



Instructions on Page 5

I. Project information

Project title: Zumbro River Watershed Load Monitoring Network

Local Partner information:

Organization name: Zumbro Watershed Partnership Inc.

Street address: 1485 Industrial Drive NW

City: Rochester State: MN Zip code: 55041

Primary contact name: Sarah Duke Middleton Phone: 507-226-7687

Email address: admin@zumbrowatershed.org Fax: _____

Fiscal contact name: Sarah Duke Middleton Phone: 507-226-6787

Email address: admin@zumbrowatershed.org Fax: _____

Field contact name: Terry Lee Phone: 507-328-6723

Email address: lee.terry@co.olmsted.mn.us Fax: _____

Reporting period:

Start date: 1/1/2015 End date: 6/30/2016
 (mm/dd/yyyy) (mm/dd/yyyy)

Project details:

Basin (check all that apply):

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

Major Watershed(s): Zumbro Hydrologic unit code(s): 07040004

Name of eligible laboratory: RMB

How many full-time equivalents (FTEs) worked on this project (total project hours/2,088 hours): 0.67

II. Activities completed

Table 1: Workplan activities

- Please list activities completed during the reporting period. Include task level detail as appropriate. Please separate activities by calendar year, if applicable.** Refer to the instructions for examples. (Insert more rows as needed by hitting the tab key in the last row/column.)

Objective	Description
1-Task A	Met DNR staff on site a minimum of one annual and usually multiple of times a year and reviewed process and how to access automated gaging equipment.
1-Task B	Annually QAPP reviewed with sampling staff and sampling procedures were reviewed.
1-Task C	Standards and other sampling supplies were purchased as needed through the project. Additional consumable supplies acquired near the end of summer 2015.
1-Task D	All staff attended required training and training on using the YSI equipment. Visited all sites and found tapedown locations on bridges. All staff attended field training each spring. Project manager met staff on site
2-Task A and B	2015 19 samples collected at S007-111, S007-112, S007-141, and S003-802

	2016 14 Samples collected on S007-111, S007-112, S007-141, and S003-802 Ice Out dates approximately 3/7/2015 and 3/1/2016
2-Task C	The field meter was calibrated prior to each sampling event or at least weekly during the monitoring season and at least monthly during the non-monitoring season and recorded into a calibration log book. The probes and sensors were checked before each sampling event to ensure they were in good operational order.
3-Task A	Task A: Prepare and submit data for EQUIS entry 2015 data was submitted and reviewed. 2016 has been collected and submitted up to May 28,2016.
3-Task B	2015 Tables, photos, and photo log submitted
3-Task C	Calculated 2013 loads for all sites in 2015. Calculated 2014 loads for three sites.
4-Task A	Invoices submitted on a monthly basis
4-Task C	Attended Kickoff Training held in 2013, 2014, 2015, and 2016. Level II FLUX training attending in 2015 by Lawrence Svien and Brian Crabtree.
4-Task D	Attended weekly telephone conferences

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

a. Were any changes made to the Quality Assurance Project Plan during the reporting period?

Yes No Revision date (mm/dd/yyyy): _____

If yes, please summarize:

b. Was an Interim Progress Report submitted?

Yes No Submittal date (mm/dd/yyyy): 1/20/2015

If no, please describe why:

c. If applicable, were FLUX32 pollutant loads submitted to your MPCA Project Manager?

Yes No N/A

Please list the sites and years where loads were calculated:

2013

H41006001 TP, DOP, TSS, NOX, TKN

H41049001 TP, DOP, TSS, NOX, TKN

H41071002 TP, DOP, TSS, NOX, TKN

H41071003 TP, DOP, TSS, NOX, TKN

2014

H41071003 TP, DOP, TSS, NOX, TKN

H41049001 TP, DOP, TSS, NOX, TKN

H41079003 TP only

If no, please describe why:

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

Yes No

If no, please describe:

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:

There were multiple people fully trained and capable to sample the sites. During the case of each sample and/or rain event the person whom was most convenient collected the sample. Refer to the Submitted EQUiS submittals for individual sample information

Table 2: Lab analyte summary

3. Please enter the number of samples collected at each site for each analyte over the reporting period. Refer to the instructions at the end of this report for an example of the completed table. Please describe conditions when either sample count was more or less than what is specified in the workplan. A Microsoft Excel template is also available to complete this table. Please see instructions for more information. (Insert more rows as needed by hitting the tab key in the last row/column.)

Year	Site Type	Stream name	EQUiS ID	TSS	SVS	Turbidity	D OP	TP	NO x	TKN	Comments
2015	subwatershed	NBMF-Oronoco	S007-111	19	19	19	19	19	19	19	Stream conditions were dry for most of the year and did not require the targeted 25 samples. This was recommended by the Project Manager.
2015	subwatershed	SBMF-Oronoco	S007-112	19	19	19	19	19	19	19	Stream conditions were dry for most of the year and did not require the targeted 25 samples. This was recommended by the Project Manager.
2015	subwatershed	NBZ-Mazeppa	S007-141	19	19	19	19	19	19	19	Stream conditions were dry for most of the year and did not require the targeted 25 samples. This was recommended by the Project Manager.
2015	subwatershed	ZR SF at 90th St BRG	S003-802	19	19	19	19	19	19	19	Stream conditions were dry for most of the year and did not require the targeted 25 samples. This was recommended by the Project Manager.
2016	subwatershed	NBMF-Oronoco	S007-111	14	14	14	14	14	14	14	The first 14 samples of 2016 were collected under this contract. The remaining samples will be collected during the remainder of the 2016 field season under a new contract.
2016	subwatershed	SBMF-Oronoco	S007-112	14	14	14	14	14	14	14	The first 14 samples of 2016 were collected under this contract. The remaining samples will be collected during the remainder of the 2016 field season under a new contract.
2016	subwatershed	NBZ-Mazeppa	S007-141	14	14	14	14	14	14	14	The first 14 samples of 2016 were collected under this contract. The remaining samples will be collected during the remainder of the 2016 field season under a new contract.
2016	subwatershed	ZR SF at 90th St BRG	S003-802	14	14	14	14	14	14	14	The first 14 samples of 2016 were collected under this contract. The

remaining samples will be collected during the remainder of the 2016 field season under a new contract.

Table 3: QA/QC samples summary

4. Please complete the table below. The table should include actual results for the original and duplicate samples over the project period. The RPD should be calculated. Provide additional information in the comments about site conditions, sampling error, etc., if known. A Microsoft Excel template is also available to complete this table. Please see instructions for more information. (Insert more rows as needed by hitting the tab key in the last row/column.)

Stream Name	Date		TSS	RPD	SVS	RPD	Turbidity	RPD	DOP	RPD	TP	RPD	NOX	RPD	TKN	RPD
Zumbro R NF at CSAH-7	9/8/2015	Sample	48		6		28		0.17		0.27		3.16		0.75	
		Duplicate	46	<u>4.3</u>	6	<u>0.0</u>	26.9	<u>4.0</u>	0.17	<u>1.2</u>	0.28	<u>2.6</u>	3.13	<u>1.0</u>	0.73	<u>2.6</u>
Zumbro R S FK at 90th St.(CR-121) BRG	9/8/2015	Sample	26		5		14		0.15		0.25		5.65		0.9	
		Duplicate	21	<u>21.3</u>	4	<u>22.2</u>	10.2	<u>31.4</u>	0.15	<u>0.7</u>	0.23	<u>6.6</u>	5.82	<u>3.0</u>	0.79	<u>13.3</u>
Zumbro R MID FK (S BR) on Frontage Road	9/8/2015	Sample	11		2		8.02		0.1		0.13		2.91		0.47	
		Duplicate	8	<u>31.6</u>	2	<u>0.0</u>	6.86	<u>15.6</u>	0.1	<u>1.9</u>	0.13	<u>2.3</u>	3.01	<u>3.4</u>	0.46	<u>3.2</u>
Zumbro R MID FK (N BR) on Frontage RD	9/8/2015	Sample	12		2		8.08		0.09		0.12		4.43		0.41	
		Duplicate	9	<u>28.6</u>	2	<u>0.0</u>	6.5	<u>21.7</u>	0.09	<u>4.5</u>	0.12	<u>0.8</u>	4.72	<u>6.3</u>	0.44	<u>9.0</u>
Zumbro R NF at CSAH-7	10/6/2015	Sample	3		1		1.71		0.03		0.05		6.06		0.32	
		Duplicate	2	<u>40.0</u>	1	-	1.72	<u>0.6</u>	0.04	<u>8.7</u>	0.05	<u>1.9</u>	5.79	<u>4.6</u>	0.32	<u>2.5</u>
Zumbro R S FK at 90th St.(CR-121) BRG	10/6/2015	Sample	2		1		1.32		0.03		0.07		7.42		0.51	
		Duplicate	2	<u>0.0</u>	2	<u>66.7</u>	1.43	<u>8.0</u>	0.02	<u>4.1</u>	0.07	<u>2.8</u>	6.98	<u>6.1</u>	0.47	<u>7.9</u>
Zumbro R MID FK (S BR) on Frontage Road	10/6/2015	Sample	2		1		0.87		0.02		0.04		4.01		0.4	
		Duplicate	2	<u>0.0</u>	1	<u>0.0</u>	0.9	<u>3.4</u>	0.03	<u>8.0</u>	0.04	<u>2.4</u>	3.92	<u>2.3</u>	0.4	<u>0.0</u>
Zumbro R MID FK (N BR) on Frontage RD	10/6/2015	Sample	1		1		0.85		0.02		0.04		5.71		0.3	
		Duplicate	1	<u>0.0</u>	1	<u>0.0</u>	0.89	<u>4.6</u>	0.02	<u>4.3</u>	0.04	<u>2.8</u>	5.56	<u>2.7</u>	0.3	<u>0.0</u>
Zumbro R NF at CSAH-7	4/26/2016	Sample	4						0.03		0.05		5.87		0.42	
		Duplicate	4	<u>0.0</u>					0.03	<u>0.0</u>	0.05	<u>4.1</u>	6.1	<u>3.8</u>	0.36	<u>14.7</u>
Zumbro R S FK at 90th St.(CR-121) BRG	4/26/2016	Sample	7						0.04		0.08		6.32		0.49	
		Duplicate	7	<u>0.0</u>					0.04	<u>8.0</u>	0.08	<u>2.4</u>	6.58	<u>4.0</u>	0.48	<u>2.1</u>
Zumbro R MID FK (S BR) on Frontage Road	4/26/2016	Sample	7						0.01		0.04		7.66		0.53	
		Duplicate	8	<u>13.3</u>					0.01	<u>0.0</u>	0.04	<u>2.5</u>	7.65	<u>0.1</u>	0.54	<u>2.4</u>
Zumbro R MID FK (N BR) on Frontage RD	4/26/2016	Sample	6						0.02		0.04		9.14		0.41	
		Duplicate	6	<u>0.0</u>					0.02	<u>0.0</u>	0.04	<u>5.0</u>	9.39	<u>2.7</u>	0.52	<u>23.9</u>

Comments:

SVS and Turbidity were not sampled in 2016. In 2015, SVS was below reporting limits at the Zumbro River North Fork and Zumbro River North Branch of the Middle Fork on 10/6/2015. In 2015, TKN was below reporting limits at the Zumbro River North Branch of the Middle Fork on 10/6/2016.

5. 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:

Not when the project started but feel comfortable with predicting events now with 3 years of experience

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

Comments:

YSI Meter has been reliable and easy to use

- c. Enter data and information into the MPCA templates and logs? Yes No

Comments:

Seems like a bit of duplicate effort. Perhaps CANVAS will help with that.

- d. Use the FLUX32 model and submit pollutant load data and supporting information? Yes No

Comments:

Complicated program. Could be a better interface and be much more interactive. Have to spend time guessing and then see what happens.

- e. Complete and submit invoices? Yes No

Comments:

- f. Complete the Interim Progress Report? Yes No

Comments:

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

none

7. Were there any change orders and/or amendments to the contract and workplan? If yes, summarize the changes.

- Yes No

Comments:

Change Order 3: Executed 1-19-16 Added \$3000 to Ob 4 Staff 3 and \$590 to supplies. Extended workplan dates to 6/30/16.

Change Order 4: Executed 4-20-16 Moved several funds to zero out line items. Deleted SVS and Turbidity from lab analysis.

Change Order 5: Executed 5-11-16 Moved \$440 to Ob 2 Staff 1 and \$180 to Ob 2 Lab from Ob 3 Staff 1.

8. If there are unspent funds, please list the Objective and Task and explain the reason for the unspent funds:

Objective 2 Personnel The third backup samplers were never used or needed. Balance remaining: \$103.49

Objective 2 Shipping, Monitoring Supplies, Travel expenditures were less than expected. Balance remaining: \$752.76

Objective 3 Personal, Staff 1 quite assisting on the FLUX calculations due to time constraints. Balance remaining: \$1,992.67

9. Please provide any constructive feedback regarding the WPLMN (training, forms, program directives, etc.):

III. Budget information

Budget item	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Total expended
Objective title:	Stream monitoring Preparation	Stream Monitoring	Data Management	Project Oversight		
Personnel: wages and benefits						
Staff #1: No. of hours <u>860</u>	\$ 2,125.20	\$ 28,736.51	\$ 5,346.91	\$ 800.00	\$	\$ 37,008.62
Staff #2: No. of hours <u>28</u>	\$	\$ 1,400.00	\$	\$	\$	\$ 1,400.00
Staff #3: No. of hours <u>578</u>	\$ 1,000.00	\$ 6,000.00	\$ 10,500.00	\$ 12,400.00	\$	\$ 29,900.00
Laboratory analyses: No. of stream samples <u>200</u>	\$	\$ 28,876.00	\$	\$	\$	\$ 28,876.00
Travel reimbursement: No. of miles <u>5100 @ \$0.56 and 1336.65 miles @ \$0.54</u>	\$ 95.06	\$ 2,548.01	\$	\$	\$	\$ 2643.07
Equipment	\$	\$	\$	\$	\$	\$
Monitoring supplies	\$ 9,775.16	\$ 1,467.64	\$	\$	\$	\$ 11,242.80
Shipping	\$	\$ 927.24	\$	\$	\$	\$ 927.24
Training and materials	\$	\$	\$	\$	\$	\$
Other <i>(describe the activity and cost – be specific):</i>						
Additional Travel Expenses - 8 lunches @ \$9.00 ea.	\$ 30	\$	\$	\$	\$	\$ 30
	\$	\$	\$	\$	\$	\$
Column total:	\$13,025.42	\$69,955.40	\$15,846.91	\$13,200.00	\$ 0.00	\$112,027.73

III. Hydrographs



