

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

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**Project Title:**

**ENRTF ID: 110-D**

Anoka Rum River Dam Asian Carp Barrier Improvements

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**Category:** D. Aquatic and Terrestrial Invasive Species

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**Total Project Budget: \$** 150,000

**Proposed Project Time Period for the Funding Requested:** 1 Year, July 2014-June 2015

**Summary:**

This project will study potential improvements to the Rum River Dam in Anoka to improve its effectiveness as a barrier to Asian carp to protect the Rum River watershed.

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**Sponsoring Organization:** City of Anoka

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**Location**

**Region:** Central

**County Name:** Aitkin, Anoka, Crow Wing, Isanti, Mille Lacs, Morrison, Sherburne

**City / Township:** Anoka

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



## **I. PROJECT STATEMENT**

Asian carp pose a threat to the waters of Minnesota. If Asian carp establish a foothold in Minnesota's rivers and lakes they will cause serious damage to native fish populations by dominating native fish for food and habitat.

Asian carp are working their way up the Mississippi River system. Efforts are underway on the Mississippi River to stop Asian Carp including a potential bubble/sound barrier at Lock and Dam No. 1 and a physical barrier created by the Coon Rapids Dam, neither of which are 100% effective.

Mille Lacs Lake is one of Minnesota's premier fisheries and is connected to the Mississippi River by the Rum River. Similar to the Coon Rapids Dam, the Rum River Dam in Anoka has potential to serve as a barrier to Asian carp. The dam is located at the downstream end of the Rum River so could provide protection for the entire watershed. The Rum River Dam in Anoka is likely an effective barrier during normal flows but would need the following modifications to improve effectiveness during higher flows:

- Replace bottom discharge flood gate with top discharge flood gate
- Replace flashboard pool control with adjustable crest gate pool control
- Alter operating plan to maintain summer pool for longer periods of the year
- Potentially modify spillway to block jumping fish

The ultimate goal of this project is to protect the Rum River watershed from Asian carp by using the existing Rum River dam in Anoka as a barrier. This proposal is for Phase 1 which is a study phase and will establish:

- Team of stakeholders to provide project input (Activity 1)
- Up-to-date knowledge base of Asian carp physical capabilities (Activity 2)
- Dam's current effectiveness as Asian carp barrier (Activity 2)
- Set of improvements that increase barrier effectiveness and minimize detrimental impacts. (Activity 2)
- Preliminary design of dam improvements (Activity 3)

Most of the project effort will be focused on a technical evaluation of the physical parameters defining Asian carp passage at the Rum River Dam in Anoka. A dam is a physical barrier, which can provide a more effective barrier than non-physical methods (i.e. sound/bubble). To gain passage upstream of a dam, Asian carp either need to jump the dam's spillway or swim through an open gate. A dam can stop Asian carp from passage if:

- The velocity of flow over the spillway or through the gate is faster than the carp can swim; or
- The distance separating swimmable water upstream and downstream of the dam is too far to jump.

Potential dam improvements and their impact on barrier effectiveness will be evaluated by analyzing the Asian carp's jumping and swimming capabilities against the velocity and separation of swimmable water upstream and downstream of the Rum River Dam in Anoka. Asian carp jumping and swimming capabilities used in the Coon Rapids Dam Asian carp barrier evaluation in 2010 will be updated to reflect new findings.

## **II. DESCRIPTION OF PROJECT ACTIVITIES**

### **Activity 1: Project Advisory Team**

**Budget: \$10,000**

A project advisory team will be assembled to include representatives of watershed counties, cities and agencies who can provide technical input on the project. The team will participate in ranking project improvement alternatives and will provide valuable perspective on impacts to environment, economics, recreational activities and public/private property. Periodic team workshops and public input meetings will be held.



## Environment and Natural Resources Trust Fund (ENRTF)

### 2014 Main Proposal

#### Project Title: RUM RIVER DAM IN ANOKA ASIAN CARP BARRIER IMPROVEMENTS

Outcome	Completion Date
1. Assemble Advisory Team	July 25, 2014
2. Workshops and public input meetings	Periodically

#### Activity 2: Develop Project Alternatives and Evaluate

**Budget: \$80,000**

Project improvement alternatives will be developed to increase barrier effectiveness. The engineering team will collect data and analyze fish capabilities, hydrology, hydraulics, existing dam features, costs, recreational interests, upstream impacts, and watershed priorities. A scoring matrix will be developed for alternatives using input from the project advisory team. The proposed project will be established using high score alternatives.

Outcome	Completion Date
1. Conceptual Designs for Project Alternatives	Oct. 24, 2014
2. Scoring Matrix	Dec. 5, 2014
3. Preferred Alternatives (i.e. Proposed Project)	Jan. 16, 2015

#### Activity 3: Preliminary Design

**Budget: \$60,000**

The conceptual design of the proposed project will be advanced to develop a preliminary plan for construction. Design will be advanced to roughly the 30% level. The deliverable for this activity will be a comprehensive preliminary design report for the proposed project. This document will be used to present the project to project partners and pursue additional funding sources for project construction.

Outcome	Completion Date
1. Draft Preliminary Design Report	March 27, 2015
2. Final Preliminary Design Report	April 24, 2015

### III. PROJECT STRATEGY

#### A. Project Team/Partners

The project will be managed through the City of Anoka who owns/operates the dam. This project has support of environmental management and governmental agencies within the watershed. Project partners are involved through the project advisory team and include the Lower Rum River WMO, Anoka Conservation District, City of Ramsey and others. Stanley Consultants will provide technical analysis and design of the project.

#### B. Timeline Requirements

This phase of the project (Phase 1) will be completed in 10 months and will take the project to roughly a 30% complete level of design. If Phase 1 yields an effective proposed project, the project will advance to future phases which will include Phase 2 – Final Design and Phase 3 – Construction.

#### C. Long-Term Strategy and Future Funding Needs

As the project moves through Phase 1 the goal is to build upon the support of current project partners and expand participation and funding sources. City of Anoka has allocated \$10,000 to Stanley Consultants for project scoping, ENRTF proposal, and a Capital budget request. A request will be submitted to the Lower Rum River WMO this fall to provide a 10% match for Phase 1 when ENRTF funds are released in July 2014. Final Design (Phase 2) and Construction (Phase 3) will be funded using a Capital budget request with the corresponding local match using local storm water funds, WMO taxation, local bonding, and federal grants.

## 2014 Detailed Project Budget

Project Title: RUM RIVER DAM IN ANOKA ASIAN CARP BARRIER IMPROVEMENTS

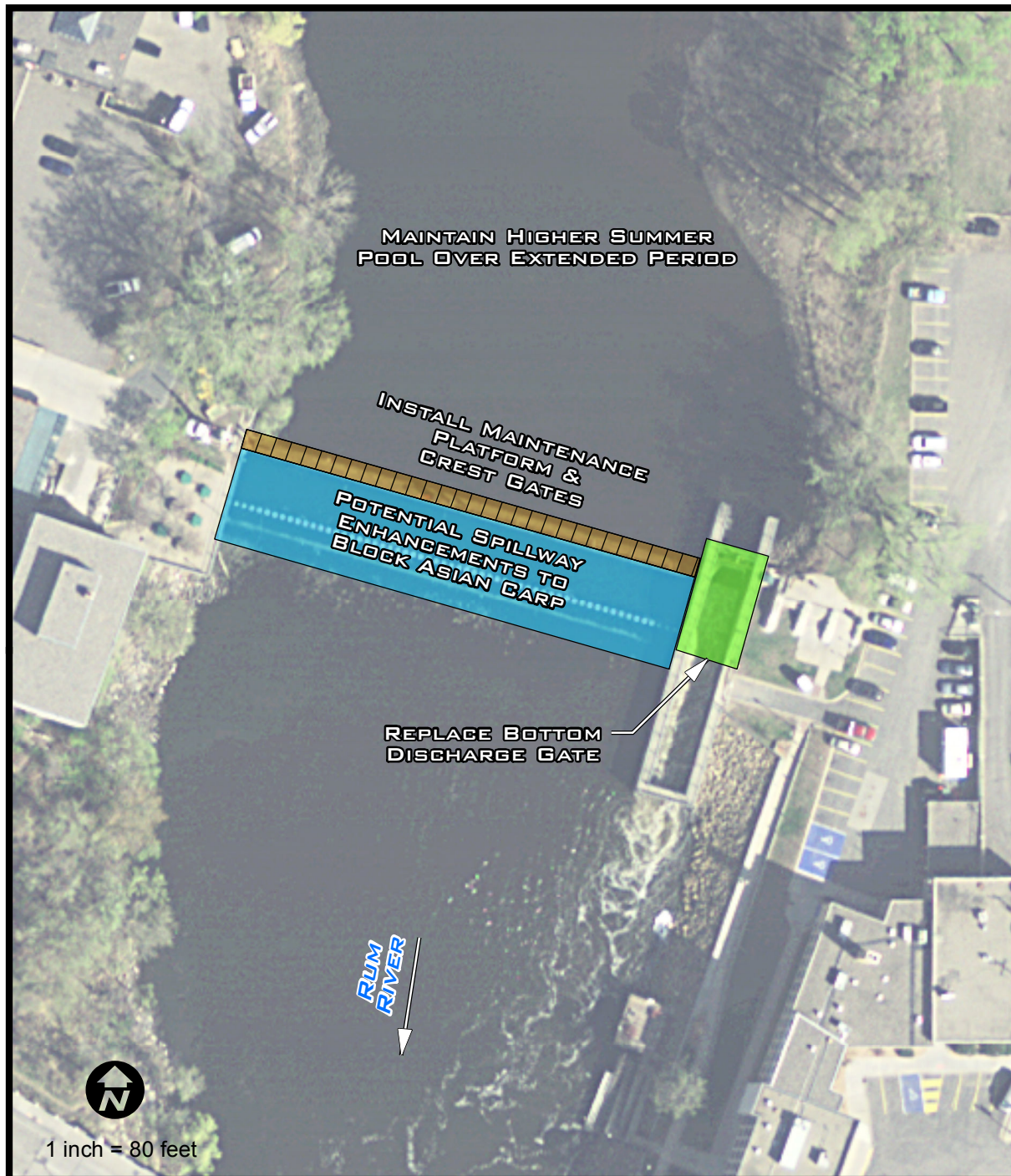
### IV. TOTAL ENRTF REQUEST BUDGET

<u>BUDGET ITEM</u>	<u>AMOUNT</u>
<b>Personnel:</b> Within current responsibilities of Sponsoring/Managing/Partner agency personnel so no salary compensation required.	\$ -
<b>Contracts:</b>	
Engineering	\$ 140,000
Public Involvement	\$ 8,700
<b>Equipment/Tools/Supplies:</b> Printing workshop materials, project information pamphlets and reports documenting the study.	\$ 770
<b>Travel:</b>	\$ -
(4) Trips for project manager (Anoka) and partner (ACD) to visit upper watershed organizations to present project and obtain input. (4 * 240 miles * \$0.55/mi)	\$ 530
	\$ -
<b>TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND \$ REQUEST =</b>	<b>\$ 150,000</b>

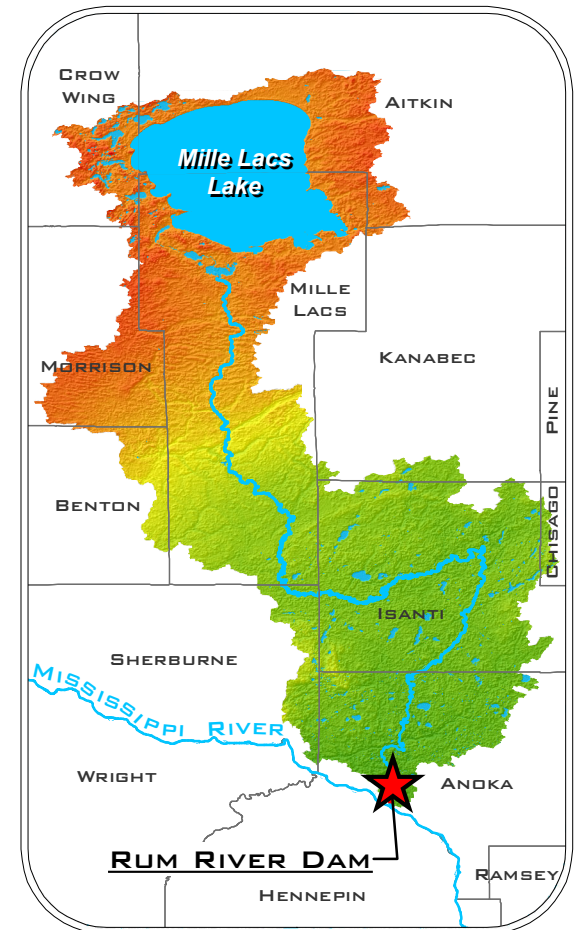
### V. OTHER FUNDS

<u>SOURCE OF FUNDS</u>	<u>AMOUNT</u>	<u>Status</u>
<b>Other Non-State \$ Being Applied to Project During Project Period:</b> Request will be submitted to LRRWMO for 10% match.	\$ 15,000	Pending
<b>Other State \$ Being Applied to Project During Project Period:</b>		
<b>Funding History:</b> City of Anoka Contract with Stanley Consultants for project scoping, grant application, and capital budget request.	\$ 10,000	Secured



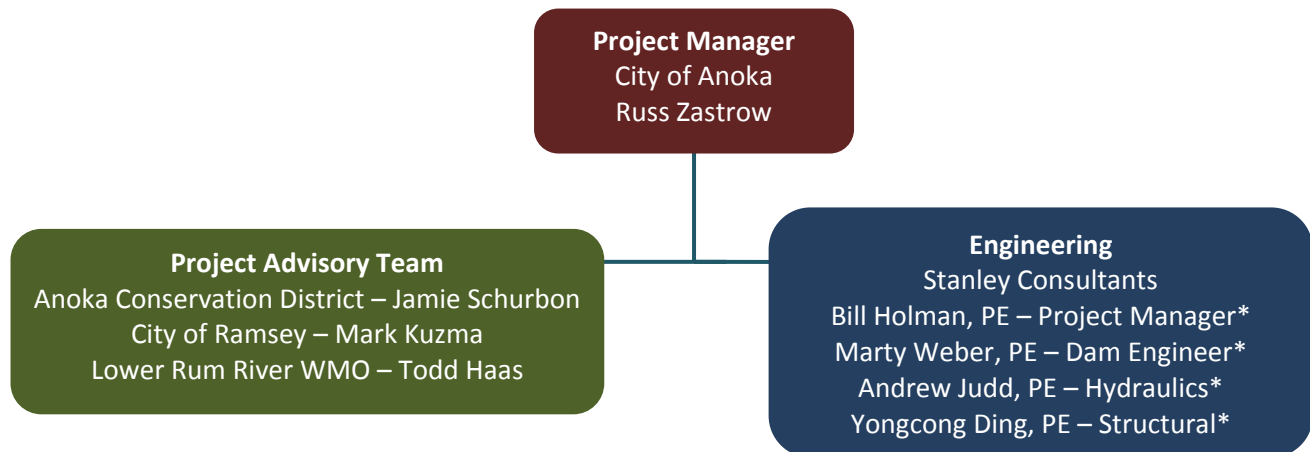


SITE MAP



RUM RIVER WATERSHED





This organization was developed to create a project team with:

- Technical competency
- Prior Asian Carp barrier experience
- Representation of watershed stakeholders

\*Involved in Coon Rapids  
Dam Carp Barrier Project

#### Project Manager

Given their proximity and history with Rum River Dam, the City of Anoka will be the project manager. Russ Zastrow has been responsible for operation and maintenance of the Rum River Dam for over 25 years. His breadth of experience with the operational requirements, range of flow conditions, and maintenance concerns at the dam will be a valuable resource in shaping the proposed barrier improvement alternatives.

#### Project Advisory Team

The project advisory team will provide input on project impacts and regional concerns. The proposed project site is the Rum River Dam in Anoka but the impact is regional so regional input will be key in project development. As the project advances, partners will be added to represent the geographic and resource groups impacted by the project.

#### Engineering

Stanley Consultants will perform technical analysis of the project. Stanley Consultants recently completed the evaluation of Asian carp barrier effectiveness at Coon Rapids Dam as well as design of dam improvements. This project would involve the same project team who is experienced with the physical parameters of Asian carp passage, river hydrology/hydraulics, and dam engineering requirements.

#### Supporting Agencies

This project has the support of several agencies within the Rum River Watershed. The following agencies have reviewed the proposed project and written letters in support of the project:

Anoka Conservation District	City of Ramsey
Benton SWCD	Isanti SWCD
City of Andover	Lower Rum River WMO
City of Anoka	Morrison SWCD
City of Coon Rapids	Sherburne SWCD