

Lessard-Sams Outdoor Heritage Council

Agenda Item Memo

DATE: Aug. 5, 2014

SUBJECT: Accomplishment Plan Amendment Request: ML 2012, Ch. 264, Art. 1, Sec. 2, Subd. 5h
Protect Aquatic Habitat from Asian Carp

PRESENTER: Nick Frohnauer, DNR

Background:

The passage of the federal Water Resources Reform and Development Act (WRRDA) in 2014 provided for a number of changes in the Army Corp of Engineers activity in Minnesota. ML 2012, Ch. 264, Art. 1, Sec. 2, Subd. 5h Protect Aquatic Habitat from Asian Carp is one of two OHF appropriations affected by the federal legislation. The DNR is requesting an amendment to the accomplishment plan for the above-referenced appropriation to provide for a change in scope of work due to the closure of the St. Anthony Falls lock and dam system.

Suggested Procedure:

Project manager discusses amendment request and then stands for questions. This item is for discussion only; a vote on the accomplishment plan amendment will take place at a subsequent LSOHC meeting.

Agenda Item # 11

Lessard-Sams Outdoor Heritage Council Laws of Minnesota 2012 Accomplishment Plan

Date: July 30, 2014

Program or Project Title: Protect Aquatic Habitat from Asian Carp

Funds Recommended: \$ 7,500,000

Manager's Name: ~~Tim Schlagenhaft~~ Nick Frohnauer

Title: ~~Invasive Fish Coordinator~~

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Legislative Citation: ML 2012, Ch. 264, Art. 1, Sec. 2, Subd. 5(h)

Appropriation Language: \$7,500,000 in the second year is to the commissioner of natural resources to design, construct, operate, and evaluate structural deterrents for Asian carp to protect Minnesotas aquatic habitat. Use of this money requires a one-to-one match for projects on state boundary waters.

County Locations: Blue Earth, Cottonwood, Hennepin, Jackson, Nicollet, Renville, Swift, and .

Ecological Planning Regions:

- Forest / Prairie Transition
- Metro / Urban
- Northern Forest
- Prairie
- Southeast Forest

Activity Type:

- Enhance
- ~~Barrier construction~~ Barrier design, construction, operation, and evaluation

Priority Resources Addressed by Activity:

- Forest
- Habitat
- Prairie
- Wetlands

Abstract:

Funding will be used to design, install and evaluate deterrent barriers in Minnesota and to cost share barriers in northwest Iowa to limit or slow the movement of Asian Invasive carp.

Design and Scope of Work:

Asian Update:

The MN DNR believed that the best approach to keep Invasive carp are threatening Minnesota. Recent captures

and eDNA evidence highlight the need to limit or slow the movement of Asian carp into the Mississippi, Minnesota, St. Croix and other rivers in Minnesota to prevent damage to native fishes and ecosystems. Most recently, significant catches of bighead and silver carp in Lake Okoboji in northwest Iowa have resulted in new threats of entry into Minnesota from the Missouri River drainage as well. Where Asian carp have established reproducing populations, they have impacted native species and caused safety concerns and impacted recreational activities.

Deterrent barriers that use electricity have proven the most effective in slowing or stopping the spread of Asian carp. In addition, other technologies such as sound and bubbles have proven effective in laboratory and small-scale field studies. Deterrent barriers are important tools for limiting or slowing the spread of Asian carp in Minnesota while other long-term control methods are developed.

Most locations on the Mississippi are unsuitable for deterrent barriers due to the nature and extent of flooding that often overtops levees and requires the Corps of Engineers to pull the gates out of the water at most locks and dams. Upper Mississippi River watershed was to close the Upper St. Anthony Falls Lock. The lock chamber is administered by the USACE and required an act of Congress to shut down. Minnesota senators and representatives successfully added an amendment to the Water Resources Reform and Development Act (WRRDA) that called for Upper St. Anthony Falls lock closure within one year of passage of the bill. The bill passed both chambers of the federal legislature and was signed into law by President Obama on June 10, 2014.

With passage of the WRRDA bill, construction of a Lock and Dam 1 barrier will not be necessary. Due to the timing of passage of the bill, there would be no cost savings by terminating the design contract for the electrical barrier at Lock and Dam 1. (Ford Dam) provides Also, by completing the design, the MN DNR will have a unique opportunity in that it is one of only 3 dams on the commercially navigable portion better understanding of the Upper Mississippi River that does not have gates; costs, potential effectiveness, and the only way fish can pass is by swimming through the lock chamber. Lock and dam 1 provides an opportunity for electric deterrent barriers to be more effective.

Recent catches of Asian carp in Lake Okoboji in northwest Iowa have prompted significant concern as there are several tributaries into which these fish could enter Minnesota waters. Constructing electrical barriers or other permanent physical barriers on these tributaries will slow or stop the spread of Asian carp. In addition, the Iowa Department of Natural Resources is proposing to construct electrical barriers at key sites in Iowa to prevent additional migration into Lake Okoboji and other tributaries. Providing cost share to construct electrical barriers at these sites would help prevent entry into Minnesota.

Electrical barriers are preferred, however, there are significant safety and structural issues concerns associated with electrical barriers that must be addressed prior to construction, especially with this technology. A completed design is expected by November 2014.

A majority of the M.L. 2012 funding allocation was allotted towards construction at a lock. If these issues are unable to be resolved, other technologies would be considered.

Any barriers would be evaluated pre and post construction to determine their effectiveness in blocking fish movement, including impacts to native species. Evaluations would be completed by implanting radio tags in native fish, including surrogate species for Asian carp, and tracking movements using stationary receivers deployed at locations within of the Mississippi River near Lock and Dam 1 This evaluation would document native fish movement around barriers and their potential impacts to native species.

Planning

Preventing negative impacts from invasive species is barrier. With construction no longer proceeding, these funds have been freed up for reallocation. The lock closure was a critical component of Minnesota's State Management Plan for major accomplishment that will help protect valuable resources in northern Minnesota, but Invasive Species. Specific to Asian carp, carp still threaten the plan identifies barriers as a tool for minimizing impacts. Minnesota's Asian Carp prevention plan, Minnesota River watershed and a 2004 study evaluating alternatives to minimize the spread of Asian carp into Minnesota also identify deterrent barriers as a potential tool.

Many tools are needed to combat invasive species, and barriers are part of an overall strategy that includes education, prevention, control, and improved habitat for native species. Barriers could concentrate Asian carp and other invasive species to more effectively utilize attractants, toxicants, fish traps, and other tools designed to reduce or control populations.

The feasibility of deterrent barriers at various locations in Minnesota has been evaluated. At this time, lock and

dam 1 and several tributaries in the Little Sioux River watershed in southwest Minnesota and northwest Iowa are considered the best sites. These locations are suited to modifying existing barriers or constructing new barriers and are considered sites at high risk from Asian carp. Additional locations have been evaluated including the mouth portion of the St. Croix River.

Upper St. Anthony Falls lock closure will provide maximum upstream protection. A large scale sampling evaluation is needed to provide baseline data as we move forward with lock closure. Reallocated funding is being requested to carry out an intensive sampling exercise.

Fish monitoring activities have begun as part of the evaluation process for proposed barriers at Lock and Dams. A telemetry study using a variety of species (excluding Invasive carp) is being conducted by DNR Section of Fisheries. Electronic receivers are in place to detect fish movement in the Mississippi River, lower Minnesota River, and lower St. Croix River. The Minnesota DNR worked with the U.S. Fish and Wildlife Service to place additional receivers in the Minnesota portion of the Mississippi River in spring/summer of 2014. Minnesota's network of receivers is now connected to a network in Missouri. With the expansion, the project not only contributes to the evaluation of potential barrier impacts but also will be providing information on Invasive carp movements as carp are tagged in the Iowa and Missouri portions of the Mississippi River. Reallocated funding is being requested to extend this project.

Waters in the southwest corner of Minnesota are vulnerable to Invasive carp expansion from the Missouri River. MN DNR fisheries identified locations to prevent Invasive carp from entering Minnesota waters and from entering the Mississippi and Minnesota river tributaries through watershed breaches. These projects employed a variety of solutions including electric barriers, increasing levee/road elevations, grates, and ditch plugging. As of June 2014: five projects have been completed, two projects are not completed but preventing carp movement, and one project is on hold due to a funding shortage. Reallocated funding is being requested to complete this work.

The scope of a feasibility study for barriers on the Minnesota and St. Croix Rivers changed after the release of the independent contractors report for barrier options for Lock and Dam #1. The feasibility for barriers on these rivers has now been narrowed to electrical based systems. The high level of recreational use on the St. Croix River combined with safety concerns of electrical barriers and the required cooperation from Wisconsin, which has expressed limited to no interest in constructing a barrier, has precluded pursuing a barrier on the St. Croix River from consideration at this time. The focus is now on the Minnesota River. The MN DNR has worked with the Water Resource Center at Minnesota State Mankato to develop a project proposal to study/evaluate barrier feasibility on the Minnesota River. Reallocated funding is being requested to proceed with this project.

The susceptible portion of the St. Croix River is not conducive to electrical barriers due to the high level of recreational use on the river combined with safety concerns and the required cooperation from Wisconsin, which has expressed limited to no interest in constructing a barrier. The best alternative is exploring deterrent technologies in lock(s) below the confluence with the Mississippi River. The Minnesota Aquatic Invasive Species Research Center has received funding to begin work in Lock and Dam 8; installing acoustic speakers at the lock and dam #2 at Hastings, model flow through the tainter gates. Reallocated funding is being requested to evaluate the deterrent technology on both Invasive carp and native species and if necessary, enhancing the project to increase effectiveness on Invasive carp and reducing the impacts on native aquatic communities.

The uncertainty associated with a barrier (effectiveness, timeline, cost, native community impacts, and constructability) on the Minnesota River at Mankato. Barriers at these locations would be very costly and may not prove effective. Nevertheless, more information is needed before determining whether a barrier high. Given this scenario, DNR Fisheries has identified high value aquatic resources that could be effectively protected at locations in tributaries. These projects will employ electric barrier technology to prevent fish movement upstream. DNR fisheries have prioritized locations and are requesting reallocated funds to design and construct these sites. Funding will be used to hire an impartial contractor to continue evaluating the feasibility of barriers at these sites. DNR has been advised that there is no constitutional, statutory, or legislative appropriation language that would prohibit using OHF appropriation for a project located out-of-state, as long as the project is meant to restore, protect, and enhance habitat for fish, game, and wildlife in Minnesota.

- projects.

Planning:

MN State-wide Conservation Plan Priorities:

- H6 Protect and restore critical in-water habitat of lakes and streams

Plans Addressed:

- Minnesota's State Management Plan for Invasive Species, Minnesota's Asian Carp Prevention Plan

LSOHC Statewide Priorities:

- No Statewide Priorities Listed

LSOHC Forest Prairie Transition Section Priorities:

- No Forest Prairie Transition Priorities Listed

LSOHC Metro Urban Section Priorities:

- No Metro Urban Priorities Listed

LSOHC Northern Forest Section Priorities:

- No Northern Forest Priorities Listed

LSOHC Prairie Section Priorities:

- No Prairie Section Priorities Listed

LSOHC Southeast Forest Section Priorities:

- No Southeast Forest Priorities Listed

Accelerates or Supplements Current Efforts:

Traditional sources of funding are not available to construct a deterrent barrier. Without Outdoor Heritage funding this project is not likely to be completed.

Sustainability and Maintenance:

Intention would be to maintain and operate barriers as long as necessary to minimize impacts from Asian carp.

Other Activity:

Barrier construction Barrier design, construction, operation, and evaluation

Activity 1 Complete design and specifications and all permit requirements for a "sweeping" electrical barrier at Lock and Dam 1. Smith Root Inc was contracted to design the barrier in May 2013. 100% design specifications are scheduled to be delivered to MN DNR in July 2014. Construction has been canceled due to Upper St. Anthony Falls Lock closure.

Activity 2 Complete design and specifications, acquire permits, and construct deterrent barriers in Minnesota's portion of the Missouri River watershed. Six projects have been completed. One project has been designed but does not currently have enough funding for construction.

Activity 3 Develop cost share agreement with State of Iowa to construct barrier at Lower Gar Outlet. This project has been completed and was operational in May 2013.

Activity 4 Complete evaluation/study on feasibility of barriers in the Minnesota River watershed. The Minnesota River is a free flowing system whose watershed covers much of southern Minnesota. Increasing the

understanding of this system will help evaluate the suitability of deterrent barriers on the Minnesota River and its tributaries. Additionally, it will help prioritize potential locations.

Activity 5 Implement and evaluate deterrent barriers at Lock and Dams. The susceptible portion of the St. Croix River is not conducive to electrical barriers due to the high level of recreational use on the river combined with safety concerns and the required cooperation from Wisconsin, which has expressed limited to no interest in constructing a barrier. The best alternative is exploring deterrent technologies in lock(s) below the confluence with the Mississippi River. The Minnesota Aquatic Invasive Species Research Center has received funding to begin work in Lock and Dam 8. Additionally, MN DNR fisheries is conducting a telemetry study to evaluate fish movement in the St. Croix River, lower Minnesota River, and the Mississippi River from Hastings to above Lock and Dam 1. This activity will focus on evaluating the deterrent technology on both Invasive carp and native species and if necessary, enhancing the project to increase effectiveness.

Activity 6 Complete design and specifications, acquire permits and construct deterrent barriers in the Minnesota River watershed. MN DNR fisheries has identified and prioritized smaller scale deterrent projects in high value sub watersheds of the Minnesota River.

Accomplishment Timeline

Activity	Approximate Date Completed
<u>Complete design and specifications and all permit requirements for a sweeping electrical barrier at Lock and Dam 1.</u>	<u>11/30/2014</u>
<u>Complete design and specifications, acquire permits, and construct deterrent barriers in Minnesotas portion of the Missouri River watershed.</u>	<u>6/30/2015</u>
<u>Develop cost share agreement with State of Iowa to construct barrier at Lower Gar Outlet.</u>	<u>5/1/2013</u>
<u>Complete evaluation/study on feasibility of barriers in the Minnesota River watershed.</u>	<u>12/30/2017</u>
<u>Implement and evaluate deterrent barriers at Lock and Dams.</u>	<u>6/30/2017</u>
<u>Complete design and specifications, acquire permits and construct deterrent barriers in the Minnesota River watershed.</u>	<u>6/30/2015</u>
<u>Complete design and specifications and all permit requirements for electric barrier at Lock and Dam 1 and deterrent barriers at five locations in Southwestern MN - design and specifications report, approved Corps of Engineers Section 408 permit for lock 1, and any permits required for SW MN barriers</u>	<u>8/15/2013</u>
<u>Construct electric barrier at Lock and Dam 1 and deterrent barriers at five locations in Southwestern MN - Complete construction</u>	<u>Installation completed by 3/31/2014</u>
<u>Develop cost share agreement with State of Iowa to construct barrier at Lower Gar Outlet - Signed cost share agreement</u>	<u>10/1/2012</u>

Outcomes

Programs in the northern forest region:

- Asian carp have less impact on native species and ecosystems. Fishing and boating will not be negatively affected.

Programs in forest-prairie transition region:

- Asian carp have less impact on native species and ecosystems. Fishing and boating will not be negatively affected.

Programs in metropolitan urbanizing region:

- Asian carp have less impact on native species and ecosystems. Fishing and boating will not be negatively

affected.

Programs in southeast forest region:

- Asian carp have less impact on native species and ecosystems. Fishing and boating will not be negatively affected.

Programs in prairie region:

- Asian carp have less impact on native species and ecosystems. Fishing and boating will not be negatively affected.

Relationship to Other Funds:

- Clean Water Fund

A one-to-one match is required for any funds that would be used for barriers in IA. Any costs related to operation and maintenance of these barriers would be the responsibility of the state of Iowa.

Budget Spreadsheet

Budget reallocations up to 10% do not require an amendment to the Accomplishment Plan

Total Amount of Request: \$ 7500000

Budget and Cash Leverage

Budget Name	LSOHC Request	Anticipated Leverage	Leverage Source	Total
Personnel	\$60,000	\$0		\$60,000
Contracts	\$6,991,000 6,971,000	\$0		\$6,991,000 6,971,000
Fee Acquisition w/ PILT	\$0	\$0		\$0
Fee Acquisition w/o PILT	\$0	\$0		\$0
Easement Acquisition	\$0	\$0		\$0
Easement Stewardship	\$0	\$0		\$0
Travel	\$0	\$0		\$0
Professional Services	\$261,000	\$0		\$261,000
Direct Support Services	\$98,000	\$0		\$98,000
DNR Land Acquisition Costs	\$0	\$0		\$0
Capital Equipment	\$0	\$0		\$0
Other Equipment/Tools	\$90,000 110,000	\$0		\$90,000 110,000
Supplies/Materials	\$0	\$0		\$0
DNR IDP	\$0	\$0		\$0
Total	\$7,500,000	\$0		\$7,500,000

Personnel

Position	FTE	Over # of years	LSOHC Request	Anticipated Leverage	Leverage Source	Total
Fisheries Specialist	1.00	1.00	\$60,000	\$0		\$60,000
Admin Asst	0.00	0.00	\$0	\$0		\$0
Total	1.00	1.00	\$60,000	\$0		\$60,000

Output Tables

Table 1a. Acres by Resource Type

Type	Wetlands	Prairies	Forest	Habitats	Total
Restore	0	0	0	0	0
Protect in Fee with State PILT Liability	0	0	0	0	0
Protect in Fee W/O State PILT Liability	0	0	0	0	0
Protect in Easement	0	0	0	0	0
Enhance	0	0	0	0	0
Total	0	0	0	0	0

Table 2. Total Requested Funding by Resource Type

Type	Wetlands	Prairies	Forest	Habitats	Total
Restore	\$0	\$0	\$0	\$0	\$0
Protect in Fee with State PILT Liability	\$0	\$0	\$0	\$0	\$0
Protect in Fee W/O State PILT Liability	\$0	\$0	\$0	\$0	\$0
Protect in Easement	\$0	\$0	\$0	\$0	\$0
Enhance	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$0	\$0	\$0

Table 3. Acres within each Ecological Section

Type	Metro Urban	Forest Prairie	SE Forest	Prairie	N Forest	Total
Restore	0	0	0	0	0	0
Protect in Fee with State PILT Liability	0	0	0	0	0	0
Protect in Fee W/O State PILT Liability	0	0	0	0	0	0
Protect in Easement	0	0	0	0	0	0
Enhance	0	0	0	0	0	0
Total	0	0	0	0	0	0

Table 4. Total Requested Funding within each Ecological Section

Type	Metro Urban	Forest Prairie	SE Forest	Prairie	N Forest	Total
Restore	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Fee with State PILT Liability	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Fee W/O State PILT Liability	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Easement	\$0	\$0	\$0	\$0	\$0	\$0
Enhance	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$0	\$0	\$0	\$0

Target Lake/Stream/River Feet or Miles

0

Parcel List

For restoration and enhancement programs ONLY: Managers may add, delete, and substitute projects on this parcel list based upon need, readiness, cost, opportunity, and/or urgency so long as the substitute parcel/project forwards the constitutional objectives of this program in the Project Scope table of this accomplishment plan. The final accomplishment plan report will include the final parcel list.

Section 1 - Restore / Enhance Parcel List

Blue Earth

Name	TRDS	Acres	Est Cost	Existing Protection?
Eagle Lake protection barrier	10825229	0	\$500,000	
Elysian Lake protection barrier	10725213	0	\$500,000	
Madison Lake protection barrier	10825215	0	\$500,000	

Cottonwood

Name	TRDS	Acres	Est Cost	Existing Protection?
Site 10	10638226	0	\$60,000	

Hennepin

Name	TRDS	Acres	Est Cost	Existing Protection?
Lock and Dam #1 lock chamber	02823217	0	\$985,500	No

Jackson

Name	TRDS	Acres	Est Cost	Existing Protection?
Milbrath Dike	10237204	0	\$57,000	Partial
Site 1A: Okabena Breach	10238207	0	\$30,000	Partial
Site 1C: Okabena Breach	10238205	0	\$400,000	No
Site 3	10238207	0	\$30,000	
Site 4: Herlein-Boote WMA	10241212	0	\$200,000	No
Site 6: Indian/Iowa	10137228	0	\$400,000	No

Nicollet

Name	TRDS	Acres	Est Cost	Existing Protection?
Evaluate barrier sites	10827212	0	\$200,000	No

Renville

Name	TRDS	Acres	Est Cost	Existing Protection?
Chetamba Creek Barrier	11638209	0	\$500,000	

Swift

Name	TRDS	Acres	Est Cost	Existing Protection?
Shakopee Creek Barrier	12025220	0	\$500,000	
Name	TRDS	Acres	Est Cost	Existing Protection?
Site 5: Lower Gar Lake outlet	09836206	0	\$261,000	No

Section 2 - Protect Parcel List

No parcels with an activity type protect.

Section 2a - Protect Parcel with Bldgs

No parcels with an activity type protect and has buildings.

Section 3 - Other Parcel Activity

Hennepin

Name	TRDS	Acres	Est Cost	Existing Protection?	Hunting?	Fishing?
Lock and Dam #1 lock chamber	02823217	0	\$5,580,000	No	Yes	Yes

Jackson

Name	TRDS	Acres	Est Cost	Existing Protection?	Hunting?	Fishing?
Site 1: Okabena Breach 1	10238205	0	\$600,000	No	Yes	Yes
Site 2: Heron Lake Breach	10237204	0	\$40,000	Partial		
Site 3: Okabena Breach 2	10238207	0	\$30,000	Partial		
Site 4: Herlein-Boote WMA	10241212	0	\$150,000	No		
Site 6: Indian/Iowa	10137228	0	\$400,000	No		
Name	TRDS	Acres	Est Cost	Existing Protection?	Hunting?	Fishing?
Evaluate barrier sites	2	0	\$200,000	No		
Site 5: Lower Gar Lake outlet	09836206	0	\$500,000	No		

No parcels with an other activity type.

Completed Parcel: Milbrath Dike

of Total Acres: 0
County: Jackson
Township: 102
Range: 37
Direction: 2
Section: 04
of Acres: Wetlands/Upland:
of Acres: Forest:
of Acres: Prairie/Grassland:
Amount of Shoreline: (Linear Feet)
Name of Adjacent Body of Water (if applicable):
Has there been signage erected at the site:

Completed Parcel: Site 1C: Okabena Breach

of Total Acres: 0
County: Jackson
Township: 102
Range: 38
Direction: 2
Section: 05
of Acres: Wetlands/Upland:
of Acres: Forest:
of Acres: Prairie/Grassland:
Amount of Shoreline: (Linear Feet)
Name of Adjacent Body of Water (if applicable):
Has there been signage erected at the site:

Completed Parcel: Site 3

of Total Acres: 0
County: Jackson
Township: 102
Range: 38
Direction: 2
Section: 07
of Acres: Wetlands/Upland:
of Acres: Forest:
of Acres: Prairie/Grassland:
Amount of Shoreline: (Linear Feet)
Name of Adjacent Body of Water (if applicable):
Has there been signage erected at the site:

Completed Parcel: Site 4: Herlein-Boote WMA

of Total Acres: 0
County: Jackson
Township: 102
Range: 41
Direction: 2
Section: 12
of Acres: Wetlands/Upland:
of Acres: Forest:
of Acres: Prairie/Grassland:
Amount of Shoreline: (Linear Feet)
Name of Adjacent Body of Water (if applicable):
Has there been signage erected at the site:

Completed Parcel: Site 5: Lower Gar Lake outlet

of Total Acres: 0
County:
Township: 098
Range: 36
Direction: 2
Section: 06
of Acres: Wetlands/Upland:
of Acres: Forest:
of Acres: Prairie/Grassland:
Amount of Shoreline: (Linear Feet)
Name of Adjacent Body of Water (if applicable):
Has there been signage erected at the site: