



**Minnesota Pollution Control Agency**

520 Lafayette Road  
St. Paul, MN 55155-4194

# 319/Clean Water Partnership/ Total Maximum Daily Loads

Semi-Annual Report for Reporting Year 2010

Reporting Period:  January 1 through June 30, 2010 (Due August 1, 2010)  
 July 1 through December 31, 2010 (Due February 1, 2011)

All information is required by U.S. Environmental Protection Agency (EPA). Do not leave blanks. This report form can be typed using your computer. Use the "tab" key to move through the fields of this form. Enter responses using text and check boxes as indicated. Keep a copy for your records.

<b>I. General Report Information</b>			
1.	Project Title:	<b>Redwood and Brown County Middle Minnesota First Order Streams Phase I Diagnostic Study</b>	
2.	Project Sponsor:	<b>Redwood-Cottonwood Rivers Control Area (RCRCA)</b>	
3.	Project Representative:	<b>Doug Goodrich, Director</b>	
4.	Email Address:	<b>douglas.goodrich@racgroup.net</b>	
5.	Loan Sponsor (if applicable):		
6.	Contract Number:	<b>B26025</b>	Loan Number: N/A
7.	MPCA Project Manager:	<b>Mark Hanson</b>	
8.	Contract Start Date:	<b>March 24, 2009</b>	Contract End Date: <b>June 30, 2011</b>
9.	Best Management Practice (BMP) Name (Refer to BMP List):		
10.	<b>319/Clean Water Partnership (CWP) only - Nonpoint Source (NPS) Category (Refer to NPS Definition of Categories):</b>		
		<b>Primary</b>	<b>Secondary</b>
	<b>Category</b>	<b>1000 (Agriculture)</b>	<b>1100 (Non-Irrigated Crop Production)</b>
			<b>Others</b>
			<b>7100, 7800 (Channelization, Tile Drainage)</b>
11.	<b>319/CWP only - NPS Functional Category (Refer to NPS Definition of Categories):</b>		
		<b>Primary</b>	<b>Secondary</b>
	<b>Category</b>	<b>Watershed Assessment/Diag.</b>	<b>TMDL Assessments</b>
12.	Waterbody type (refer to NPS Waterbody Type):	<b>Rivers and Streams</b>	
13.	Hydrologic unit code (12 digits):	<b>07020007-(0201-0203, 0401, 0404, 0406, 0407)</b>	Latitude-longitude: <b>44o25'26" - 94o51'07"</b>
14.	<b>319/ CWP only:</b> Type of pollutant(s) addressed (refer to NPS Pollutants):	<b>Diagnostic Study (Turbidity/Bacteria/Nut.)</b>	
15.	Ecoregion (refer to NPS Ecoregion):	<b>4700 (Western Corn Belt Plains)</b>	
16.	Basin name (check all that apply): <b>Middle Minnesota River Basin</b>		
	<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		

## II. 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 Minnesota River currently does not meet federal water quality standards and is a major source of pollution to the Mississippi River, Lake Pepin, and ultimately, the Gulf of Mexico where hypoxia of coastal waters continues to be an issue. The first order streams in this project area need to be protected and enhanced to ensure their water quality standards are aiding in TMDL goals and accomplishments in the Minnesota basin. The overriding goal of the state of Minnesota is to restore the Minnesota River to a resource that is fishable and swimmable. Recommendations for reduction in the Minnesota River watershed, based on modeling scenarios put forth in the preparation of the Minnesota River Turbidity TMDL, are for fifty percent turbidity (mostly sediment) and phosphorus.**
- The project area lies between two major watershed confluences, the Redwood and Cottonwood Rivers. This area has been included by designation as a part of the Middle MN River Basin but for the most part been overlooked by major watershed initiatives. The Brown-Nicollet-Cottonwood Board has contributed to work in the area recently by providing low interest loans for the area for non-compliant SSTS systems and has been meeting with some landowners to implement continuous CRP buffers along ditches and tributaries. This project will expand those efforts in conjunction with establishing six long term monitoring sites that will enable the project to develop an implementation plan that will prioritize each of the watersheds and implement best management practices geared to maintain or improve water quality and keep these first order streams off of the 303d list. In the event the data does support listing the watersheds the implementation plan will be constructed according to current TMDL implementation plan guidance and the data will be readily available to be used for the development of a TMDL if it is warranted. Currently none of the streams are listed individually. Data provided with a successful Phase I will help support future watershed management decision making. Proper management of these reaches to reduce sedimentation and loss of nutrients will provide economic benefits to both the watershed and to downstream areas. The cost of not managing land use practices within the watershed will continue to rise as well as the cost to maintain productivity for generations to come.
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.
- A. Overall Resource Goals**
- The purpose of this resource investigation phase of this project is to document factors that may be affecting the six streams of the study to determine if reductions are indeed needed on these watercourses to preserve or meet water quality goals. Ultimately an implementation plan would be set into motion to outline activities needed in priority areas of these watersheds to help reach not only the water quality levels needed for the individual reaches to meet their goals but also the overall objectives of the Minnesota River on the whole.
- B. Water Quality Characterization Goals**
- Determine whether the six streams in the study area fall under a restoration or protection criteria through the completion of a thorough diagnostic study.
  - Identify pathways of pollutant delivery.
  - Identify sources of pollutants contributing to water quality reductions.
  - Define sediment/nutrient loads and concentrations in the six tributaries of the study.
  - Identify BMP solutions to facilitate any load/concentration reductions that may be needed within the framework of an implementation plan.
  - Develop and implement public awareness from farm and non-farm prospective.
- C. Preliminary Quantitative Goals**
- Preliminary quantitative goals are a little harder to ascertain at this stage in the project. There aren't many assessment instances available for these six streams so general ecoregional guidelines are to be used. Specific numerical goals will be set during the preparation of the final plan and implementation in the future but it is likely that quantitative goals will be to conform to the standards for 2B streams in Minnesota as outlined in Minn. R. ch. 7050. One specific goal is to provide conditions so that the dissolved oxygen is maintained above 7.0 mg/L to foster a naturally reproducing trout population in the portion of Spring Creek which is a designated trout stream.
- D. Information and Education Goals for Citizens in the Project Area**
- Stronger stewardship attitudes in these small watersheds.
  - Stronger awareness of how water and the land (uses) are connected.
  - Awareness of recreational opportunities.
  - Dissemination of water testing results in a manner that is readily understandable to stakeholders.
  - Keeping interested parties abreast of the activities commencing in the project area.
  - Support and direction for concerned citizens on water quality issues in the area.
  - Determine the attitudes of stakeholders toward protection of these streams.
- Project Activities:
- Work Plan Development**
- investigate and write preliminary work plan
  - prepare and adopt final work plan
- Water Quality Monitoring and Data Analysis**

sampling and field readings  
rating curve development  
laboratory analysis  
data interpretation  
loading estimates  
final report

**Watershed Prioritization and Implementation Plan Development**

stream bank surveys  
GIS  
modeling (FLUX, LDC, SWAT)  
selection of priority areas  
BMP analysis  
final plan

**Information and Awareness Efforts**

brochures  
newsletters  
public meetings

**Administration**

reporting  
project coordination/facilitation

**III. Semi-annual Report Information**

1. Project activities completed during last six (6) months according to the program elements or tasks:  
**The past six months activities have been spent accomplishing the following work plan tasks:**

**Water Quality Monitoring and Data Analysis**

sampling and field readings  
data interpretation  
laboratory analysis

**Watershed Prioritization and Implementation Plan Development**

stream bank/ land use surveys

**Administration**

reporting  
project coordination/facilitation

2. Challenges faced (optional):

- **The proximity of the Wabasha Creek site to the Minnesota River allowed it to be affected (briefly) by out of bank flows in early spring of 2009 and 2010.**
- **The extremely dry summer allowed the smaller streams to dry up in the late summer/autumn periods of the sampling year 2009. Some of the sampling was limited.**
- **As of June 30<sup>th</sup> 2010, BNC has ceased activities. It may prove difficult to round out the match portion of this grant.**

3. Summary of monitoring data collected:

SELECTED PARAMETERS FOR LABORATORY ANALYSIS AND FREQUENCY OF SAMPLING

STORET CODE S005-	623	624	625	626	627	628
TOTAL SUSPENDED SOLIDS	T/S	T/S	T/S	T/S	T/S	T/S
TOTAL SUSPENDED VOLATILE SOLIDS	T/S	T/S	T/S	T/S	T/S	T/S
TURBIDITY	T/S	T/S	T/S	T/S	T/S	T/S
TOTAL PHOSPHORUS	T/S	T/S	T/S	T/S	T/S	T/S
ORTHO-PHOSPHORUS	T/S	T/S	T/S	T/S	T/S	T/S
NITRATE-NITROGEN	T/S	T/S	T/S	T/S	T/S	T/S
AMMONIA NITROGEN	T/S	T/S	T/S	T/S	T/S	T/S
TOTAL KJELDAHL NITROGEN	T/S	T/S	T/S	T/S	T/S	T/S
<i>E. coli</i> BACTERIA	5M-2	5M-2	5M-2	5M-2	5M-2	5M-2

SELECTED PARAMETERS FOR FIELD ANALYSIS AND FREQUENCY OF SAMPLING

pH	T/S	T/S	T/S	T/S	T/S	T/S
TEMPERATURE	T/S	T/S	T/S	T/S	T/S	T/S
DISSOLVED OXYGEN	T/S	T/S	T/S	T/S	T/S	T/S
TRANSPARENCY (T-TUBE)	T/S	T/S	T/S	T/S	T/S	T/S

WATER LEVEL RECORDS for WATERSHED MONITORING SITES 625-628 is 24 HOUR, SEVEN DAY per WEEK STAGE RECORDING DURING ICE FREE MONTHS

Key: T = twice monthly, S = storm event, 5M-2 = Five times monthly over two years

4.	Have all monitoring stations been established in STORET? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
5.	Is the data being routinely submitted for storage into STORET? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Last submittal date: <b>12-31-09</b>	<b>Was submitted as specified</b> Not Yet
6.	Is the data being annually entered into E-Link? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Date last entered:	NA
7.	Identify any significant <b>findings</b> and <b>results</b> of the project to date, as well as any unanticipated findings: <b>Based on preliminary data, all sites appear to be impaired for bacteria and excess nutrients</b>	
8.	Describe specific (quantifiable, if possible) results achieved during this period: <b>See # 7.</b>	
9.	Summarize any work plan changes: <b>Work plan was delayed and sampling grant was rushed into completion in order to start the monitoring season. Some of the pre-project meetings have been forgone.</b>	
10.	List anticipated activities for next six (6) months: <b>Water Quality Monitoring and Data Analysis</b> sampling and field readings rating curve development laboratory analysis data interpretation loading estimates <b>Watershed Prioritization and Implementation Plan Development</b> stream bank surveys GIS <b>Information and Awareness Efforts</b> brochures newsletters public meetings <b>Administration</b> reporting project coordination/facilitation	
11.	List all products (documents, pamphlets, videos, maps, etc.) produced in this reporting period. - Various spreadsheets for sample data tracking - In-kind inventory - Spreadsheets related to reporting	

#### IV. Expenditure Information for this Period

CWP: Provide a copy of the Expenditure Report with cumulative expenditures and this period's expenditures budget balances by work plan program element. The format for the Semi-Annual Expenditure Report is available on the Web at:  
<http://www.pca.state.mn.us/publications/wq-cwp7-09.xls>.

Expenditure Report attached

CWP, 319, and TMDL - Complete the table below:	Amount
Total Grant Amount:	200,000.00
Total Match Amount (if applicable)	200,000.00
<b>Total Project Amount:</b>	<b>\$400,000.00</b>
Cumulative Grant Expenditures through this period:	51,280.10
Cumulative Match Expenditures through this period:	91,065.15
<b>Total Cumulative Expenditures through this period:</b>	<b>\$142,345.25</b>
Date form completed:	<b>07/23/10</b>
Please submit to:	Your project manager <b>MARK HANSON</b>

**PROJECT TITLE: Middle Minnesota River, Redwood & Brown Counties, Diagnostic Project; Contract Agreement #B26025**  
**BUDGET/EXPENDITURES AS OF June 30, 2010**

**Objectives**

	unit cost	unit	Quantity Exp/budget	Cash Budgeted	Match In-kind Budgeted	Total Budgeted	Cumulative Cash Expended	Cumulative Match In-kind Expended	Cumulative Total Expended	Cash Budget Balance	Match In-kind Budget Balance	Total Budget Balance
<b>Objective 1): Work Plan/Monitoring Plan Development</b>						\$0.00			\$0.00	\$0.00	\$0.00	\$0.00
Task A- Investigate and Write Preliminary Plans; Prepare and Adopt Final Plans	\$27.00	200 hours	\$5,400.00	\$5,400.00		\$5,400.00	\$5,234.34		\$5,234.34	\$165.66	\$0.00	\$165.66
<b>Total Element 1</b>			\$5,400.00	\$5,400.00	\$0.00	\$5,400.00	\$5,234.34	\$0.00	\$5,234.34	\$165.66	\$0.00	\$165.66
<b>Objective 2): Water Quality Monitoring and Data Analysis -</b> Sampling and Field Monitoring, Rating Curve Development, Data Interpretation, and Loading Estimates for Incorporation of Final Report Components						\$0.00			\$0.00	\$0.00	\$0.00	\$0.00
Task A- Watershed Tech. - Annually Re-establish Sites and Collect Water Quality Samples; Perform Analysis Needed to Complete Diagnostic Report	\$23.00	1800 hrs	\$41,400.00	\$41,400.00		\$41,400.00	\$8,778.51		\$8,778.51	\$32,621.49	\$0.00	\$32,621.49
Task B- Water Monitoring Analysis			\$30,738.00	\$30,738.00		\$30,738.00	\$16,064.30		\$16,064.30	\$14,673.70	\$0.00	\$14,673.70
e. coli	\$11.60	180							\$0.00	\$0.00	\$0.00	\$0.00
tss	\$8.80	300							\$0.00	\$0.00	\$0.00	\$0.00
tsvs	\$14.40	300							\$0.00	\$0.00	\$0.00	\$0.00
turbidity	\$8.80	300							\$0.00	\$0.00	\$0.00	\$0.00
total phosphorus	\$11.60	300							\$0.00	\$0.00	\$0.00	\$0.00
ortho-phosphorus	\$11.60	300							\$0.00	\$0.00	\$0.00	\$0.00
tkn	\$16.00	300							\$0.00	\$0.00	\$0.00	\$0.00
ammonia	\$14.40	300							\$0.00	\$0.00	\$0.00	\$0.00
nitrate-nitrite as n	\$9.90	300							\$0.00	\$0.00	\$0.00	\$0.00
Brown-Nicollet Cottonwood SWAG Analysis in the Project Area	\$3,000.00	2 sites			\$6,000.00	\$6,000.00		\$3,662.84	\$3,662.84	\$0.00	\$2,337.16	\$2,337.16
MnDNR - Site Flow Measurement	\$7,000.00	4 sites/2 yr			\$28,000.00	\$28,000.00		\$14,000.00	\$14,000.00	\$0.00	\$14,000.00	\$14,000.00
Task C- Misc. Monitoring Supplies/Equipment, Vehicle Expenses	\$3,005.33	Per year (2.25)	\$6,762.00	\$6,762.00	\$3,500.00	\$10,262.00	\$950.18	\$3,500.00	\$4,450.18	\$5,811.82	\$0.00	\$5,811.82
<b>Total Element 2</b>			\$78,900.00	\$78,900.00	\$37,500.00	\$116,400.00	\$25,792.99	\$21,162.84	\$46,955.83	\$53,107.01	\$16,337.16	\$69,444.17
<b>Objective 3): Watershed Prioritization and Implementation Plan Development -</b> Surveying, Compiling GIS/Survey/WQ Data, Modeling, Technical Advisory Meetings, and BMP Analysis for the Implementation Prioritization of the Project Area; Implementation Plan Development						\$0.00			\$0.00	\$0.00	\$0.00	\$0.00
Executive Director	\$27.00	1000 hours	\$27,000.00	\$27,000.00		\$27,000.00	\$2,488.49		\$2,488.49	\$24,511.51	\$0.00	\$24,511.51
Watershed Tech.	\$23.00	1000 hours	\$23,000.00	\$23,000.00		\$23,000.00			\$0.00	\$23,000.00	\$0.00	\$23,000.00
Watershed Engineer	\$30.00	100 hours	\$3,000.00	\$3,000.00		\$3,000.00	\$1,591.20		\$1,591.20	\$1,408.80	\$0.00	\$1,408.80
BNC WQB	\$20.00	200			\$4,000.00	\$4,000.00			\$0.00	\$0.00	\$4,000.00	\$4,000.00
County SWCD's	\$34.50	1,000			\$34,500.00	\$34,500.00		\$91.00	\$91.00	\$0.00	\$34,409.00	\$34,409.00
MNDNR	\$40.00	100			\$4,000.00	\$4,000.00		\$2,000.00	\$2,000.00	\$0.00	\$2,000.00	\$2,000.00
<b>Total Element 3</b>			\$53,000.00	\$53,000.00	\$42,500.00	\$95,500.00	\$4,079.69	\$2,091.00	\$6,170.69	\$48,920.31	\$40,409.00	\$89,329.31
<b>Objective 4): Outreach, Information, and Awareness Efforts -</b> Providing Material for Support, Newsletters, Media, and Public Informational Meetings						\$0.00			\$0.00	\$0.00	\$0.00	\$0.00
Task A- Water Quality Tech. Asst.	\$25.00	600 hrs	\$15,000.00	\$15,000.00		\$15,000.00			\$0.00	\$15,000.00	\$0.00	\$15,000.00
<b>Total Element 4</b>			\$15,000.00	\$15,000.00	\$0.00	\$15,000.00	\$0.00	\$0.00	\$0.00	\$15,000.00	\$0.00	\$15,000.00
<b>Objective 5): Grant Administration and Facilitation</b>						\$0.00			\$0.00	\$0.00	\$0.00	\$0.00
JPO Appropriations					\$120,000.00	\$120,000.00		\$67,811.31	\$67,811.31	\$0.00	\$52,188.69	\$52,188.69
Executive Director	\$27.00	600 hrs	\$16,200.00	\$16,200.00		\$16,200.00	\$8,100.00		\$8,100.00	\$8,100.00	\$0.00	\$8,100.00
Support Staff	\$21.00	900 hrs	\$18,900.00	\$18,900.00		\$18,900.00	\$8,073.08		\$8,073.08	\$10,826.92	\$0.00	\$10,826.92
Office Supplies	\$2,000.00	Per year (2.25)	\$4,500.00	\$4,500.00		\$4,500.00			\$0.00	\$4,500.00	\$0.00	\$4,500.00
Misc. Services/expenses	\$3,600.00	Per year (2.25)	\$8,100.00	\$8,100.00		\$8,100.00			\$0.00	\$8,100.00	\$0.00	\$8,100.00
<b>Total Element 5</b>			\$47,700.00	\$47,700.00	\$120,000.00	\$167,700.00	\$16,173.08	\$67,811.31	\$83,984.39	\$31,526.92	\$52,188.69	\$83,715.61
<b>ITEMIZED PROGRAM ELEMENT BUDGET</b>												
<b>Total Element 1</b>			\$5,400.00	\$5,400.00	\$0.00	\$5,400.00	\$5,234.34	\$0.00	\$5,234.34	\$165.66	\$0.00	\$165.66
<b>Total Element 2</b>			\$78,900.00	\$78,900.00	\$37,500.00	\$116,400.00	\$25,792.99	\$21,162.84	\$46,955.83	\$53,107.01	\$16,337.16	\$69,444.17
<b>Total Element 3</b>			\$53,000.00	\$53,000.00	\$42,500.00	\$95,500.00	\$4,079.69	\$2,091.00	\$6,170.69	\$48,920.31	\$40,409.00	\$89,329.31
<b>Total Element 4</b>			\$15,000.00	\$15,000.00	\$0.00	\$15,000.00	\$0.00	\$0.00	\$0.00	\$15,000.00	\$0.00	\$15,000.00
<b>Total Element 5</b>			\$47,700.00	\$47,700.00	\$120,000.00	\$167,700.00	\$16,173.08	\$67,811.31	\$83,984.39	\$31,526.92	\$52,188.69	\$83,715.61
<b>Project Grand Total</b>			\$200,000.00	\$200,000.00	\$200,000.00	\$400,000.00	\$51,280.10	\$91,065.15	\$142,345.25	\$148,719.90	\$108,934.85	\$257,654.75

## MIDDLE MINNESOTA DIAGNOSTIC PROJECT IN-KIND TRACKER

Organization	Date(s)	Activity	Services/ Materials	Time (hr)	Rate/hr	Miles	Rate/mi.	Value
					\$			\$
Redwood SWCD	7/2/09 - 7/24/09	Review the work plan draft and QAPP for the project		1.5	30.00			45.00
Lower Soix Env.	7/2/09 - 7/24/09	Review the work plan draft and QAPP for the project		2	23.00			46.00
	4/1/09 -		\$		\$		\$	\$
BNC	10/31/09	BNC - Sampling activities - SWAG - 2 sites, 15 times	1,248.00	15	29.00	465	0.55	1,938.75
	4/1/09 -		\$		\$		\$	\$
Brown County	10/31/09	Brown County - SWAG Program - 1 site, 20 times	1,118.34	10	24.00	665	0.55	1,724.09