

## 1.01 PROJECT PROPOSAL SUMMARY SHEET

**PROJECT TITLE:** Red River Basin River Watch and River of Dreams

**NAME, ADDRESS, PHONE AND E-MAIL OF LEAD PROJECT SPONSOR/SUBGRANTEE:**

International Water Institute  
1120 28<sup>th</sup> Ave. N. Suite B  
Fargo, ND 58102

**STATE CONTACT PERSON:** Charles Fritz

**TITLE:** Director

**PHONE:** 701-388-0861

**E-MAIL:** [charles@iwinst.org](mailto:charles@iwinst.org)

**STATE:** North Dakota

**WATERSHED:** Red River Basin

**HYDROLOGIC UNIT CODE:** 0902 **HIGH PRIORITY WATERSHED (yes/no):** No

### PROJECT TYPES

### WATERBODY TYPES

### NPS CATEGORY

STAFFING & SUPPORT  
 WATERSHED  
 GROUNDWATER  
 I&E

GROUNDWATER  
 LAKES/RESERVOIRS  
 RIVERS  
 STREAMS  
 WETLANDS  
 OTHER

AGRICULTURE  
 URBAN RUNOFF  
 SILVICULTURE  
 CONSTRUCTION  
 RESOURCE  
EXTRACTION  
 STOWAGE/LAND  
DISPOSAL  
 HYDRO  
MODIFICATION  
 OTHER

### SUMMARIZATION OF MAJOR GOALS:

Provide watershed education opportunities to the eleven high schools and eighteen elementary schools currently involved with the Red River Basin River Watch (RW) and River of Dreams (ROD) programs. Expand STEM assistance to include Science Educator K -12 Professional Development Workshops using RW and ROD place-based watershed curriculum to increase teacher watershed science self-efficacy.

**PROJECT DESCRIPTION:** The RW program provides watershed education opportunities for local high school students through hands-on science, water quality monitoring, and river recreation activities designed to challenge students and facilitate understanding and appreciation of water resources. ROD is a complementary program that engages elementary students to explore the connectivity of our planet's water supply and how watersheds function.

**FY 2025 319 funds requested \$425,784 Match \$283,856**

**Other Federal Funds \$0 Project FTE: 1.31**

**Length of proposal: 3 years from July 1, 2025 to June 30, 2028.**

**Total project cost \$709,640**

## 2.0 STATEMENT OF NEED

**2.1** This project will build on and continue the Red River Basin River Watch and River of Dreams project started in 2020. A summary of activities and accomplishments under the 2022 agreement are included in *Appendix A*.

**2.2** The North Dakota Department of Environmental Quality (NDDEQ) has identified the need to deliver a balance of information and education throughout North Dakota as a critical component of the Non-Point Source (NPS) Pollution Management Program. NPS pollution can affect the state's water resources and it is important for citizens to understand NPS causes and effects; including how the NPS pollution is affected by a variety of water issues ranging from flooding, farming practices, drought, and wetland drainage.

Students today are increasingly disconnected from the natural environment. The IWI's RW and ROD projects will engage students in hands-on education programs to better understand how humans interact and affect valuable river resources of the Red River Basin through integrated classroom and outdoor experiences that:

- build awareness of river ecosystems and watershed connections
- increase student capacity to make informed decisions about their environment
- instill a sense of place highlighting the historic, economic, and ecological uniqueness of their local watershed

**2.3** RW and ROD increase knowledge, understanding and appreciation of water resources through education of non-point source pollution, water quality issues, connectivity of our planet's water supply, and how watersheds function. RW and ROD target elementary through high school aged students and teachers (specifically 4<sup>th</sup> – 12<sup>th</sup> grade). The majority of teachers have little or no training in NPS pollution causes and effects. Teachers are more likely to teach subjects they are familiar with and understand themselves. RW and ROD will increase teacher awareness and understanding leading to more classroom activities on water issues.

## 3.0 PROJECT DESCRIPTION

**3.1** The IWI will engage high school and elementary students within North Dakota Red River Basin school districts in hands-on education programs focused on river resources within their local watershed. IWI will provide integrated classroom and outdoor experiences that; build awareness of river ecosystems and watershed connections, increase student capacity to make informed decisions about their environment, and instill a sense of place about the uniqueness of their local watershed.

**3.2** Objectives/Measurable outcomes:

Obj. 1. **River Watch:** Increase awareness and knowledge of local land use and watershed connections through water quality monitoring, biological monitoring, watershed exploration and STEM activities. Engage eleven RW teams to explore streams and other aquatic environments in the Red River Basin, documenting local watershed conditions.

***Water Quality and Biological Monitoring: Stream Sampling and Macroinvertebrates.***

- Water Quality – RW Students and Team Leaders will be trained to use field sampling equipment (e.g. sonde, Van Dorn sampler and Secchi tube). RW teams monitor local rivers and streams. Parameters measured typically include stage, appearance,

recreational suitability, stream condition/habitat assessment, transparency, water temperature, dissolved oxygen, pH, and conductivity. Frequency: Two times annually. Estimated cost \$96,000.

- Macroinvertebrate Collection – River Watch students will sample macroinvertebrate communities and learn about the relationship between water quality and biological communities. Teams will monitor biological communities in their own watershed when conditions allow, however; if local conditions are not adequate River Watch teams will be encouraged to visit Prairie Waters Education and Research Center. Each RW team two times during the project. Estimated cost \$43,000.
- Review water quality data collected with RW teams and teachers. Provide information/training on Aquatic Nuisance Species (ANS) and insight into conditions at the monitoring sites. Once annually. Estimated cost \$7,000.

***River Explorers Paddling Program: Lead guided river ecology excursions (18 trips) from July 2025 through June 2028 on various reaches of rivers in the Red River Basin.***

- IWI paddling staff scout rivers at different water levels to assess safety and water levels needed for safe passage by RW student exploratory teams. Ongoing. Estimated cost \$4,800.
- Eighteen guided river ecology excursions in the Red River Basin, all utilizing GPS and mapping/photo documentation of baseline geomorphology and recreation conditions. Six trips annually. Estimated cost \$47,000.
- Create and share information from river trips on IWI website via on-line map and multimedia reports. Reports may include the following; number of trip participants, river route and reaches covered, photo-documentation of river conditions, and a summary of observations by trip participants on river conditions, land use, and recreation suitability. Ongoing. Estimated cost \$9,000.
- Final Report to include areas explored, number of participants and links to trip reports Estimated cost \$2,500.

Obj. 2. **STEM assistance:** Assist in provision of Science, Technology, Engineering and Math (STEM) education and engagement opportunities through watershed science.

***Host regional fall kick-off events for RW teachers and youth leaders. Events will incorporate team building skills, local watershed project presentations and data interpretation.***

- 2-3 regional fall kick-off events/training sessions in each year. Estimated cost \$51,500.
- Summary report will be provided each year to document participants at regional kick-off events and topics covered. Information will be included in the Final Report. Estimated cost \$800.

***Utilize the annual River Watch Forum to provide exposure to relevant research topics and an opportunity to present findings from current research involvements. Provide opportunities for youth to engage in scientific research and outreach.***

- River Watch Forum presented in February or March each year with keynote speaker and concurrent sessions focused on emerging watershed education and research. Poster displays, written reports and/or video presentations of assigned research topics, service learning projects and special investigations by RW teams in collaboration with watershed partners. One time annually. Estimated cost \$86,000.
- Summary report written to document participating RW teams/schools and highlighting awards and watersheds represented in research, with links to materials. To be completed yearly and included in the October annual report. Estimated cost \$1,200.

***Partner with local Universities to provide professional development (PD) workshops for K-12 science educators using RW and ROD place-based watershed curriculum.***

- Solicit interested partner organizations to participate in; 1) identification of current place-based watershed education PD offerings and 2) creating PD place-based workshops that increase teacher watershed science self-efficacy. Completed December 2025. Estimated cost \$1,500.
- Create a project team to develop place-based watershed science PD opportunities. Project team members will include IWI staff, K-12 educators, partner organization staff, graduate students, and higher ed professors. The team will document current placed-based watershed science PD offerings, gaps and create learning objectives for the PD workshops. Completed December 2026. Estimated cost \$4,000.
- Develop workshop documents, materials, and activities utilizing the expertise of the project team members. Provide four place-based watershed education PD workshops (12 hours of instruction) within the Red River Basin. Two workshops held in 2027 and 2028. Estimated cost \$16,500.
- Provide 20 scholarships for current RW and ROD teachers to attend PD offerings. Estimated cost \$9,000.
- Assess project activities and learning outcomes. Summary report written to document participating educators, project activities and outcomes. Completed after workshops and provided in the final report. Estimated cost \$3,500.

Obj. 3. **River of Dreams:** Engage elementary students in a hands-on education program that incorporates a number of core education topics including math, science and geography (90 classrooms ~ 1,600 students).

***Engage an entire grade level of students by partnering with teachers to bring experiential watershed education into their classrooms and then into their watershed.***

- School contacts. Solicit classrooms to be involved. Identify lead teacher and determine the number of students to be involved. Ongoing. Estimated cost \$7,500.
- Resources acquired to deliver ROD to local elementary students and teachers. Ongoing. Estimated cost \$80,500.
- Prepare materials (e.g. virtual geography tour with worksheet) and canoes for ROD activities. Ongoing. Estimated cost \$32,500.

- School classroom sessions. Hold classroom sessions to present materials and explore program expectations. One session per classroom per year. Estimated cost \$58,000.
- Field sessions with ROD participants. Release of individual ROD canoes and review of watershed lessons learned by students. One session per classroom per year. Estimated cost \$58,000.
- Evaluation of ROD activities using pre/post surveys of students. Completed each year. Results will be reported as part of Final Report. Estimated cost \$9,000.

Obj. 4. **Evaluation/Reporting:** Project Evaluation, Management and Reporting. Cost \$81,000.

**Track project grant-related expenditures. Compile and organize invoices, pay bills and submit expense reimbursements in a timely manner.**

- Grant-related expenditures tracked, bills paid and expense reimbursements submitted at least quarterly.
- Provide quarterly progress reports along with reimbursement requests.

**Track objectives and tasks to ensure outcomes are being met. Prepare and complete reports and results from the Red River Basin River Watch and River of Dreams program.**

- Annual report to the NDDEQ and RRJWRD will be submitted by October 1 of each year.
- Complete final report and submit by June 30, 2028.

**3.3 The milestone table** below shows the timeline for the different tasks previously described. All objectives and tasks are the responsibility of the IWI.

TASK/RESPONSIBLE ORGANIZATIONS	OUTPUT	Q T Y	SFY26	SFY27	SFY28
<b>OBJECTIVE 1 - River Watch</b>					
<b>Task 1 - Water Quality and Biological Monitoring</b>	Sampler training, sample collection.	0.20 FTE 11 RW teams involved.			
<b>Task 2 - Red River Explorers</b>	River ecology excursions and trip reports.	0.20 FTE 18 river trips.			
<b>OBJECTIVE 2 - STEM Assistance</b>					
<b>Task 1 - Fall Kick Off Events</b>	Watershed education and training.	0.10 FTE 260 students			
<b>Task 2 - River Watch Forum</b>	Watershed education and training.	0.12 FTE 260 students			
<b>Task 3 - Teacher Development Workshops</b>	4 place-based watershed education PD workshops	0.07 FTE 40 teachers			
<b>OBJECTIVE 3 - River of Dreams</b>					
<b>Task 1 - School classroom and field sessions.</b>	Deliver and present program materials.	0.49 FTE 1,600 students			
<b>OBJECTIVE 4 - Eval and Report</b>					
<b>Task 1 - Track and pay bills, submit expenses.</b>	Quarterly progress reports and reimbursements.	0.06 FTE			
<b>Task 2 - Prepare and complete reports.</b>	Interim and final reports.	0.07 FTE			

## 4.0 COORDINATION PLAN

**4.1** The IWI will be the sponsoring organization with local cost share (\$283,856) provided by North Dakota Red River Joint Water Resources District (RRJWRD). The IWI Education and Monitoring Director will be responsible for project management with the IWI Project Specialist leading coordination and delivery of RW and ROD education activities. IWI will supply all education materials, presentation equipment, and the website for this project. The IWI has a strong long-standing record of working with other entities in delivering watershed education within Minnesota and North Dakota and has worked closely with the Prairie Waters Education and Research Center (PWERC) to help them develop River Watch activities and has received training from their staff to continue the development of our River Watch program (e.g. biological monitoring).

For this project, schools will be encouraged to use the PWERC for their macroinvertebrate collection activities when local conditions are not adequate. IWI and PWERC will coordinate on future education and training opportunities and staff will assist each other when and where appropriate. Since 2013, the IWI has worked with the RRJWRD, NRCS and the State Water Commission (SWC) to deliver watershed education programs within the Red River Basin.

As part of our ongoing coordination and internal assessment process, the IWI Board of Directors oversees the Institute, ensures it is run properly, and involves representative groups in the activities of the Institute. Below is a list of board members and their agency or institution affiliation.

Officers		
<b>Jon Ewen (Chair)</b>  ND at Large	<b>Phil Murphy (Vice Chair)</b>  ND At Large	<b>Dr. Lindsay Pease (Secretary/Treasurer)</b> <i>Assistant Professor and Extension Specialist, Research and Outreach Center, University of Minnesota Crookston</i>
Board Members		
<b>Dr. Thomas Desutter</b> <i>Program Lead, School of Natural Resources North Dakota State University</i>	<b>Keith Weston</b> <i>ND Red River Joint Water Resource District</i>	<b>Dr. Duane Pool</b> <i>Economist, ND State Water Commission</i>
<b>April Swenby</b> <i>MN Sandhill Watershed District</i>	<b>John Finney</b> <i>Red River Watershed Management Board</i>	<b>Robert Laidler</b> <i>Director Emeritus, Oak Hammock Marsh</i>
<b>Tom Shockman</b> <i>President, Shockman Financial</i>		

**4.2** RW and ROD have support of governmental, educational and citizen groups. The ND State Water Commission and RRJWRD provided the IWI with a grant to deliver RW in 2018 and in 2019. The NDDEQ with a match from the RRJWRD also provided NPS funds for RW and ROD activities in 2019 - 2025. Through this grant we will continue to engage students to teach them about NPS pollution, watershed functions and our water supply.

**4.3** The IWI has a history of delivering watershed education using outdoor learning activities that have been supported by 319 funds. As stated earlier, we have worked with the Prairie Waters Education and Research Center to help in the development of their River Watch program and to receive training from their staff on macroinvertebrate collection and identification. IWI has also partnered with the ND Game and Fish and ND Forest Service providing opportunities for outreach regarding ANS, forests, and other agency initiatives.

**4.4** The RW and ROD programs provide participants with watershed education that incorporates STEM activities for high school students and geography, culture, art and music for elementary students. RW and ROD activities enable participating students to have a better understanding of how watersheds function and their importance to societal well-being.

RW is a holistic approach covering many aspects of watershed education. Students and teachers learn about watershed function and process through hands-on activities including water quality monitoring, biological monitoring and river exploration. RW participants also receive training during scheduled events throughout the year and complete a yearly assignment as a team for presentation at the annual forum.

ROD students gain an understanding of watersheds and how they function through activities tailored to their local watershed. In coordination with the classroom instruction, IWI staff assist in the implementation and launching of 14” canoes provided to the classrooms. As a canoe is located and documented on the ROD mobile application, a student may better understand the actual physical movement of water resources within tributaries and throughout the Red River Basin through real-time interaction. Prairie Waters Education and Research Center has a different 319 NPS pollution funded program in North Dakota that brings students to their center for instruction. This project delivers RW and ROD to local schools with activities performed within and tailored to each school’s watershed. Therefore, there is no duplication or replication of 319 NPS pollution funding.

**5.0 EVALUATION AND MONITORING PLAN**

**5.1** The IWI will analyze the student participation through quantitative data including numbers of students participated, monitoring completed, explorer miles logged and canoes launched. Qualitative data will be gathered from assessment worksheets, forum assignments completed by the students and through instructor observation. Teacher evaluations of implementation problems as well as pre/post surveys of students will be utilized to gauge understanding and comprehension of key concepts and principles. These data will be collected, reviewed, and discussed by IWI Staff. A compilation of these data will be presented to major funding sources and the Board of Directors. The Director will receive feedback from these entities and implement any needed changes.

**6.0 BUDGET**

**6.1** The funds for this project will be used for a 36-month period. Funding will start July 1, 2025 and continue through to June 30, 2028.

**Budget Table for Red River Basin River Watch and River of Dreams**

**Part 1 – Funding sources**

	<b>SFY 26</b>	<b>SFY 27</b>	<b>SFY 28</b>	<b>Total</b>
<b>FY2025 Section 319 Funds</b>	\$141,928	\$141,928	\$141,928	\$425,784
<b>State and Local match:</b>				
1) ND Joint Water Resources District	\$94,619	\$94,619	\$94,619	\$283,856
				<b>\$709,640</b>

**Budget Table for Red River Basin River Watch and River of Dreams**

**Part 2 – Funding Budget** - The funds for this project will be used for funding 36 months.

<b>Project Objectives and Tasks</b>	<b>SFY26-28</b>	<b>Total Costs</b>	<b>Cash Match</b>	<b>319 funds</b>
<b>OBJECTIVE 1 - River Watch; Monitoring and Explorers</b>				
Salary/Fringe	\$166,600	\$166,600	\$66,640	\$99,960
Sub-Teacher	\$10,500	\$10,500	\$4,200	\$6,300
Mileage	\$22,500	\$22,500	\$9,000	\$13,500
Lodging	\$1,500	\$1,500	\$600	\$900
Meeting Expense	\$1,000	\$1,000	\$400	\$600
Supplies	\$6,500	\$6,500	\$2,600	\$3,900
<b>Subtotals</b>	<b>\$208,600</b>	<b>\$208,600</b>	<b>\$83,440</b>	<b>\$125,160</b>
<b>Objective 2 - STEM Assistance; Fall Kick Offs and Annual Forum</b>				
Salary/Fringe	\$130,255	\$130,255	\$52,102	\$78,153
Sub-Teacher	\$4,400	\$4,400	\$1,760	\$2,640
Teacher Scholarships	\$9,000	\$9,000	\$3,600	\$5,400
Mileage	\$9,500	\$9,500	\$3,800	\$5,700
Meeting Expense	\$15,500	\$15,500	\$6,200	\$9,300
Supplies	\$5,500	\$5,500	\$2,200	\$3,300
<b>Subtotals</b>	<b>\$174,155</b>	<b>\$174,155</b>	<b>\$69,662</b>	<b>\$104,493</b>
<b>Objective 3: River of Dreams; Classroom and Field Activities</b>				
Salary/Fringe	\$208,335	\$208,335	\$83,334	\$125,001
Sub-Teacher	\$0	\$0	\$0	\$0
Mileage	\$8,500	\$8,500	\$3,400	\$5,100
Meeting Expense	\$0	\$0	\$0	\$0
Supplies	\$28,850	\$28,850	\$11,540	\$17,310
<b>Subtotals</b>	<b>\$245,685</b>	<b>\$245,685</b>	<b>\$98,274</b>	<b>\$147,411</b>
<b>Objective 4 - Evaluation and Reporting; Reimbursements and Reports</b>				
Salary/Fringe	\$81,200	\$81,200	\$32,480	\$48,720
<b>Subtotals</b>	<b>\$81,200</b>	<b>\$81,200</b>	<b>\$32,480</b>	<b>\$48,720</b>
<b>TOTALS</b>	<b>\$709,640</b>	<b>\$709,640</b>	<b>\$283,856</b>	<b>\$425,784</b>





**October 31, 2024**

## **ND Red River Basin River Watch River of Dreams Progress Report**

Red River Basin River Watch employs a watershed-based, cross-curricular approach to learning. We strive to introduce students to their local watershed, allowing them to connect to the world around them both upstream and downstream. We do this by educating students in their home watershed as well as connecting them with schools throughout the basin.

Danni Halvorson  
Director - Education  
International Water Institute



## Program Overview

The Red River Basin River Watch Program (RW) delivers innovative watershed education programming to schools and communities across the Red River of the North Basin. Believing education is the most effective tool to change attitudes and behaviors, RW delivers watershed education for elementary, middle, and high school students through hands-on science and watershed exploration activities designed to challenge students and facilitate understanding of water resources. RW classroom and outdoor activities Classroom and outdoor activities are designed to address education initiatives, including:

- ✓ Build capacity of local communities to protect and sustain water resources
- ✓ Provide education and outreach to inform Minnesotans' water choices
- ✓ Encourage citizen and community engagement on water

Support from the Red River Watershed Management Board, Red River Joint Water Resource District and local districts has built an effective and popular watershed education program across the Red River of the North Basin that focuses on water quality. Since program inception, RW teams from schools throughout the Red River Basin have collected water quality data to complement the state assessment of surface waters. Clean Water Act (MN) and Dept. of Environmental Quality (ND) funds have enabled the International Water Institute (IWI) to build on this established and popular RW foundation by providing additional opportunities for participants to understand how to protect and improve the Red River Basin's valuable water resources, including:

### [Water Quality Monitoring:](#)

Collect and record conditions at local rivers and streams using state-of-the-art scientific methods and equipment. Grab samples and real-time monitoring.



### [Annual River Watch Forum:](#)

Annual event challenging students to learn and share about emerging local watershed issues.

### [Macroinvertebrate Monitoring:](#)

Macroinvertebrate monitoring provides additional insights on watershed and ecosystem health.



### [River Explorers:](#)

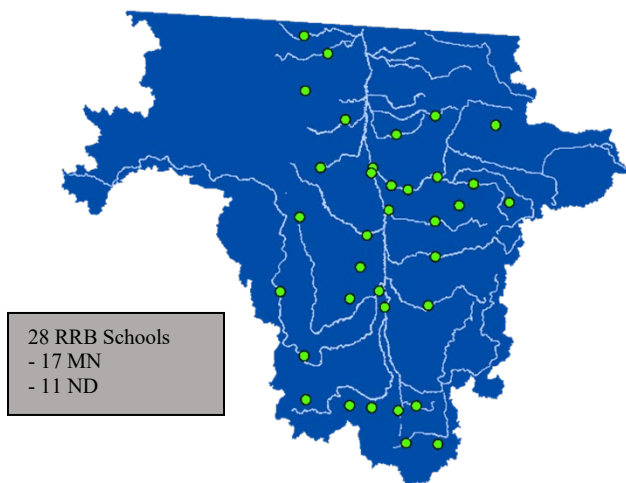
Guided kayak excursions on local rivers to observe and document watershed conditions.

### [River of Dreams:](#)

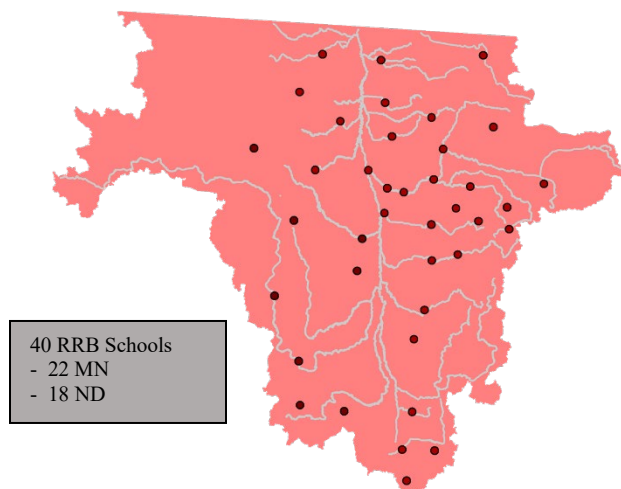
A cross-curriculum watershed education program tailored to elementary students.

## Participating Schools

*River Watch*



*River of Dreams*



## Project Goals, Work Tasks, and Outcomes

The project goal is to engage Red River Basin high school, middle school, and elementary students in hands-on education programs focused on river resources within their local watershed. Program activities include integrated classroom and outdoor experiences that build awareness of river ecosystems and watershed connections, increase student capacity to make informed decisions about their environment, and instill a sense of place about the uniqueness of their local watershed. The work tasks and activities completed from July 2022 through October 2024 are discussed below

**River of Dreams:** Engage elementary students in River of Dreams (ROD) a hands-on education program focused on the valuable river resources of the Red River Basin. Provide integrated classroom and outdoor experiences that; build awareness of river ecosystems and watershed connections, increase student capacity to make informed decisions about their environment and instill a sense of place about the uniqueness of their local watershed—historic, economic, and ecological.

### Measurable Outcomes - ROD

- Classroom resources prepared and delivered including books, art supplies, and canoes.
- Completed 62 classroom sessions to present materials and go over program expectations.
- Completed 62 field sessions with ROD participants. Release of individual ROD canoes and review of watershed lessons learned by students.
- Created canoe pages and entered canoe tracking information into the ROD database. Program and canoe information can be found [here](#).
- Assessment pre/post surveys of students.



**Red River Explorers Paddling Program:** Increase awareness and knowledge of local land use and watershed connections through a Red River Explorers Paddling Program to allow RW teams and community members to “water-truth” streams in the Red River Basin, documenting local watershed conditions.

Measurable Outcomes – Paddle Trips

- Provided twenty-eight (28) guided river ecology excursions with 399 participants.
- Past river trip reports can be viewed [here](#).

**Water Quality and Biological Monitoring:** Participants are trained in the use of water quality and macroinvertebrate sampling equipment. Participants monitor local streams for water chemistry and macroinvertebrate communities.

Measurable Outcomes – Water Quality and Biological Monitoring

- 35 water quality events were completed. Parameters measured typically included stage, appearance, recreational suitability, stream condition/habitat assessment, transparency, water temperature, dissolved oxygen, pH, and conductivity.
- Five macroinvertebrate events were completed. Students conducted macroinvertebrate studies and identification activities to assess water quality health and learned about the relationship between water quality and biological communities.
- Reviewed water quality data with students and teachers providing insight to conditions at the monitoring locations.

**STEM Assistance:** Assist in provision of Science, Technology, Engineering and Math (STEM) education and engagement opportunities through watershed science. Provide professional teacher development through watershed inquiry and education opportunities. Provide opportunities for youth to engage in scientific research and outreach. Supplement stream monitoring activities with real-time continuous data collection.

Measurable Outcomes – STEM Assistance

- 4 regional fall kick-offs were held. 200 students and ten teachers received training in water quality data analysis, watershed mapping, outdoor podcasts, survey creation and analysis and water related communication content development.
- Partnered with Wilderness Inquiry to provide canoe trips for participants at each kick-off location (Moorhead, and East Grand Forks).
- Hosted the 28<sup>th</sup> and 29<sup>th</sup> Annual River Watch Forums at the Alerus Center in Grand Forks, ND. Over 200 students and teachers were in attendance for each forum. Forum schedules included a keynote speaker and break-out sessions with hands-on activities relating to watershed management or river monitoring careers. Break-out sessions featured speakers who all interact with the land, water, and rivers in different ways.
- In 2023, River Watch Teams compared water quality data from rivers in their community to downstream sites on those same rivers. They also determined the drainage area for their monitoring sites and their entire watershed. Finally, they compared their water quality data to state standards. Each school made a poster board and a brochure and presented this information to a live panel of judges at the Forum.
- The 2024 theme “Leaping into Watershed Communications” had students dropping their scientific equipment and reaching for a camera and entering the recording studio instead. Each participating team created content by designing a calendar and by producing a podcast all about their local river or watershed. They also added a binder to catalog information about their water quality monitoring sites and a poster display for live judging.
- Past forum events can be viewed [here](#).

## Project Evaluation

Twenty-five Minnesota and North Dakota educators that were involved with the RW program were provided an opportunity to complete an online survey. Eighteen educators completed the online survey (seven from ND). Overall teachers were pleased with the quality of watershed science activities offered and found them useful in helping meet education requirements. Select individual question responses are shown below (Figures 1 – 5).

Figure 1.

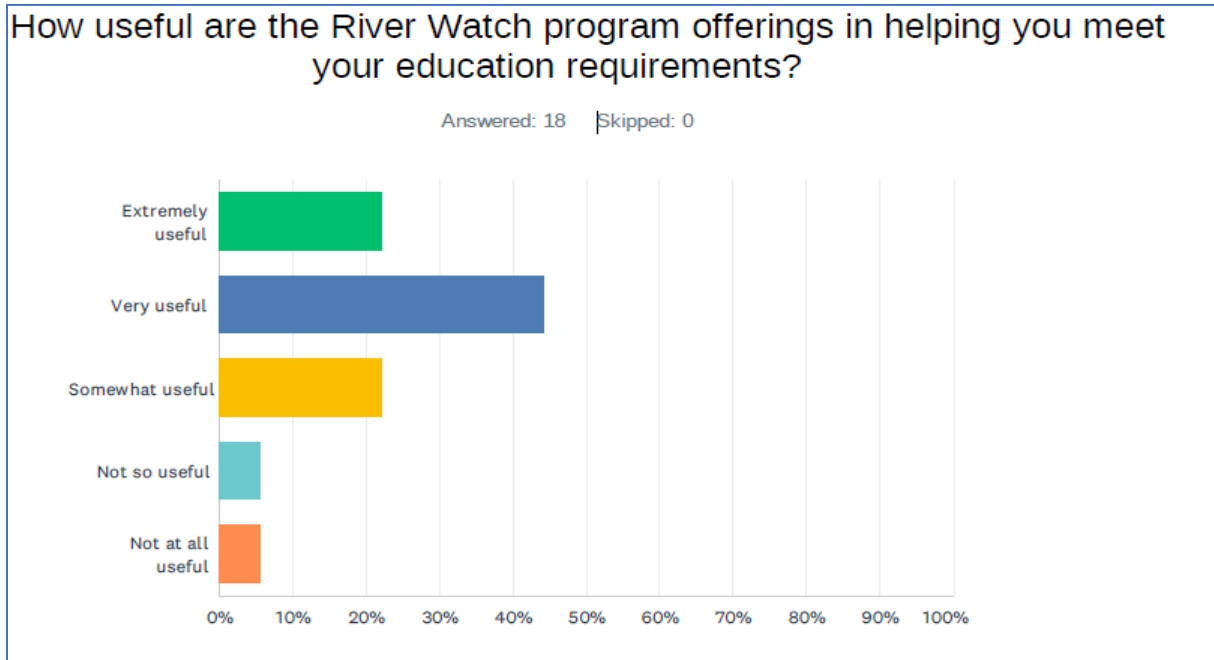


Figure 2.

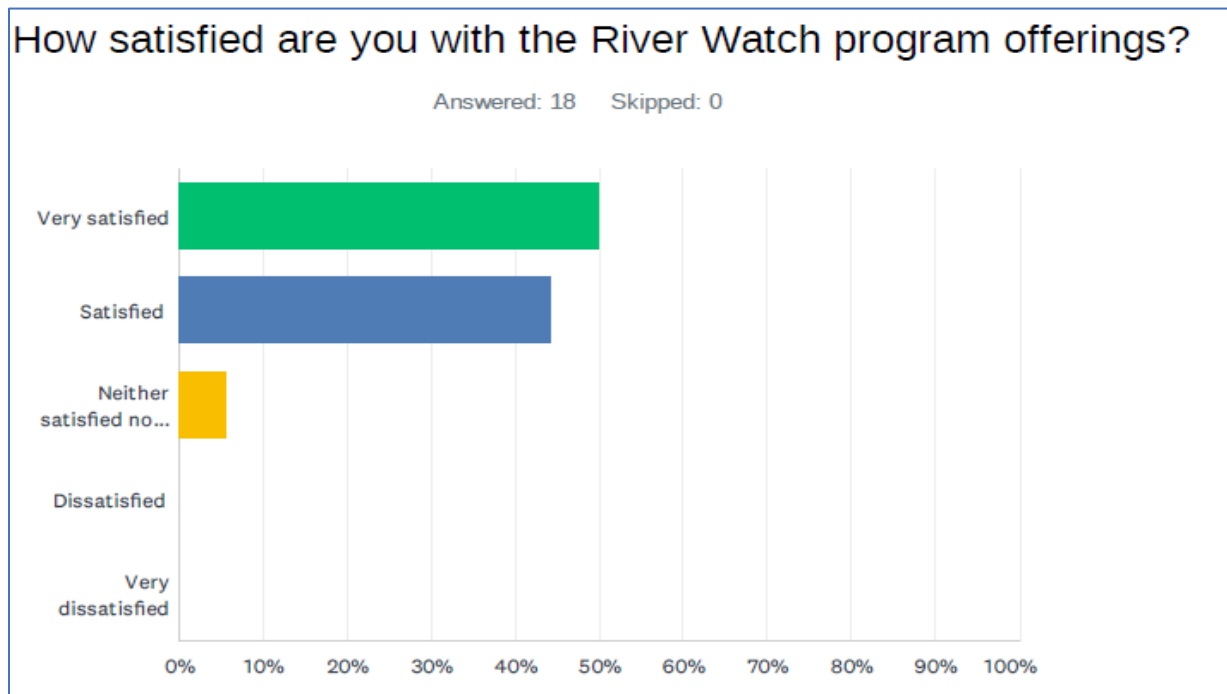


Figure 3.

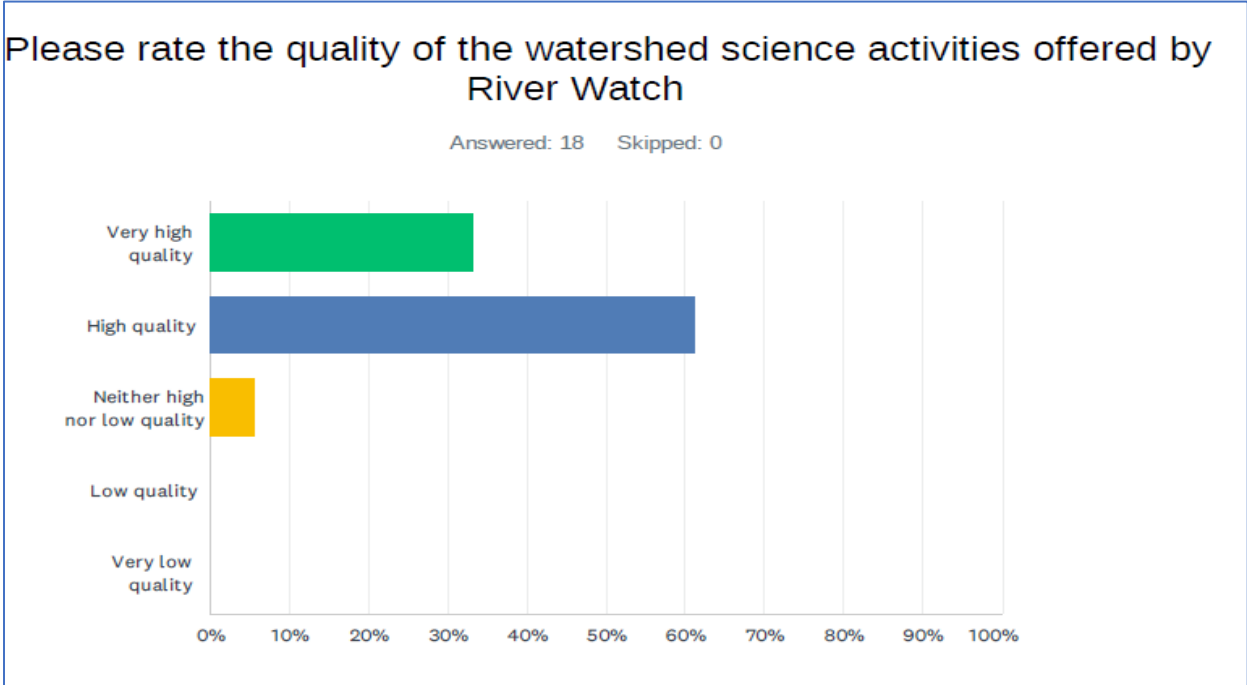


Figure 4.

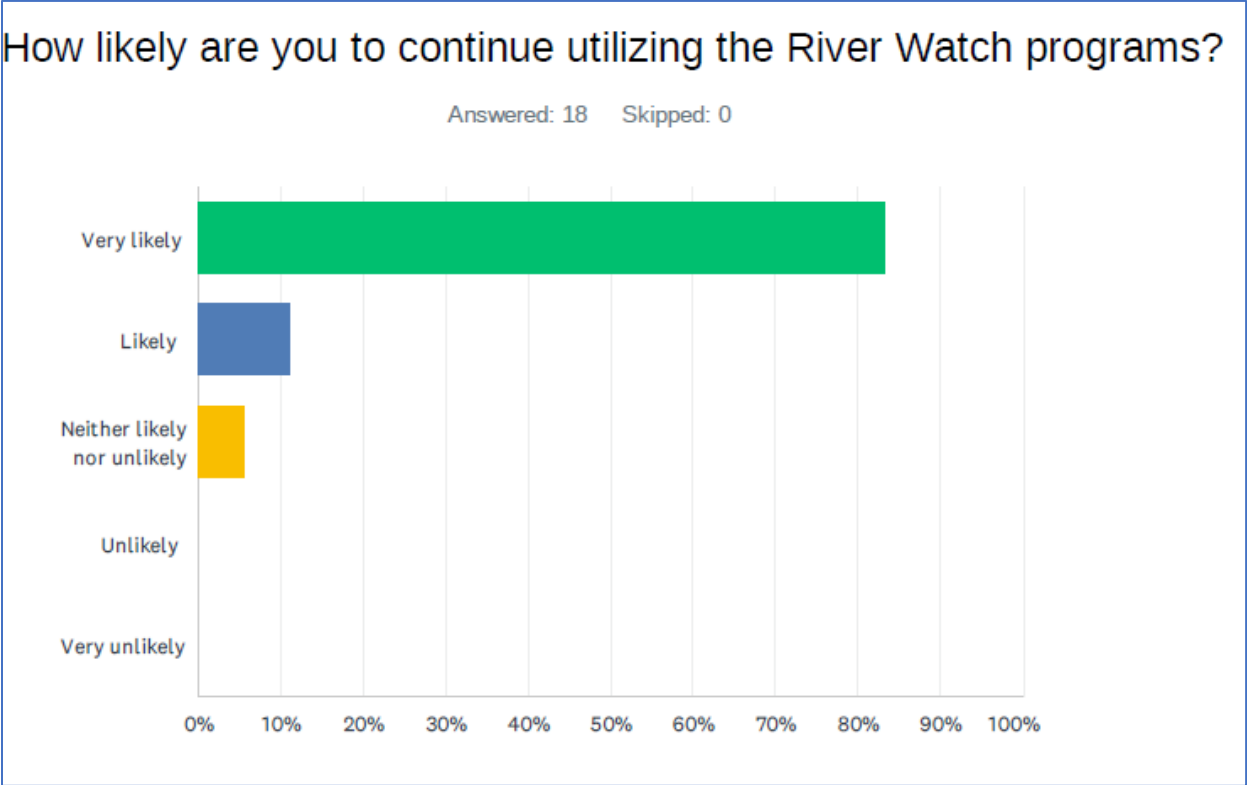
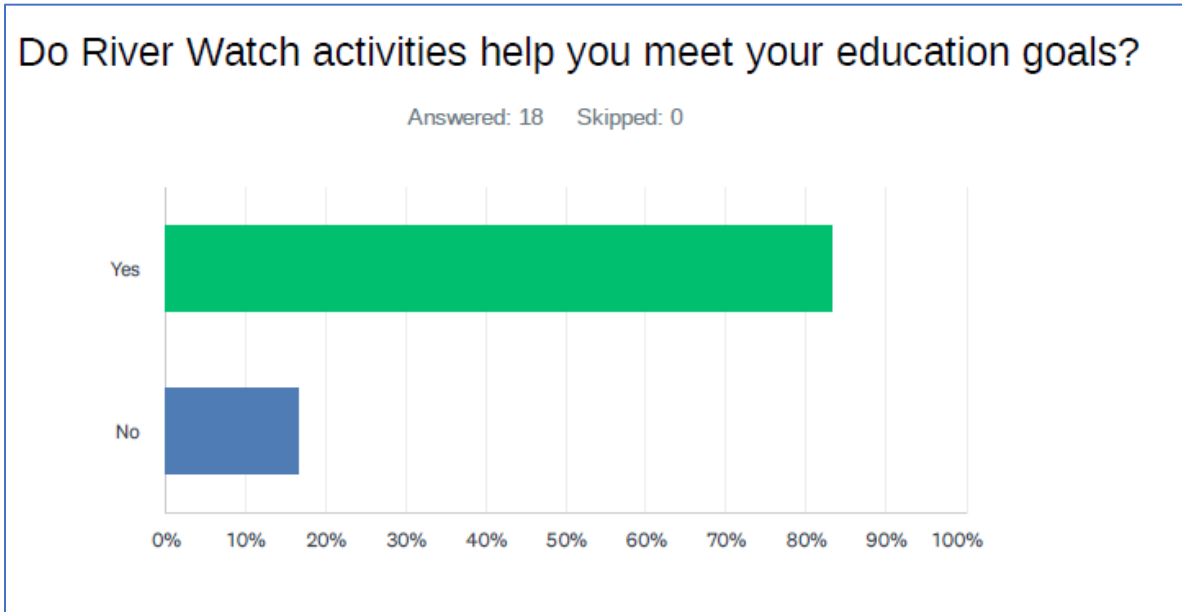
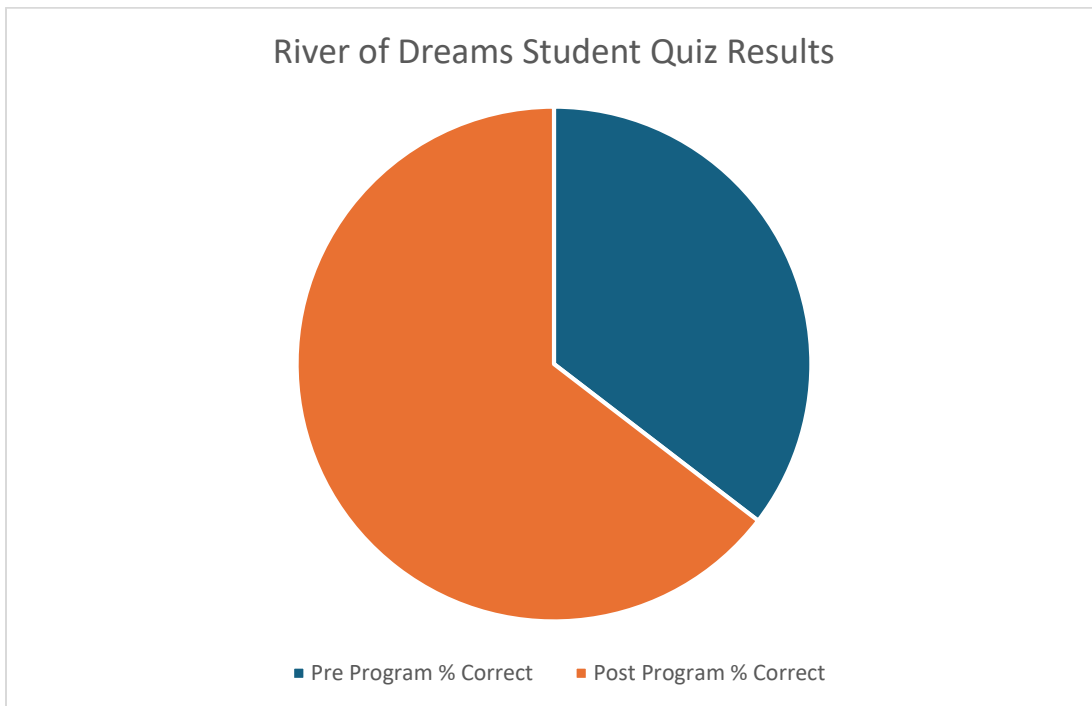


Figure 5.



Student pre and post-quizzes were given during classroom sessions to 1,225 ROD participants. Students were asked a series of questions related to watershed/river terminology and pollution sources. Post-activity correct response rates increase by 28%. Student quiz response results are shown below (Figure 6).

Figure 6.





## Information and Education Outputs

The Red River Basin RW Program has been an ongoing program for 29 years and has developed numerous information and education outputs throughout the years. Recent outputs including training materials, videos, virtual activities, education opportunities, and newsletters can be explored on the [International Water Institute Education Website](#).



HOME ABOUT EDUCATION RESEARCH SUPPORT SERVICES TOOLS

## Watershed Education

The International Water Institute utilizes a cross-curricular approach to watershed science utilizing the "4 C's":

- CHALLENGING participants to collect and think critically about scientific data
- CREATING a sense of responsibility and stewardship for local waterways
- CONNECTING students to their local rivers through experiential learning opportunities
- CULTIVATING interest and appreciation for watershed science careers and opportunities