

**2010 BWSR Conservation Drainage Grant  
Semi-annual Reports  
Initiative Update**

**Initiative #4: 2010 Conservation Drainage Pilot Project - MFCRWD Monitoring**

May-Jun 2010: The only activity that took place under the Monitoring element in this reporting period was the purchase of new equipment for monitoring.

Jul-Dec 2010: These months were riddled with frustrations with monitoring the water within the tiles. Much time and effort was invested into installing and programming flow equipment, and in troubleshooting the issues that the equipment was causing. In the end, precipitation data is great, we have water quality data on one occasion from both sites, but flow data is questionable. 2011 will require another concentrated effort to provide solid data.

Jan-Jun 2011: The semi-annual report from the second half of 2010 was submitted via eLINK; information submitted was re-formatted a few times per the Board Conservationist's request. Daily flow records from both the north and south sites were created, as were the FLUX input files. A section on Conservation Drainage was written as a part of the District's annual report, and a display summarizing the project was created for the District's 6th Anniversary Open House. District staff drove to the University of Minnesota's Southwest Research and Outreach Center in Lamberton to inquire with Dr. Jeff Strock on the ways to best improve data collection. New equipment (pressure transducers) was purchased and installed in tile lines in May, and a precipitation gauge was installed. Samples for water quality analysis were collected on one occasion. At the South site (no water control structure): TSS 158mg/l, Nitrate 31.6 mg/l, OP 0.431mg/l, TP 0.685. At the North site (water control structure): TSS 29mg/l, Nitrate 23.6mg/l, OP 0.223mg/l, TP 0.35mg/l.

Jul-Dec 2011: Equipment was maintained, including the removal of debris built up on/around pressure transducers. Stop logs were added to the control structure to hold more water in the North site tile line; data was downloaded from equipment on three occasions; equipment was removed at the end of the monitoring season. Water quality samples were collected on two occasions. South site (no water control structure) 7/14/11: TSS 20mg/l, Nitrate 13.7mg/l, OP 0.484mg/l, TP 0.516mg/l. 8/2/11: TSS 10mg/l, Nitrate 12.9mg/l, OP 0.26mg/l, TP 0.312mg/l. North site (water control structure) 7/14/11: 5mg/l, Nitrate 14.0mg/l, OP 0.363mg/l, TP 0.41mg/l. 8/2/11: TSS 2mg/l, Nitrate 10.6mg/l, OP 0.267mg/l, TP 0.314 mg/l.

Jan-Jun 2012: Data from pressure transducers collected in 2011 was consolidated and corrected. Equipment (for 2012 was "lab" tested prior to deployment; upon successful review, equipment was installed at both sites. Data were downloaded on multiple occasions and samples were collected on three occasions. Samples were collected on May 3, May 30, and June 18. Unfortunately, review of the data show a laboratory error in the Nitrogen processing – they processed for Nitrate + Nitrite, which is

inconsistent with the parameters analyzed under the grant thus far. As of submittal time for this report, the lab is re-analyzing the samples for Nitrate only. To avoid any confusion, this semi-annual report only contains information for the May 3 sample; the other samples will be reported in the following semi-annual report. South site (no water control structure) 5/3/12: TSS 36mg/l, Nitrate 9.13mg/l, OP 0.269mg/l, TP 0.305mg/l. North site (water control structure) 5/3/12: TSS <1mg/l, Nitrate 12.00mg/l, OP 0.232mg/l, TP 0.230mg/l.

Jul-Dec 2012: Equipment was maintained and monitored. Stop logs were added to the control structure to hold more water in the North site tile line; data was downloaded from equipment on multiple occasions; equipment was removed at the end of the monitoring season on November 8, 2012. Water quality samples were collected on three occasions in 2012, including May 3, May 30, and June 28. South site (no water control structure) 5/3/12: TSS 36mg/l, Nitrate 9.13mg/l, OP 0.269mg/l, TP 0.305mg/l. 5/30/11: TSS 63mg/l, Nitrate 12.5mg/l, OP 0.158 mg/l, TP 0.198mg/l. 6/18/11: TSS 167mg/l, Nitrate 11.0mg/l, OP 0.264mg/l, TP 0.774mg/l. North site (water control structure) 5/3/12: TSS <1mg/l, Nitrate 12.00mg/l, OP 0.232mg/l, TP 0.230mg/l. 5/30/12: TSS 3mg/l, Nitrate 2.0mg/l, OP 0.233mg/l, TP 0.239mg/l. 6/18/12: TSS 150mg/l, Nitrate .5mg/l, OP 0.232mg/l, TP 0.423mg/l.