Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194

WPLMN Interim Progress Report

Watershed Pollutant Load Monitoring Network (WPLMN)

Doc Type: Contracts Interim Report

Instructions on page 5

Due February 1, 2017

I. Project information

Project title: Root River Watershed Pollutant Load Monitoring

Contract number: 6333 SWIFT number: 56714 Purchase order number: 3000006183

Local partner information:

Organization name: Fillmore SWCD

Street address: 900 Washington St. NW

City: Preston State: MN Zip code: 55965

Primary contact name: Donna Rasmussen Phone: 507-765-3878

Email address: donna.rasmussen@fillmoreswcd.org Fax: na

Fiscal contact name: Donna Rasmussen Phone: 507-765-3878

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Field contact name: Jennifer Ronnenberg Phone: 507-765-3878

Email address: jennifer.ronnenberg@fillmoreswcd.org Fax: na

Reporting period:

Start date: 1/15/2016 *(mm/dd/yyyy)* End date: 12/31/2016 *(mm/dd/yyyy)*

Project location:

Basin (check all that apply):

☐ Red River ☐ Rainy River ☐ Lake Superior ☐ Minnesota ☒ Lower Mississippi ☐ St. Croix ☐ Upper Mississippi

Major watershed(s): Root River Hydrologic unit code(s): 07040008

Name of eligible laboratory: Minnesota Department of Health

How many full-time equivalents (FTEs) worked on this project in 2016 (total project hours/2,088 hours):

II. Activities completed

Table 1: Workplan activities

1. **Please list activities completed during the report period under the current contract. Include task level detail as appropriate**. Refer to the instructions for an example. (Insert more rows as needed by hitting the tab key in the last row/column.)

Objective and task	Description
1: Stream Monitoring, Task A: Complete required documents prior to sampling	The QAPP document was completed and submitted to MPCA for approval on 5/25/16. The QAPP has an effective date of 6/1/16.
1: Stream Monitoring, Task B: Acquire monitoring equipment and supplies	Bulk supplies were purchased in March and September of 2016. Ice and packing tape were purchased throughout the sampling season as needed.
1: Stream Monitoring, Task C: Obtain required field training	Both the Watershed Management Coordinator and the Conservation Technician attended the 3-part MPCA webinar trainings on 2/11/16, 2/18/16 and 2/25/16. The Watershed Management Coordinator also completed the multi-year hydrograph exercises for each sampling site and the

	multiple subsequent webinar discussions that were added on to the work plan by the MPCA.
1: Stream Monitoring, Task D: Collect water quality samples following sample collection protocols as defined in the WPLMN SOP	Samples were collected by the Watershed Management Coordinator, Conservation Technician and Intern at all sites between 2/18/16 and 10/31/16 using WPLMN SOP as follows: Main Branch Root River: 40 samples, South Fork Root River: 36 samples, South Branch Root River: 37 samples, North Branch: 36 samples, Middle Branch: 38 samples. One set of QA/QC field replicate samples were collected at all five sites on 4/13/16. Samples were shipped to the MDH lab following lab sample submission protocol for analysis of total phosphorus, dissolved orthophosphate, total suspended solids, total Kjeldahl nitrogen, and nitrate-nitrogen.
1: Stream Monitoring, Task E: Collect field measurements and observations at each site visit	Field measurements and observations were completed on each sampling day by the Water Management Coordinator, Conservation Technician and Intern at all sites between 2/18/16 and 10/31/16 using WPLMN SOP. Data included: dissolved oxygen, water temperature, pH and specific conductance using a calibrated field meter; stream transparency using a 100 cm Secchi tube; visual observations and upstream/downstream photos; stream stage measurements using wire weight devices and data-logger readings at South Branch and Middle Branch sites. The field meter was not recorded on some of the sampling dates due to probe malfunction/power issues.
1: Stream Monitoring, Task F: Ensure field meter is calibrated and in good operational order.	Field probe was calibrated 12 times during the reporting period. Calibrations were performed either weekly during the sampling season, or immediately prior to a sample collection day.
2: Data Management, Task A: Prepare and submit data for EQuIS entry	The Watershed Management Coordinator submitted 13 bi-monthly EQuIS reports to the MPCA Project Manager starting 3/15/16 and ending 10/31/16. Canvas-EQuIS converted file was compiled, edited and submitted on 11/8/16.
2: Data Management, Task B: Submit visual observations & water level info using Canvas	The Water Management Coordinator completed submission of field visual observations, measurements and photos via Canvas by November 1, 2016.
2: Data Management, Task C: Compile and submit photos, copies of field sheets and field meter calibration log to MPCA Project Manager	2016 field meter calibration log sheets and scanned field sheets were submitted by the Water Management Coordinator to MPCA Project Manager by 11/1/2016. Site photos were submitted through Canvas.
2: Data Management, Task D: Complete load calculations using the FLUX32 model	Seasonal load calculations were completed using the FLUX32 model for 2014 data at Main Branch, South Fork, South Branch and Middle Branch Root River sites. Verification meeting attended on 4/27/16 by the Water Management Coordinator.
2: Data Management, Task E: Attend staff training from MPCA	Both the Watershed Management Coordinator and the Conservation Technician attended the 3-part MPCA webinar trainings on 2/11/16, 2/18/16 and 2/25/16. The Watershed Management Coordinator also completed the multi-year hydrograph exercises for each sampling site and the multiple subsequent webinar discussions that were added on to the work plan by the MPCA.
3: Project Oversight, Task A: Track project expenditures and submit invoices	Grant expenditures are tracked in the SWCD accounting system. Quarterly invoices and supporting documentation were submitted to MPCA in April, July, and October 2016.
3: Project Oversight, Task B: Complete reporting requirements using format provided by MPCA Project Manager	Quarterly invoices submitted using format provided by MPCA. Final report completed for previous grant using format provided by MPCA.
3: Project Oversight, Task C: Participate in a mid-project review upon expenditure of 50% of budget.	NA-to be completed when 50% of budget expended.
3: Project Oversight, Task D: Participate in telephone conferences	Regular scheduled call-in meetings were attended 19 times by the Watershed Management Coordinator and 14 times by the Conservation Technician in the reporting period. Many of these meetings were conducted via webinar.
3: Project Oversight, Task E: Attend staff training as arranged by MPCA	SWCD Administrator participated in a conference call on April 13 regarding invoicing.

2. Please answer the following questions relating to the deliverables for the project.

a. Was the Quality Assurance Project Plan (QAPP) approved by the Quality Assurance/Quality Control (QA/QC) Coordinator and your Project Manager prior to the monitoring season?

☒ Yes ☐ No Approval date (mm/dd/yyyy): 6/1/2016

If no, please comment: _____

b. Were the field meter calibration log, EQuIS template, Canvas entries, and field notes, submitted by November 1?

☒ Yes ☒ No If no, please comment: *Some were, some were not. See comment in #4*

c. Were pollutant loads computed in a timely manner (within 60 days of receiving the .xml)?

☒ Yes ☒ No If no, please comment: *All sites were completed with the exception of North Branch, which was completed by the MPCA Project Manager due to other obligations.*

d. Were you able to attend a majority of the weekly check in telephone conferences during the reporting period?

☒ Yes ☐ No If no, please comment:

e. Was a backup sampler used to collect any of the samples?

☒ Yes ☐ No If yes, please describe when, who, if they were trained, and any other details:

Caleb Fischer, Conservation Technician and the summer intern for Fillmore SWCD were additonal samplers in 2016. Each received field training, Caleb regularily attends call-ins and trainings.

3. Please answer the following questions *and* provide comments.

Were you comfortable with your level of training and current ability to:

a. Collect stream samples over the entire range of the hydrograph? ☒ Yes ☐ No

Comments:

Sampling protocol changed quite a bit in the middle of the season due to MPCA changes in guidance. We feel we have a good understanding of what MPCA wants for hydrograph sampling.

b. Calibrate and use the field meter and equipment? ☒ Yes ☐ No

Comments:

c. Enter data and information completely into the EQuIS template, the Canvas application and the calibration log? ☒ Yes ☐ No

Comments:

d. Use the FLUX32 model accurately and submit pollutant loads? ☒ Yes ☐ No

Comments:

e. Complete and submit invoices? ☒ Yes ☐ No

Comments:

Laboratory costs were first charged to this grant from the June 2016 lab bill on Invoice #1 submitted in July.

4. Describe in detail any problems, delays, or difficulties that occurred in fulfilling the requirements of the work plan. How did you resolve these problems?

The process for entering data into Canvas worked fairly well, with the exception that editing after submission was not allowed.This made it hard to make corrections after the fact when reviewing entries.The Canvas to Equis converter and subsequent editing was a redundant task that we were not given time to complete by the deadline.I resolved it by completing the task and submitting it when I was able to review and make edits. It turned out to be more work than just using the regular Equis site inspection spreadsheet.With the hopeful addition of a field electronic device from the SWCD, this process may be minimized, but the double entry required when entering data directly on the computer doesn't save any time. If you have grantees who do not have portable devices for the field, there should be an option to only have to use one program.

5. Were there any change orders and/or amendments to the contract and work plan? If yes, summarize the changes.

☐ Yes ☒ No

Comments:

6. Please provide any constructive feedback regarding the WPLMN (training, deliverables, deadlines, program directives):

Please respect the time of the grantees. Adding the required extensive hydrograph exercises and discussions to our work plan was too time comsuming. I would have appreciated reviewing our relevant hydrographs in one solo webinar session instead of making all grantees review each other's hydrographs over the expanse of several months.

III. Budget Information

Please copy the information on the Invoice tab from the Microsoft Excel Invoice workbook and paste into this Interim Progress Report template. See Instructions for details.

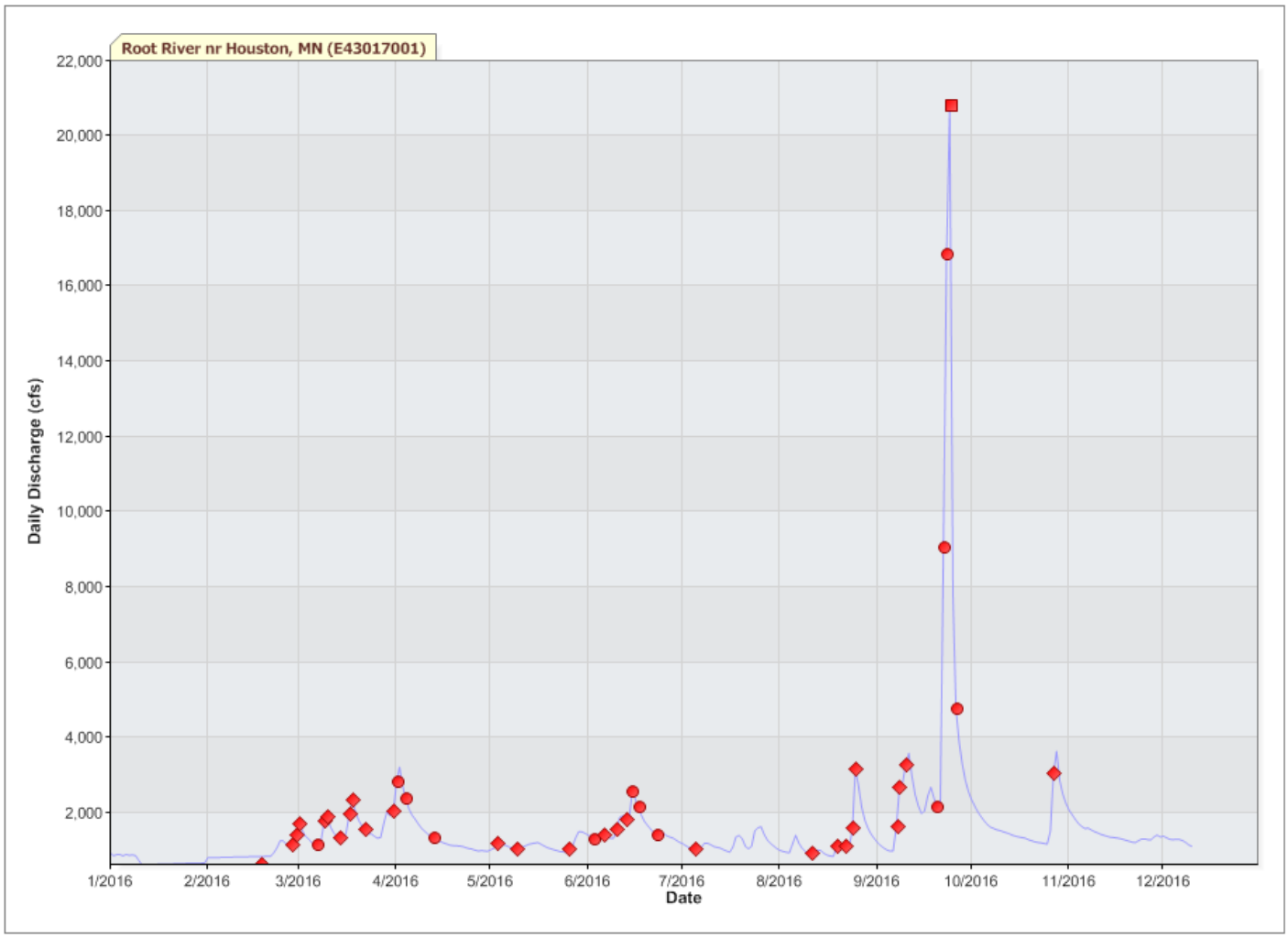
Objective	Line Item	MPCA Funds Awarded	MPCA Funds Expended prior to this Invoice	MPCA Funds Expended this Invoice	MPCA Funds Expended	Balance	Budget Expended (%)
1) Stream Monitoring	Personnel	$24,572.30	$5,463.22	$1,072.28	$6,535.50	$18,036.80	**27%**
1) Stream Monitoring	Laboratory	$27,400.00	$4,576.00	$8,782.00	$13,358.00	$14,042.00	**49%**
1) Stream Monitoring	Travel	$4,152.65	$1,877.96	$189.00	$2,066.96	$2,085.69	**50%**
1) Stream Monitoring	Shipping	$1,000.00	$93.74	$86.21	$179.95	$820.05	**18%**
1) Stream Monitoring	Equipment & supplies	$2,692.00	$23.80	$159.41	$183.21	$2,508.79	**7%**
2) Data Management	Personnel	$8,222.30	$882.15	$2,966.78	$3,848.93	$4,373.37	**47%**
2) Data Management	Training	$250.00	$0.00	$0.00	$0.00	$250.00	**0%**
2) Data Management	Per diem	$144.00	$0.00	$0.00	$0.00	$144.00	**0%**
3) Project Oversight	Personnel	$3,805.82	$712.94	$372.71	$1,085.65	$2,720.17	**29%**
Total:		**$72,239.07**	**$13,629.81**	**$13,628.39**	**$27,258.20**	**$44,980.87**	**38%**

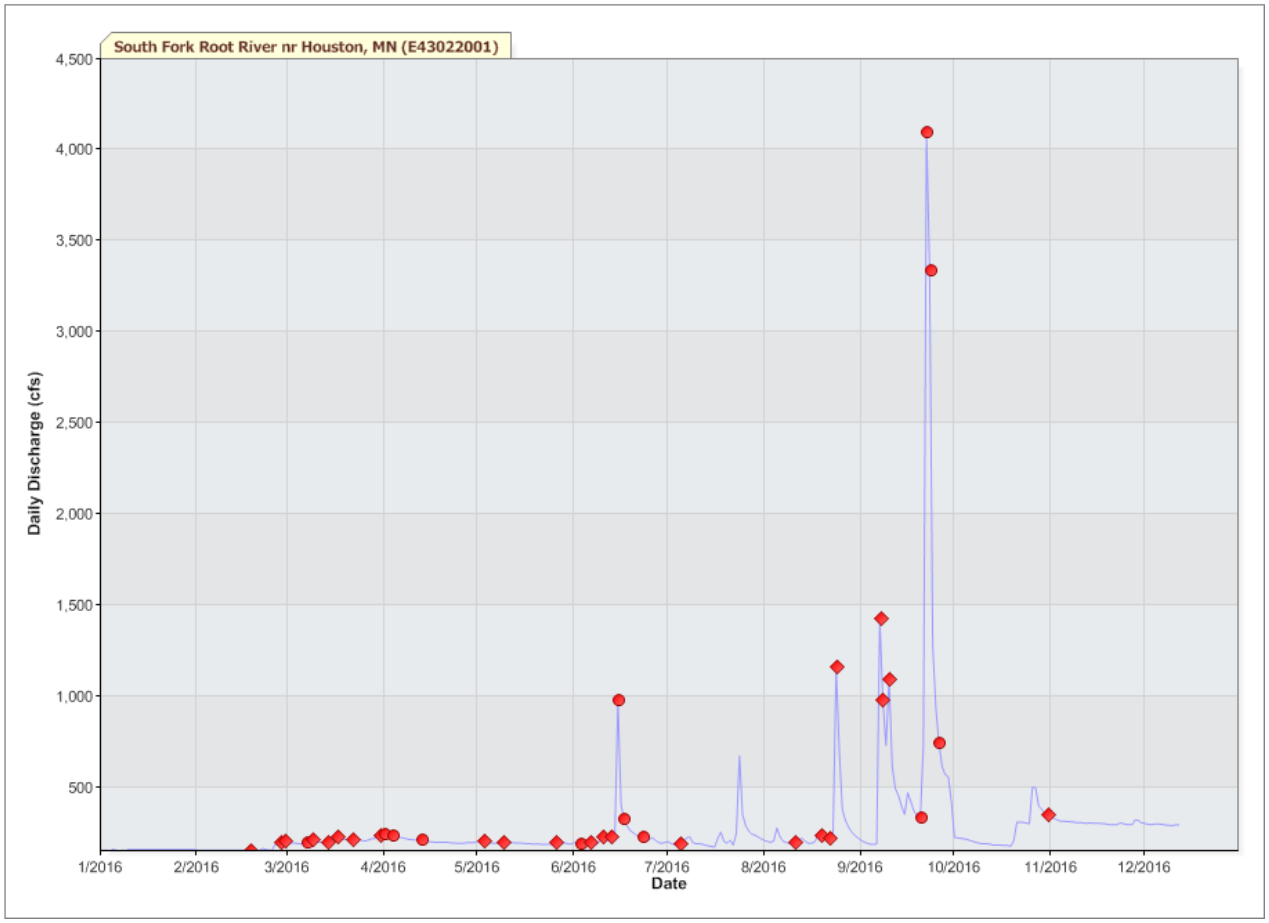
Comments:

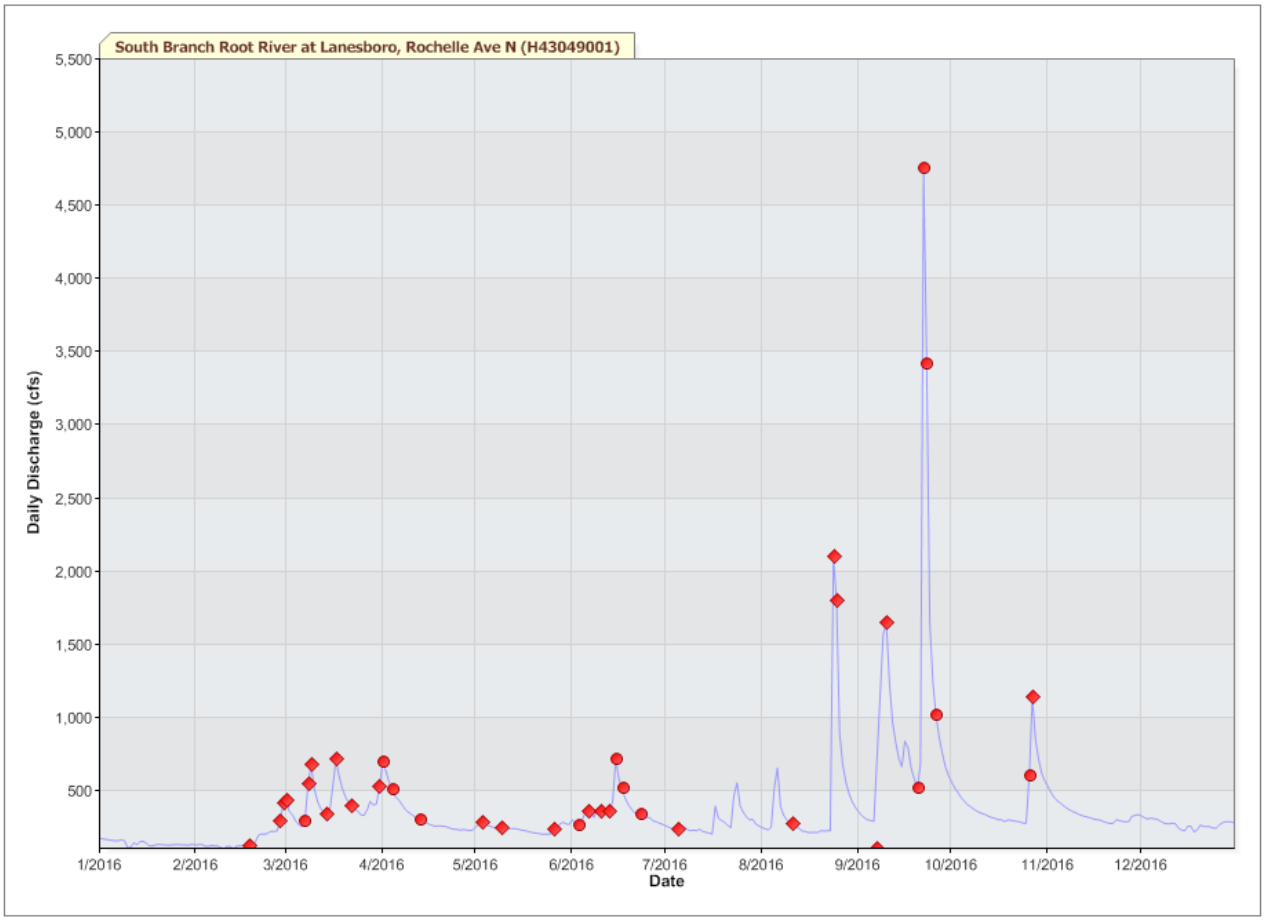
IV. Hydrographs

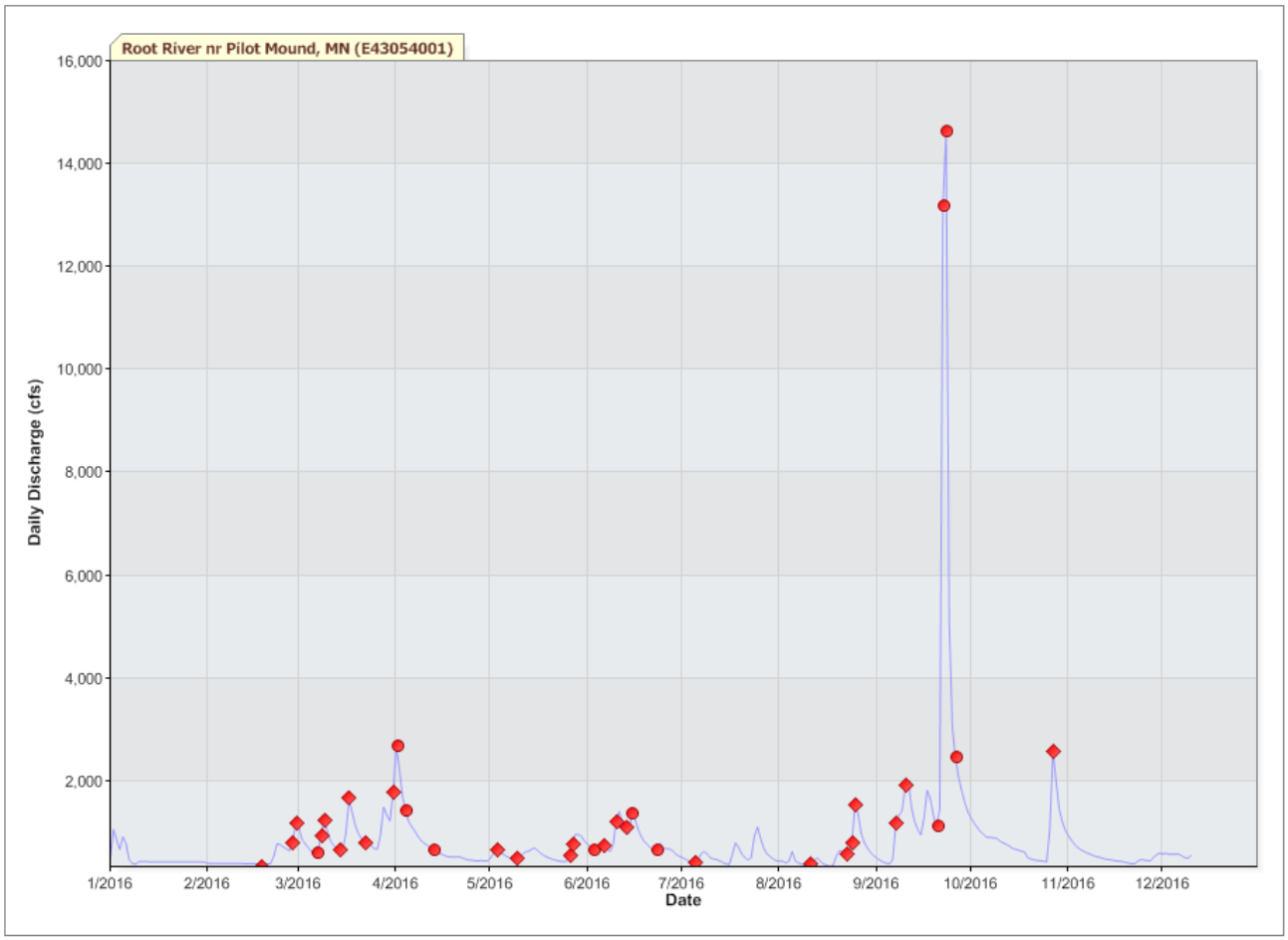
Comments:

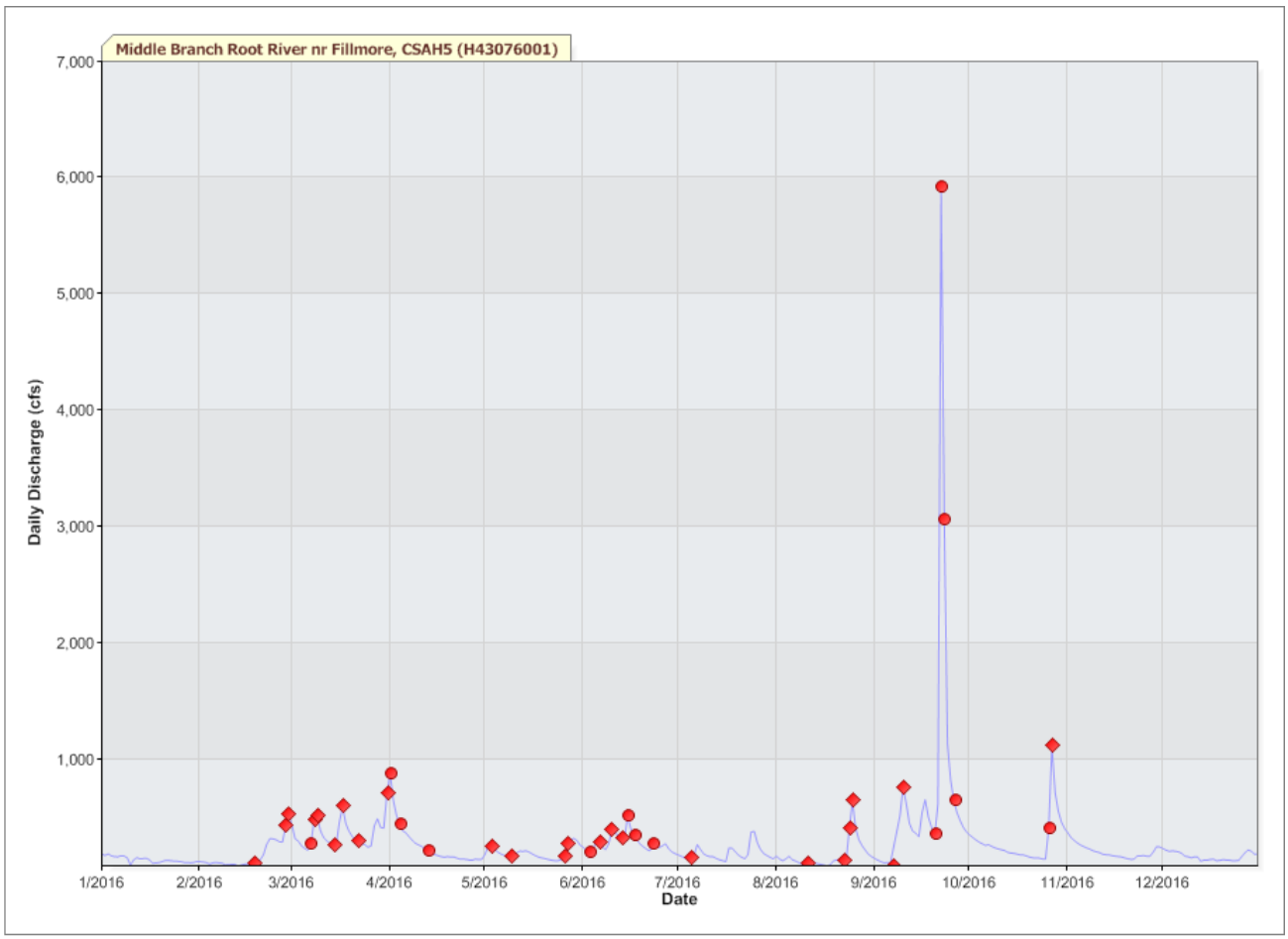
Snowmelt was mild in 2016 due to dry soil conditons, very little sub-surface frost and even, slow warming temperatures. Early season hydrographs were sampled frequently in an attempt to fully charactize the snowmelt period. Mid-season,a new sampling protocol was discussed to reduce sampling frequency.Hydrograph response to rain events increased the later part of the season due to continually elevated soil moisture levels leading to quick saturation points.




South Fork Root River nr Houston, MN (E43022001)
Daily Discharge (cfs)
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
1/2016
2/2016
3/2016
4/2016
5/2016
6/2016
7/2016
8/2016
9/2016
10/2016
11/2016
12/2016
Date


South Branch Root River at Lanesboro, Rochelle Ave N (H43049001)
Daily Discharge (cfs)
5,500
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
1/2016
2/2016
3/2016
4/2016
5/2016
6/2016
7/2016
8/2016
9/2016
10/2016
11/2016
12/2016
Date


Root River nr Pilot Mound, MN (E43054001)
Daily Discharge (cfs)
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
1/2016
2/2016
3/2016
4/2016
5/2016
6/2016
7/2016
8/2016
9/2016
10/2016
11/2016
12/2016
Date


Middle Branch Root River nr Fillmore, CSAH5 (H43076001)
Daily Discharge (cfs)
7,000
6,000
5,000
4,000
3,000
2,000
1,000
1/2016
2/2016
3/2016
4/2016
5/2016
6/2016
7/2016
8/2016
9/2016
10/2016
11/2016
12/2016
Date