	18.46%	\$ 89,698.43	\$ 20,309.17
3	08	11/9/2007	\$ 6,375.87	2%	\$ 22.27	\$ 26,677.44	24.25%	\$ 83,322.56	\$ 26,699.71
4	08	11/9/2007	\$ 10,593.18	2%	\$ 22.27	\$ 37,270.62	33.88%	\$ 72,729.38	\$ 37,292.89
5	08	12/10/2007	\$ 7,979.40	2%	\$ 86.49	\$ 45,250.02	41.14%	\$ 64,749.98	\$ 45,336.51
FY Totals	08	6/30/2008	\$ 45,250.02	2%	\$ 590.23	\$ 45,250.02	41.14%	\$ 64,749.98	\$ 45,840.25
6	09	8/5/2008	\$ 7,592.34	2%	\$ 679.37	\$ 52,842.36	48.04%	\$ 57,157.64	\$ 53,521.73
7	09	8/5/2008	\$ 6,955.89	2%	\$ 679.37	\$ 59,798.25	54.36%	\$ 50,201.75	\$ 60,477.62
8	09	9/26/2008	\$ 9,224.37	2%	\$ 850.72	\$ 69,022.62	62.75%	\$ 40,977.38	\$ 69,873.34
FY Totals	09	6/30/2009	\$ 23,772.60	2%	\$ 1,914.35	\$ 69,022.62	62.75%	\$ 40,977.38	\$ 70,936.97
FY Totals	10	6/30/2010	\$ -	2%	\$ 3,333.09	\$ 69,022.62	62.75%	\$ 40,977.38	\$ 72,355.71

Loan Disbursement Voucher SRF/CWP Loan Program

Date: 7/20/2011
Project Name: Cottonwood River Watershed
Project Number: SRF0183
Vendor Name: **Murray County**
Vendor Address: -
Vendor Number: 034083001 00
Allotment ID #: 07 050 R32 F210 W74
BS Account: E322
Order #: 00000001435
Original Loan Amount: \$ 60,000.00
Loan Balance (after this request): See Table
Disbursement Request Number: See Table
Disbursement Request Amount: _____

Disb. Request #	FY	Date Disb.	Disb. Amount	Loan Rate	Cumm Interest Owed	Total Disb. to Date	% Disb.	Loan Balance to Date	Loan Amount Owed
1	10	8/31/2009	\$ 15,685.97	2%	\$ -	\$ 15,685.97	26.14%	\$ 44,314.03	\$ 15,685.97
FY Totals	10	6/30/2010	\$ 15,685.97	2%	\$ 261.43	\$ 15,685.97	26.14%	\$ 44,314.03	\$ 15,947.40
2	11	9/7/2010	\$ 11,699.28	2%	\$ 320.79	\$ 27,385.25	45.64%	\$ 32,614.75	\$ 27,706.04

Appendix C. Monitoring Summary and Submitted Data

Annual Loading to the Cottonwood River for each year in tons, 1997-2009

<u>YEAR</u>	<u>TSS</u>	<u>N-NO₂+NO₃</u>	<u>TP</u>	<u>P-PO₄</u>
<u>PLC001 - Cottonwood River near New Ulm</u>				
1997	330,178.02	6,868.76	126.73	505.18
2000	182,666.50	1,967.02	159.70	38.98
2001	122,431.52	4,124.83	149.69	113.65
2002	288,513.42	6,065.60	271.42	113.09
2003	54,673.84	3,576.20	78.16	19.15
2004	284,408.72	6,030.66	301.98	111.10
2005	109,000.71	7,810.23	130.30	59.26
2006	186,751.14	14,564.46	259.94	103.83
2007	90,871.78	5,654.72	146.66	50.47
2008	109,596.44	7,460.89	143.38	57.34
2009	68,632.66	623.30	35.13	12.63
2010	610,469.91	15,521.11	856.47	376.09
<u>PLC010 - Cottonwood River near Leavenworth</u>				
1997	148,093.42	2,801.93	220.23	45.67
1998	43,306.90	1,010.20	73.40	16.40
1999	102,016.55	3,823.73	134.23	61.31
2000	99,063.20	1,090.62	99.17	27.83
2001	66,307.16	2,773.43	131.33	95.47
2002	66,911.89	4,874.41	114.59	27.70
2003	37,542.80	3,267.81	48.77	11.43
2004	88,652.06	4,021.39	130.43	45.15
2005	76,838.30	4,158.50	102.12	39.84
2006	120,830.49	8,475.88	204.80	94.53
2007	28,834.18	2,842.81	62.78	19.53
2008	50,059.41	4,337.12	72.84	29.14
2009	2,849.02	371.03	11.71	4.96
<u>PLS005 - Sleepy Eye Creek near Leavenworth</u>				
1997	9,774.71	821.84	26.21	13.28
1998	4,167.59	520.10	12.43	2.78
1999	20,906.74	1,368.64	31.38	15.40
2000	40,644.06	529.56	32.54	8.90
2001	3,534.57	848.65	12.43	11.21
2002	*	*	*	*
2003	2,530.17	920.22	6.56	1.63
2004	12,568.51	1,571.16	46.19	42.23
2005	7,895.69	2,622.07	22.21	16.66
2006	5,598.76	4,482.42	25.90	17.50
2007	11,701.88	2,055.07	26.95	16.99
2008	5,904.35	2,058.95	13.00	8.59
2009	589.31	256.12	3.91	2.60
* = Abnormal Circumstances (roadwork construction upstream)				
<u>PTC015 - Cottonwood River near Revere</u>				
1997	26,163.52	914.94	50.94	14.30
1998	7,940.34	208.83	15.29	4.21
1999	13,182.09	885.84	19.80	12.81

PMC020 - Cottonwood River near Lambertton

2000	25,129.50	45.12	27.82	9.13
2001	14,647.68	1,247.47	19.29	17.02
2002	45,432.68	2,021.50	63.78	27.03
2003	3,004.03	336.98	5.22	2.37
2004	32,763.94	2,103.80	74.95	31.95
2005	23,535.84	1,810.58	34.76	15.20
2006	53,091.56	4,034.90	96.62	43.84
2007	14,947.38	1,199.85	29.34	9.60
2008	14,959.54	2,018.12	29.22	14.31
2009	2,717.38	127.44	6.27	2.96

TUP - Plum Creek near Walnut Grove

1997	5,861.58	314.50	8.77	1.71
1998	2,139.72	122.78	3.11	0.58
1999	12,433.66	413.13	10.87	5.31
2000	7,000.36	72.55	6.66	0.70
2001	25,837.56	258.57	24.78	9.04
2002	4,384.94	359.41	6.07	0.98
2003	19,792.25	261.07	15.13	0.94
2004	22,600.91	977.25	31.33	12.81
2005	7,287.55	729.30	11.12	4.47
2006	6,114.13	885.85	12.27	5.41
2007	2,417.58	323.08	4.55	1.36
2008	4,297.76	506.67	6.80	2.18
2009	157.46	33.83	0.60	0.46

SLH020 - Highwater/Dutch Charley

1997	36,085.53	97.50	65.18	17.89
1998	3,035.59	43.81	5.12	1.10
1999	25,933.68	595.77	53.27	13.39

Annual Flow Weighted Mean Concentrations (mg/L)

YEAR	TSS	N-NO₂+NO₃	TP	P-PO₄
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PLC001 - Cottonwood River near New Ulm

1997	301.96	6.28	0.460	0.160
2000	637.95	6.70	0.560	0.130
2001	233.36	7.86	0.285	0.217
2002	435.25	9.15	0.409	0.170
2003	143.65	9.40	0.205	0.050
2004	450.16	9.55	0.478	0.176
2005	172.65	12.37	0.206	0.094
2006	184.73	14.41	0.257	0.103
2007	155.77	9.69	0.251	0.087
2008	174.00	11.80	0.227	0.091
2009	34.80	3.16	0.178	0.064
2010	290.00	7.38	0.407	0.179

PLC010 - Cottonwood River near Leavenworth

1997	314.31	5.95	0.470	0.100
1998	264.11	6.16	0.450	0.100
1999	265.07	9.94	0.350	0.160
2000	548.80	6.04	0.550	0.150
2001	150.62	6.23	0.298	0.217

2002	133.26	9.71	0.228	0.055
2003	128.80	11.21	0.167	0.046
2004	206.16	9.35	0.303	0.105
2005	184.88	10.01	0.25	0.10
2006	165.54	11.61	0.281	0.130
2007	85.14	8.39	0.185	0.058
2008	121.00	10.50	0.177	0.071
2009	27.50	3.53	0.111	0.047

PLS005 - Sleepy Eye Creek near Leavenworth

1997	113.78	9.57	0.310	0.150
1998	73.95	9.23	0.220	0.050
1999	223.02	14.60	0.330	0.160
2000	667.58	8.70	0.530	0.150
2001	53.90	12.84	0.190	0.170
2002	*	*	*	*
2003	46.02	16.74	0.119	0.062
2004	89.46	11.18	0.329	0.301
2005	56.54	18.78	0.159	0.119
2006	26.56	21.27	0.123	0.083
2007	90.99	15.98	0.210	0.132
2008	49.80	17.40	0.110	0.073
2009	17.30	7.51	0.115	0.076

* = Abnormal Circumstances (roadwork construction upstream)

PMC020 - Cottonwood River near Lamberton

2000	344.58	5.99	0.380	0.130
2001	82.44	7.02	0.108	0.095
2002	198.49	8.83	0.278	0.118
2003	76.17	8.54	0.132	0.060
2004	123.27	7.92	0.282	0.120
2005	128.45	9.88	0.190	0.083
2006	139.96	10.64	0.255	0.116
2007	95.43	7.66	0.187	0.061
2008	72.90	9.84	0.142	0.070
2009	42.60	2.00	0.098	0.046

TUP - Plum Creek near Walnut Grove

1997	148.13	7.95	0.220	0.040
1998	139.89	8.03	0.200	0.040
1999	313.84	10.43	0.270	0.130
2000	565.31	5.86	0.540	0.056
2001	692.36	6.93	0.664	0.242
2002	176.85	14.50	0.245	0.040
2003	803.74	10.60	0.615	0.038
2004	275.05	11.89	0.381	0.156
2005	126.26	12.64	0.19	0.08
2006	85.09	12.33	0.171	0.075
2007	70.75	9.46	0.13	0.04
2008	96.30	11.40	0.152	0.049
2009	15.70	3.37	0.059	0.046

MONITORING and EVALUATION of the COTTONWOOD RIVER WATERSHED

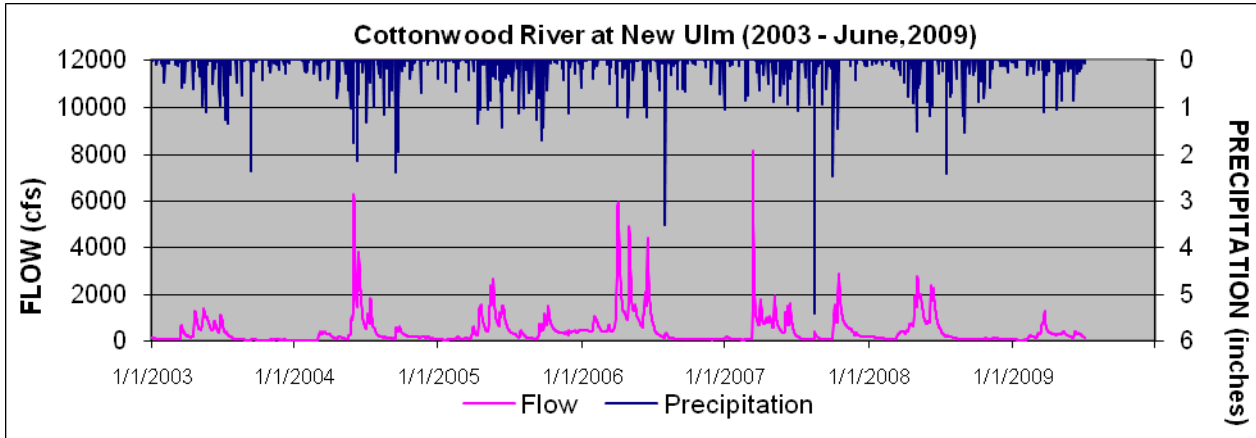
Long-term conditions monitoring is key to any water quality evaluation on the watershed level. During the diagnostic stage, monitoring data is used to identify pollutant contributions to a watershed from areas disproportional to their size in the watershed on the whole. Efforts to get projects on the ground for conservation can be more efficiently applied once priority areas are established. Monitoring is also instrumental as one of the few means to accurately track the progress of efforts of restoration projects on a watershed level by being more precise in loading estimates. As the project progresses, we can establish trends in the watershed to further fine tune studies and formulate recommendations for future projects as well as securing means to fund conservation practices.

Monitoring sites for the Cottonwood River Watershed from 2000-2009 consisted of three main stem sites and two tributary sites. Apart from PMC020 which was added in 2000, these sites were consistent with the sites used in the diagnostic study starting in 1997. Sites used are PLC001 on the Cottonwood River which is on Cottonwood Street in New Ulm; PLC010 on the Cottonwood River on County Road 8 north of Leavenworth; PMC020 on the Cottonwood River where it passes under US Highway 14 just east of Lambertson; PLS005 on Sleepy Eye Creek, a major tributary, on County Road 8 north of Leavenworth; TUP on Plum Creek on County Road 10 northeast of Walnut Grove. Starting in 2000, all sites measured stage using Druck pressure transducers and recorded instantaneous data using Campbell Scientific dataloggers (SR5, CR10). Starting in 2003, sites PLC010 and PLS005 used ultrasonic radiosondes to measure stage. Through 2005, Storm flow samples were taken with ISCO automatic samplers and it was decided to make all sites grab sites in 2006. Also in 2006, TUP was added as one of the sites using ultrasonic radiosondes to measure stage and it was decided to stop using the pressure transducers at PMC020 and PLC001 and use the USGS and DNR stage data that were being taken at the same sites.

Sample collection consisted of at least one base flow sample per month from April through September of each year along with samples for at least two storm events over the year if the budget allows for it. After 2004 the goal was two base flow samples per month where no storm event existed. Storm events are considered to be that which occurs after five year rain event. A stream is considered to be at base flow when there has been no influence on the stage for over a week. Water samples were analyzed at Minnesota Valley Testing Laboratories in New Ulm and followed procedures outlined and certified in their procedural manual. Water samples were analyzed for total phosphorus, ortho-phosphorus, nitrate-nitrogen, turbidity, and fecal coliform. Later, TSVS was added to the roster of tests in the watershed and Fecal Coliform testing was replaced with E. coli testing in 2007.

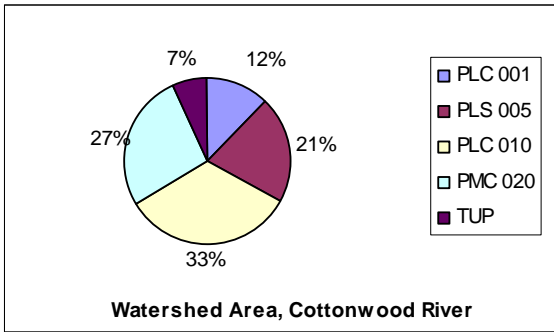
Water conditions tested in the field include Temperature, Dissolved Oxygen, pH, Conductivity, and clarity using the turbidity tube.

SEASONAL VARIATIONS-

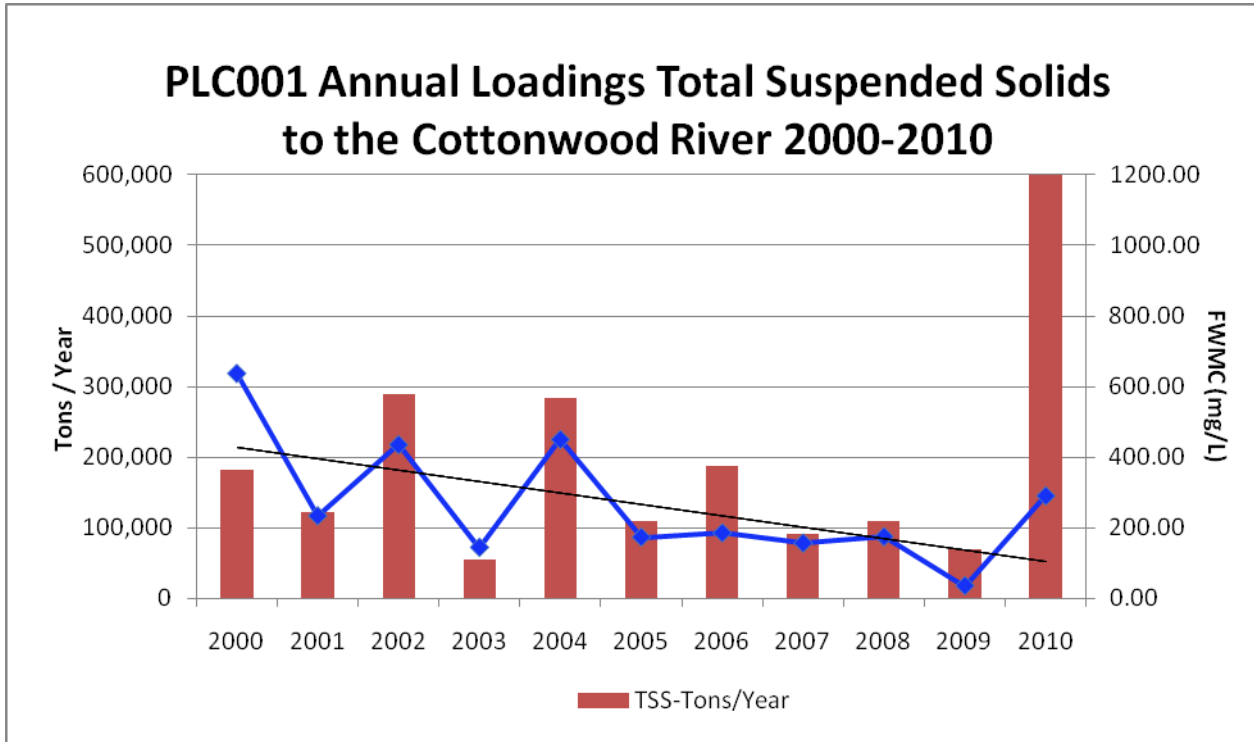


For the winter of 2002-03 as well as most of the year of 2003 flows were low on the Cottonwood in response to little rain through the year. Consequently, snowmelt flows in the spring of 2004 were much tamer than normal and the spring of 2004 was most uneventful. On Memorial Day weekend of 2004 the watershed received rains in excess of three inches which spiked the river to the third highest level of the seven year period of this report. Subsequent rains of over 2 inches in mid-July raised the river level slightly and briefly but mid-September and fall rains kept river levels up into the winter but a slow melt with little snow on the ground, the spring of 2005 saw a less remarkable rise in the river. 2005 remained rather unremarkable apart from an isolated area of very heavy rain in the middle of the watershed. Again in the fall and the winter of 2005, there were late fall rains in excess of an inch five different times before freezing. Ice out was in late March of 2006 following the wet fall of 2005 yielding some high flows. There were three major rain events in the watershed in 2006 in late March, late April, and mid-June followed by a relatively dry summer and early fall. Another isolated area of heavy rain fell in the watershed in June, roughly in the same area as heavy rains in the previous year. Ice jams and melting would account for the abrupt spike in the spring of 2007 around March 15th followed by rains to keep the waters in the thousands of cfs through March. The rest of the summer saw rain events that didn't exceed 1 inch but once in May and July. Back to back rains totaling nearly 7 inches of rain on August 18th and 19th pushed the flow up very little. Another couple of heavy rains in the month of October made the river come up noticeably and stay up in to the freeze. The winter of 2008 benefitted from a slow snowmelt and kept the river from spiking until late April and into May due to rains of nearly 2 inches on already wet grounds. A wet May followed by a couple of larger storms in June pushed the river to a peak by mid-June. The hydrograph falls off steadily through the summer and into the fall of 2008, unaffected by a heavy rain on July 17th. The winter of 2008-09 was dry and the spring and early summer of 2009 has been abnormally dry as can be seen on the hydrograph.

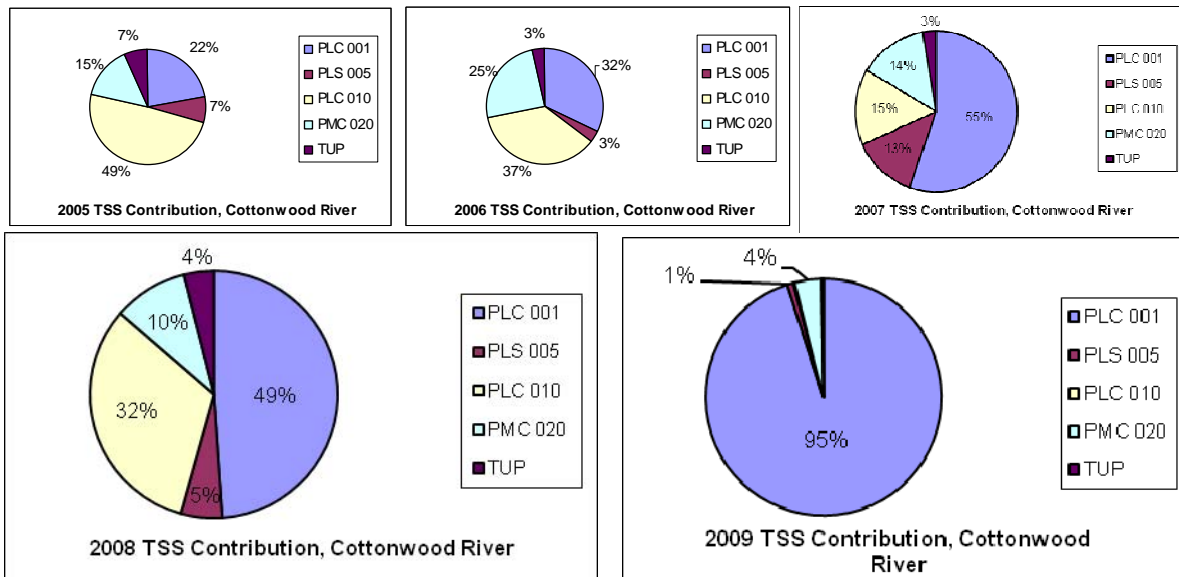
ANALYTE ANALYSIS-



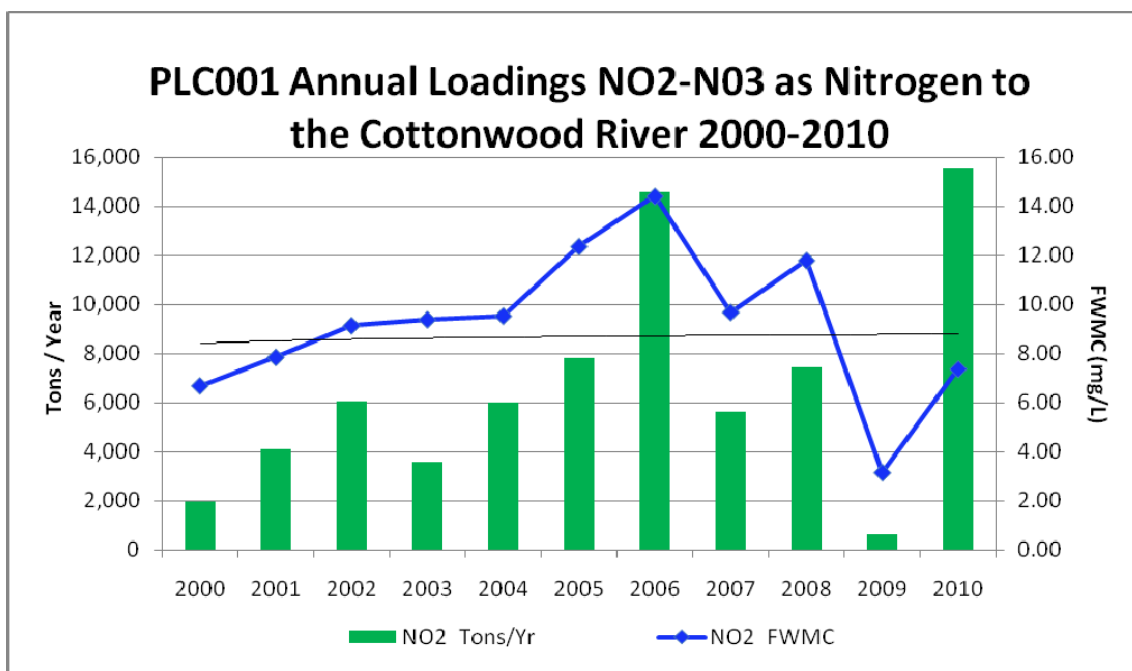
Site “PLC001”, “PLC010”, and “PMC020” are located on the main stem of the Cottonwood River. Site “PLS005” is near the mouth of the tributary Sleepy Eye Creek and Site “TUP” is near the mouth of the tributary Plum Creek. “PLC001”, near the mouth, is in New Ulm, “PLC010” is near Leavenworth, and “PMC020” is near Lamberton.



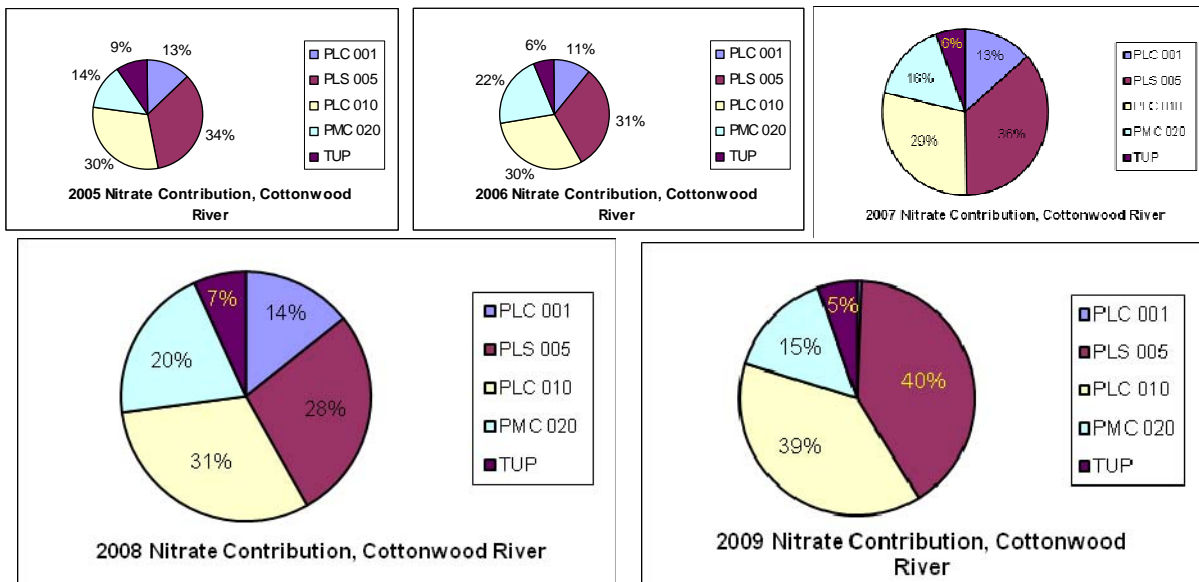
2000 was a slow year for flow, but yielded the highest average concentration of suspended sediments in the decade discussed in this report, though the total mass of sediment during the sampling season wasn’t nearly as high as other years. Sediment mass in 2001 was less than 2000 and the average concentration was much less. Most sediment appears to have come from a few storm events in 2001. The highest yearly mass of sediment during the seven sample seasons came in 2002. The average concentration was elevated in 2002, perhaps from steady smaller rain events. The dry conditions of 2003 clearly affected the suspended sediments in the Cottonwood River, the lowest average concentration and total season mass of suspended solids occurred in 2003. In 2004, a couple of heavy turbidity high flows and heavy fall rains contributed to the high mass and high average concentration for the year. A majority of sediment in the 2005 and 2006 years were due to a few storm events which make sense when we notice that the flow weighted mean concentration was lower while total sediment mass was around normal. The overall trend of Total Suspended Solids (TSS) flow-weighted mean concentration (FWMC) in the Cottonwood River at New Ulm is down slightly from 2000 thru 2006, but much higher than concentrations of around 60 mg/L. Trends appear to be leveling off in 2007 and 2008. A dry year in 2009 gave us a negligible concentration but bounced as a result of multiple flooding events in 2010 which yielded the highest mass of suspended solids in the ten year period, but there is an overall downward trend in concentration over the nine year period.



The pie charts for sediment contribution attempt to graphically display how contributions vary from year to year. When viewed in conjunction with hydrograph data they can help us explain how a watershed reacts in a variety of annual situations (wet years/dry years). While accounting for 12% of the watershed area, site “PLC001” accounts for, on average, 50% of the watershed’s sediment making this stretch a major contributor to sediment. With high, steep river banks and gullies branching from the main river, it is plausible that more available sediment from river banks than other areas. “PLC010”, which includes the large Highwater-Dutch Charlie tributary, makes up one-third of the Cottonwood River watershed and contributes nearly 25% of sediment in the watershed coming through New Ulm which means that 45% of the watershed accounts for ¾ of sediment in the Cottonwood River watershed. It is also worth noting that Sleepy Eye Creek watershed (“PLS005”), which is nearly completely farmed, only yields 6 % of the sediment for the watershed given its size of over 20% of land area. The extremely dry flows of 2009 skewed the contribution percentage charts. Possible reasons could be storage within the system or a stable system in sites above the PLC010 site due to diminished stream erosion mechanics and little runoff through the year.

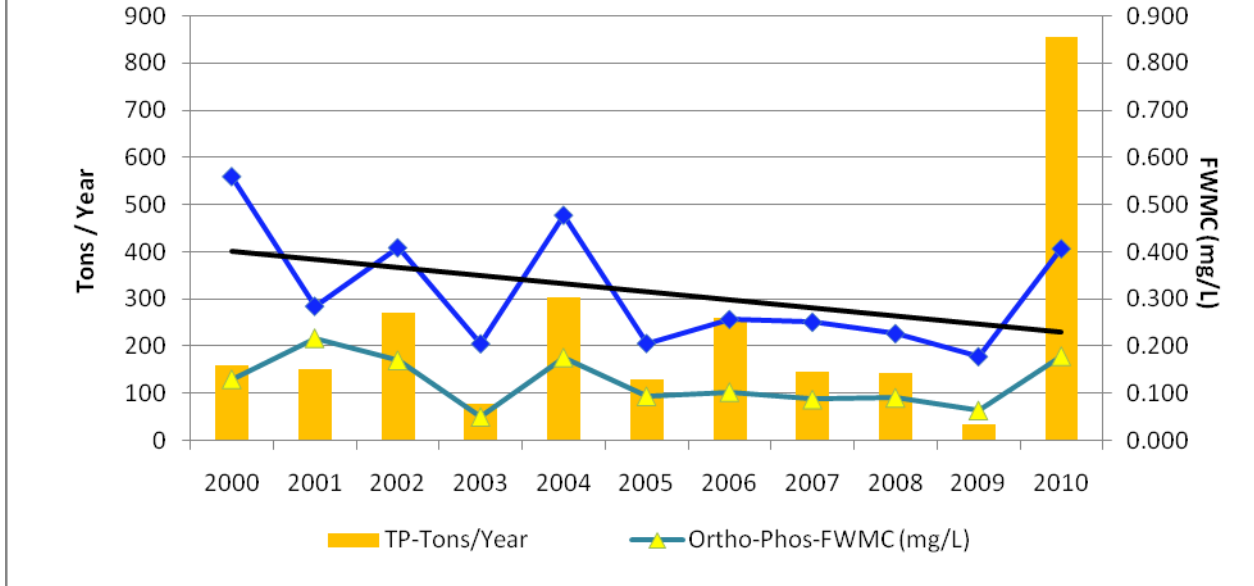


The trend of Nitrogen values in the Cottonwood River over the years from 2000 to 2006 seems apparent. Up. Only in 2005, 2006, and 2008 at the New Ulm site, does the FWMC go above the 10 mg/L value that is considered high for drinking water. Just as in the case of TSS, 2003 showed a drop in the mass of Nitrates over the sampling season, but the FWMC kept in line with the rising trend over the seven year period. Also, post canopy, heavier late season rains fell in 2004-2006 may have contributed to higher overall mass of nitrate-nitrites for the sampling season in those years. Nevertheless, it appears that there are some issues with Nitrates in the Cottonwood River watershed. Nitrates tend to trend in proportion to the volume of water in storm events in non-canopy periods of the sampling season. In other words, high rains generally bring high nitrates with lack of vegetation. 2007 and 2008 concentrations of NO₂-NO₃ as N bounced around the 10 mg/L mark. 2009 and 2010 was a story of two opposites. In dry 2009, was nearly negligible and in very wet 2010, nitrate yields were huge though the concentrations just under 8 mg/L. The trend tends to be stabilizing with nitrates in the watershed.

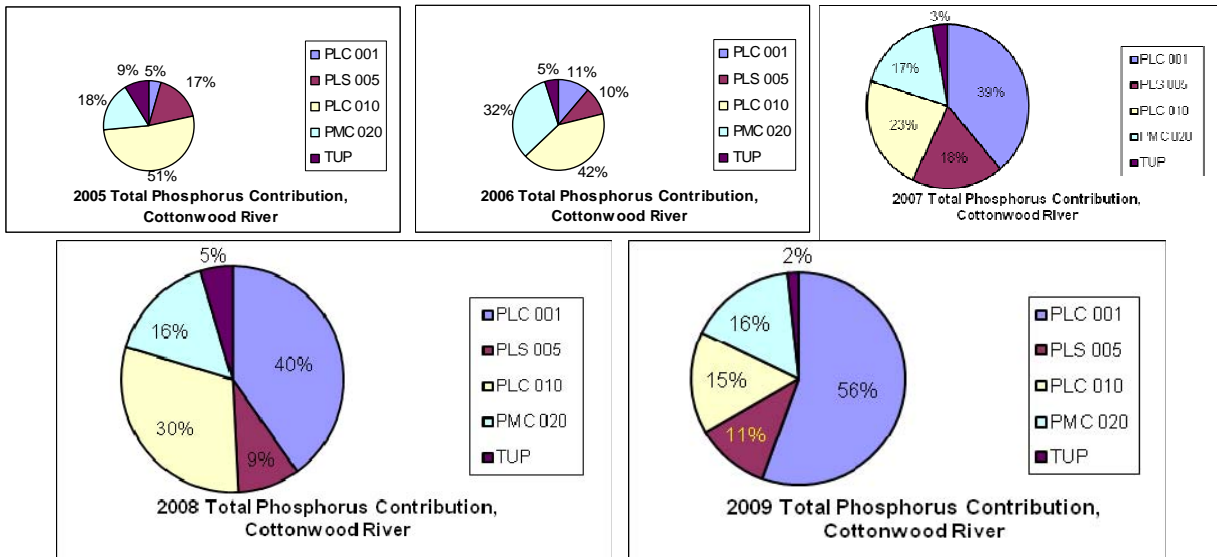


Just as in the case of the sediment graphs, the nitrate pie charts attempt to track the proportion of sources of nitrates to the Cottonwood River over the seven years of this implementation period as well as the reaction of the river to differing annual conditions. The trends for nitrates tend to be simple. On average, nitrate contributions are comparable to the watershed area for the “TUP” and the “PLC001” sites. The “PMC020” site tends to contribute a little less than its watershed proportion. Until the last year of the project, the “PLC010” sub-shed has contributed slightly less of the total nitrates to the entire watershed for its total area in the watershed, although the mass of nitrates exiting through New Ulm had risen between 2004 and 2008. The subshed that has consistently contributed a higher proportion of nitrates to the Cottonwood River than its area is Sleepy Eye Creek. It appears that the portion of the watershed sampled at “PLS005” accounted for twice the nitrates as area.

PLC001 Annual Loadings Total Phosphorus to the Cottonwood River 2000-2010



The mass of Total Phosphorus (TP) values mirror that of TSS over the seven year period. The higher mass values for 2002 and 2004 and the low mass anomaly due to the dry conditions in 2003 are evident as they are in the values from the TSS graphs. The trend for the FWMC for TP is verisimilar to that of the TSS as well. All FWMCs for the ten year period are well above that of the target value of 0.100, five times the value at times. Apart from 2000 and 2001 values for Ortho-phosphorus followed a close trend with that of TP and TSS. The 2000 and 2001 values varied from that of TSS and TP. All in all, a downward trend in phosphorus concentration appears to exist in the Cottonwood River watershed



The trends for Total Phosphorus in the Cottonwood River watershed mimic that of TSS in terms of proportion to watershed acreage, the exception being that the TP to TSS ratio for “PLC001” is about 1 to 2 making the rest of the watershed show a higher proportion of TP to TSS through the watershed.

RCRCA

Redwood-Cottonwood Rivers Control Area
has cost share funds available for BMPs within
the Cottonwood & Redwood River Watersheds.
RCRCA cost share can provide up to
75% of the practice cost!

Best Management Practices include:

Grassed Waterway	Terraces
Alternative Tile Intake or Rock Tile Intakes	Stream Bank Protection/Stabilization
Water and Sediment Control Basins	Grade Stabilization Structures

RCRCA - 1241 East Bridge Street
Redwood Falls, MN 56283
Phone - 507-637-2142 Ext. 4
E-mail - rcrca2day@yahoo.com
Website - www.rcrca.com

***RCRCA Cost Share funds are limited and
available on a first come, first served
basis. Apply now to secure funding.***

Low – interest residential loans available for septic system upgrades!

- Loans are 3 1/2% interest for up to 10 years
- Loan payments are due twice a year, at same time as property taxes
- Septic systems must be within the Cottonwood or Redwood River Watersheds



Call the Redwood – Cottonwood Rivers Control Area (RCRCA) at 507-637-2142, Ext. 4 for more information, or visit us online at www.rcrca.com.

“Working to improve water quality in the Redwood and Cottonwood River Watersheds since 1983”



Mission:

RCRCRA, in cooperation with partner groups and landowners, works to improve water quality, reduce erosion, and enhance recreational opportunities by providing education, outreach, monitoring and technical assistance within the watershed boundaries.

RCRCRA's watershed management has accomplished:

- Secured funding for dredging Lake Redwood.
- Outreach activities: *canoe trips, golf tourney, photo contest, envirothon, environmental fair, local school presentations, SWROC Natural Resource Day, Lyon County Water Festival, Yellow Medicine Conservation Day.*
- Provided over \$689,000 in cost-share funds to landowners in the Redwood River Watershed.
- Provided over \$298,000 in cost-share funds to landowners in the Cottonwood River Watershed.
- Provided over \$740,000 in low interest loans for septic system maintenance & upgrades within the Redwood River Watershed.
- Provided over \$1,570,000 in low interest loans for septic system maintenance & upgrades within the Cottonwood River Watershed.

RCRCRA activities going forward:

- Writing fecal TMDLs for the Cottonwood & Redwood River Watersheds.
- Writing turbidity TMDLs for the Cottonwood & Redwood River Watersheds.
- Oversee the dredging of Lake Redwood.
- Secured additional monies for low interest loans on non-compliant septic systems in Redwood & Cottonwood River Watersheds.
- Continue cost-sharing with landowners to improve water quality & reduce erosion.

RCRCRA - 1241 E. Bridge St., Redwood Falls, MN 56283

www.rcrca.com - 507-637-2142 Ext.4

RCRCRA, formed in 1983 is a local joint-powers organization working to enhance and protect both the Redwood and Cottonwood Rivers. Member counties and Soil and Water Conservation Districts include: Brown, Cottonwood, Lincoln, Lyon, Murray, Pipestone, Redwood and Yellow Medicine. RCRCRA is a recognized leader in watershed management, working with local, state and federal agencies, as well as private foundations to distribute information and to finance and carry out programs of benefit to both watersheds.

Let's go Canoeing!

Trips subject to weather and/or water level cancellation or postponement.



Cottonwood River - Tuesday, June 16 10 - 10:30 AM

(We'll meet south of Essig at the Cottonwood River canoe access on County Road 11 and canoe into Flandrau State Park, New Ulm.)

Redwood River - Thursday, June 18 10 - 10:30 AM

(We'll meet at Perk's Park on the shores of Lake Redwood in Redwood Falls and take a shuttle bus to County Road 6, where the Redwood River crosses CR 6 and canoe back to our vehicles at Lake Redwood.)

See Maps on website for more information

Please bring your own canoe, paddles & life vest, if possible.
A limited number of canoes are available, call to reserve one today!
It is recommended that you bring ***sunscreen, bug repellent, drinking water, snacks*** for the trip down and ***dry clothes*** for the end of the trip.

We will provide a snack and beverages prior to start of the trip as well as a light meal and refreshments at the end of the canoe trip. We may stop during the trip down for a quick break/snack. A bus ride back to your vehicle will be provided at the conclusion of the Cottonwood River trip. A bus ride to the starting point will be provided at the beginning of the Redwood River trip

****No one will be allowed to canoe without an approved flotation device.****

****A release waiver must be signed before you will be allowed to canoe****

**Please register by June 12th
Call RCRCA at 507-637-2142, ext. 4**



Sponsored by:
Redwood-Cottonwood Rivers
Control Area (RCRCA)
1241 East Bridge Street,
Redwood Falls, MN 56283
E-mail: rcrca2day@yahoo.com

**Web site:
www.rcrca.com**

Cottonwood and Redwood River Canoe Trips - June 16 & 18, 2009

Do you have a day off? Would you like a good reason to take one?? Come out and join us for a day on the river. RCRCA is hosting it's annual canoe trip down the Redwood and Cottonwood Rivers. Bring your spouse, your kids, your parents, your friends or come and meet some new ones.

RCRCA will provide snacks and refreshments. Bring your canoe or kayak if you have one. We have a limited number of canoes available for free usage, so call & reserve now!

Tuesday, June 16th

Cottonwood River Canoe Trip

Thursday, June 18th

Redwood River Canoe Trip

For more information, or to sign up for a canoe trip contact Shawn with RCRCA at:

Phone: 507-637-2142 Ext. 4

E-mail: rcrca2day@yahoo.com

Website: www.rcrca.com



Appendix E: Outreach Activities Summaries

2007 Outreach Activities

Date	Organization or Event	Staff	# of Contacts	Watershed	Description
10-Jan-07	MSU-Mankato Water Conference	Jim	99	Both	Laptop Kiosk & Display Board
11-Jan-07	MSU-Mankato Water Conference	Jim	99	Both	Laptop Kiosk & Display Board
Till 2/1/7	RCRCA Photo Contest	Shawn	16	Both	Encourage passive recreation in both watersheds
5-Mar-07	Photo Contest Judging	Shawn & Jim	5	Both	Assemble judges to determine winners in RCRCA Photo Contest
27-Apr-07	Earth Day for Redwood County	Shawn & Jim	300	Both	Stream table & displays for students and adults
9-May-07	YM Conservation Day	Shawn	100	Redwood	Stream table for 5th grade students
14-May-07	YM Conservation Day	Shawn	50	Redwood	Stream table for 5th grade students
16-May-07	State Envirothon Meet	Shawn & Doug	135	Both	Judging teams for State Champion Envirothon Meet
8-Jun-07	RCRCA Canoe Trips	Shawn	W/S Wide	Both, More Cottonwood	Radio interview/promo for Canoe Trips
19-Jun-07	RCRCA Canoe Trip - Cottonwood	Shawn & Jim	42	Cottonwood	Canoe trip down the Cottonwood River
20-Jun-07	Canoe Trip for Redwood Alt. School	Shawn & Jim	14	Redwood	Canoe trip down the Redwood River
21-Jun-07	RCRCA Canoe Trip - Redwood	Shawn & Jim	20	Redwood	Canoe trip down the Redwood River
29-Aug-07	RCRCA Golf Event	Shawn	W/S Wide	Cottonwood	Flyers posted at golf event supporters business
12-Sep-07	Lake Redwood Public Meeting	Jim	40	Redwood	Public meeting on Lake Redwood Dredge Project
13-Sep-07	RCRCA Golf Event	Shawn, Jim & Dug	52	Cottonwood	Golf Tourney at Sanborn Golf Course
18-Sep-07	Area 5 Environmental Fair	Shawn	160	Redwood	Stream Table for 6th grade students
19-Sep-07	SE St. John's Elementary	Shawn & Joe - DNR	13	Cottonwood	Visit local stream to look at macroinvertebrates
21-Sep-07	Lyon Co. Water Festival	Shawn	130	Redwood	Stream Table for 8th Grade
8-Dec-07	2007 RCRCA Annual Meeting	All Staff	70	Both	Display set up, powerpoint kiosk and Jim presentation
			1345	People directly contacted	

2008 Outreach Activities

Date	Organization or Event	Staff	# of Contacts	Watershed	Description
30-Apr-08	Region V Envirothon	Shawn & Doug	90	Both	Judging Oral Presentations
1-May-08	Lyon Co. Conservation Day	Shawn	270	Both	Present Stream Table & assistants do 2 activities for large groups of 5th graders
7-May-08	Yellow Medicine Conservation Day	Shawn	110	Redwood	Present Stream Table - 5th graders
8-May-08	Lyon Co. Conservation Day	Shawn	150	Both	Present Stream Table - 5th graders
12-May-08	Yellow Medicine Conservation Day	Shawn	60	Redwood	Present Stream Table - 5th graders
29-May-08	Redwood Co. E-Recycling Day	Jim & Doug	450 Est.	Both	Assist County in harvesting electronic waste
4-Jun-08	RCRCA Canoe Trip Radio Interview	Shawn	Watershed Wide	Both	Radio Interview regarding Canoe Trips on KNUJ
16-Jun-08	RCRCA Canoe Trip with Redwood Co. 4-H Group	Shawn, Dug & Jim	12	Redwood	Canoe trip down the Redwood River & Educational layover in pasture
17-Jun-08	RCRCA Canoe trip down the Cottonwood River	Shawn & Jim	55	Cottonwood	Canoe trip down the Cottonwood River
18-Jun-08	RCRCA Canoe trip for Redwood Alt. & Shintonka Schools	Shawn, Dug & Jim	40	Redwood	Canoe trip down the Redwood River & Educational layover in pasture
19-Jun-08	RCRCA Canoe Trip - Redwood	Shawn & Jim	26	Redwood	Canoe trip down the Redwood River
18-Sep-08	Redwood Co. Historical Soc.	Shawn	1+	Both	Aquire 3-D elevation map for local historical society - Scott Larson
23-Sep-08	Environmental Fair - Slayton	Shawn	165	Both	Present Stream Table - 6th graders
24-Sep-08	Environmental Fair - Slayton	Shawn	255	Both	Present Stream Table - 6th graders
30-Oct-08	RRC High School in Lamberton	Shawn	12	Cottonwood	Ppt presentation and field experience with equipment and tablet sampling
13-Dec-08	2008 RCRCA Annual Meeting	All Staff	75	Both	Display Set up & Doug Presentation
	2008 Totals =		1775+	count totals	
	Not including TMDL Meetings!		+ 450 est. and ? Hist. society		

2009 Outreach Activities

Date	Organization or Event	Staff	# of Contacts	Watershed	Description
6-May-09	Region V Envirothon	Shawn	40	Both	Judging Oral Presentations
11-May-09	Yellow Medicine Conservation Day/ Del Clark Lake	Shawn	50	Redwood	Present Stream Table & assistants do 2 activities for large groups of 5th graders
13-May-09	Yellow Medicine Conservation Day/ Upper Sioux State Park	Shawn	85	Redwood	Present Stream Table - 5th graders
2-Jun-09	Radio Interview for Canoe Trips	Shawn	Watershed Wide	Both	15 minute interview on KNUJ about upcoming Canoe trips
19-Aug-09	Turbidity TMDL Meeting	Doug & Shawn	10	Cottonwood	1st Public Meetings for Turbidity TMDL
20-Aug-09	Turbidity TMDL Meeting	Doug & Shawn	14	Redwood	1st Public Meetings for Turbidity TMDL
22-Sep-09	Environmental Fair Day 1	Shawn	175 est	Both	1717 total students attend over 2 days
23-Sep-09	Environmental Fair Day 2	Shawn	155 est	Both	
12-Dec-09	RCRCA/AREA II Annual Meeting	All Staff	75	Both	
	2009 Totals =		605	Totals	
	Note: Not including TMDL Meetings No Dedicated Education Staff				

2010 Outreach Activities

Date	Organization or Event	Staff	# of Contacts	Watershed	Description
10-Feb-10	KNUJ Radio Interview	Shawn	Radio Audience	Both	General discussion about RCRC history and mission
22-Apr-10	Earth Day - Streamtable	Shawn	70-80	Both	Set up & manned stream table @ Earth Day Event, RWF Armory
12-May-10	Assist MNSU WRC Canoe Trip down the Cottonwood River	Shawn	16	Cottonwood	Provide Canoes and accompany MNSU WRC staff & students down the Cottonwood River
21-Jun-10	Educational Canoe Trip	Shawn & Kari	18	Redwood	Take Alternative School Kids down the Redwood River via Canoe. Educational Talk/stop along way
22-Jun-10	Cottonwood River Canoe Trip	Shawn, Kari & Doug	60	Cottonwood	Canoe Trip down the Cottonwood River. Scott Kudelka assisted
24-Jun-10	Redwood River Canoe Trip	Shawn & Bill	55	Redwood	Canoe Trip down the Redwood River. Scott Kudelka assisted.
14-Sep-10	Cottonwood Conservation Day	Shawn	30-40	Both	Set up & manned display and interacted with other agency staff & visitors
	2010 Totals =		@260	Totals	
	Note: Not including TMDL Meetings No Dedicated Education Staff				