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, 2018**

## I. Project information

Project title: Root River Watershed Pollutant Load Monitoring

Contract number: 8417 SWIFT number: 98219 Purchase order number: 3000015227

**Local partner information:**

Organization name: Fillmore Soil and Water Conservation District (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: 507-765-4512

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

Email address: donna.rasmussen@fillmoreswcd.org Fax: 507-765-4512

Field contact name: Caleb Fischer Phone: 507-765-3878

Email address: caleb.fischer@fillmoreswcd.org Fax: 507-765-4512

**Reporting period:**

Start date: 1/1/2017 *(mm/dd/yyyy)* End date: 12/31/2017 *(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 2017 (total project hours/2,088 hours):

## II. Activities completed

### Table 1: Workplan activities

1. **Please list activities completed during the report period. 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 2017. Ice and packing tape were purchased throughout the sampling season as needed. The Hach sonde was damaged and was repaired in August at a cost of $2912.08 plus shipping of $35.03. |

| | |
|---|---|
| 1: Stream Monitoring, Task C: Obtain required field training | Both the Watershed Management Coordinator and the Conservation Technician attended the WPLMN Training at the Stearns History Museum in St. Cloud, MN on 2/07/17. 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 2/21/17 and 10/30/17 using WPLMN SOP as follows:<br>Main Branch Root River: 21 samples, South Fork Root River: 18 samples, South Branch Root River: 16 samples, North Branch: 17 samples, Middle Branch: 17 samples. 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 2/21/17 and 10/30/17 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 2 of the sampling dates due to probe malfunction/power issues and was sent in for repairs during this time. |
| 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 EQuIS template and reports were not used during the months of 2017. All data reporting has since been changed to the Canvas application. |
| 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, 2017. |
| 2: Data Management, Task C: Compile and submit photos, copies of field sheets and field meter calibration log to MPCA Project Manager | 2017 field meter calibration log sheets and scanned field sheets were submitted by the Water Management Coordinator to MPCA Project Manager by 11/1/2017. 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 2015 data at Main Branch, North Branch, South Branch and Middle Branch Root River sites. Verification meeting attended on 3/24/17 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 WPLMN Training at the Stearns History Museum in St. Cloud, MN on 2/07/17. The Watershed Management Coordinator and the Conservation Technician attended the FLUX training webinar on 1/10/17. 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 2017. Two change orders were processed, one in March and one in August. |
| 3: Project Oversight, Task B: Complete reporting requirements using format provided by | Quarterly invoices submitted using format provided by MPCA. Final report completed for previous grant using format provided by MPCA. |

| | |
|---|---|
| MPCA Project Manager | |
| 3: Project Oversight, Task C: Participate in a mid-project review upon expenditure of 50% of budget. | Mid-project meeting held 9/12/17; Donna Rasmussen, Mike Walerek and Kelli Nerem in attendance. Discussion regarding the level of detail that is now needed for invoicing, such as number of samples/lab invoice and where ice is purchased. Also discussed the grant amendment process for agreement from Feb. 2018 to June 30, 2020. |
| 3: Project Oversight, Task D: Participate in telephone conferences | Regular scheduled call-in meetings were attended 19 times by the Watershed Management Coordinator and 7 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 | NA other than discussions during mid-project meeting. |

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

a. Was the Quality Assurance Project Plan (QAPP) revised in 2017?
☐ Yes ☒ No If yes, approval date (mm/dd/yyyy): _____

b. Were the field meter calibration logs, Canvas entries, and field notes submitted by November 1?
☒ Yes ☐ No If no, please comment: _____

c. Were pollutant loads computed in a timely manner (within 60 days of receiving the .xml)?
☒ Yes ☐ No If no, please comment: _____

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:

**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:
*We feel we have a good understanding of what MPCA wants for hydrograph sampling. Sample collection coverage is well represented for 2017.*

b. Calibrate and use the field meter and equipment? ☒ Yes ☐ No
Comments:
*Calibration and use of the field meter was no challenge. This year, our handeheld surveyor was down for a short period of time and required maintenance to be performed, which was completed promptly.*

c. Enter information into the Canvas application and submit the calibration log, field notes and additional photos?
☒ Yes ☐ No
Comments:
*I feel the transition to using Canvas exclusively for all data and picture submittal this year went well for the most part.*

d. Use the FLUX32 model accurately and submit pollutant loads? ☒ Yes ☐ No
Comments:
*FLUX worked as well as previous years.*

e. Complete and submit invoices? ☒ Yes ☐ No
Comments:
*Invoicing process is well developed.*

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. I feel this area is slowly getting better over time.*

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, midproject meeting, deliverables, deadlines, program directives):**

   *Although I do feel we have a rather strong handle on sampling,sampling protocol can be difficult to understand when exactly to sample at times throughout the year. When we create a minimum site "Event Discharge Rate" to trigger sample collection, the variation in storm events that may occur do not always warrant the collection of said sample. Example: if told to not collect a sample unless the site reaches 3000 cfs discharge, some years there may not be any events that hit this rate, or maybe just one or two events do reach 3000 cfs for the whole year. When this is the case, the site would be highly under sampled for the year if we followed the protocol. All the while taking into consideration how many samples we are allowed for the year making sure we do not over or under collect samples. I know this is difficult to regulate and I feel we all do a good job of sampling our events, but I guess I am getting at more freedom of sample number volume for the grantees would be nice. Not having to worry about if we have enough samples to make it through the year or if we are over/under sampling an event would be appreciated.*

## 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.**

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

# WPLMN Invoice

**Watershed Pollutant Load Monitoring Network (WPLMN) Program**

*Doc Type: Invoice - Outgoing*

| | | | | | |
|---|---|---|---|---|---|
| **Remit to:** | Accounts Payable and Project Manager | | | **Invoice #:** | 7 |
| | | | | **Invoice date:** | 1/23/2018 |
| **Contract #:** | **8471** | | | **Invoice period:** | 10/01/2017-12/31/2017 |
| | | | | | (mm/dd/yyyy-mm/dd/yyyy) |
| **SWIFT #:** | **98219** | | | | |
| **PO #:** | **3000015227** | | | | |
| **Contract amount:** | $72,239.07 | **10% Retainage amount:** | $7,223.91 | **MPCA funds available:** | $65,015.16 |

| | |
|---|---|
| **Project title:** | Root River Watershed Pollutant Load Monitoring |
| **Local Partner:** | Fillmore SWCD |
| **Local Partner Authorized Representative:** | Donna Rasmussen |
| **MPCA Project Manager:** | Mike Walerak |
| **State Authorized Representative:** | Lee Ganske |

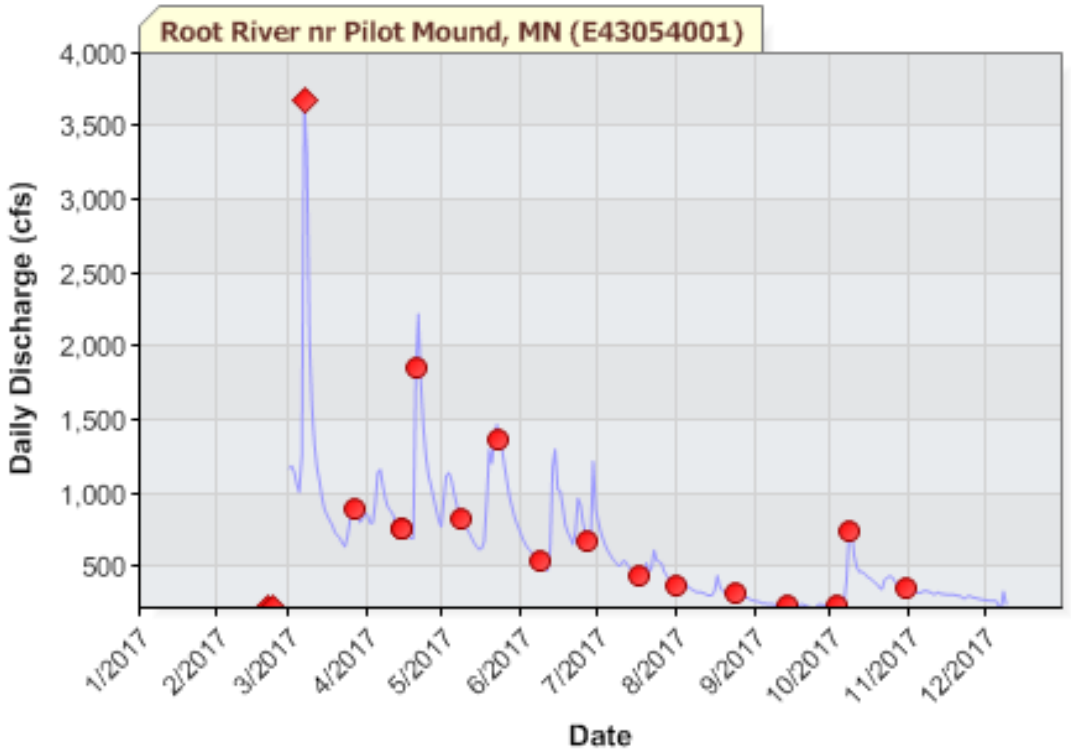
| Objective | Line Item | MPCA Funds Awarded | MPCA Funds Expended prior to this Invoice | MPCA Funds Expended this Invoice | MPCA Funds Expended | Balance | Budget Expended (%) |
|---|---|---|---|---|---|---|---|
| 1) Stream Monitoring | Personnel | $24,572.30 | $13,330.69 | $1,552.50 | $14,883.19 | $9,689.11 | **61%** |
| 1) Stream Monitoring | Laboratory | $24,702.00 | $20,805.00 | $3,450.00 | $24,255.00 | $447.00 | **98%** |
| 1) Stream Monitoring | Travel | $4,152.65 | $3,685.02 | $238.45 | $3,923.47 | $229.18 | **94%** |
| 1) Stream Monitoring | Shipping | $1,000.00 | $390.93 | $29.77 | $420.70 | $579.30 | **42%** |
| 1) Stream Monitoring | Equipment & supplies | $3,520.00 | $3,340.49 | $3.98 | $3,344.47 | $175.53 | **95%** |
| 2) Data Management | Personnel | $10,092.30 | $9,186.00 | $810.60 | $9,996.60 | $95.70 | **99%** |
| 2) Data Management | Training | $250.00 | $250.00 | $0.00 | $250.00 | $0.00 | **100%** |
| 2) Data Management | Per diem | $144.00 | $72.00 | $0.00 | $72.00 | $72.00 | **50%** |
| 3) Project Oversight | Personnel | $3,805.82 | $3,148.45 | $583.33 | $3,731.78 | $74.04 | **98%** |
| | **Total:** | **$72,239.07** | **$54,208.58** | **$6,668.63** | **$60,877.21** | **$11,361.86** | **84%** |

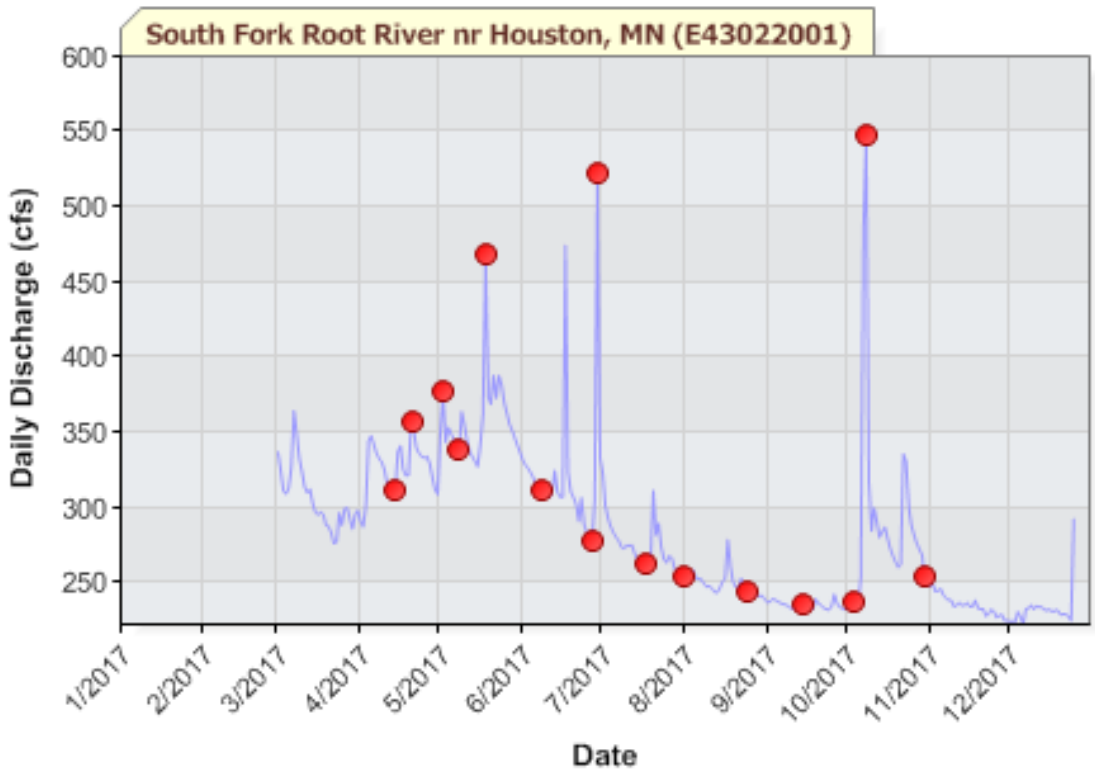
**Comments:**

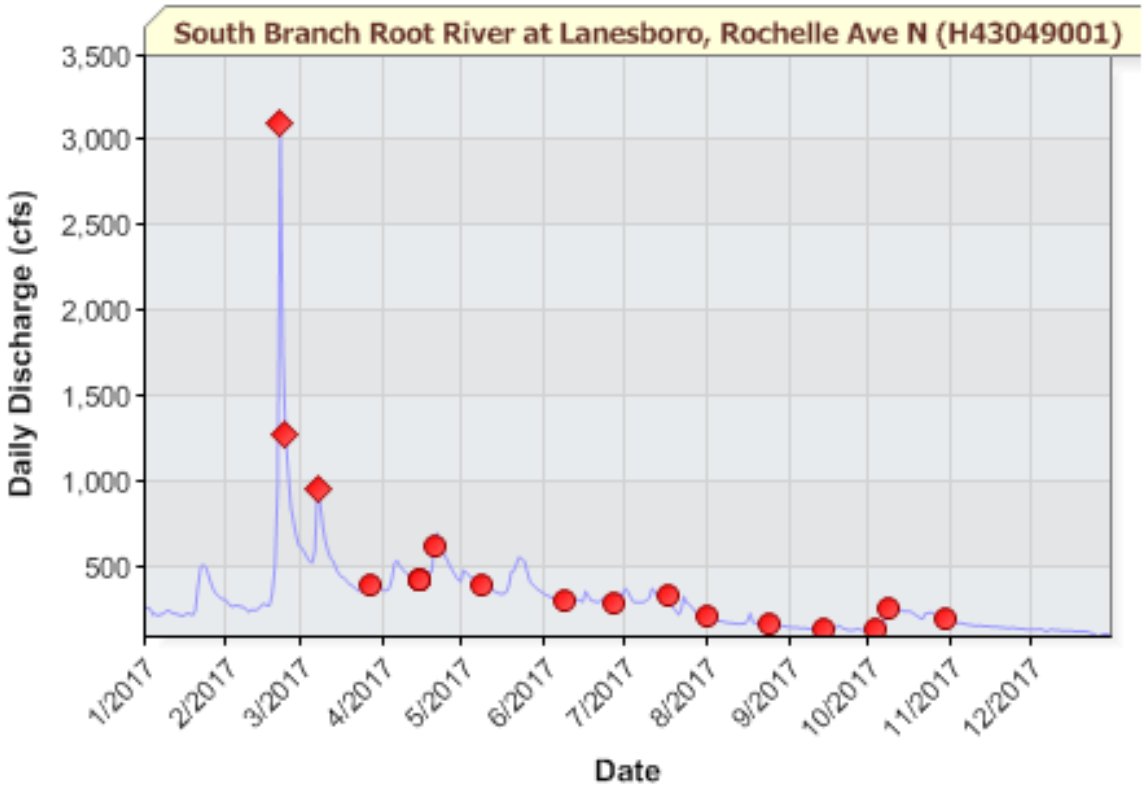
## IV. Hydrographs

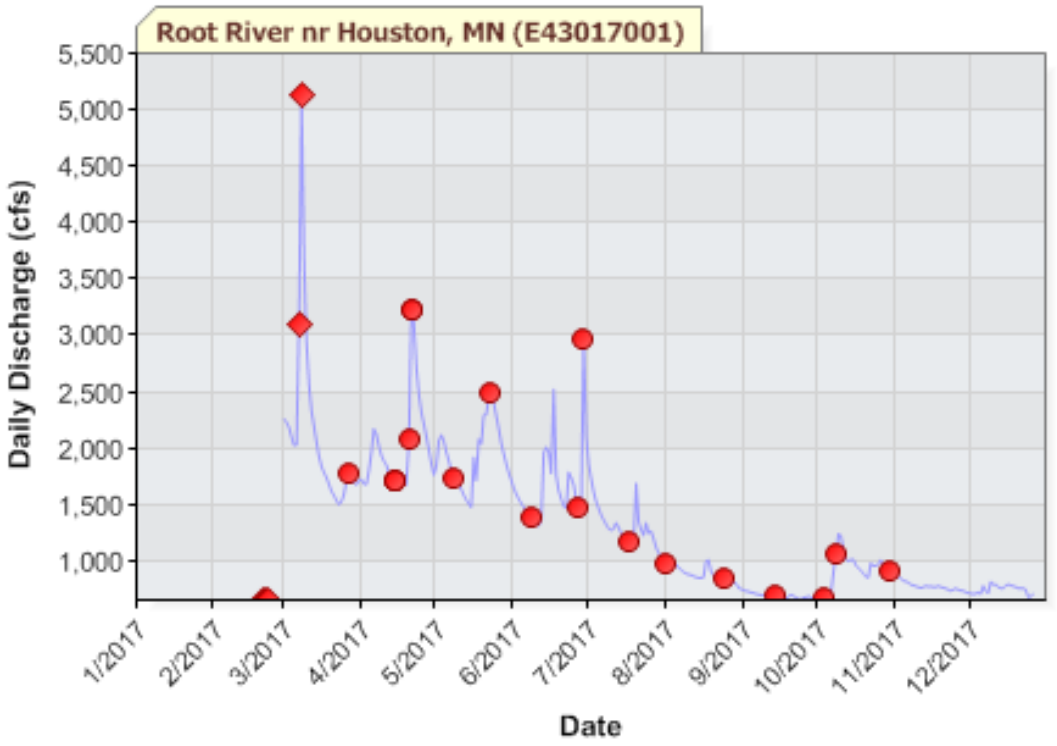
**Comments:**

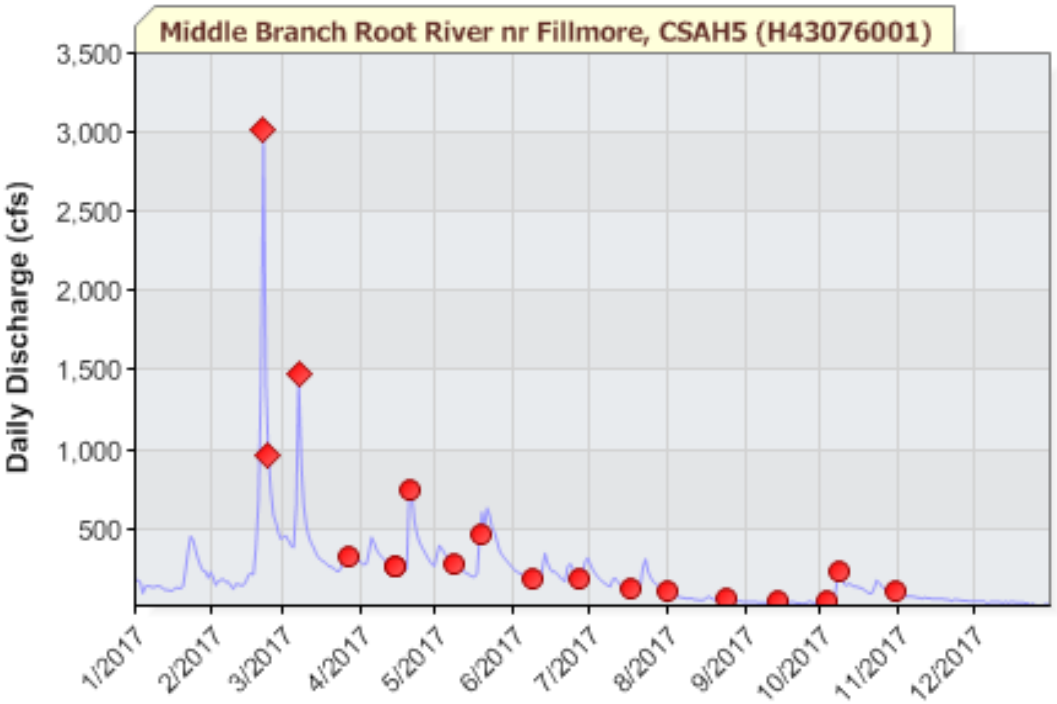
*Snowmelt was an average spring this year with no out of the ordinary events. Adequate sample coverage throughout. South Fork Root River site has more samples collected during the months of February and March than shown on the hydrograph due to a Hydstra ID number change in the middle of the season.*




South Branch Root River at Lanesboro, Rochelle Ave N (H43049001)
Daily Discharge (cfs)
3,500
3,000
2,500
2,000
1,500
1,000
500
1/2017
2/2017
3/2017
4/2017
5/2017
6/2017
7/2017
8/2017
9/2017
10/2017
11/2017
12/2017
Date


Root River nr Houston, MN (E43017001)
Daily Discharge (cfs)
5,500
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
1/2017
2/2017
3/2017
4/2017
5/2017
6/2017
7/2017
8/2017
9/2017
10/2017
11/2017
12/2017
Date


Middle Branch Root River nr Fillmore, CSAH5 (H43076001)
Daily Discharge (cfs)
3,500
3,000
2,500
2,000
1,500
1,000
500
1/2017
2/2017
3/2017
4/2017
5/2017
6/2017
7/2017
8/2017
9/2017
10/2017
11/2017
12/2017