

By: Corey Hanson, Water Quality Coordinator
For: December 8, 2011
Red Lake Watershed District Board Meeting

Thief River Watershed Assessment Project (Watershed-Based TMDL)

- Task 3 – Continuous Water Quality Monitoring
 - Finished the final in-lab cleaning and calibration of the Eureka Mantas for 2011.
 - Installed a Manta deployment pipe at the Hwy 54 crossing of the Moose River (Site X4).



- Installed a Manta deployment pipe at the Hwy 89 crossing of the Mud River (Site 757).



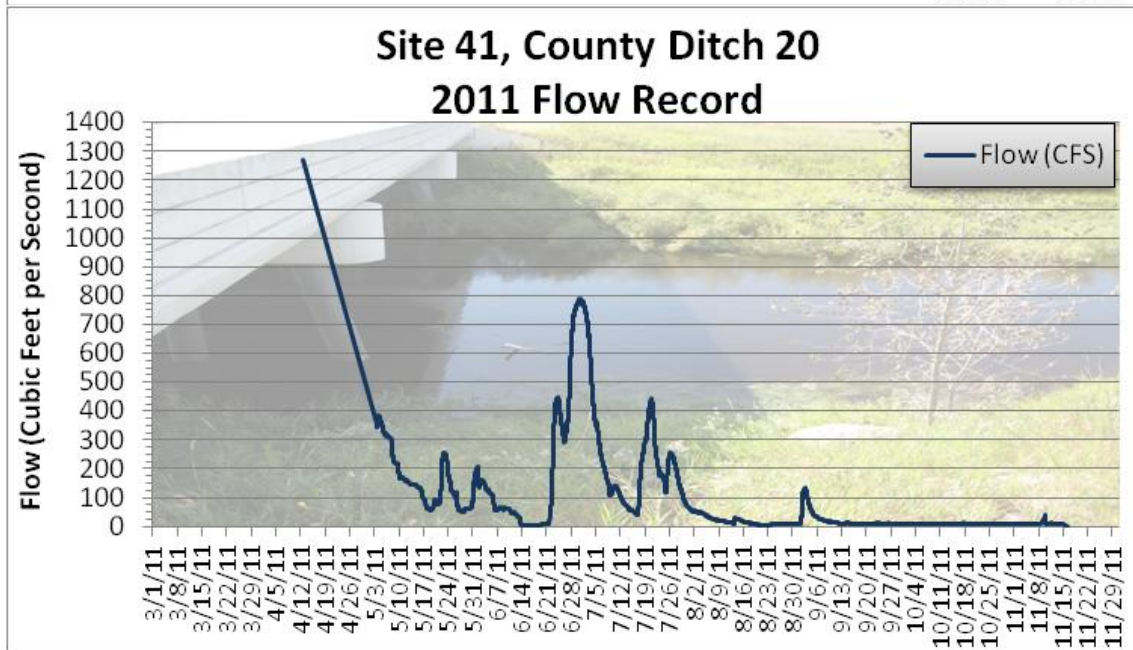
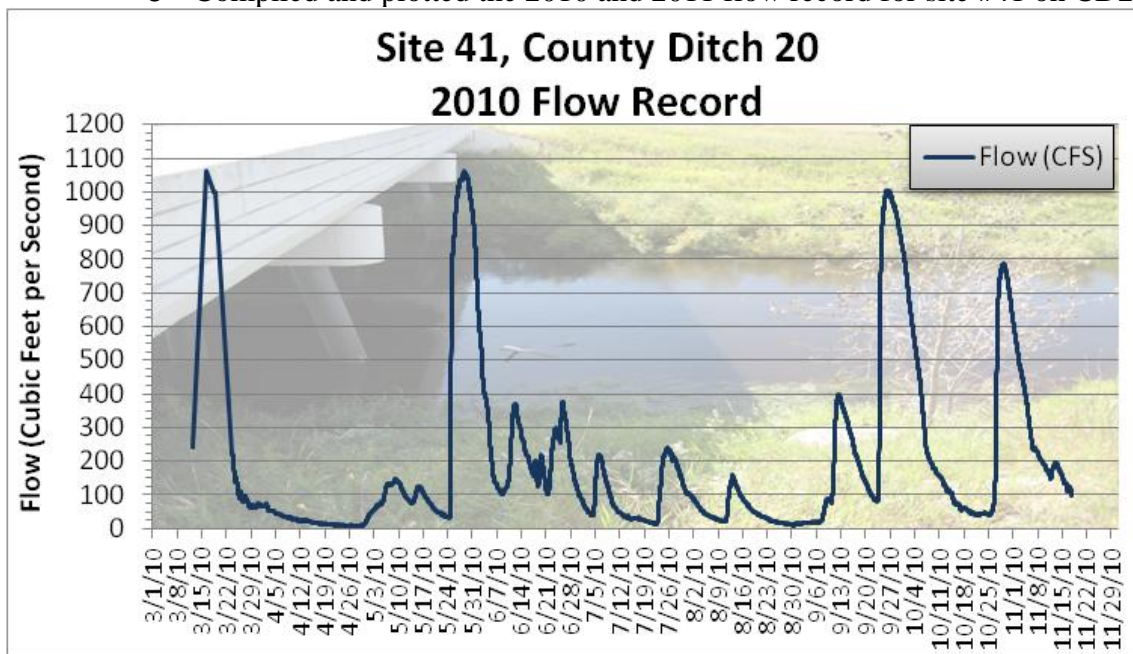
- Task 5 – Stage and Flow Monitoring
 - Purchased the cables necessary to transfer data from the Campbell Scientific storage module to a computer. The storage module contains the 2011 stage record for stream gauge number 40 on the Thief River at County Road 7. The storage module was used to regularly download data from the Campbell Scientific datalogger installed at the site. The datalogger was connected to an ultrasonic gage that was installed by the MPCA.
 - All of the Thief River watershed's HOBO water level loggers were retrieved on November 16th and 17th before they could get frozen into the ice.
 - Data was downloaded from the HOBOS and processed/corrected using data from a barometric pressure logger that was deployed at the RLWD office, and converted into Excel files.
 - Installed a high-water HOBO deployment pipe at the Hwy 54 crossing of the Moose River (Site X4).



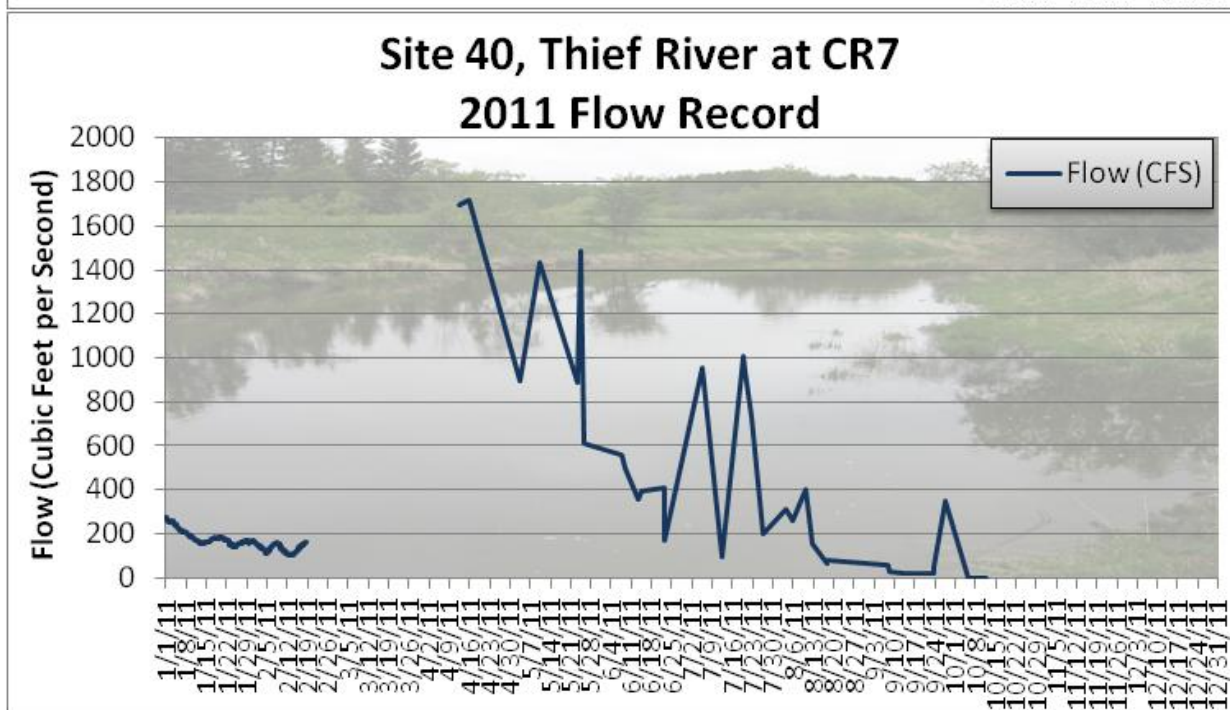
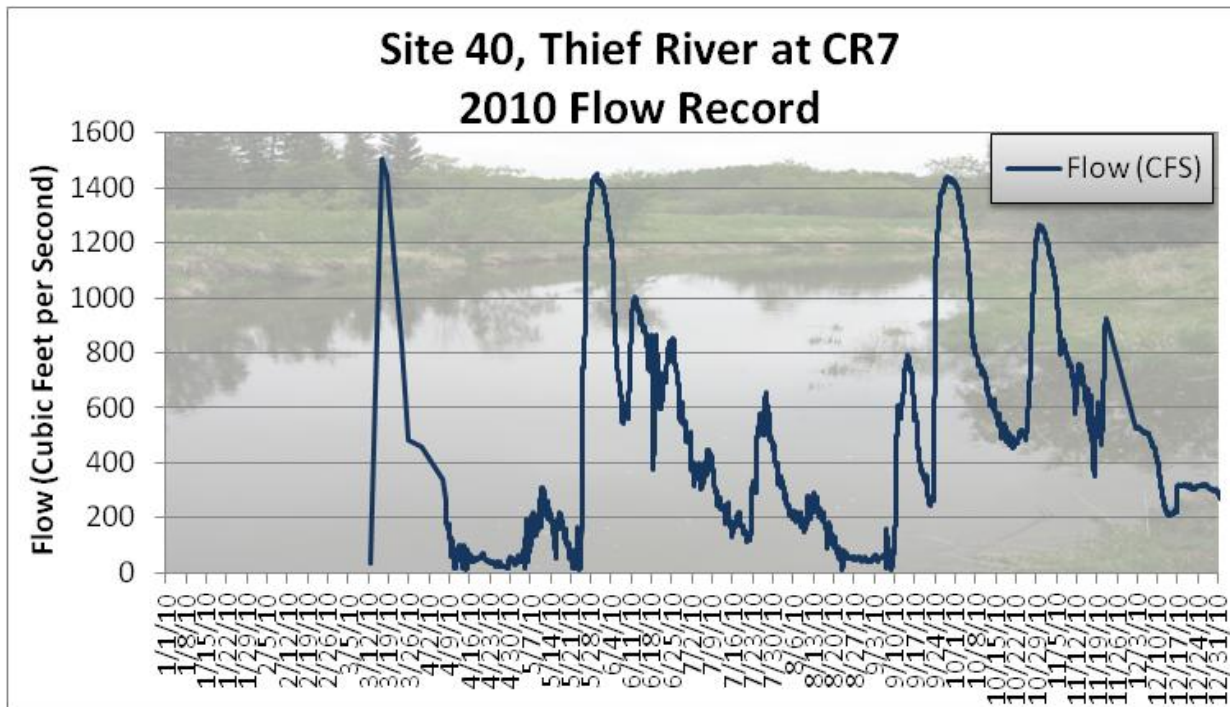
- Installed a high-water HOBO deployment pipe at the CD20 monitoring site (stream gauging site #41)



- Task 8 – Watershed Modeling
 - I have been in touch with both Stephanie Johnson of Houston Engineering and Mike Vavricka of the MPCA. The HSPF modeling should begin soon. Completion of Phase I of the HSPF modeling is scheduled for June 2012. The rest of the model should be completed by the end of 2012.
- Task 9 – Monitoring Data Entry
 - Completed a review of the 2011 data and submitted it to the MPCA for entry into the EQUIS database.
- Task 10 – Data Analysis
 - Compiled and plotted the 2010 and 2011 flow record for site #41 on CD20.



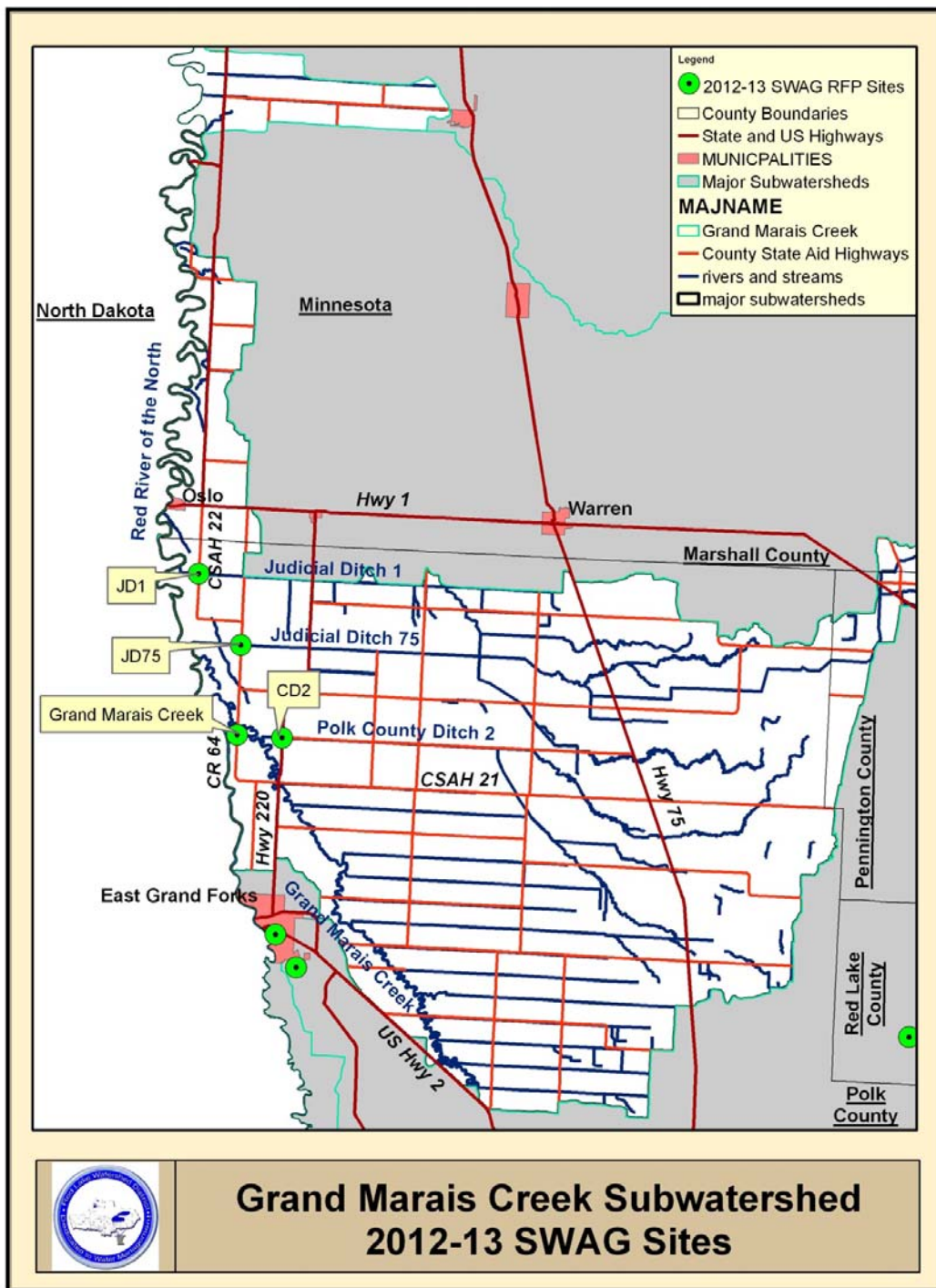
- Compiled and plotted the 2010 and part of the 2011 flow record for site #40 on the Thief River. The HOB0 that was trapped under the ice last winter kept taking readings until it ran out of memory space in early 2011. A rough record of flow was plotted using manual stage measurements. The rest of the 2011 flow record will be compiled from the data collected by the ultrasonic gage and data logger that were installed in 2011.

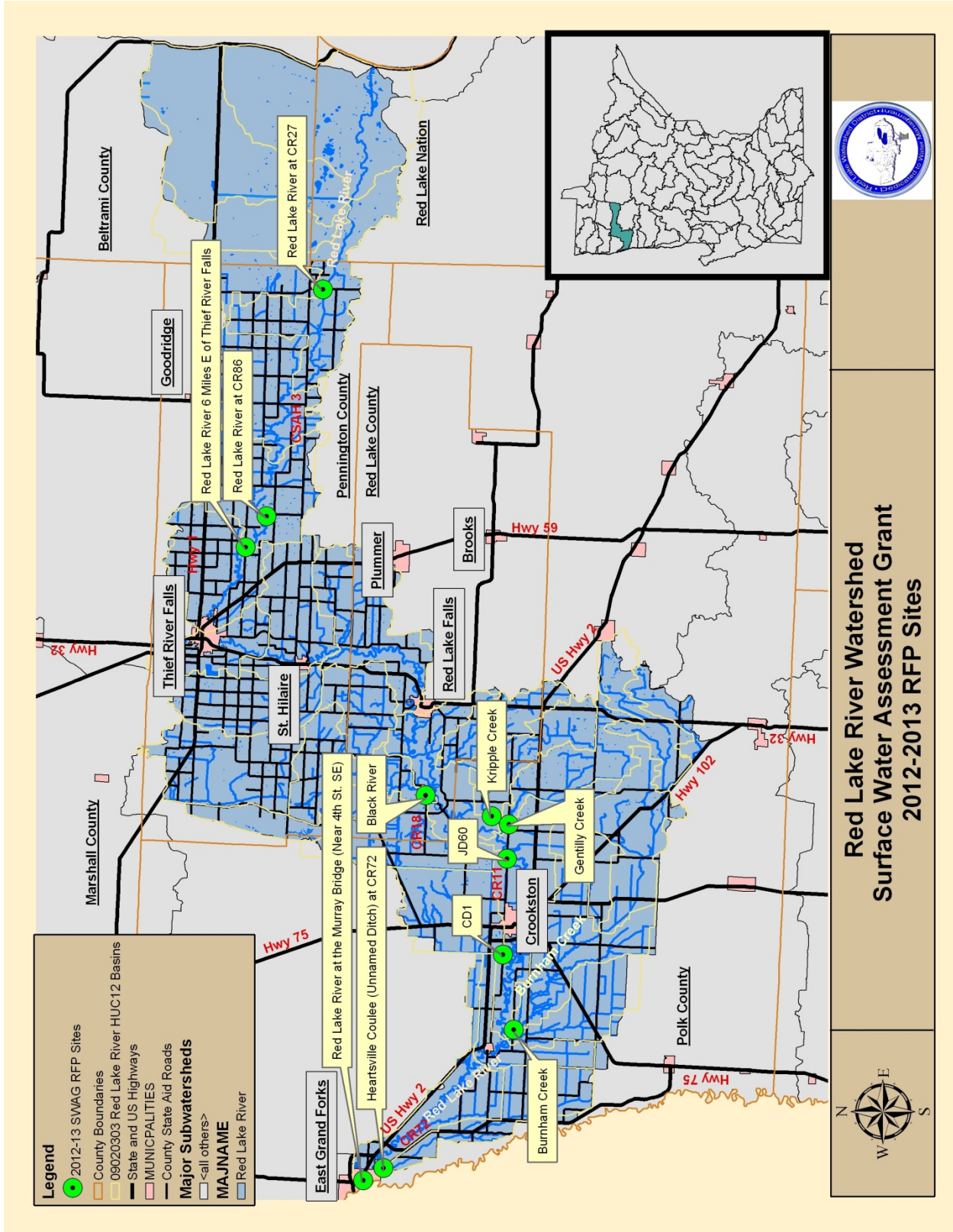


- Task 11 – Civic Engagement
 - Lori Clark and Molly MacGregor gave a presentation at the Marshall County Water Resources Advisory Committee meeting in Newfolden on November 2nd. They explained civic engagement, the opportunities for stakeholder involvement, and Molly’s demographic report for the Thief River watershed.
 - There is a low population density in the Thief River watershed (<3 people per square mile)
 - The highest land ownership classification in the Thief River watershed was “Farm, Non-Homestead” at 29% (people own land there, but don’t live there).
- Task 12 – Identification of Sources and Solutions
 - Jim Blix has received instruction from Houston Engineering staff and has started working on the terrain analysis for portions of the Thief River watershed. Hydro-correcting the LIDAR data will take up the majority of the time involved with completing this task. In the raw LIDAR data, roads look like dams, regardless of whether or not there is a culvert (the aerial data collection can’t see through the roads). Most of the culverts and bridges can be identified and “burned” into the LIDAR data in the office. Some questions about whether or not a culvert exists can only be answered by going out into the field and looking for a culvert.

Red Lake River Watershed Assessment Project (Watershed-Based TMDL)

- Task 2 – Water Quality Sampling
 - Completed and submitted a Surface Water Assessment Grant Application for the Red Lake River and Grand Marais Creek watersheds.
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Red Lake River Watershed
Surface Water Assessment Grant
2012-2013 RFP Sites

- Task 3 – Continuous Water Quality Monitoring
 - Made plans for deployment pipe installations and purchased supplies (pipes and hardware).
 - Installed a deployment pipe for Eureka Midge dissolved oxygen loggers at the Gentilly Creek monitoring site.
- Task 5 – Flow Monitoring
 - Made plans for deployment pipe installations and purchased supplies.
 - Prepared twelve 1 ½” PVC pipe deployment tubes for Red Lake River watershed HOBO water level logger deployments (perforating the lower end, inserting a screw across the bottom to prevent loss of the logger).
 - Installed high-water and low-water HOBO water level logger deployment pipes at the Black River monitoring site at the Hwy 18 crossing.



- Installed a HOBO water level logger deployment pipe at the Cyr Creek monitoring site.



- Installed deployment pipes for a HOBO water level logger and a Eureka Midge dissolved oxygen logger at the Gentilly Creek monitoring site.



- Task 10 – Civic Engagement
 - Assembled an initial list of potential stakeholders that will be invited to meetings.
 - Lori Clark began researching potential collaborations in order to assess the community’s capacity for watershed planning.
- Task 11 – Identification of Sources and Solutions
 - Received a draft report on the MNGreenCorps Crookston Stormwater Management study that was conducted by Michael Knudson. One interesting bit of information from the study was the discovery that the city’s snow dumping site was located next to the river. So, all of the dirt that was scraped up with the snow would run into the river as the snow melted. Also, stormwater drainage from the Crookston industrial park had consistently high turbidity levels, up to 447 NTRU.

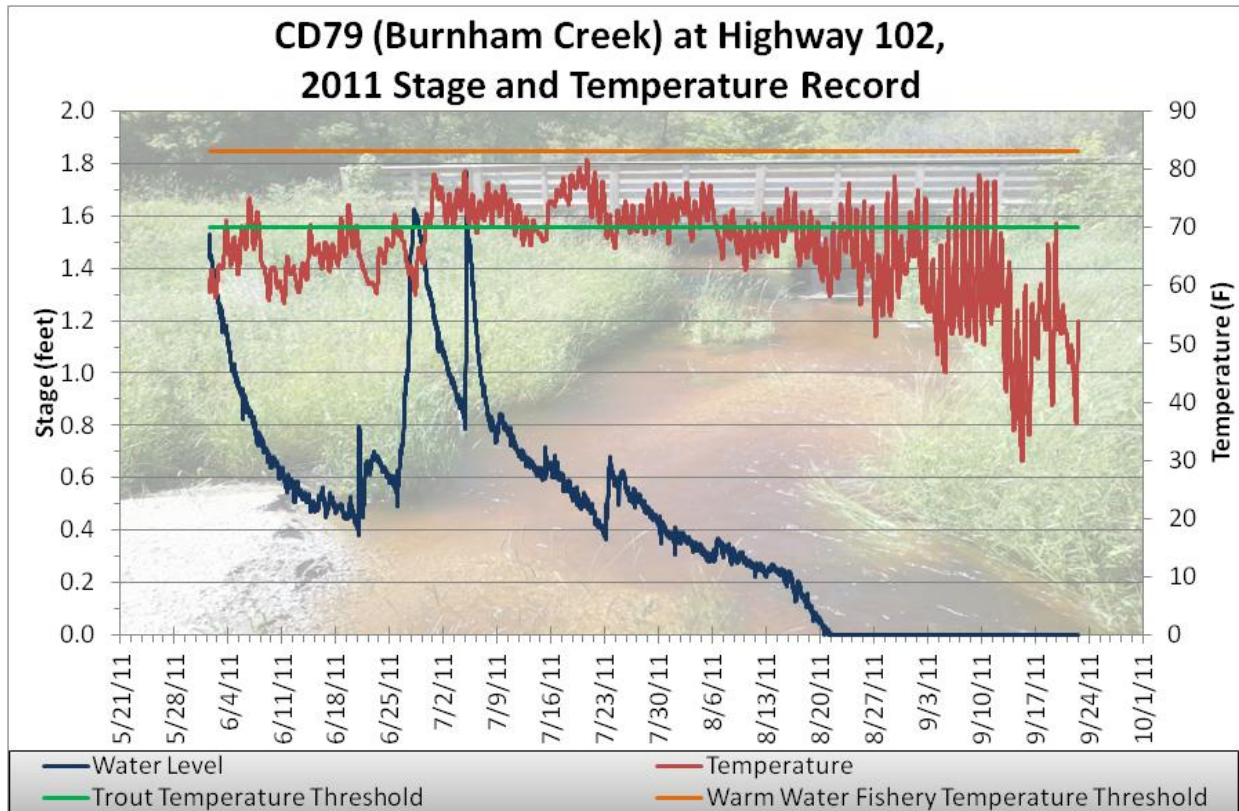


District Monitoring

- Finished entering 2011 data, reviewed it, and submitted it to the MPCA for entry into the EQuIS database.

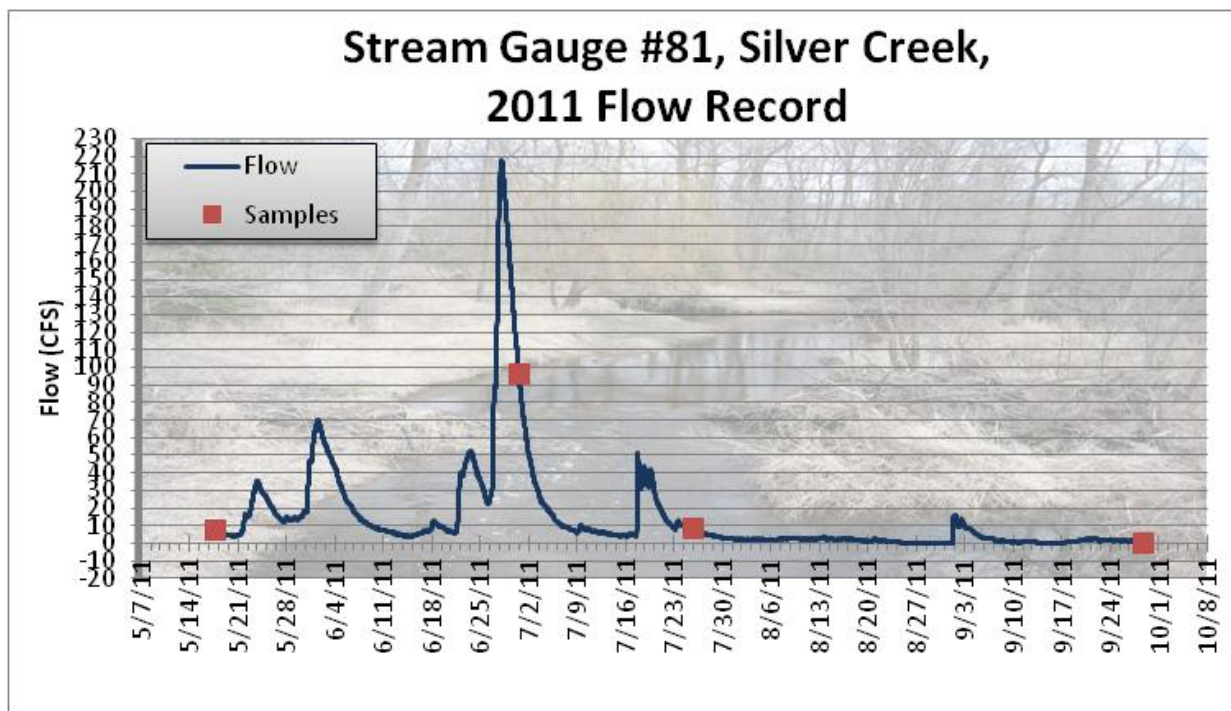
Stream Gauging

- Compiled, calculated, and plotted the 2011 stage record for the Highway 102 crossing of Polk CD79 (Burnham Creek, Stream Gauge 91). This site is located upstream of the washed-out Spring Gravel dam and a potential stream restoration project. The temperature data is as important as the stage data as it shows whether or not there is potential for fish to survive in the stream. The temperature data shows that fish could survive in the ditch. The stage record shows, however, that the stream can go dry at times.



- Created an updated site description for Stream Gauge #91 on CD79 or the stream gauge file.

- Compiled, calculated, and plotted the 2011 flow record for the CR111 Silver Creek monitoring site (water quality site #81)



November 2011 Meetings and Events

- **November 1, 2011** – Deadline for submitting field and lab data to the MPCA for entry into the EQUIS database.
- **November 2, 2011** - Marshall County Water Resources Advisory Committee
- **November 10, 2011** – Due date for 2012 Assessment-SWAG applications

Plans for December 2011

- Thief River Watershed Assessment Project.
 - Work with Lori Clark to plan a stakeholders meeting for early January.
 - Compile stage records and calculate flow records from HOBO Water Level Logger data.
 - Compile and correct continuous water quality data.
 - Complete a report on the existing data that is available for the watershed.
 - The BASINS modeling process may begin soon.
 - Jim Blix will be working on terrain analysis to identify potential erosion areas throughout the watershed.
 - Provide flow and water quality data to Stephanie Johnson for calibration of the HSPF model.

- Red Lake River Watershed Assessment Project
 - Try to install some more HOB0 and Midge deployment pipes if I can get more fence posts and the weather is favorable.
 - Complete a report on the existing data that is available for the watershed.
 - Start working on civic engagement; work with Lori Clark to plan a project kickoff meeting.

Future Meetings/Events

- **December 9, 2011** – Red River Basin Monitoring Advisory Committee meeting
- **December 19, 2011** – Red River Basin Water Quality Team meeting (over WebEx)
- **January 3, 2012** - Pennington County Water Resources Advisory Committee, 9 AM
- **January 11, 2012** – Marshall County Water Resources Advisory Committee, 9 AM
- **January 12, 2012** – Franklin Middle School Science Fair judging
- **January 13, 2012** – Tentatively scheduled date for a kickoff stakeholders' meeting for the Thief River Watershed Assessment Project.
- **January 31, 2012** – First progress report for the Thief River SWAG monitoring is due.
- **February 1, 2012** - BWSR CWF Grant semi-annual progress reports are due.
- **February 1, 2012** - MPCA Thief River Watershed Assessment Project semi-annual progress report is due.
- **August 1, 2012** – BWSR CWF Grant semi-annual progress reports are due.
- **August 1, 2012** – MPCA Thief River Watershed Assessment Project semi-annual progress report is due.
- **January 31, 2013** – The second progress report or final report for the Thief River SWAG monitoring is due.
- **February 1, 2013** - BWSR CWF Grant semi-annual progress reports are due.
- **February 1, 2013** - MPCA Thief River Watershed Assessment Project semi-annual progress report is due.
- **June 30, 2013** – Expiration of the Thief River Watershed Assessment Project Contract.
- **June 30, 2013** – Expiration of the Red Lake River Watershed Assessment Project – Phase I Contract.
- **June 30, 2013** – Final report for the Thief River SWAG grant is due
- **July 30, 2013** – Due date for the final progress report and final invoice for the Thief River Watershed Assessment Project
- **July 31, 2013** – Final payment request for the Thief River SWAG is due.