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, 2019

I. Project information

Project title: Root River Watershed Pollutant Load Monitoring

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

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: 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: 1/1/2018 *(mm/dd/yyyy)* End date: 12/31/2018 *(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

Project details:

Amendment execution date: 06/15/2018

Name of eligible laboratory: RMB Environmental Laboratories, Inc.

How many full-time equivalents (FTEs) worked on this project in 2018 (total project hours/2,088 hours): 0.13

Were there any staff changes on the project? ☐ Yes ☒ No

If yes, please describe: _____

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
Obj. 1, Task A	QAPP completed with RMB Lab and submitted to MPCA in June; approved by MPCA.
Obj. 1, Task B	Other than ice, the only other supplies purchased were packing tape and pliers.
Obj. 1 Task C	No field trainings were held in 2018.
Obj. 1, Task D	Water Management Coordinator participated in conference call 7/31/18 re: hydrograph analysis and conducted hydrograph research. Hydrographs are reviewed online before, during and after all storm events throughout the sampling season to determine when sampling should occur. Hydrographs are also reviewed at least once a week during base flow conditions.
Obj. 1, Task E	Water quality samples were collected by the Water Management Coordinator following sample collection protocols defined in the WPLMN SOPG on 27 sampling dates from 3/8/18 through 10/31/18 as follows: Main Branch Root River: 23 samples. Middle Branch Root River: 22 samples. North Branch Root River: 25 samples. South Branch Root River: 22 samples. South Fork Root River: 21 samples. 2018 total: 113 samples. One set of QA/QC Field Replicate samples were collected at all five sites on 6/7/18. Samples taken from February through July were shipped to the MDH Laboratory following sample submission protocol for analysis of total phosphorus, total suspended solids, total Kjeldahl nitrogen and nitrate-nitrogen. Samples taken August through October were sent to the RMB Laboratory once the QAPP was finalized.
Obj. 1, Task F	Field measurements were collected and field observations were recorded at each site visit for dissolved oxygen, water temperature, pH and specific conductance, as well as stream transparency using the Canvas App. Wire weight gauges were used to determine stage at all site visits. Data were entered into Canvas and field sheets were scanned and submitted in November.
Obj. 1, Task G	Probes are calibrated prior to every sampling round. Calibration sheets were scanned and submitted in November. Probe calibrated once a month during the winter months.
Obj. 2, Task A	For the first six months of the year, EQuIS data entry was conducted by the MDH lab. With the transition to a different lab, the Water Management Coordinator worked with RMB Lab to establish the sites for the lab to enter the data. RMB Lab entered second half of the year data into EQuIS.
Obj. 2, Task B	All data collected from March 1 to October 31 was submitted via Canvas by the 1st and 15th of each month.
Obj. 2, Task C	Photos, scans of field sheets and the field meter calibration log were submitted to MPCA in November.
Obj. 2, Task D	Load calculations were completed using the FLUX 32 model for the South Branch (4/3/18), Middle Branch (4/4/18), South Fork and Main Branch (9/28/18 and 10/4/18), and the North Branch (10/18/18).
Obj. 2, Task E	Water Management Coordinator participated in Web-Ex trainings 1/11 and 1/16/18 (FLUX refresher), 2/27, 3/27 and 5/16/18 (Data management).
Obj. 3, Task A	Project expenditures are tracked using the SWCD's established accounting and grant tracking system. Quarterly invoices were submitted within 30 days of the end of the quarter for 4th quarter 2017 and for 1st, 2nd, and 3rd quarters 2018 using the invoice templates provided by MPCA.
Obj. 3, Task B	The 2017 Interim Progress Report was completed and submitted to MPCA in January 2018.
Obj. 3, Task C	No mid-project review meeting held in 2018.
Obj. 3, Task D	The Water Management Coordinator participated in weekly check-in calls with PCA Project Manager. Some of the check-ins were conducted through email.
Obj. 3, Task E	The SWCD Administrator participated in an online administrative training webinar 7/25/18 to review the new invoice format.

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

   a. Was the Quality Assurance Project Plan (QAPP) revised in 2018?

   ☒ Yes ☐ No If yes, approval date (mm/dd/yyyy): 7/18/2018

   b. Were the field meter calibration logs, Canvas entries, and field notes submitted by February 1, 2018 (if applicable) and November 1, 2018?

   ☐ Yes ☒ No If no, please comment: *All Canvas entries and field notes were submitted ahead of schedule. The field meter calibration logs were submitted on November 15, 2018.*

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

☐ Yes ☒ No If no, please comment: *Some loads were not completed within the 60 day timeframe in 2018 due to lack of data management hours in our budget.*

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:

The Water Management Coordinator had adequate sampling coverage throughout the 2018 season. The five subwatersheds of the Root River are very flashy systems making it somewhat difficult at times to get an early peak, rising limb/close to peak and falling limb samples. One example is an event that happened at Middle Branch (H43076001) during 6/9/18 through 6/10/18. Discharge went from approximately 160 cfs on Saturday night 6/9/18 @ 18:00 to ~5600 cfs on Saturday 6/9/18 three hours later (peak 22:00). Then it went back down on Sunday 6/10/18 @ 08:00 to ~1000 cfs. Stage rose approximately 7 feet and then receded 5.5 feet within a 14 hour time frame--this all happening on a Saturday night into early Sunday morning. This is a non-typical "flash flood" event, but I wanted to point out how quickly the sytems in the Root River are capable of rising and falling within a few hours. This event is not adequately shown on the 2018 year summary hydrograph below, being it rose and then fell so quickly. It shows peak discharge around 1550 cfs for this event when it actually was around 5600 cfs according to DNR equipment.

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

Comments:

c. Enter information into the GoCanvas application and submit the calibration log, field notes and additional photos? ☒ Yes ☐ No

Comments:

GoCanvas has been very helpful in getting data, field notes, pictures, etc. submitted efficiently within a timely fashion saving more data management time to be spent on Hydrograph analysis, FLUX32 calculations and watershed analysis.

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

Comments:

e. Complete and submit invoices? ☒ Yes ☐ No

Comments:

The improvements to the invoices has made completing them much faster and more efficient.

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 of doing an amendment to the contract this past year created some difficulties. The process was started in February of 2018. Part of this amendment, once executed, was to start using a new laboratory, RMB Labs. The new client form was sent in to RMB Lab in March with an anticipated April 1st start date. At this point, we were running very low on data management hours and sampling hours in our current contract. When the new amendment did not come through, we had to hold off on having the back up sampler participate in sampling events, losing time to provide training to the back up position as his direct experience is low in WPLMN sampling. With the lack of data management hours, the Water Management Coordinator was not able to complete some of the FLUX32 load calculations within the 60 day timeframe. Also, it was difficult to tell the new laboratory when our actual start date would be. The start date would not come until three months later in July of 2018 with RMB Lab. Budget shifting was needed to complete our deliverables to the best of our ability given the circumstances, which resulted in multiple change orders being put through. At one point we ran out of money for laboratory analysis resulting in the Fillmore SWCD charging MDH lab work directly to the MPCA project manager's account. All of these items described were completely attainable, although it would have been a smoother transition had the amendment been executed in a more timely manner.

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

☒ Yes ☐ No

Comments:

Change orders were completed in January, March and April to address some of the funding shortfalls noted above. An amendment was approved in June to extend the end date for two years from June 30, 2018, to June 30, 2020, and increased the contract amount by $42,477.98 from $72,239.07 to $114,717.05.

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

   As described in question #4, the amendment process had some difficulties this past year.

   That said, my project manager, Mike Walerak as well as Kelli Nerem have always been incredibly helpful in anything we've ever asked of them.

   I think the Canvas app. has been a great addition to the program.

   Trainings and directions have always been thoroughly detailed. I feel the complexity of FLUX32 still creates a need for ongoing training. I am comfortable with my load calculations but a better understanding of why we do some of the things we do in FLUX creates a need to be continually learning and growing in this area.

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

Invoice #: 11

Invoice date: 1/25/2019

Invoice period: 10/01/2018-12/31/2018 (mm/dd/yyyy-mm/dd/yyyy)

Contract Routing (CR)#: 8471

SWIFT #: 98219

PO #: 3000015227

Contract amount: $114,717.05

10% Retainage amount: $11,471.71

MPCA funds available: $103,245.35

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

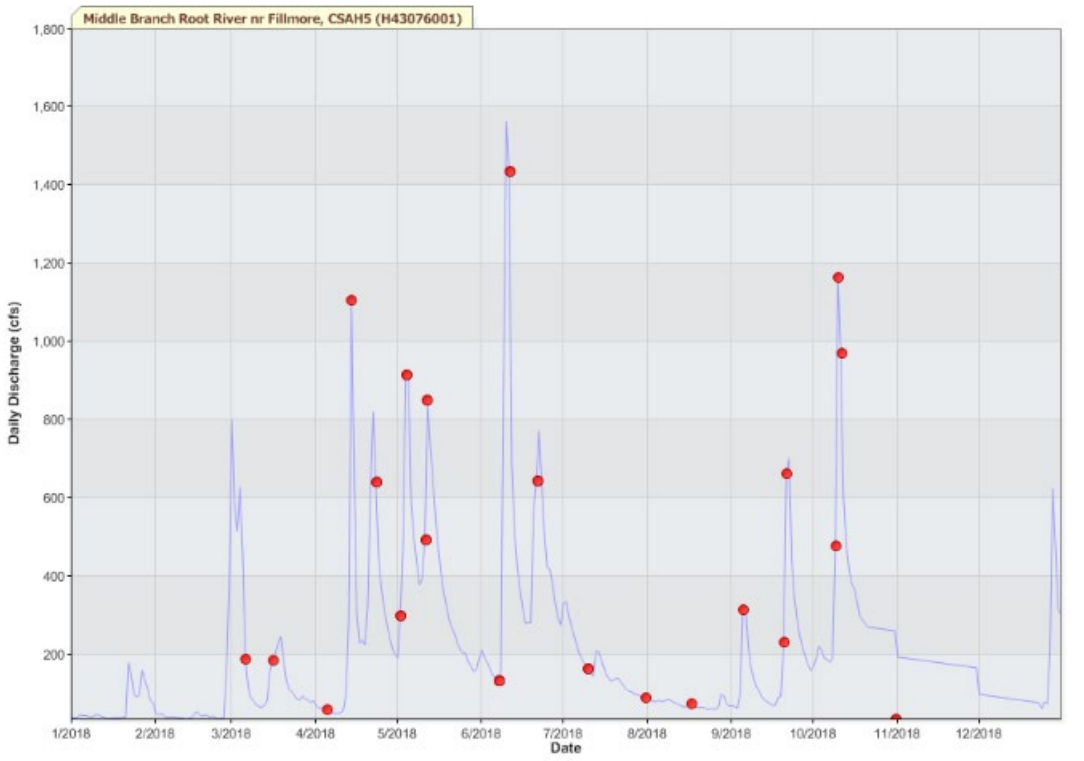
Line Item	MPCA Funds Awarded	MPCA Funds Expended prior to this Invoice	MPCA Funds Expended this Invoice	MPCA Funds Expended	Balance	Budget Expended (%)

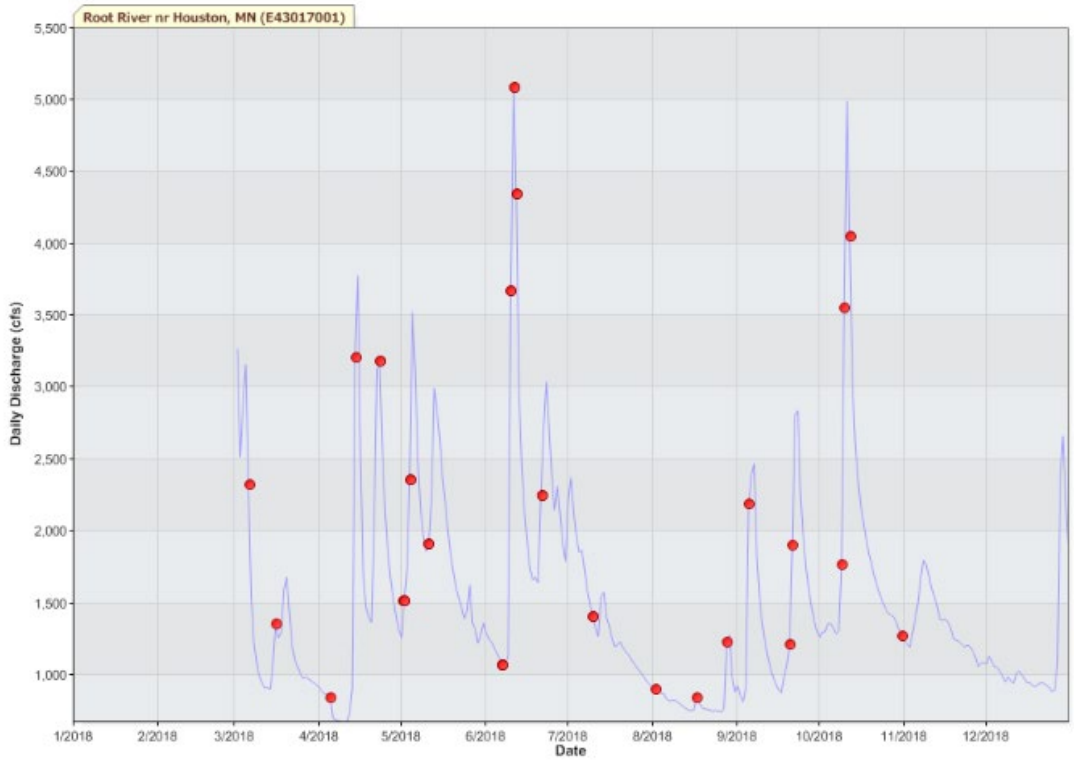
Water Management Coordinator	$43,159.64	$29,073.45	$1,822.48	$30,895.93	$12,263.71	**72%**
Conservation Technician	$13,683.46	$6,219.19	$0.00	$6,219.19	$7,464.27	**45%**
SWCD Administrator	$6,109.49	$2,905.01	$196.59	$3,101.60	$3,007.89	**51%**
Ob 1 (Stream Monitoring) Laboratory	$37,204.00	$28,125.00	$2,173.00	$30,298.00	$6,906.00	**81%**
Ob 1 (Stream Monitoring) Mileage	$8,179.36	$5,330.45	$399.54	$5,729.99	$2,449.37	**70%**
Ob 1 (Stream Monitoring) Shipping	$979.79	$592.57	$69.19	$661.76	$318.03	**68%**
Ob 1 (Stream Monitoring) Lodging	$250.00	$0.00	$0.00	$0.00	$250.00	**0%**
Ob 1 (Stream Monitoring) Equipment & supplies	$4,757.31	$3,413.26	$5.94	$3,419.20	$1,338.11	**72%**
Ob 1 (Stream Monitoring) Per Diem	$72.00	$0.00	$0.00	$0.00	$72.00	**0%**
Ob 2 (Data Management) Lodging	$250.00	$250.00	$0.00	$250.00	$0.00	**100%**
Ob 2 (Data Management) Per diem	$72.00	$72.00	$0.00	$72.00	$0.00	**100%**
Total:	**$114,717.05**	**$75,980.93**	**$4,666.74**	**$80,647.67**	**$34,069.38**	**70%**

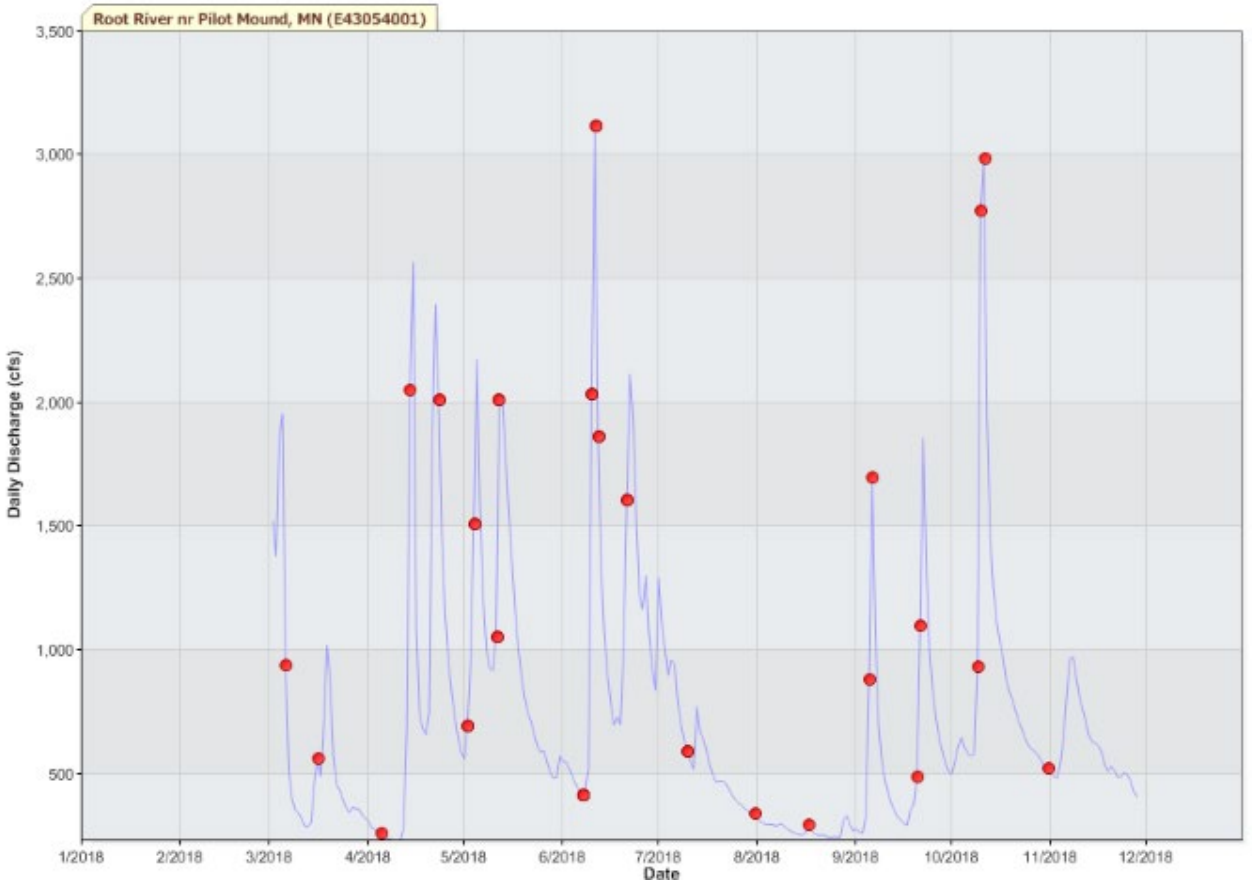
Comments:

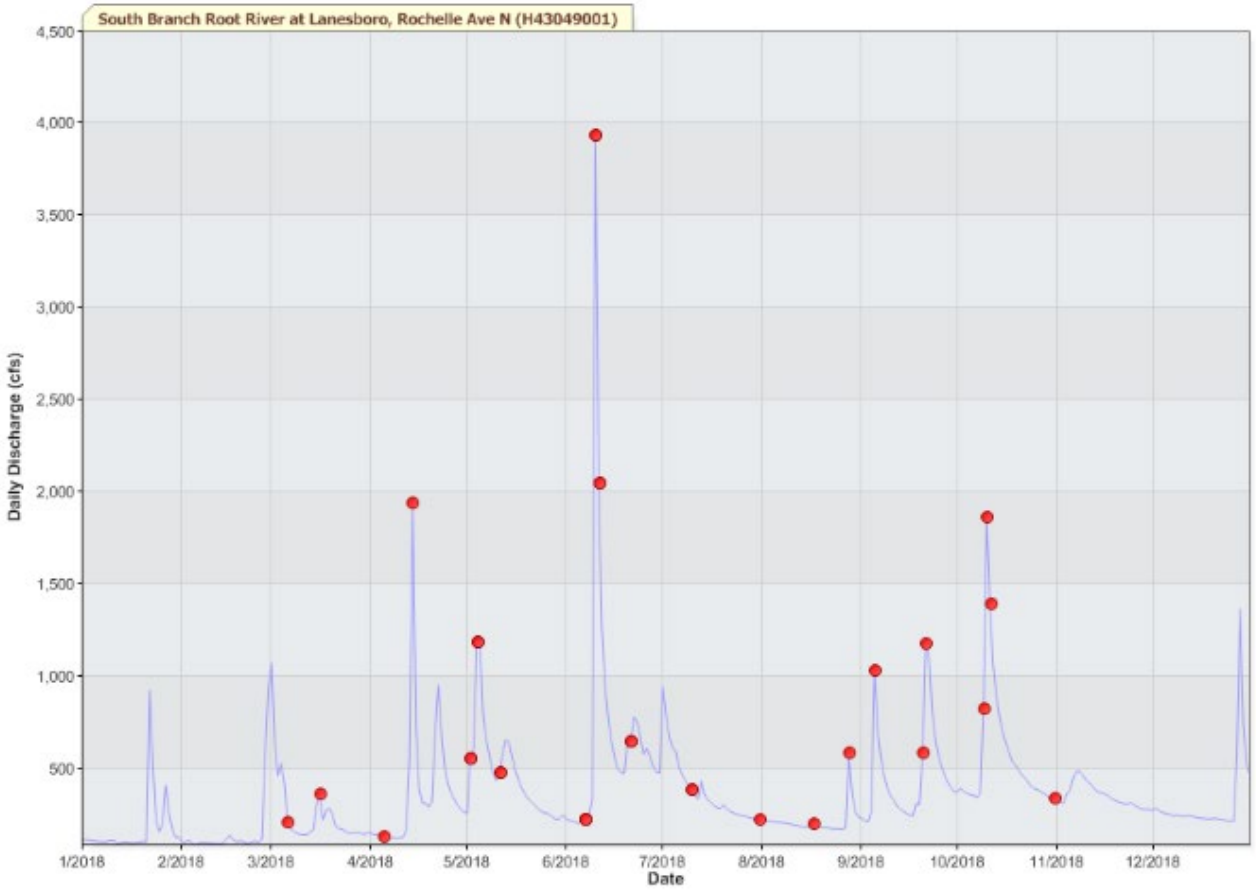
IV. Hydrographs

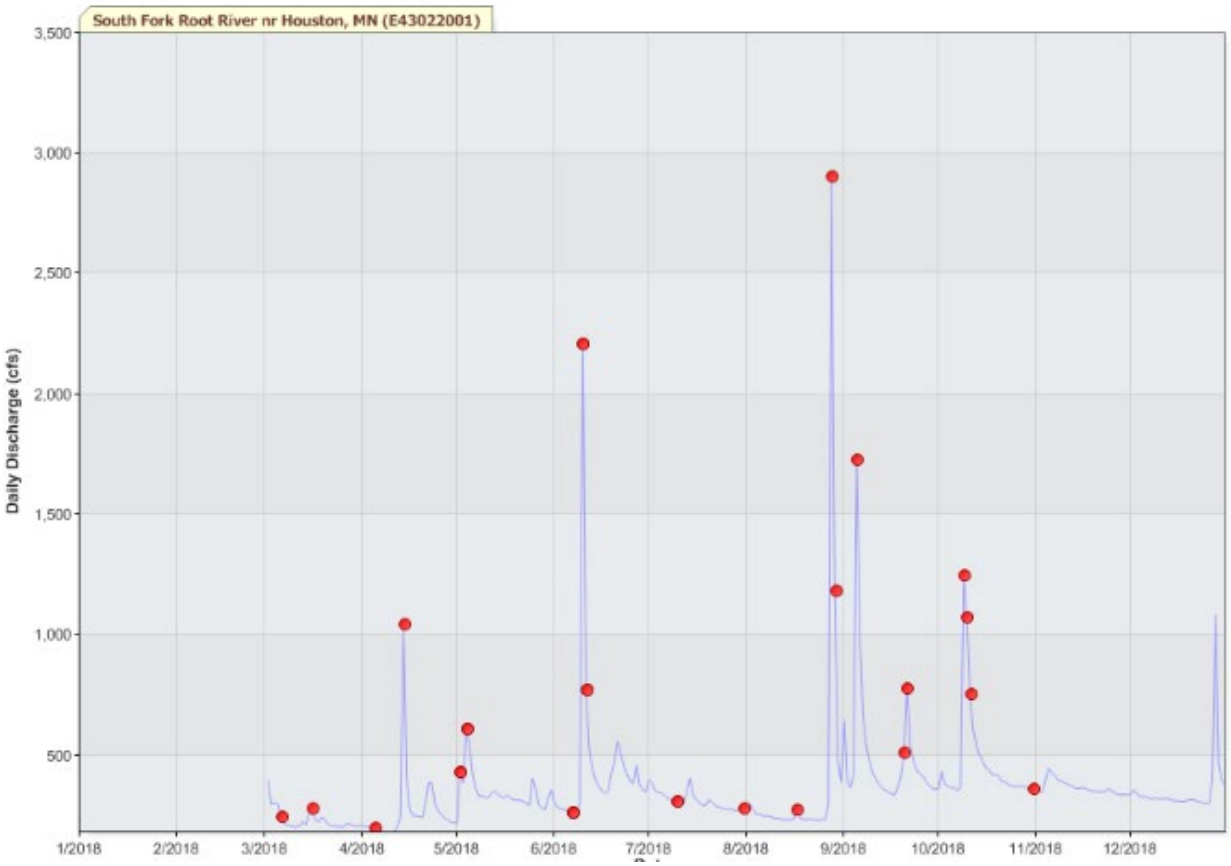
Comments:






Root River nr Pilot Mound, MN (E43054001)
Daily Discharge (cfs)
3,500
3,000
2,500
2,000
1,500
1,000
500
1/2018
2/2018
3/2018
4/2018
5/2018
6/2018
7/2018
8/2018
9/2018
10/2018
11/2018
12/2018
Date


South Branch Root River at Lanesboro, Rochelle Ave N (H43049001)
Daily Discharge (cfs)
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
1/2018
2/2018
3/2018
4/2018
5/2018
6/2018
7/2018
8/2018
9/2018
10/2018
11/2018
12/2018
Date


South Fork Root River nr Houston, MN (E43022001)
Daily Discharge (cfs)
3,500
3,000
2,500
2,000
1,500
1,000
500
1/2018
2/2018
3/2018
4/2018
5/2018
6/2018
7/2018
8/2018
9/2018
10/2018
11/2018
12/2018