

**Environment and Natural Resources Trust Fund
2014 Request for Proposals (RFP)**

Project Title:

ENRTF ID: 060-B

WQExPertApp

Category: B. Water Resources

Total Project Budget: \$ 882,500

Proposed Project Time Period for the Funding Requested: July 14, 2014 - July 13, 2016

Summary:

The WQExPertApp is an online tool that bridges the gap between Clean Water Funded TMDL/WRPP strategies by delivering prioritized, targeted and measurable on-the-ground BMP and CP projects.

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Sponsoring Organization: International Water Institute

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Web Address www.iwinst.org

Location

Region: Statewide

County Name: Statewide

City / Township:

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



Environment and Natural Resources Trust Fund (ENRTF)

2014 Main Proposal

Project Title: WQExPertApp – Targeting Project Implementation, Documenting Water Quality Improvements, and Ensuring Fiscal Accountability at the Watershed Scale

I. PROJECT STATEMENT

Minnesota has invested heavily in developing Total Maximum Daily Load (TMDL) and Watershed Restoration and Protection Plan (WRPP) strategies to improve and protect Minnesota's waters. TMDLs and WRPPs include general strategies for improving water quality but rarely identify the specific locations of projects necessary to achieve the desired sediment and nutrients load reduction. MN selected the Hydrologic Simulation Program Fortran (HSPF) model as the standard for developing TMDL's and WRPP's in the 83 major watersheds. The HSPF model is the basis for measuring the effectiveness of on the ground practices by generally quantifying reductions of nonpoint source pollution (NPS). However, HSPF is a sophisticated model requiring local governments to acquire expertise capable of running and interpreting the model to effectively site and build NPS water quality improvement projects (Best Management Practices – BMPs; Conservation Practices – CPs) and implement conservation programs. HSPF is rarely used to develop detailed implementation plans showing specific project locations. Reducing these technical assistance costs would increase available dollars for implementation of projects (boots on the ground). The Water Quality Practitioner Expert System for Project Implementation Application (WQExPertApp) can be used state-wide by any practitioner to provide the technical bridge between the general description of the types of strategies in a TMDL or WRPP and the identification of implementable on-the-ground BMPs and CPs. The WQExPertApp will include the capability to "ingest" and fully use HSPF (also SWAT and P8) model results to site one or many water quality improvement projects, evaluate collective water quality and economic benefits, and demonstrate fiscal accountability. WQExPertApp will leverage previous fiscal investments of the International Joint Commission, the U.S. Army Corps of Engineers, and the Board of Water and Soil Resources.

II. DESCRIPTION OF PROJECT ACTIVITIES

Activity 1: Practitioner Workshops to Complete Implementation Plans **Budget: \$32,500**

Six regionally (2 sets of 3) located workshops for local practitioners and MN State agency staff.

Outcome	Completion Date
1. Written Use Case Analysis for WQExPertApp (document describing design)	Month 3
2. Tool beta testing by Practitioners and State agency staff	Month 12
3. Practitioner and agency staff use of tool to complete detailed implementation plans	Month 15

Activity 2: Socio-Economic/Water Quality / Ecological Benefits Analysis **Budget: \$125,000**

Develop methods to evaluate the socio-economic, water quality and ecological benefits to rank NPS Best Management/Conservation Practice projects.

Outcome	Completion Date
1. Complete description of methods used	Month 4
2. Implement and test methods	Month 6
3. Incorporate methods into Beta tool	Month 10

Activity 3: Create HydroConditioned and WQ Products from Statewide LiDAR **Budget: \$400,000**

Create hydro-conditioned and enhanced water quality geo-spatial data products for the 12-digit Hydrologic Unit Codes encompassing the areas managed by the project partners.

Outcome	Completion Date
1. Complete description of methods used	Month 4
2. Implement and test methods	Month 6



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3. Incorporate methods into Beta tool	Month 10
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Activity 4: Program WQExPertApp

Budget: \$125,000

WQExPertApp will be programmed following the completion of concept design as describe in the document *Use Case Analysis for WQExPertApp* completed during Activity 1

Outcome	Completion Date
1. Completed beta version of WQExPertApp for testing by Practitioners	Month 12
2. Revisions to beta version completed based on Practitioners testing / workshops	Month 13
3. Deployment of WQExPertApp for state-wide use	Month 15

Activity 5: Integrate Ingestion of Watershed Model (HSPF, P8) Output

Budget: \$125,000

Program the WQExPertApp to ingest HSFP model results. Identify priority subwatersheds, priority management zones, and field-scale locations to construct BMPs and CPs.

Outcome	Completion Date
1. Complete description of methods used	Month 4
2. Implement and test methods	Month 6
3. Incorporate methods into Beta tool	Month 10

Activity 6: Use WQExPertApp - Develop Detailed Watershed Strategies

Budget: \$75,000

Develop 8 – 12 detailed watershed project implementation strategies showing the “best locations” for project construction NPS BMPs to achieve the loading capacities specified by TMDLs and WRPPs.

Outcome	Completion Date
1. Completed Watershed Strategies Identifying Implementable Projects	Month 15

III. PROJECT STRATEGY

A. Project Team/Partners

A local/state government and private company partnership led by the International Water Institute (www.iwinst.org) with partners located in geographically unique areas across Minnesota will use WQExPertApp to develop detailed strategies ready for subsequent funding and construction. Committed partners include the Heron Lake Watershed District, the Upper MN River Watershed District, the South Washington Watershed District, the Middle Fork Crow River Watershed District, Blue Earth County Environmental Services, Grant County, Pomme de Terre River Association, Becker County SWCD, the Sauk River Watershed District, the Buffalo Red River Watershed District, Lake of the Woods Soil and Water Conservation District, the Buffalo Creek Watershed District, Carlton County Soil and Water Conservation District and the Rice Creek Watershed District. The Board of Water and Soil Resources has agreed to participate and support the research. Plans are to engage the regional BWSR staff in workshop participation.

B. Timeline Requirements

A 24 month timeline to ensure practitioners are engaged in the concept design and use of the tool. Completed detailed watershed strategies are expected to be submitted for Clean Water Fund consideration.

C. Long-Term Strategy and Future Funding Needs

Expanding the use of WQExPertApp to the entire State to site one or many water quality improvement projects, evaluate their collective water quality and economic benefits, and demonstrate fiscal accountability at the watershed scale.

2014 Detailed Project Budget

Project Title: *[Insert "Project Title" here]*

INSTRUCTIONS AND TEMPLATE (1 PAGE LIMIT)

Attach budget, in MS-EXCEL format, to your "2014 LCCMR Proposal Submission Form".

(1-page limit, single-sided, 10 pt. font minimum. Retain bold text and DELETE all instructions typed in italics. ADD OR DELETE ROWS AS NECESSARY. If a category is not applicable write "N/A", leave it blank, or delete the row.)

IV. TOTAL ENRTF REQUEST BUDGET *[Insert # of years for project]* years

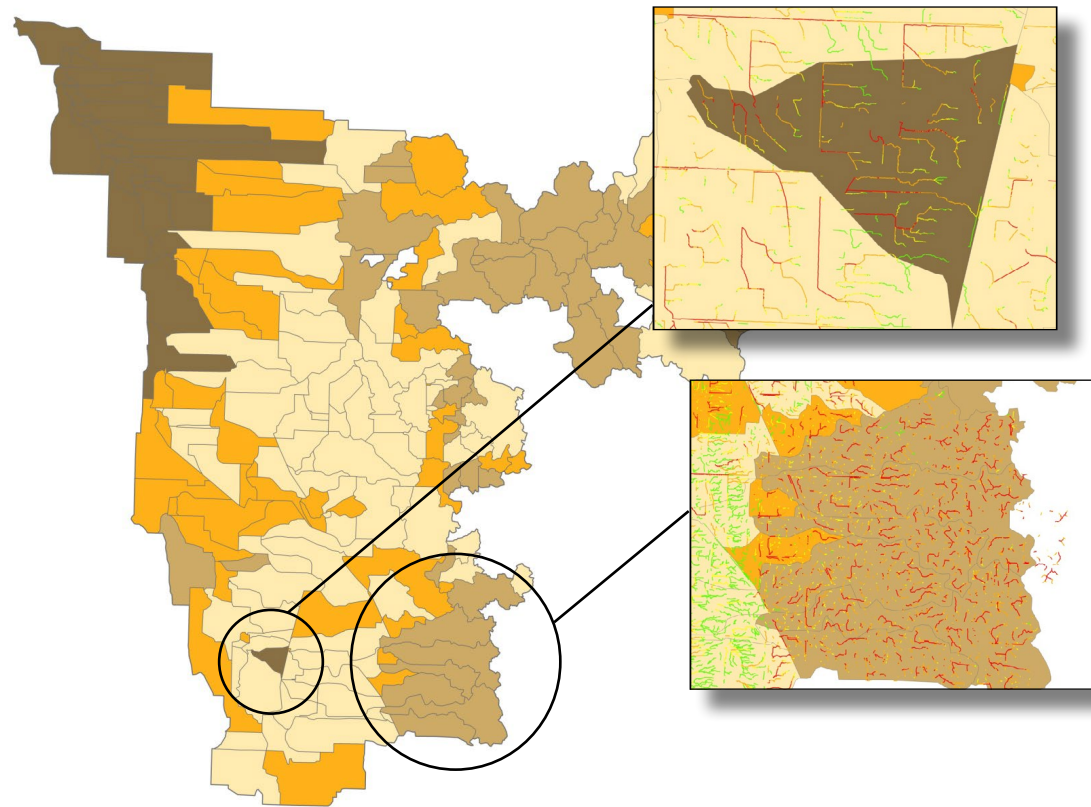
BUDGET ITEM <i>(See "Guidance on Allowable Expenses", p. 13)</i>	AMOUNT
Executive Director (2 Years, %FTE, 30% Fringe) - Project Management, Terrain Products QA, Outreach, Meeting Facilitation, Reporting	\$ 100,224
GIS Project Manager (2 Years, 75%FTE, 30% Fringe) - Terrain Processing Management, Terrain Processing, Terrain Product QA	\$ 187,920
2 GIS Project Specialists (2 Years, 60%FTE, 30% Fringe) - Terrain Processing	\$ 121,731
Contracts:Houston Engineering, Inc. - Water Resources Engineering	\$ 261,875
Contracts:Houston Engineering, Inc. - Web/GIS Application Development	\$ 180,625
Contracts:Houston Engineering, Inc. - Meeting Facilitation and Support	\$ 27,625
Equipment/Tools/Supplies: <i>In this column, list out general descriptions of item(s) or item type(s) and their purpose - one row per item/item type.</i>	NA
Acquisition (Fee Title or Permanent Easements): <i>In this column, indicate proposed number of acres and and name of organization or entity who will hold title.</i>	NA
Travel: <i>Be specific. Generally, only in-state travel essential to completing project activities can be included.</i>	\$ 2,500
Additional Budget Items: <i>In this column, list any additional budget items that do not fit above categories. List by item(s) or item type(s) and explain how number was reached. One row per type/category.</i>	NA
TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND \$ REQUEST =	\$ 882,500

V. OTHER FUNDS

SOURCE OF FUNDS	AMOUNT	Status
Other Non-State \$ Being Applied to Project During Project Period: <i>Indicate any additional non-state cash dollars to be spent on the project during the funding period. For each individual sum, list out the source of the funds, the amount, and indicate whether the funds are secured or pending approval.</i>	NA	<i>Indicate: Secured or Pending</i>
Other State \$ Being Applied to Project During Project Period: <i>Indicate any additional state cash dollars (e.g. bonding, other grants) to be spent on the project during the funding period. For each individual sum, list out the source of the funds, the amount, and indicate whether the funds are secured or pending approval.</i>	NA	<i>Indicate: Secured or Pending</i>
In-kind Services During Project Period: <i>Workshop participants will attend meeting on their own time and travel expense</i>	\$ 8,000	<i>Pending</i>
Remaining \$ from Current ENRTF Appropriation (if applicable): <i>Specify dollar amount and year of appropriation from any current ENRTF appropriation for any directly related project of the project manager or organization that remains unspent or not yet legally obligated at the time of proposal submission. Be as specific as possible. Describe the status of funds in the right-most column.</i>	NA	<i>Indicate: Unspent? Not Legally Obligated? Other?</i>
Funding History: BWSR Clean Water Fund Grant, COE??	NA	

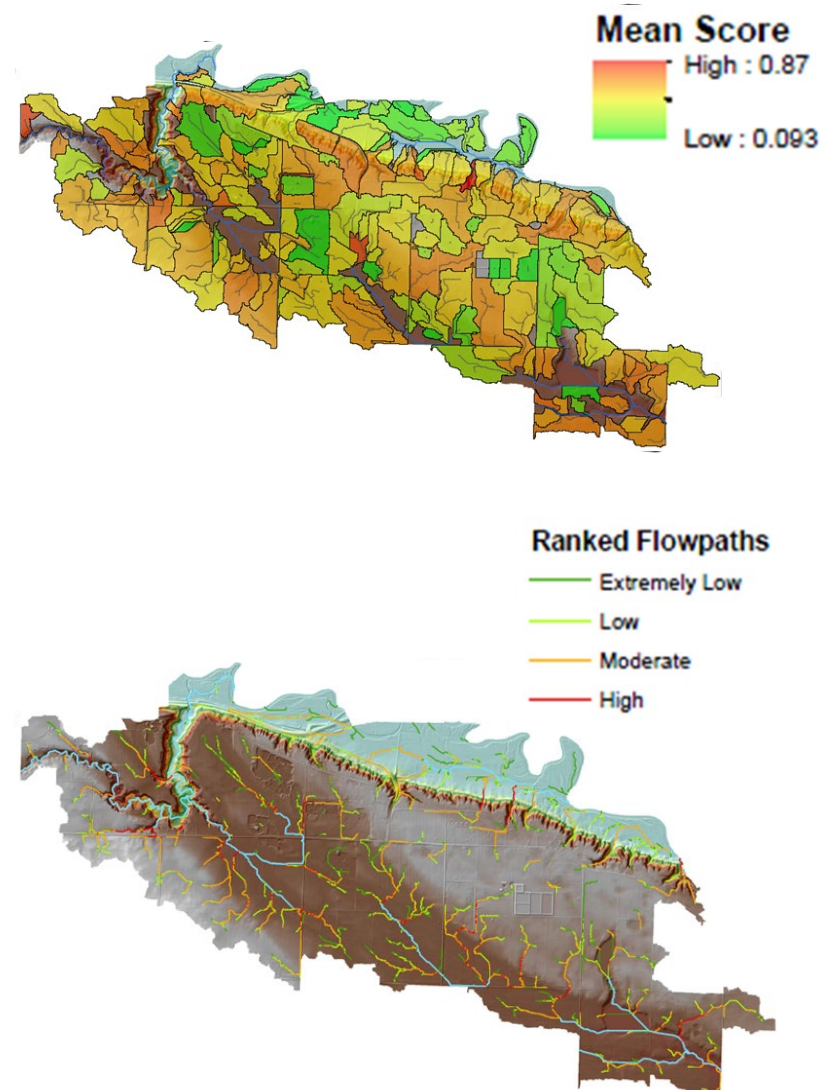
WQExPert APP

Prioritize



Subwatersheds for
Implementation

Target



Project Locations Within
Watershed at Fields Scale

Measure



Progress in Water
Quality Improvement

Project Manager: Charles Fritz
Director, International Water Institute
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701.388.0861

Charles Fritz holds a M.S. in Natural Resources Management (NDSU) and has served as the Director of the International Water Institute for 13 years. Mr. Fritz has been responsible for numerous projects directly applicable to the 2014 LCCMR WQExPertAPP proposal including the Red River Basin Decision Information Network (www.rrbdin.org), Red River Basin Mapping Initiative (<http://www.iwinst.org/lidar/>), LiDAR Viewer (<http://gis.rrbdin.org/lidarviewer/index.html>), LiDAR Download Portal (<http://gis.rrbdin.org/lidardownload/index.html>), Project Planning Tool/Useful Watershed Applications (<http://gis.rrbdin.org/ppt/> and <http://gis.rrbdin.org/pptviewer/>), and the Water Quality Decision Support Application (<http://www.rrbdin.org/wqdsa-welcome>). Mr. Fritz will be responsible for ensuring the required accounting, timelines, deliverables and reporting per the LCCMR contract tenants.

The International Water Institute (Institute) was formed to facilitate research, public education, training and information dissemination relating to flood damage reduction and water resources protection (www.iwinst.org)

The International Water Institute is a Minnesota registered 501c3 Non-profit organization