Environment and Natural Resources Trust Fund
2015 Request for Proposals (RFP)

Project Title: **ENRTF ID:** **091-D**

Minnesota Invasive Carp Action Plan Implementation

Category: D. Aquatic and Terrestrial Invasive Species

Total Project Budget: $ 4,359,517

Proposed Project Time Period for the Funding Requested: 3 years, July 2015 - June 2018

Summary:

This project would help inform and implement multiple actions to limit the impact of silver, grass, black, and bighead carp on waters within Minnesota.

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Sponsoring Organization: MN DNR

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Web Address

Location

Region: Statewide

County Name: Statewide

City / Township:

Alternate Text for Visual:

This map provides a preliminary risk-based spatial depiction of where Asian carp may spread by their own swimming abilities in Minnesota. This assessment does not include all risk factors that could potentially move Asian carp (e.g. transport by humans). This product is based on information from several barrier databases, GIS analysis, and field level knowledge. Note that these boundaries could shift with additional analysis, refined information, ground truthing, and field projects.

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

PROJECT TITLE: Minnesota Invasive Carp Action Plan Implementation

I. PROJECT STATEMENT

The Minnesota Department of Natural Resources recognizes there is high risk to native aquatic communities, recreational opportunities, and economic sectors with the potential expansion of invasive carp populations into Minnesota. In response, the DNR in conjunction with a variety of partners developed the Minnesota Asian Carp Action Plan (November 2011) that outlined actions to limit the impact of invasive carp. Understanding invasive carp expansion into Minnesota and implementing deterrence strategies are key components of the plan and the focus of this project.

Invasive carp (e.g., bighead carp, silver carp, grass carp, and black carp) risk assessments and data collections have been ongoing in recent years in the Midwest, with common findings that these carp species can cause substantial ecological and economic damage to waterways where they have colonized. Invasive carp, particularly bighead and silver carp, have exhibited tremendous population growth in parts of the Mississippi and Missouri River basins: Illinois River (IL), Ohio River (KY, IN, OH, WV, and PA), James River (SD and ND), Wabash River (IN and IL). Invasive carp populations have had cascading negative ecological impacts by competing for food and habitat and even causing changes in water quality through their voracious feeding characteristics. They have been shown to predate heavily on plankton and strongly compete with young native fish species. Their ability to migrate long distances through connected rivers and streams in North America has challenged scientists and decision-makers in finding solutions to stay ahead of the leading edge of invasive carp dispersal.

The goals and purpose of this project are: 1) Increase baseline knowledge of invasive carp populations in Minnesota; 2) Track population parameters (spawning, recruitment, range expansion) of invasive carp in Minnesota; 3) Implement deterrence measures to lessen invasive carp impacts while limiting impacts to native species; and 4) Identify, evaluate, and prioritize deterrence measures in Minnesota. Preventing the establishment of invasive carp is the best way to limit their impacts. This project will help Minnesota maximize this opportunity with a strategic, informed approach.

II. PROJECT ACTIVITIES AND OUTCOMES

Activity 1: Understanding the impacts of invasive carp barriers on native fish **Budget: $ 500,000**

Barriers are often considered to limit the expansion of invasive carp populations. But the negative impacts of barriers may be greater than the impact of invasive carp on native communities. This activity would help understand barrier impacts on native communities and ways to lessen or mitigate the impact.

Outcome	Completion Date
1. Understanding native fish movements around lock and dams	6/30/18
2. Understanding movements of native fish that silver and bighead carp associate with	6/30/18
3. Recommendations on barrier operations to benefit native fishes	6/30/18

Activity 2: Protecting high value water resources in Southern Minnesota **Budget: $ 3,000,000**

MN DNR has completed an initial risk assessment that identified and evaluated watershed connections for potential invasive carp pathways into southwestern Minnesota. Activity 2 is the implementation phase; contracting a vendor to design and install small-scale projects, along with necessary land agreements.

Outcome	Completion Date
1. Identification of high value waters at risk	Done
2. Identification of preferred deterrent method (electric barrier, berm, specialized culvert,	9/1/2015

etc.)	
3. Hydraulic analyses contracts, engineering contracts, lease agreements if needed	12/31/2015
4. Finalize landowner lease agreements, fee simple or easement acquisition for project sites	9/30/2016
5. Review and accept detailed engineering design – proceed to construction, supply equipment, permit fees, inspection & oversight, final start-up & operate electric barriers	6/30/2017
6. Safety measures installed, adjustments, inspections, equipment or site maintenance	6/30/2018

Activity 3: Detecting invasive carp expansion into Minnesota **Budget: $ 475,000**

This proposal would build on ongoing efforts, utilize new technology, and expand efforts to monitor adult population expansion, detect spawning activity, and watch for recruitment. The focus would shift to Pools 5 through 8 of the Mississippi River, closer to the documented successful spawning in Iowa, while maintaining current activities in Pool 2, Minnesota River and St. Croix River.

Outcome	Completion Date
1. Understand population levels of invasive carp in Minnesota	Ongoing
2. Monitor for invasive carp spawning in Minnesota	Ongoing
3. Monitor for juvenile invasive carp in Minnesota	Ongoing

Activity 4: *Identifying and prioritizing locations to deter invasive carp movements* **Budget: $ 150,000**

The DNR Division of Fisheries recently completed a GIS project identifying areas susceptible to invasive carp expansion via their natural swimming ability. The next step is utilizing this data to fully evaluate the potential deterrence strategies.

Outcome	Completion Date
1. GIS identification of potential strategic locations for barriers	3/1/2016
2. GIS identification of watershed breaches	3/1/2016
3. Field verification and data collection of barrier locations and watershed breaches	11/1/2016
4. Determine and prioritize viable projects	6/30/2017

III. PROJECT STRATEGY

A. Project Team/Partners

This project is a collaboration of multiple divisions in the DNR, the Minnesota Aquatic Invasive Species Research Center, and numerous affiliations will partner on project elements via technical assistance or community outreach.

B. Project Impact and Long-Term Strategy

This project will contribute to Minnesota's efforts in combating invasive carp expansion. Understanding invasive carp population fronts helps establish timeframes and value of implementing prevention strategies. It also will help in identifying areas that need to transition from prevention to control measures. Maximizing prevention efforts will hopefully reduce the need or scope of control measures. This project is part of the larger invasive carp control effort which also includes research, control methods, and outreach.

C. Timeline Requirements

Understanding and monitoring invasive carp populations is an ongoing process and will likely extend beyond the timeframe above. For planning purposes, we have approached this task in a 36 month window. We anticipated adjusting sampling methodology as needed and expect to continue this monitoring into the future, basing potential funding requests on up to date information. Deterrence project timelines are based on past experience. Identifying, evaluating, and prioritizing potential deterrence locations will produce a list projects that will need implementation funding. We will pursue multiple funding sources, including ENTRF.

2015 Detailed Project Budget

Project Title: *Minnesota Invasive Carp Action Plan Implementation*

INSTRUCTIONS AND TEMPLATE (1 PAGE LIMIT)

Attach budget, in MS-EXCEL format, to your "2015 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 budget item row is not applicable put "N/A" or delete it. All of "Other Funds" section must be filled out.)

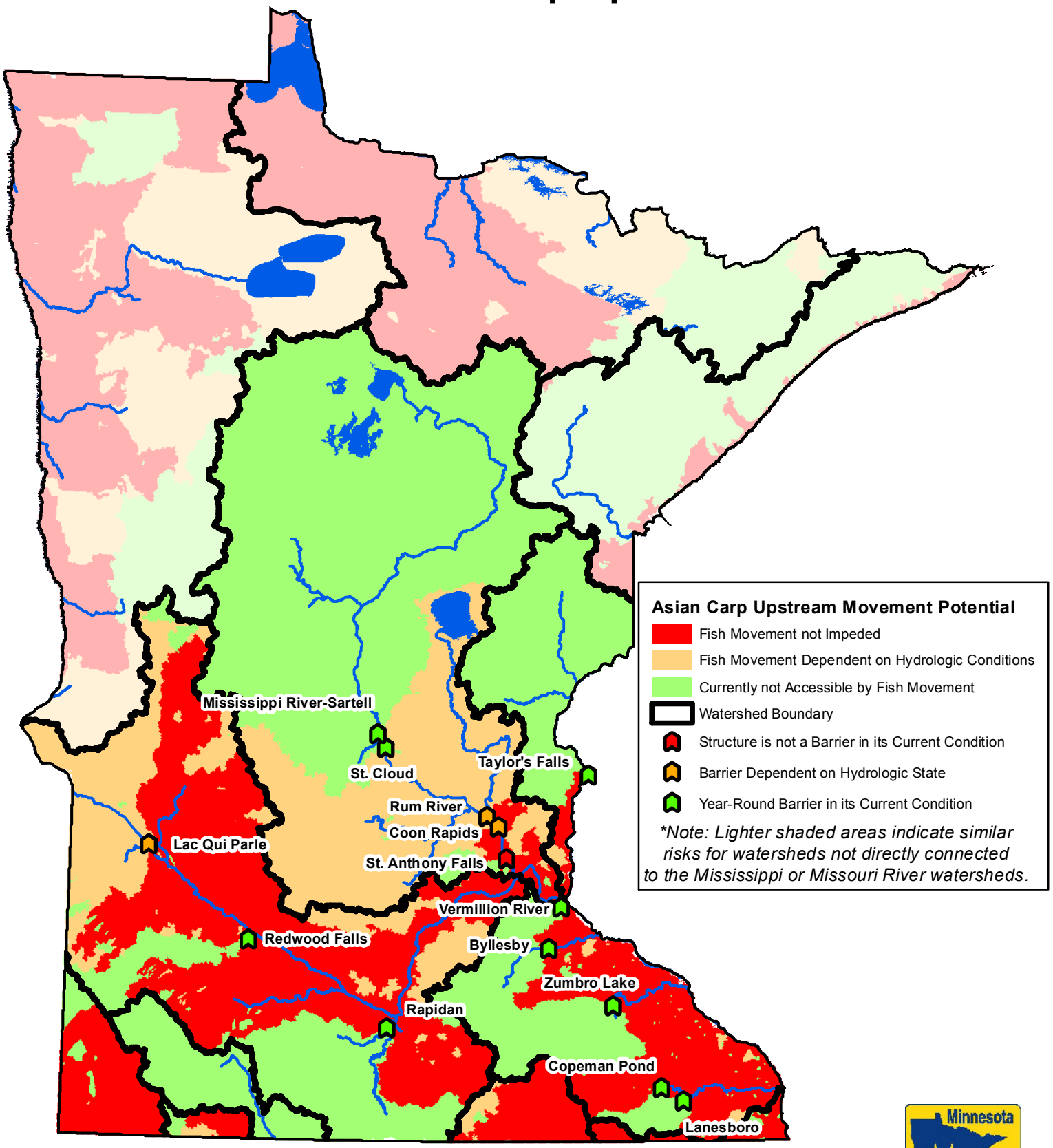
IV. TOTAL ENRTF REQUEST BUDGET *3* **years**

BUDGET ITEM *(See "Guidance on Allowable Expenses", p. 13)*	**AMOUNT**
Personnel: *Activity 3 - 3 FTE Unclassified Fisheries Specialists ($320,000)* *Activity 4 - 1 FTE Unclassified Fisheries Specialist ($120,000)*	$ 440,000
Contracts: Activity 1 - Minnesota Aquatic Invasive Species Research Center ($500,000) Activity 2 - Desgin and construction contracts ($2,500,000) Activity 3 - Commercial Fishers ($100,000)	$ 3,100,000
Equipment/Tools/Supplies: Activity 3 - Invasive carp sampling gear ($30,000) Activity 4 - Field tablet computer, field gear ($5,000)	$ 35,000
Acquisition (Fee Title or Permanent Easements): Activity 2 - Fee Title or Permanent easements for project installation or mitigation of project impacts - will be held by MN DNR ($500,000)	$ 500,000
Travel: Activity 3 - Fleet charges, lodging ($25,000) Activity 4 - Fleet charges, lodging ($25,000)	$ 50,000
Additional Budget Items: Direct support services. DNR's direct and necessary costs pay for activities that are directly related to and necessary for accomplishing appropriated programs/projects. In addition to itemized costs captured in our proposal budget, direct and necessary costs cover HR Support (~$15,912), Safety Support (~$3,936), Financial Support (~$40,625), Communication Support (~$1,141), IT Support (~$27,276), Planning Support (~$704), Procurement Support (~$235), and division and regional program management (~$144,688) that are necessary to accomplishing funded programs/projects.	$ 234,517
TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND $ REQUEST =	$ 4,359,517

V. OTHER FUNDS *(This entire section must be filled out. Do not delete rows. Indicate "N/A" if row is not applicable.)*

SOURCE OF FUNDS	**AMOUNT**	**Status**
Other Non-State $ To Be Applied To Project During Project Period: MN DNR continually seeks funding from a variety of sources to support invasive carp efforts in the state.	Unknown	Pending
Other State $ To Be Applied To Project During Project Period: Activity 2 - There are over 17 partners [LGUs, organizations, and associations] that have supported DNR efforts for controlling invasive carp migration. Some will provide various cash or in-kind services pre, during, and after this 3-year funding project. ($20,000) Upper St. Anthony Falls lock closure would eliminate the need for an electrical barrier at Lock and Dam 1 on the Mississippi River. This would free up construction funds allocated by LSOHC that could be applied to portions of this project. Upper St. Anthony Falls lock closure is contigent on the Water Resources Reform and Development Act passing. ($3,000,000)	$ 3,020,000	Pending
In-kind Services To Be Applied To Project During Project Period: MN DNR Fisheries field staff in SW MN have been conducting assessments and barrier coordination at a rate of approximately $100,000 (per year) of in-kind salary from the Game & Fish Fund. This is planned to continue during FY14-FY16 for this proposal. Additionally, about $20,000 (per year) of in-kind salary from MN DNR Ecological & Waters Resources and Engineering for technical assistance on SW MN barrier sites will be contributed for early coordination, modeling, and prevention assessments.	$ 120,000	Secured
Funding History: ENRTF M.L. 2013 - Detection and Monitoring of Asian Carp Populations and Movements ($540,000) ENTRF M.L. 2015 - Blocking Bighead, Silver, and Other Invasive Carp by Optimizing Locks and Dams ($854,000)	$ 1,394,000	Secured Pending
Remaining $ From Current ENRTF Appropriation: *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. Indicate the status of the funds.*	$ -	Indicate: Unspent? Legally Obligated? Other?

Minnesota DNR Barrier and Watershed Breach Study: Relative Risk of Asian Carp Upstream Movement



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Minnesota DEPARTMENT OF NATURAL RESOURCES

04/22/2014

Project Manager Qualifications

Project Manager and Activity 4 Lead: **Nick Frohnauer** is the MN DNR Invasive Fish Coordinator stationed in St. Paul. He has been in this position for 1 year and with DNR for 6 years. He coordinates the state's efforts for invasive carp, working with state and federal agencies, non-governmental organizations, universities, and private citizens. Prior to taking this position, Nick worked as a fisheries biologist in Duluth, MN for five years. He administered the aquatic plant management program, stocking, fishing tournament, and easements for the area. He also was the lead on unique projects: sturgeon monitoring, stream habitat restoration, and fisheries population characteristics in Jay Cooke State Park. Prior to arriving in Minnesota, Nick also worked in Idaho, Missouri, and Maine.

Activity 1Lead: **Minnesota Aquatic Invasive Species Research Center (MAISRC).** The Center's mission is to develop biologically and economically sound solutions to control key aquatic invasive species affecting Minnesota's waters. MAISRC's strategy is to develop an in-depth understanding of the biology and ecology of key AIS to determine if there are weaknesses in their life histories that can be targeted for control and eradication. The Center will also use modeling and risk analysis to help state AIS managers determine the most efficient and effective application of any of the Center's findings.

Activity 2 Lead: **Jack Lauer** is the MN DNR Southern Region Fisheries Manager in New Ulm. He has been in this position for 13 years and with DNR for 29 years. He administers DNR Fisheries operations, management, and programs for a 33-county area encompassing several hundred managed lakes, thousands of miles of warm, cool, and cold water streams, and fish production at two hatchery facilities. He has worked in priority watersheds to initiate conservation partners, farmers, and municipalities to identify and prioritize best land stewardship practices so all parties are educated about water quality and aquatic habitat in southern Minnesota's valued lakes, streams, and rivers and how that is integrated within the agricultural rich landscape.

Activity 3 Lead: **Bradford Parsons** is the MN DNR Central Region Fisheries Manager in St. Paul. He has been in this position for 2 years and with DNR for 26 years. The Central Region encompasses 24 counties, from Todd in the Northwest to Houston in the Southeast, and covers over 75% of the state's population. As the Regional Manager, Brad oversees seven area fisheries offices including the lakes areas of Little Falls, Hinckley, and Montrose, an outstanding metro fishing area, the Mississippi and St. Croix Rivers, and the trout streams of the Driftless area. Prior to moving to St. Paul in 2010, Brad spent 24 years as a Fisheries Research Scientist in Glenwood. His research focused primarily on walleye stocking evaluations, panfish recruitment and exploitation, and fish/wetland interactions.

Organizational Description: The Minnesota Department of Natural Resources works with citizens to conserve and manage the state's natural resources, to provide outdoor recreation opportunities, and provide for commercial uses of natural resources in a way that creates a sustainable quality of life. This mission requires sharing stewardship with citizens and partners, working together to address often-competing interests.