

**Environment and Natural Resources Trust Fund
2011-2012 Request for Proposals (RFP)**

LCCMR ID: 050-B

Project Title: Preservation of Natural Resources, Ecology, and Stormwater Reuse

Category: B. Water Resources

Total Project Budget: \$ \$350,000

Proposed Project Time Period for the Funding Requested: 3 yrs, July 2011 - June 2014

Other Non-State Funds: \$ 0

Summary:

First of its kind design, combining "Complete Streets" with preservation of natural resources, ecology, and reuse of stormwater, exceeding regulation and setting new standards for future improvements in communities.

Name: Todd Hubmer

Sponsoring Organization: City of Afton

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Location

Region: Metro

Ecological Section: Minnesota and NE Iowa Morainal (222M)

County Name: Washington

City / Township: Afton

<input type="checkbox"/>	Funding Priorities	<input type="checkbox"/>	Multiple Benefits	<input type="checkbox"/>	Outcomes	<input type="checkbox"/>	Knowledge Base				
<input type="checkbox"/>	Extent of Impact	<input type="checkbox"/>	Innovation	<input type="checkbox"/>	Scientific/Tech Basis	<input type="checkbox"/>	Urgency				
<input type="checkbox"/>	Capacity	<input type="checkbox"/>	Readiness	<input type="checkbox"/>	Leverage	<input type="checkbox"/>	Employment	<input type="checkbox"/>	TOTAL	<input type="checkbox"/>	%

2011-2012 MAIN PROPOSAL

PROJECT TITLE: Preservation of Natural Resources, Ecology, and Stormwater Reuse.

I. PROJECT STATEMENT

Old Village Afton, located on the wild and scenic St. Croix River, is a place to experience some of the States most beautiful natural assets and wildlife. The Old Village is a historical area which features unique bluffs with groundwater springs and two pristine creeks, Kelle's Creek and Valley Creek. Lake St. Croix is impaired for nutrients but a TMDL has not yet been completed by the MPCA. The City of Afton recognizes the importance of these resources to its residents, visitors, businesses, and citizens of Minnesota. The City is dedicated to improving water quality and controlling erosion. The City is currently in the planning process of designing new storm sewer infrastructure in the Old Village. In effort to construct an innovative stormwater system and exceed existing regulatory requirements the City is seeking additional funding.

Currently the Old Village area is experiencing major flood problems, sanitary and storm sewer deficiencies, and roadway deterioration. The City is working to resolve all these issues in a comprehensive approach. The improvement project for which we are seeking assistance uses innovative methods to improve water quality and preserve the unique ecology of the area. Stormwater in the Old Village area is currently conveyed through inadequate ditch and culvert systems which encourage erosion and do not provide water quality benefits prior to discharging into Lake St. Croix.

Protecting surface waters and preserving the natural habitat and ecology of the Old Village area will be accomplished by reducing stormwater volume, sediment loading and total phosphorus loading with a stormwater system comprised of innovative BMPs. BMPs may consist of biofiltration, greenways of native vegetation, and porous pavers or pavements installed on a county road. Rainwater harvesting and reuse along with rock runnels to capture, infiltrate, treat, and convey stormwater runoff may also be constructed. The runnels may function in place of a conventional pipe network. Proposed water quality features may be designed in rare combination with "Complete Streets" standards to provide Old Village Afton with improvements that exceed all stormwater quality and quantity regulations. By exceeding regulation and providing a pioneering approach to manage stormwater the following project goals will be accomplished:

- **First of its kind design, combining "Complete Streets" [encouraging non motorized traffic and reducing pollution] with preservation of natural resources, ecology, and reuse of stormwater exceeding regulation and setting new standards for future improvements**
- Improved understanding of innovative stormwater system design, performance, and maintenance approaches
- Improved surface water quality, reduced erosion/sedimentation, groundwater recharge, and reduced human impact

Monitoring and evaluation of the improvements will be performed to ensure they are meeting design expectations and exceeding government regulations. The monitoring effort will also establish a baseline for innovative stormwater system designs in the future. The City of Afton's experience will provide an educational opportunity for Cities, Counties, State, and other agencies and organizations to learn from and implement similar approaches in future projects.

II. DESCRIPTION OF PROJECT ACTIVITIES

Activity 1: Construct New and Innovative Stormwater System **Budget: \$310,000**

Construction of up to: 1500 square yards of biofiltration, 1200 square yards of native vegetation greenways, and 3000 square yards of porous pavement in County Road 21. Rainwater harvesting and reuse may also be used in City Park to utilize stormwater as a resource instead of a waste product. Up to 1600 square yards of rock runnels may be constructed to capture, infiltrate, treat, and convey stormwater and promote habitat and ecology in the Old Village area. Areas susceptible to erosion will be stabilized to preserve habitats and reduce sedimentation of downstream surface waters.

Outcome	Completion Date
<i>1. Construct roadside biofiltration, greenways of native vegetation, porous pavement in a County Road Application, underground storage/reuse system, and rock runnel conveyance system to exceed water quality/quantity requirements in Old Village.</i>	<i>July 2011 –June 2013</i>
<i>2. Stabilize highly erodible areas.</i>	<i>July 2011 –June 2013</i>

Activity 2: Monitor and Evaluate Performance of Innovative BMPs **Budget: \$ 40,000**

Data collection and analysis of constructed BMPs will be performed. The performance of each BMP will be investigated and documented to aid in future design expectations.

Outcome	Completion Date
<i>1. Performance of unique BMPs will be established and a baseline for future designs will be developed and shared with other government and non-government organizations. Tours of the site will be conducted and data on effectiveness will be shared through publications and conferences.</i>	<i>July 2011 – June 2014</i>

III. PROJECT STRATEGY

A. Project Team/Partners

The City of Afton will be the project lead through Project Manager Todd Hubmer and City Engineer Diane Hankee. The project team will consist of the following organizations and team members: Washington County – Wayne Sandberg, MnDNR – Pat Lynch, and Valley Branch Watershed District – Dave Bucheck.

The City of Afton is currently working with Washington County on Planning for County Road 21 Reconstruction and with the MnDNR on the Flood Damage Reduction Project. These projects are addressing the other concerns in the Old Village area including: flood protection, storm and sanitary sewer improvements, and road improvements. This grant will allow the City to implement stormwater features in excess of standard requirements and develop a unique, groundbreaking approach integrating stormwater management and “Complete Streets”.

B. Timeline Requirements

Activity 1 –constructed with County Road 21 Reconstruction Project (Funded by City of Afton and Washington County) and the Flood Damage Reduction Project (Funded by City of Afton and MnDNR). **Activity 2** – July 2011 to June 2014 following the construction.

C. Long-Term Strategy and Future Funding Needs

The City and County are prepared to match grant funding received so the proposed innovative stormwater BMPs can be constructed as a stand alone project. However, many of the stormwater improvements will be constructed as the County Road 21 Project and the Flood Damage Reduction Project are being built between 2011 and 2013.

2011-2012 Detailed Project Budget

IV. TOTAL TRUST FUND REQUEST BUDGET 3 years

<u>BUDGET ITEM</u>	<u>AMOUNT</u>
Personnel: <i>The City is only asking for construction, monitoring, and education dollars. Engineering costs will be provided in-kind by the City and County. \$40,000 accounts for monitoring and education. (Monitoring Technician - \$76/hour - Salary - \$27.54, Overhead/Benefits - \$48.46)</i>	\$ 40,000
Contracts: <i>The following are engineer's estimate of construction costs for improvements above and beyond existing regulations</i>	
<i>1,500 square yards of Biofiltration</i>	\$ 54,000
<i>1,200 square yards of native vegetation greenways</i>	\$ 8,000
<i>3,000 square yards of porous pavement</i>	\$ 69,000
<i>1,300 square yards of rock runnels</i>	\$ 83,000
<i>Rainfall harvesting/reuse</i>	\$ 96,000
TOTAL ENVIRONMENT & NATURAL RESOURCES TRUST FUND \$ REQUEST	\$ 350,000

V. OTHER FUNDS

<u>SOURCE OF FUNDS</u>	<u>AMOUNT</u>	<u>Status</u>
Other Non-State \$ Being Applied to Project During Project Period: <i>City-Stormwater conveyance off mainline - \$500,000. County-County Road 21 Reconstruction to "Complete Streets" standards- \$2,500,000. This money is available to match any addition funding dollars.</i>	\$ 3,000,000	<i>Pending</i>
Other State \$ Being Applied to Project During Project Period: <i>DNR funds for lift station and appurtenant work.</i>	\$ 500,000	<i>Pending the 2010 Bonding Bill</i>
In-kind Services During Project Period: <i>These are in-kind project services provided by the City and County prior to initiation of this grant so the project is construction ready.</i>	\$ 75,000	<i>Secured</i>
Remaining \$ from Current ENRTF Appropriation (if applicable): <i>NA</i>	\$ -	<i>Indicate: Unspent? Not Legally Obligated? Other?</i>
Funding History: <i>See in-kind services description.</i>		
Total Other Funds	\$ 3,575,000	



Lake St. Croix



- Legend**
- - - Old Village Limits
 - Runnel
 - Biofiltration, Greenway Vegetation, Porous Pavement
 - Rain water harvesting/reuse



City of Afton Proposed Improvements



0 450 Feet



Attachment Item #6

Project Manager Qualifications and Organization Description

Project Manager – Todd Hubmer, PE (WSB & Associates)

Todd has 18 years of experience in the field of water resources engineering. He has been responsible for completing hydrologic and hydraulic analyses for drainage systems in a wide variety of water resource, environmental, and municipal projects. Todd is also experienced in water quality and quantity modeling and very familiar with the processes involved in monitoring various Best Management Practices. He has managed multiple innovative stormwater quality projects in the past, examples include but are not limited to: St. Anthony Water Reuse Facility, Brooklyn Center Underground Regional Treatment Facility, and Roseville Biofiltration and Wetland Enhancement Project. In addition, Todd has successfully administered FEMA, Watershed District, County, State Aid, FHWA, MnDOT, Met Council, MnDNR Metro Greenways, MnDNR Conservation Partnership grants and many onther grant and public finance projects. He is fully capable of successfully managing this improvement project.

Organization Description – City of Afton

The City of Afton's goal is to integrate new technologies in stormwater quality with street design. Currently MnDot's design for "Complete Streets" does not incorporate stormwater quality. This project would provide an example of how this could be accomplished using innovative methods of managing stormwater. Without the help of this funding the City may only be able to construct a standard storm sewer pipe system.

The City of Afton's in-house staff consists of a Clerk and Administrator. The City Council volunteers and does a lot of work themselves. In addition, they rely on their City Engineer to help with planning as implied by the resolution 2010-19.