

**Environment and Natural Resources Trust Fund  
2016 Request for Proposals (RFP)**

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**Project Title:**

**ENRTF ID: 107-C**

Next Generation Watershed Connections

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**Category:** C. Environmental Education

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**Total Project Budget:** \$ 246,444

**Proposed Project Time Period for the Funding Requested:** 3 years, July 2016 to June 2019

**Summary:**

650 elementary and 100 high school students will connect through engagement in experiential education and outdoor learning activities designed to enhance their understanding of watershed connections and stewardship.

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**Name:** Danni Halvorson

**Sponsoring Organization:** International Water Institute

**Address:** 23493 155th Ave. NW  
Viking MN 56760

**Telephone Number:** (218) 280-0515

**Email** danni@iwinst.org

**Web Address** www.iwinst.org

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**Location**

**Region:** Central, NW, NE

**County Name:** Beltrami, Clay, Itasca, Koochiching, Lake of the Woods, Marshall, Polk, Red Lake, St. Louis, Traverse

**City / Township:**

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**Alternate Text for Visual:**

The visual portrays students participating in Next Generation Watershed Connections activities.

_____ Funding Priorities	_____ Multiple Benefits	_____ Outcomes	_____ Knowledge Base
_____ Extent of Impact	_____ Innovation	_____ Scientific/Tech Basis	_____ Urgency
_____ Capacity Readiness	_____ Leverage	_____ TOTAL	_____ %



**PROJECT TITLE: Next Generation Watershed Connections**

**I. PROJECT STATEMENT**

The International Water Institute (IWI) will engage and connect 650 elementary and 100 high school students via experiential education and outdoor learning activities to enhance watershed understanding and stewardship. Elementary students will learn of watershed connections via River of Dreams’ project activities. High school students will work with elementary students, plus connect with natural resource managers through River Explorers kayak discovery trips.

Based on the Holling C. Holling book, “Paddle to the Sea,” River of Dreams captures the imagination and interest of elementary students as they each receive small, 14” cedar canoes to decorate with their personal design for launch in their local stream. Before launching their canoes, students learn about watershed connections through classroom math, science, geography, culture, and art activities and create a dream for their canoe’s journey. Each dream is registered along with a unique identifying number via a mobile application that tracks the canoe’s journey through the watershed. The activity teaches students about stream connectivity and fosters a sense of place.

High school students will work with the elementary students on the River of Dreams project and follow-up the River of Dreams canoe launch with a River Explorers kayak trip to find and re-launch stranded canoes. High school students will also log the location of discovered canoes via the River of Dreams mobile application, allowing elementary students to track their canoe’s progress downstream. The kayak discovery trips will be part of the guided River Explorers program whereby students observe and document watershed conditions (e.g., river access, erosion, buffers, mussel presence). River Conditions Reports with geotagged pictures will be prepared to share with local and state water resource managers and the public, raising awareness of needs for stream protection or improvement.

Three (3) Next Generation Watershed Connections outreach workshops will be delivered in neighboring river basins (target areas: Rainy, Upper Mississippi, and St. Louis) to share lessons learned and provide guidance for program implementation in watersheds throughout Minnesota.

**II. PROJECT ACTIVITIES AND OUTCOMES**

**Activity 1:** Solicit school participation, sign agreements, mobile application development, and purchase equipment. **Budget: \$63,194**

Project Coordinator will set the program up in five (5) Red River of the North Basin schools. Coordinator will oversee and guide the contract to develop, test, and launch the River of Dreams mobile application.

<b>Outcome</b>	<b>Completion Date</b>
1. Schools have signed agreements; 5 schools.	Nov 30, 2016
2. Mobile application to track canoes created and launched.	Nov 30, 2016
3. Purchase and prepare educational materials and equipment.	Feb. 29, 2017

**Activity 2:** River of Dreams (ROD) **Budget: \$ 77,950**

Organize classroom visits and field activities for students. Provide teachers with education materials, equipment, and assist with program delivery. Train teachers and students in the use of ROD mobile application, assist in 10 canoe release sessions, lead 10 river trips to field test mobile application.

<b>Outcome</b>	<b>Completion Date</b>
1. 20 school groups completed classroom and field activities (750 students).	June 30, 2018



**Environment and Natural Resources Trust Fund (ENRTF)**  
**2016 Main Proposal**  
**Project Title: Next Generation Watershed Connections**

2. Teacher evaluation of educational materials and mobile application performance.	June 30, 2018
3. Student evaluation (elementary) of watershed knowledge and interest.	June 30, 2018

**Activity 3: River Explorers – River Trips for Stream Condition Scouting** **Budget: \$67,000**

Organize classroom visits and field activities for high school students. Train teachers and students in use of waterproof/GPS-enabled cameras and development of Stream Condition Reports. Project Coordinator and Education Specialist will teach kayak safety and paddling skills and lead 10 kayak river trips in areas of interest to document stream conditions (GPS camera use) and assist in development of 10 Stream Condition Reports.

Outcome	Completion Date
1. 10 high school groups completed classroom exercises and river trips (100 students).	Oct. 31, 2018
2. 10 Stream Condition Reports completed and shared with local resource managers.	Dec. 31, 2018
3. Teacher program evaluation and resource manager evaluation of condition reporting.	April 30, 2019
4. Student evaluation of watershed knowledge, interest, and stewardship awareness	April 30, 2019

**Activity 4: Program Outreach – Major Watershed Workshops** **Budget: \$38,300**

Develop a transferable education model that can be used in any watershed in Minnesota and hold 3 outreach workshops in neighboring Major Watersheds.

Outcome	Completion Date
1. Program Model finalized and developed based on teacher input.	Feb. 29, 2019
2. 3 outreach workshops complete.	June 30, 2019
3. Final project results analyzed and reported.	June 30, 2019

**III. PROJECT STRATEGY**

**A. Project Team/Partners**

IWI staff will work with 750 students and 13 teachers in five (5) school districts from five (5) different counties within the Minnesota portion of the Red River of the North Basin. Stream Condition Reports will be used to engage local SWCDs and Watershed Districts. Houston Engineering Inc. will be the contractor to develop the River Of Dreams mobile application which will build on prior flood tracking mobile technology produced by their staff.

**B. Project Impact and Long-Term Strategy**

Project methods, costs, and outcomes will be replicable in other MN watersheds. Project procedures and details will be available on the IWI website for download. IWI will conduct outreach training sessions in three other major MN water basins (Rainy, Upper Mississippi, and St. Louis). The River Of Dreams mobile technologies will be transferable to the entire state. The Stream Condition Reports will record valuable information to share with local watershed, SWCD managers, and others involved with watershed stressor identification and Watershed Restoration and Protection Projects.

IWI will maintain the River Of Dreams application for canoe entry, tracking of canoes, and Stream Condition Report products through its website. IWI will survey students over the course of the project to assess impacts. Teachers and resource managers will also be surveyed to identify project strengths and opportunities for improvement.

**C. Timeline Requirements**

This will be a three year project with elementary student watershed education based on the River of Dreams activities completed in years 1 and 2. High school watershed education using River Explorers activities and outreach workshops will be complete by the end of year 3.

## 2016 Detailed Project Budget

**Project Title:** Next Generation Watershed Connections

### IV. TOTAL ENRTF REQUEST BUDGET - 3 years

<b>BUDGET ITEM</b>	<b>AMOUNT</b>
<b>Personnel:</b> Coordinator - 25% fte; 68% salary/32% fringe; 36 months; (\$33,800 annually)	Project \$ 101,400
<b>Personnel:</b> Specialist - 25% fte; 70% salary/30% fringe; 36 months (\$23,400 annually)	Education \$ 70,200
<b>Personnel:</b> Project Manager - 5% fte; 68% salary/32% fringe; 36 months; (\$8,320 annually)	\$ 24,960
<b>Professional/Technical/Service Contracts:</b> Houston Engineering Inc. River of Dreams mobile application development.	\$ 10,000
<b>Equipment/Tools/Supplies:</b> 650 River Of Dreams 14" inch cedar canoes purchased at \$20 each (\$13,000). Purchase canoe ID codes, epoxy to seal in codes, art supplies to decorate canoes (\$1,000) Purchase 6 kayaks with safety gear and paddles at \$500 per each complete set-up (\$3,000). Purchase 1 six place kayak trailer (\$2,100)	\$ 19,100
<b>Travel:</b> Mileage- 25,450 miles at \$0.575 per mile (\$14,634) Lodging and meals - (\$1,200)	\$ 15,834
<b>Additional Budget Items:</b> 3 Moblie application store registration fees at \$150 per (\$450) Bus transportation for 30 field trips for canoe launches and river trips \$150 per (\$4,500)	\$ 4,950
<b>TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND \$ REQUEST =</b>	<b>\$ 246,444</b>

### V. OTHER FUNDS

<b>SOURCE OF FUNDS</b>	<b>AMOUNT</b>	<b>Status</b>
<b>Other Non-State \$ To Be Applied To Project During Project Period:</b> Northwest Minnesota Foundation grant application.	\$ 13,306	pending
<b>Other State \$ To Be Applied To Project During Project Period:</b>	NA	NA
<b>In-kind Services To Be Applied To Project During Project Period:</b>	NA	NA
<b>Funding History:</b> Clean Water Legacy Fund, legislative appropriation. Funding expended prior to July 1, 2016.	\$ 89,730	
<b>Remaining \$ From Current ENRTF Appropriation:</b>	NA	NA

# Next Generation Watershed Connections



**Project Statement:** Elementary and high school students will connect through engagement in experiential education and outdoor learning activities designed to enhance their understanding of watershed connections and stewardship.



## Program Outcomes:

- 650 elementary students learn about river system connectivity and watershed functionality.
- 100 high school students assist in elementary program delivery and explore their local rivers in the process.
- Statewide transferable program model.



## **Project Manager Qualifications & Organization Description**

### **Project Manager:**

Danni Halvorson is the Education and Monitoring Director for the International Water Institute. He currently manages several state grants.

### **Organization Description**

The International Water Institute (Institute) was formed following the 1997 Red River of the North flood to facilitate research, public education, training, and information dissemination relating to flood damage reduction and water resource protection & enhancement in the Red River Basin.

The Institute is a 501(c) (3) organization governed by an international Board of Directors.