

## 2018 Project Abstract

For the Period Ending June 30, 2021

**PROJECT TITLE:** Expanding River Watch Program on the Minnesota River with High School Teams

**PROJECT MANAGER:** Ted L. Suss

**AFFILIATION:** Friends of the Minnesota Valley

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**FUNDING SOURCE:** Environment and Natural Resources Trust Fund

**LEGAL CITATION:** M.L. 2018, Chp. 214, Art. 4, Sec. 02, Subd. 05e as extended by M.L. 2020, First Special Session, Chp. 4, Sec. 2

<b>APPROPRIATION AMOUNT:</b>	\$100,000
<b>AMOUNT SPENT:</b>	<b>\$100,000</b>
<b>AMOUNT REMAINING:</b>	\$0

### Sound bite of Project Outcomes and Results

With funding from the ENMRTF, we were able to expand River Watch from four high school teams to 14 teams and recruited at least two additional teams to participate in future years. Through the program, approximately 250 students learned how to conduct water quality monitoring, the pollutants that affect water quality, how to operate monitoring equipment, and to report the data. Students learned sources of pollution and actions that can be taken to reduce future water pollution.

### Overall Project Outcome and Results

The River Watch program engaged high school students from 18 high schools in lessons about surface water quality, students learned how to operate sophisticated electronic equipment to test water quality. Data collected was submitted to the Minnesota Pollution Control Agency through the Citizen Water Quality Monitoring program.

Although data collection is an important purpose of the River Watch program, providing students with a meaningful experiential learning opportunity that teaches them the importance of water quality is the primary purpose. River Watch participants learn more than just facts, they develop understanding about water quality they will carry with them for their entire lives. Based on student feedback, River Watch achieved this goal of a meaningful educational experience.

Another goal Friends of the Minnesota Valley hoped to accomplish with ENRTF funding was to grow our River Watch program from a trial program working with four teams to a program

working with 15-20 teams. Through the use of ENRTF funding, Friends was able to develop high quality informational brochures, a website, and other supporting materials to promote the River Watch program. We succeeded by working with 18 different high schools and will begin the 2021-2022 school year with 16 teams participating in River Watch and other teams considering joining. Covid limitations significantly reduced our ability to take students directly to rivers for sampling during the 2021 school year, but desired program growth did occur.

A third objective was to raise public awareness of the River Watch program and public awareness of the water quality problems facing the Minnesota River. On several occasions, local news media covered student monitoring events. Public awareness of River Watch is well established and the program is set to continue in future years due to the foundation built during the three years that the program was funded by LCCMR.

The Minnesota River is widely seen as one of the most polluted rivers in Minnesota. Teaching today's high school students (tomorrow's adult citizens and leaders) the seriousness of this problem, giving them the knowledge and understanding of the problem, and inculcating a desire to solve the problem will benefit the State of Minnesota as these young people move into positions in which their personal actions and the public decisions they make or influence lead to river water quality protections. As the River Watch program grows, an ever-growing number of young people will be motivated and equipped to "clean up" the Minnesota River.

The data collected to date and in the future will enable policy makers at the local and state level to make better informed decisions that will improve and protect water quality in the Minnesota River basin and downstream in the Mississippi River.

### **Project Results Use and Dissemination**

Each time a River Watch Team conducted a water quality monitoring event, local news media including radio, newspapers, and television was informed and invited to provide coverage. Several local newspaper articles covering such events were published and at least one television story was broadcast.

The very process of recruiting River Watch teams involved communication with every secondary school administrator in the Minnesota River basin. These communications were often shared with local school boards as part of the participation approval process.

Students and staff in River Watch have been invited to speak at local service group meetings.

Each communication included reference to LCMR/ENRTF funding



# Environment and Natural Resources Trust Fund (ENRTF) M.L. 2018 ENRTF Work Plan Final Report (Main Document)

**Today's Date:** October 11, 2021

## Final Report

**Date of Work Plan Approval:** 06/05/2018

**Project Completion Date:** June 30, 2021

**Does this submission include an amendment request?** Yes

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**PROJECT TITLE:** Expanding River Watch Program on the Minnesota River with High School Teams

**Project Manager:** Ted L. Suss

**Organization:** Friends of the Minnesota Valley

**College/Department/Division:** NA

**Mailing Address:** P.O. Box 20697

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**Web Address:** <https://www.friendsmnvalley.org/river-watch>

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**Location:** The entire Minnesota River Basin will be included in this program

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**Total Project Budget:** \$100,000

**Amount Spent:** \$100,000

**Balance:** \$0

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**Legal Citation:** M.L. 2018, Chp. 214, Art. 4, Sec. 02, Subd. 05e as extended by M.L. 2020, First Special Session, Chp. 4, Sec. 2

**Appropriation Language:** \$100,000 the second year is from the trust fund to the commissioner of natural resources for an agreement with Friends of the Minnesota Valley to expand a River Watch program on the Minnesota River to recruit at least 15 additional teams of high school students in monthly monitoring and reporting of water quality.

M.L. 2020 - Sec. 2. ENVIRONMENT AND NATURAL RESOURCES TRUST FUND; EXTENSIONS. [To June 30, 2021]

## **I. PROJECT STATEMENT:**

The River Watch program is a high school team based program through which each team will conduct water quality monitoring at 3-5 sites on the main channel of the Minnesota River or a tributary river or stream.

Water will be monitored for nitrates, dissolved oxygen, phosphorus, clarity, bacteria, sediment content, and flow levels will also be recorded. All data will be reported to the MNPCA.

This project is a continuation of a limited River Watch program Friends of the Minnesota Valley launched with six high school based teams during the 2017-2018 school year. Classroom-based teams are typically 20 to 30 students - averaging 23 students in phase 1. After School teams are usually smaller and expected to be between 10 to 12 students.

A major outcome of the River Watch program is building a stronger public awareness and public support for river water quality improvement and associated land management improvement is essential if the Minnesota River water quality and sediment issues are to be successfully addressed. The River Watch program is modeled after the highly successful River Watch program operated by the International Water Institute on the Red River.

Another outcome is to provide a hands-on learning experience for students that will lead them to a greater understanding and appreciation of water quality issues and provide them with technical knowledge and skills.

### **Overall GOALS**

One: Conduct monthly water quality monitoring using PCA protocols and report the data to MNPCA to enable state and local units of government to make data-driven decisions to improve water quality and reduce sediment transfer.

Two: Increase in the amount of reliable water quality data to policy makers and the public.

Three: Engage students and the public in a water quality improvement project.

## **II. OVERALL PROJECT STATUS UPDATES:**

### **First Update January 31, 2019**

River Watch Program Coordinator has been successfully recruited and has signed a contract to coordinate and lead the program. Every high school in the Minnesota River Basin has received another letter and additional emails about the program. A teacher/team leader training was held in Mankato in August 2018.

### **Second Update June 30, 2019**

The River Watch Program was successfully operated during the 2018-2019 school year with a total of ten high school based teams participating in Water Quality Monitoring and reporting Data to the MN PCA. During the 2018-2019 school year the following schools participated in monitoring: Sleepy Eye St. Mary's, Sleepy Eye Public, St Peter, Waseca, Lac Qui Parle Valley, Mankato East, Mankato West, Yellow Medicine East, New Ulm Public, Shakopee, and Redwood Area. Four additional teams planned to begin participation during the spring of 2019 but due to excessive school cancellations, those teams did not begin monitoring during the school year. Recruiting continues for additional teams to participate during the 2019-2020 school year.

### **Amendment Request June 30, 2019**

We are requesting to move \$5,000 from the "Other: Expenses for two forums" to a Supplies line item to permit the purchase of consumable chemicals needed to calibrate and operate the YSI Sonde and conduct water quality monitoring. This expense for chemicals and consumable supplies was unknown at the time we began the program as the initial YSI Sonde purchase (prior to ENRTF funding for River Watch) included chemicals and supplies sufficient for the beginning phase of monitoring.

The budget amount for River Watch Forums is reduced from \$10,000 to \$5,000 and a new line item, Supplies is created in the amount of \$5,000

Due to significant weather related school cancellation during the 2018-2019 school year, several school districts cancelled all spring field trips and outings. This resulted in our inability to convene the end of the year RiverWatch forum thus reducing the expected expenditure in this line item. .

Amendment Approved by LCCMR 9/30/2019

### **Third Update January 31, 2020**

River Watch Activities during this update period consisted of monitoring by the following school teams Sleepy Eye St. Mary's, Sleepy Eye Public, St Peter, Waseca, Lac Qui Parle Valley, Mankato East, Mankato West, Yellow Medicine East, New Ulm Public, Shakopee, Redwood Area which previously monitored with the addition of LeSueur Henderson. Monitoring data collected has been reported to the Minnesota Pollution Control Agency. During the winter months, much effort has been put forth to engage additional schools and commitments to form a team and monitor have been obtained from Kennedy High School in Bloomington, Austin, Owatonna, and Faribault. Ongoing. Additional recruiting is taking place at this time and ongoing discussions are occurring with school staff in other high schools.

### **Amendment requested retroactive to October 12, 2019**

In late fall 2019 our Technical Services Contractor requested that she be released from her contract to accept full time employment with another organization. By mutual agreement her contract was terminated on 10/12/2019. The amount shown in the budget spreadsheet reflects a prorated payment of her contract up to and through that date.

Following this notification from our contractor, Friends sought to obtain the services of another contractor. The most qualified applicant was not willing to work under a contract and Friends chose to employ this individual at a monthly salary rate that when combined with benefits was equal to the amount that would have been paid under contract. The amendment request is twofold, 1) Amend the budget to move the money from a Technical services contract to salary and benefits and 2) Approve changing from a contractor to an employee.

End of amendment request

Amendment Approved by LCCMR2/26/2020

**Project extended to June 30, 2021 by LCCMR 6/18/20** as a result of M.L. 2020, First Special Session, Chp. 4, Sec. 2, legislative extension criteria being met.

### **Fourth Update July 1, 2020:**

Due to Covid restrictions and school closures, Water Quality Monitoring was severely limited during this reporting period. Efforts were focused on recruitment, development of recruitment and program explanation

materials, and communication with team leaders in the high schools to maintain interest and participation in the program.

A new strategy was developed and pilot implemented during this reporting period. Since classes were being conducted online by high schools during April and May when live and in person water quality monitoring would normally have occurred, we identified a team/class that was willing and able to participate in water quality monitoring through an online social media platform.

First, the River Watch coordinator traveled to a designated water quality monitoring site and conducted the monitoring, which will be live streamed on Instagram to be viewed in real time by another volunteer. Once this process was fully developed and developed into a smooth process, a real time monitoring event was scheduled with the high school team leader and the team members who would be able to view the monitoring event, ask questions, receive answers, and make observations.

When the 2020-2021 school year commences, if Covid restrictions prevent team water quality monitoring, this system will be used.

Team members who are distance learning will log into the selected social media platform at the pre designated time, the River Watch coordinator will travel to that team's monitoring site(s) and conduct the monitoring which will be livestreamed to team members.

#### **Amendment Request 9-8-2020**

Due to a math error in preparing the January 31, 2020 budget report, the Contractor budget line item showed expenditures of \$22,500 and the budget was reduced to \$22,500. This was in error, the correct amount spent for the Contractor was \$34,750. This is corrected as follows. Transfer \$5000 from River Watch forum, Transfer \$5,000 from Salary to Contractor. This does not change the program function. Transfer \$2,250 from Mileage/Travel to contractor to better reflect actual costs. These three budget modifications equal \$12,250, the correct amount to match the actual amount spent for Contractor Services.

Due to the Covid restrictions, it was not possible to hold the end of year River Watch Forum during spring 2020. Therefore, as reflected in the attached budget, all funds allocated to the River Watch Forum for Salary and Benefits are requested to be reallocated to Salary and Benefits for the River Watch Coordinator to oversee and conduct water monitoring with River Watch Teams during the 2020-2021 school year. This will be reflected in the updated budget report. Allocate \$5,000 budgeted for forums to Contractor Expense

During spring 2020, we ordered a new River Watch brochure printed, the estimated cost was expected to be \$2000, however, due to a paper shortage, we selected an upgraded paper and the final cost of the printing was \$2647. The amendment request is to reduce travel from \$12,000 to \$9,103 and to increase the printing line item from \$2,000 to \$2,647.

End of amendment request

#### **Amendment Approved by LCCMR 1/25/2021.**

#### **Fifth Update January 1, 2021:**

Due to Covid restrictions, the manner in which the River Watch program is delivered was modified. Work normally planned for July and August 2020; mostly travel to visit schools for recruitment, retention, and teacher training, was cancelled. By mutual agreement between employer and employee, the River Watch Coordinator took an unpaid leave of absence during July and August. Details are provided in the update for each activity, but in brief: monitoring took place during the fall at all sites for each River Watch Team, a video was provided to each team for inclusion in distance learning. A high level of contact has been maintained with each team

leader/teacher to insure continued River Watch participation by each team post covid. Three new teams have been recruited and will join the program when live monitoring is again possible. Other teams are considering joining post covid.

The monitoring videos River Watch has provided to teachers are enthusiastically received and used by those teachers through distance learning. Again, this is discussed in the Activity updates below.

Note on funding: Friends of the Minnesota Valley engaged in its most aggressive fundraising and grant writing efforts to date to keep the River Watch program operating through the 2020-2021 school year. That fundraising effort plus covid related cost savings, combined with the ability to carryover unexpended funds from FY 20 to FY 21 made it possible to continue the program through the date of this report and through the end of the 2020-2021 school year.

### **Amendment Request 3/24/2021**

amendment request Budget reallocation

As we near the project completion deadline, we are able to determine final expenditure amounts in each budget category. Due to covid restrictions, the amount of travel expenditure was dramatically reduced and we request to transfer full full remaining amount of the travel line item, of \$5,435 to the personnel line item. Any further travel expenses on this project will be paid for from non ENRTF funds. No further equipment expenses are expected therefore we request a transfer of the remaining \$200 to the Salary line item. No further materials and supplies will be purchsed with ENRTF funds during this project. Therefore we request moving the balance of \$742 in the material and supplies line item to the Personel Line item. The result of these changes will leave the revised personnel budget, following approval of the amendment, at \$48,877. As of this date, March 24, 2021, Friends of the Minnesota Valley has already expended more than \$448,887 on personnel costs and will fund the remainder of this cost for this fiscal year from non ENRTF funds.

Amendment Approved by LCCMR 3/30/21

### **Final Update June 30, 2021**

During the course of this project, River Watch on the Minnesota River worked with teams from a total of 14 different schools. During the January 1, 2021 through June 30, 2021 time frame of this report, direct monitoring by high school students only took place with one team. Other team sampling did not occur due to covid restrictions. However, a relationship was established with Minnesota State University-Mankato and Martin Luther College in New Ulm through which a total of six college students joined with Friends of the Minnesota Valley staff and conducted sampling at eleven(11) sites and shared that data with the classroom teacher for teacher use with team members in the school.

Significant time and effort was spent maintaining contact with team leaders in all 14 schools and efforts continued to recruit additional teams to join the River Watch program with the beginning of the 2021-2022 school year.

Building on the success of the ENRTF/LCCMR funded program which was operated during the 2018-2019, 2019-2020, school years Friends of the Minnesota Valley was able to secure private donations which when combined with carryover dollars to operate in a covid restricted manner in 2020-2021. The three years of program operation provided the necessary basis to obtain funding from the 2021 Minnesota Legislature to continue the River Watch program during 2021-2023.

### **Overall Project Outcomes and Results (from Abstract)**

The River Watch program engaged high school students from 18 high schools in lessons about surface water quality, students learned how to operate sophisticated electronic equipment to test water quality.

Data collected was submitted to the Minnesota Pollution Control Agency through the Citizen Water Quality Monitoring program.

Although data collection is an important purpose of the River Watch program, providing students with a meaningful experiential learning opportunity that teaches them the importance of water quality is the primary purpose. River Watch participants learn more than just facts, they develop understanding about water quality they will carry with them for their entire lives. Based on student feedback, River Watch achieved this goal of a meaningful educational experience.

Another goal Friends of the Minnesota Valley hoped to accomplish with ENRTF funding was to grow our River Watch program from a trial program working with four teams to a program working with 15-20 teams. Through the use of ENRTF funding, Friends was able to develop high quality informational brochures, a website, and other supporting materials to promote the River Watch program. We succeeded by working with 18 different high schools and will begin the 2021-2022 school year with 16 teams participating in River Watch and other teams considering joining. Covid limitations significantly reduced our ability to take students directly to rivers for sampling during the 2021 school year, but desired program growth did occur.

A third objective was to raise public awareness of the River Watch program and public awareness of the water quality problems facing the Minnesota River. On several occasions, local news media covered student monitoring events. Public awareness of River Watch is well established and the program is set to continue in future years due to the foundation built during the three years that the program was funded by LCCMR.

The Minnesota River is widely seen as one of the most polluted rivers in Minnesota. Teaching today's high school students (tomorrow's adult citizens and leaders) the seriousness of this problem, giving them the knowledge and understanding of the problem, and inculcating a desire to solve the problem will benefit the State of Minnesota as these young people move into positions in which their personal actions and the public decisions they make or influence lead to river water quality protections. As the River Watch program grows, an ever growing number of young people will be motivated and equipped to "clean up" the Minnesota River.

The data collected to date and in the future will enable policy makers at the local and state level to make better informed decisions that will improve and protect water quality in the Minnesota River basin and downstream in the Mississippi River.

Amendment Request 10/11/2021

LCCMR staff identified a mistake in the approved final report budget. Budget submitted was not the correct previously approved budget from March 2021. In order to correct the mistake an amendment is requested to move the remaining balance of approximately \$153 from Capital Equipment and approximately \$1 from travel to personnel using the March 2021 approved budget. Personnel budget will change from \$48,877 to \$49,031.

**Amendment Approved 10/11/2021**

### **III. PROJECT ACTIVITIES AND OUTCOMES:**



**ACTIVITY 1:**

**Description:** Recruit 15-20 High School based teams, including identifying a team leader, and train the team leader to oversee team water quality monitoring efforts.

**ENRTF BUDGET:** \$ 14,000

Outcome	Completion Date
1. 15-20 teams recruited for the 2018-2019 school year (Classroom-based teams are 20 to 30 students - averaging 23 students) After School teams are 10 to 12 students)	August 1, 2018
2. 2018-2019 Team Leader training provided	August 15, 2018
3. Recruit teams to replace teams that quit the program or to add to the number of teams and provide training to team leaders	August 15, 2019

**First Update January 31, 2019**

Eight high school teams joined the program and conducted water quality monitoring during the fall of 2018. Each team has at least one adult team leader who has been trained by the River Watch Program Coordinator. Initial monitoring data has been submitted to the MPCA. An additional three high school teams have committed to begin water quality monitoring in the spring of 2019. Another five schools are actively considering joining the program, possibly to begin monitoring Spring 2019 or Fall 2019. Efforts to recruit additional teams are ongoing at this time.

**Second Update June 30, 2019**

Ten teams conducted monitoring during the 2018-2019 school year four additional teams intended to begin monitoring during the spring of 2019 but chose not to monitor due to excessive school cancellations. As of the date of this report, a total of 16 teams have committed to participate in River Watch during the 2019-2020 school year and recruiting continues at this time. Team leader training for new team leaders will occur in August 2019. During the 2018-2019 school year the following schools participated in monitoring: Sleepy Eye St. Mary’s Sleepy Eye Public, St Peter, Waseca, Lac Qui Parle Valley, Mankato East, Mankato West, Yellow Medicine East, New Ulm Public, Shakopee, and Redwood Area.

**Third Update January 31, 2020**

Recruiting of teams continues with good progress. Bloomington LeSueur/Henderson, St Peter, and Cedar Mountain began monitoring fall 2019. Kennedy High School and Faribault Alternative have committed to begin monitoring during spring 2020. As of the date of this report, 16 teams will definitely monitor during the 2019-2020 school year. Discussions are ongoing with Bloomington Jefferson and Austin High School to begin monitoring Spring 2020. Much interest has been received from Owatonna High School.

**Fourth Update July 1, 2020:**

Recruitment activities during the January-June 2020 time frame included email communications with a school administrator in each district in the Minnesota Valley not already participating in River Watch. A special effort was made to identify the teacher who would be most likely to lead the team effort in each school and a follow-up communication including emails, direct phone calls, and sending printed brochures and other information directly to the school staff member.

Since most schools shut down during this timeframe, extra effort was put into communicating with participating schools to keep them engaged in the program in upcoming years. In effect, we were recruiting schools to remain active participants in River Watch.

**Fifth Update January 1, 2021:**

Each school team that previously participated in River Watch was contacted via phone or email for retention in the program. Although the original intention was to make these contacts in person at each school the

phone/email contact was substituted. Schools that had committed to join River Watch beginning during the 2020-2021 school year were contacted and informed that while River Watch was continuing for this school year, new schools would not be added unless the school was able to participate with team live monitoring and that schools inclusion into the program would be delayed until live team monitoring was possible. Every school that previously participated in River Watch committed to remain in the program or to rejoin the program when live monitoring was resumed.

**Final Update June 30, 2021**

Recruiting of new teams to add to the program and replace any teams that discontinued working with River Watch continued during this most recent January 1, 2021-June 30 2021 timeframe. Much of the effort during this time period focused on maintaining a high level of communication with existing team leaders to substitute live sampling with staff sampling and sharing data with team leaders for classroom use. This was especially important, and successful, to ensure that teams did not drop out of River Watch during the Covid restriction timeframe. We fully expect all fourteen(14) teams that previously participated to conduct live student monitoring again beginning fall of 2021. Two additional teams have contacted Friends of the Minnesota Valley to join the program beginning with the 2021-2022 school year.

**ACTIVITY 2:**

**Description:** Purchase one YSI Sonde water quality monitoring Probe to be shared by the high school based teams and consumable materials and supplies needed to perform water quality monitoring. Purchase curriculum materials to add macroinvertebrate survey work to already scheduled monitoring events.

**ENRTF BUDGET: \$11,000**

<b>Outcome</b>	<b>Completion Date</b>
1. Purchase YSI Sonde probe and accessories	August 15, 2018
2. Purchase macroinvertebrate teaching materials and equipment	August 15, 2019
3. Purchase Chemicals and Consumable supplies for operating the “YSI Sonde	June 30, 2020

**First Update January 31, 2019**

Friends of the Minnesota Valley owns one YSI Sonde which was sufficient for the fall 2018 monitoring. The additional Sonde will be purchased when the number of schools monitoring requires this equipment.

**Second Update June 30, 2019**

The YSI probe, this probe purchase is funded with ENRTF funding to supplement the probe previously owned by Friends of the Minnesota Valley, was ordered near the end of the 2018-2019 school year along with a significant amount of necessary chemicals. We have learned that the chemicals necessary for sanitizing the probe and that are consumed in each monitoring process are much more expensive than anticipated and more is consumed than anticipated. A budget amendment is necessary to provide funding for chemicals. These chemicals are included as accessories in the outcome. The amendment will be to increase the budget for activity 2 from \$6,000 to \$11,000. Two thousand of the increase is for YSI Chemicals and three thousand is for macroinvertebrate curriculum materials and equipment.

**Third Update January 31, 2020**

No purchases of equipment have been made during this reporting period.

**Fourth Update July 1, 2020:**

No purchases of equipment or supplies were made during this period.

**Fifth Update January 1, 2021:**

This activity is completed for this program

**Final Update June 30, 2021**

This activity is completed for this program

**ACTIVITY 3:**

**Description:** Plan and conduct monthly water quality monitoring and reporting at three or more locations per team.

**ENRTF BUDGET: \$75,000**

Outcome	Completion Date
1. 2018-2019 school year water quality monitoring by 15-20 teams	June 30 2019
2. 2019-2020 school year water quality monitoring by 15-20 teams	June 30, 2020
3. 2020-2021 school year water quality monitoring by 15-20 teams	June 30 2021

**First Update January 31, 2019**

Water quality monitoring has begun as described in activity 1.

**Second Update June 30, 2019**

As noted above, Water Quality Monitoring was conducted by 10 school based teams during the 2018-2-019 school year. A second part time Monitoring leader/contractor is being recruited and trained to provide leadership to all teams so as to increase the amount of monitoring. Funding for this contract is within the budgeted amount.

During the recruitment process and the monitoring events, strong interest has been expressed in expanding the monitoring content to include Macroinvertebrate survey. Friends of the Minnesota Valley has decided to expand the monitoring components, this does not involve any additional staff but will enrich each monitoring event. Some instructional materials and equipment, nets for example, are needed to incorporate the macroinvertebrate surveys into the water quality monitoring events.

**Third Update January 31, 2020**

As noted above, monthly water quality monitoring by 14 teams during fall of 2019. Data has been recorded and submitted to the MN PCA from each monitoring event.

**Fourth Update July 1, 2020:**

As noted above. Live monitoring was not conducted during this reporting period. Livestream monitoring process was developed, tested, and pilot implemented during this reporting period

**Fifth Update January 1, 2021:**

During spring 2020, as noted in previous updates, a mix of virtual monitoring strategies were developed and tested. From this effort, a new River Watch monitoring strategy was adopted and implemented for the fall of the 2020-2021 school year. That strategy was as follows:

The River Watch Coordinator, accompanied by two volunteers from the same household, traveled to each River Watch monitoring site and conducted the monitoring in the same manner as if the high school team was present. **(Note: Social distancing and mask wearing was required.)** The entire monitoring process was digitally recorded. This included recording the full monitoring experience such as noting weather conditions, any special features at or near the monitoring site that could affect water quality, changes at or near the monitoring site

such as erosion of land use as compared to previous visits, and the actual monitoring itself including close up video of the data displayed on the monitoring probe screen.

River Watch provided a badly needed addition to the troublesome distance learning being implemented in Minnesota schools.

Initially, it was hoped that the monitoring at each site could occur at a time that would permit live streaming through Zoom directly to students during the normal class time. Since very few, if any, classes or teams met at a specified time in accordance with a school calendar. This livestreaming was not possible.

Since livestreaming was not possible, the video of each monitoring event was then edited to to improve the viewing experience and additional comments were added by the River Watch Coordinator. These videos were then made available to the teacher who was able to provide the video to students in the team/class as part of an assignment or instructional unit.

Response to this strategy, based mostly on email feedback from teachers has been universally positive and teachers report that enthusiasm for live monitoring by the team has actually increased.

Although time spent monitoring was reduced by eliminating the need to accommodate class schedules, since several monitoring events could be completed on the same day, much extra time was needed to edit the videos.

Prior to Covid, three teams expressed an interest in monitoring during the summer months. However, this summer 2020 activity was cancelled, again due to covid.

#### **Final Update June 30, 2021**

Monitoring during this last time period was conducted by River Watch staff at 10 previously identified team sites with the data shared with team leaders for use in classroom lessons. This monitoring was assisted by a total of six(6) different MSU-Mankato and Martin Luth College students. Use of college students was a bonus not intended in the original work plan but substituted to replace live student teams monitoring. Riverwatch staff also monitored two sites for a team that expressed an interest in joining the River Watch Program during the 2021-2022 school year and that data was shared with a team leader. for use in her classroom. Based on this monitoring effort and the data received by the team leader, that team will join the River Watch program in 2021-2022.

#### **ACTIVITY 4:**

**Description:** Plan and convene two annual Minnesota River Basin Wide Forums at which all teams will present their experiences, report their data, and share data analysis. All state and local water quality policy makers and all other elected officials will be invited along with the news media. Approximately half of this expenditure will be for contractor time and the remaining will be for direct expenses.

ENRTF BUDGET: \$0

<b>Outcome</b>	<b>Completion Date</b>
1. Convene 2018-2019 school year annual River Watch Forum	June 30, 2019
2. Convene 2019-2020 school year annual River Watch Forum	June 30, 2020

**First Update January 31, 2019**

Initial planning has begun, and continues, for the first annual River Watch Forum. Communication with schools has taken place to determine the best date and location.

**Second Update June 30, 2019**

A 2018-2019 forum was largely planned when excessive weather-related school closings forced many schools to opt out of sending the student team to a forum on a school day. The expenses related to planning were expended. The 2018-2019 forum was cancelled. A budget amendment is being requested to move \$5000 in funding from the cancelled forum into materials and supplies as described above in activity 2.

**Third Update January 31, 2020**

Planning for an end of year forum during this reporting period involved meeting with team adult leaders to determine the most valuable components of a forum, best location, and activities.

**Fourth Update July 1, 2020:**

Due to Covid restrictions and uncertainty over large gatherings during the remainder of the project period, we will not be able to complete this activity. The \$5,000 in funds to Activity 3 for salary payment to the Water Monitoring. These funds will continue to be used for salary and benefits, but in a different activity.

**Fifth Update January 1, 2021:**

This Activity was removed from the plan and funds transferred to staff expenditure as noted in previous updates.

**Final Update June 30, 2021**

This activity was removed from the program as noted in the previous update.

**IV. DISSEMINATION:**

**Description:** Due to the high degree of public engagement in this project, dissemination will occur simultaneously with project work. A brief dissemination outline follows:

Team Recruitment will involve communicating via email and phone with administrators in virtually every school district in the Minnesota River basin. All written and email communication will highlight the role of the LCCMR and the ENRTF in funding the project.

Water quality monitoring performed by high school students is extremely newsworthy in the communities of the Minnesota River basin. Press are invited to photo the monitoring efforts and interview students. A press packet will highlight the role of LCCMR and ENRTF funding

The end of the year forum for team members will be widely promoted throughout the Minnesota River basin, elected and appointed government officials will be invited and press coverage is likely. Again the role of LCCMR and ENRTF funding will be highlighted.

**First Update January 31, 2019**

Local news media have covered some monitoring activities. News articles have run in local newspapers.

**Second Update June 30, 2019**

Local news media are invited to every monitoring event. Coverage has been quite good. Information about LCCMR and ENRTF funding is provided at every opportunity.

### **Third Update January 31, 2020**

Local News media is informed of every monitoring event, a press handout concerning River Watch which itself includes a reference explaining that River Watch is funded with a grant from the Environment and Natural Resources Trust Fund. A major aspect of the River Watch recruiting and fundraising is through social media, primarily Facebook. Each social media communication includes attribution to the ENRTF.

All printed brochures and program information sheets include the ENRTF attribution.

### **Fourth Update July 1, 2020:**

Due to Covid restrictions and the stay at home order, most effort during this reporting period was developed to develop River Watch Brochures, and River Watch information materials that will be used to recruit teams, inform team host schools and communities about River Watch. These materials were created in digital format suitable for printing and distribution as hard copies.

### **Fifth Update January 1, 2021:**

The River Watch Coordinator is working with team leaders/teachers to make the River Watch videos available for distribution on local access cable television stations. A short video on the River watch program, including significant reference to the funding received through LCCMR from the ENRTF has been recorded. This video will be edited into the video shared with teachers for student use. As of the date of this report, no public access airing has been reported back to the River Watch Coordinator. The River Watch Coordinator is continuing to develop and promote this public access video sharing.

### **Final Update June 30, 2021**

Because there was no live student monitoring during this time period, we were unable to work with local media to cover monitoring events during the time frame of this report.

#### Final Report Summary

Each time a River Watch Team conducted a water quality monitoring event, local news media including radio, newspapers, and television was informed and invited to provide coverage. Several local newspaper articles covering such events were published and at least one television story was broadcast.

The very process of recruiting River Watch teams involved communication with every secondary school administrator in the Minnesota River basin. These communications were often shared with local school boards as part of the participation approval process.

Students and staff in River Watch Have been invited to speak at local service group meetings.

Each communication included reference to LCMR/ENRTF funding

## **V. PROJECT BUDGET SUMMARY:**

**A. Preliminary ENRTF Budget Overview:** See attached budget spreadsheet

**Explanation of Capital Expenditures Greater Than \$5,000:** Friends of the Minnesota Valley intends to purchase one YSI Sonde Probe for water quality monitoring. The probe itself is a multi-function electronic tool to be purchased at a cost of \$3,200. In addition to this device, three cables of different lengths, each equipped with sensors, are needed.

Students will use the probes by lowering the cable from a bridge into the river water below the sensors to collect data which is transmitted through the cable to the probe. The students will read and record the various data from the probe. The total purchase package from a single vendor may exceed \$5,000.

In addition to the probe and cables, carrying cases, sensor sanitizing/neutralizing agents, safety gear such as reflective vests and traffic cones will be purchased.

The \$6000 budget amount is based on our experience purchasing one YSI Sonde and related equipment for use during the 2018-2018 school year.

**Explanation of Use of Classified Staff:** NA

**Total Number of Full-time Equivalent (FTE) Directly Funded with this ENRTF Appropriation:** one

Enter Total Estimated Personnel Hours: 2,080	Divide by 2,080 = TOTAL FTE:
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**Total Number of Full-time Equivalent (FTE) Estimated to Be Funded through Contracts with this ENRTF Appropriation:** one (through professional services contract for one half time each of two years)

Enter Total Estimated Personnel Hours: 2080	Divide by 2,080 = TOTAL FTE: 1
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**B. Other Funds:**

SOURCE OF AND USE OF OTHER FUNDS	Amount Proposed	Amount Spent	Status and Timeframe
<b>Other Non-State \$ To Be Applied To Project During Project Period:</b>			
Friends of MN Valley Staff Time	\$ 20,000	\$ 0	Ongoing during the project, committed from funds on hand.
<b>Other State \$ To Be Applied To Project During Project Period:</b>			
	\$ 0	\$ 0	
<b>Past and Current ENRTF Appropriation:</b>			
	\$ 0	\$ 0	
<b>Other Funding History:</b> Friends of the MN Valley has invested or will spend approximately \$30,000 in launching the program during the 2017-2018 school year prior to July 1, 2018.			
	\$	\$	

**VI. PROJECT PARTNERS:**

**A. Partners receiving ENRTF funding**

Name	Title	Affiliation	Role
None			

**B. Partners NOT receiving ENRTF funding**

Name	Title	Affiliation	Role
Friends of the Minnesota Valley		Sponsor	Project Management

**VII. LONG-TERM- IMPLEMENTATION AND FUNDING:**

The 2021 Minnesota Legislature appropriated \$50,000 for FY 2022 and \$50,000 for FY 2023 to continue the program.

**VIII. REPORTING REQUIREMENTS:**

- The project is for three years, will begin on July 1, 2018, and end on June 30, 2021.
- Periodic project status update reports will be submitted January 31 and June 30 of each project year.
- A final report and associated products will be submitted between June 30 and August 15, 2021.

**IX. SEE ADDITIONAL WORK PLAN COMPONENTS:**

**A. Budget Spreadsheet**



**Project Title: Expanding River Watch Program on the Minnesota River with High School Teams**

**Legal Citation:** M.L. 2018, Chp. 214, Art. 4, Sec. 02, Subd. 05e

**Project Manager:** Ted L. Suss

**Organization:** Friends of the Minnesota Valley

**College/Department/Division:** NA

**M.L. 2018 ENRTF Appropriation:** \$100,000

**Project Length and Completion Date:** 3 years June 30, 2021

**Date of Report:** October 11, 2021

This budget was not correct when submitted and approved in the final report on September 3, 2021.

This is the correct approved budget from Marh 2021.

Ted please review the revised budget from 10-11-21. Make any corrections as needed.



ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET	Revised Budget (01-01-2021)	Revised Budget (3-24-21)	Revised Budget (10-11-21)	Amount Spent	Balance
<b>Personnel (Wages and Benefits)</b>	\$49,031	\$48,877	\$49,031	\$49,031	\$0
Employee Salary					
<b>Professional/Technical/Service Contracts</b>	\$34,750	\$34,750	\$34,750	\$34,750	\$0
<i>Project Manager, the selected person will be experienced in program management specifically water quality or natural resources management. This person will be responsible for training, monitoring oversight, reporting oversight, team commitment and direction at the forums.</i>					
<b>Capital Equipment over \$5,000</b>	\$5,647	\$5,800	\$5,647	\$5,647	\$0
<i>one YSI Sonde water quality monitoring Probe The probe itself is a multi function electronic tool to be purchased at a cost of \$3,200. In addition to this device, three cables of different lengths, each equipped with sensors, are needed. The total purchase package from a single vendor may exceed \$5,000.</i>					
<b>Materials and Supplies</b>	\$4,258	\$4,258	\$4,258	\$4,258	\$0
<b>Printing</b>	\$2,647	\$2,647	\$2,647	\$2,647	\$0
<b>Travel expenses in Minnesota</b>	\$3,667	\$3,668	\$3,667	\$3,667	\$0
<i>Program Manager instate travel, mileage and lodging, to numerous monitoring sites within Minnesota River Basin on a monthly basis. Cost estimated based on analysis of expected team locations and expected monitoring locations for each team.</i>					
<b>Other: expenses for two forums</b>	\$0	\$-	\$-	\$0	\$0
<i>These expenses will include hall rental and related expenses for Annual River Watch Forum - estimated 200 people to attend - Two times - once for each of 2 years of funding. (Public space with no charge will be used if possible) and materials and items provided to participants. Refreshments for students at the forum.</i>					
<b>COLUMN TOTAL</b>	\$100,000	\$100,000	\$100,000	\$100,000	\$0