Request for Funding Form
Lessard-Sams Outdoor Heritage Council
Fiscal Year 2011

Program or Project Title: **#33 DNR Aquatic Habitat Program**

Date: **November 2, 2009**

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	Council Funding Request	Out-Year Projections of Needs		
Funds Requested ($000s)	**FY 2011**	FY 2012	FY 2013	FY 2014
Aquatic Management Area Acquisition	**10,206**	10,206	10,206	11,750
Stream Habitat Restoration and Enhancement	**5,893**	5,200	5,700	6,500
Lake Habitat Enhancement	**1,059**	600	1000	1125
Outdoor Heritage Fund (Totals)	**$17,158**	$16,006	$16,906	$19,375

A. Summary

DNR requests $17.2 million from the Outdoor Heritage Fund to deliver accelerated aquatic habitat management projects within a comprehensive statewide framework of existing DNR habitat programs. This proposal uses a multi-programmatic approach to achieve prioritized aquatic habitat protection, restoration, and enhancement for lakes, trout streams, and rivers across Minnesota. We propose to: i) protect 42.8 miles of shoreline on lakes, rivers and trout streams; ii) effect structural repairs to 4 lake outlet control structures that will integrate fish passage; iii) restore and enhance river and stream functions that will benefit over 600 river miles; and iv) enhance 3.6 miles of shoreline habitat on publicly-owned lakeshore. The strategic approach and priority resources targeted in this proposal are supported by a number of internal and external conservation planning documents. The DNR will implement the objectives of this proposal through established and highly successful programs each having strong stakeholder support including: Aquatic Management Area Program, Shoreland Habitat Restoration Program, Stream Habitat Program, and Coldwater Streams

Program. Program outcomes proposed with this funding will align with Lessard-Sams Outdoor Heritage Council Planning Section priorities.

B. Background Information

1. What is the problem or opportunity being addressed?

Minnesota's aquatic habitats have been degraded or threatened by a century or more of land, hydrology, and human settlement related alterations. The consequences to aquatic species have been reduced habitats for essential life history stages, lack of access to traditional spawning areas, and fragmentation of formerly continuous habitat that served as corridors to facilitate seasonal movements.

Geographically, aquatic habitats are in various states of quality and experiencing differing levels of environmental stress with a general pattern of healthy habitats under low stress in the northeast and less healthy habitats under high stress in the southern and western portions of the state (see Figure H-15 in the State Conservation and Preservation Plan). But even within this generalized pattern there are many notable exceptions – aquatic habitats exhibiting declining quality under high environmental stress in the northeast, and moderate to high quality habitats within high environmental stress landscapes to the west and south. This provides a meaningful framework for providing habitat protection, restoration, and enhancement through DNR's diverse habitat programs infrastructure.

2. What action will be taken?

DNR will acquire 42.8 miles of critical shoreland habitat in fee title or permanent easement along lakes, rivers, and trout streams; develop preliminary designs and implement construction activities to enhance fish passage across barriers and reconnecting access to over 600 miles of trout streams and major rivers; effect structural repairs to four lake outlet control structures that will integrate fish passage; develop preliminary designs and implement construction activities to restore channel stability along one mile of trout stream and 3 miles of major rivers; offer incentive matching grants to up to five local governments that incur increased capital costs to upgrade project designs above minimum allowable standards to achieve fish passage at stream crossings scheduled for repair or replacement; provide technical assistance to local governments and provide matching funds for activities to enhance 3.6 miles of public shoreline habitat along AMAs and other state, county, township, and municipal lands; and provide trout stream corridor enhancement benefiting over 100 miles of stream by excluding livestock, removing invasive plant species, and reestablishing native cover on public-owned lands and easements.

3. Who will take action and when?

DNR will begin immediately, upon approval by L-SOHC, to implement this Program. DNR will initiate contracts for grants, appraisals, and certain construction activities within three months of the first fiscal year of the appropriation for a number of projects; conduct feasibility and preliminary design studies to select preferred options throughout the grant period for some construction projects; and develop engineering

designs throughout the three fiscal years for additional construction projects that DNR will seek to fund with future capital bonding and L-SOHC requests.

Proposed activities will be conducted by DNR staff and by contract for services (e.g., MCC work crews, construction contractors, and independent real estate appraisers). DNR proposes temporary field staff and program coordinator positions during the term of this grant request to implement these accelerated habitat protection, restoration, and enhancement objectives where the proposed activities stretch beyond the Department's current capacity.

Temporary field staff will perform the following activities:

- ½ FTE Land Acquisition Specialist: Position will be shared with Section of Wildlife to process acquisition fact sheets and coordinate AMA projects. This shared position will add capacity to efficiently process accelerated acquisition of AMA fee title and permanent easement lands.
- 2 FTE Field Acquisition Specialists: Positions will be stationed in SE Minnesota and the North Shore to identify strategic stream parcels to acquire, work with landowners, and develop permanent easement acquisition projects. The AMA Acquisition Plan establishes aggressive permanent easement acquisition targets for these two landscapes, but existing staff capacity does not exist to cultivate accelerated projects. These positions specifically will work toward achieving those targets.
- 1 FTE Stream Restoration Coordinator: Position will provide project coordination and technical review for stream restoration and dam modification projects. Position will prepare environmental review documents necessary for project implementation.
- 2 FTE River Ecologists: Positions will be located in field offices and will provide local expertise for project designs, contact affected landowners, work with local governments, prepare environmental review documents, conduct on-site inspections of construction activities, and assess future candidate project sites.
- ½ FTE Shoreland Restoration Specialist: Position will provide public lakeshore enhancement project design and review, technical assistance to local units of government, project site inspections, and block grant contract coordination.
- 1 FTE Fish Passage Specialist: Position will provide technical review of design plans for enhancing fish passage across HW61 at three significant fish spawning tributaries of Lake Superior. Position will also conduct field assessments of other key Lake Superior spawning tributaries to identify additional candidate fish passage projects and initiate pre-design work.

4. How will you coordinate this program with the other Constitutional Funding?

The proposed habitat protection, restoration, and enhancement activities are most appropriately suited to the Outdoor Heritage Fund, although some activities will have additional secondary benefits to water quality (e.g., reduced nutrient and sediment loading). DNR will ensure that L-SOHC funds are applied to qualifying projects and will complement overall Program budgets resulting in comprehensive delivery that benefits Minnesota's aquatic resources.

5. What specific habitat changes will occur if this item is funded? Be specific about and list multiple benefits if they exist.

DNR will protect 42.8 shoreline miles (2,095 acres) of new Aquatic Management Areas (AMA) on lakes, warmwater streams, and trout streams for habitat protection and compatible public outdoor uses consistent with the Outdoor Recreation Act (M.S. 86A.05, Subd.14) and Minnesota Rules Chapter 6270.

Fish passage over in-stream barriers on coldwater streams and warmwater rivers will reconnect fish and other aquatic species to hundreds of miles of upstream habitats essential for spawning, juvenile life stages, overall population abundance and genetic diversity. Dam modifications will be completed to enhance fish passage and reconnect 147.5 river miles. Channel modifications will be completed to restore stability to 3 river miles. This proposal will also provide engineering designs necessary to queue up successive years' construction projects to a stage of readiness for dirt-moving. These design projects ultimately will benefit an additional 400 miles of river upon completion of construction activities. Preliminary design and feasibility work will be completed for 6 projects, and final engineering to enable construction activities under a future proposal will be completed for 3 projects. Fish passage will be enhanced following structural repairs to 4 lake outlet controls, benefiting not only native fish species directly but also native mussel species that are dependent on fish for upstream transport.

At the end of the L-SOHC grant period, 3.6 miles of public shoreline including AMAs and other state, county, township, and municipal lands will be enhanced to provide erosion protection, habitat diversity for multiple species of fish and wildlife (including game species and SGCNs), and enhanced aesthetics. Project habitat benefits will continue to accrue beyond the term of this grant as project sites mature and the shoreline assumes a more natural character.

6. When do you expect to see these habitat changes?

Protection benefits will be realized immediately upon transfer of fee title or permanent easement interest to the DNR.

Within three years following restoration or enhancement, projects should be providing the desired habitat functions. Some changes will immediately follow the proposed activity (e.g., fish movement following barrier modification) while other changes will accrue incrementally over a few years following the proposed action (e.g., native grasses and woody plants following shoreline enhancement).

For pre-design and engineering accomplished under this proposal, habitat changes are expected to result following future appropriations that will be requested from various sources including capital bonding and L-SOHC to fund the construction work called for in the engineering design solution.

7. Will your Outdoor Heritage Fund dollar request complete the planned accomplishments?

__X__YES _____NO

If not, how will you finance completion?

The DNR will accomplish the scope of work proposed in this grant request. Note that this proposal queues up construction-ready projects for future funding rounds of the L-SOHC. The nature of large-scale habitat restoration and enhancement projects of the magnitude called for in the Statewide Conservation and Preservation Plan requires a longer timeline to develop and complete (typically 4-5 years) than the three fiscal year funding cycle of the Outdoor Heritage Fund grants. DNR's approach is to break major construction-related activities into elements of Planning, Design, and Construction that can individually be accomplished within the funding cycle, but a given project may not proceed through all of these elements within the funding cycle.

8. How will you pay for the maintenance of the accomplishments?

Routine maintenance of AMA parcels will be accomplished by Area Fisheries Managers as part of their public land management responsibilities. Periodic enhancements such as invasive species removal, prescribed burning, supplemental vegetation planting, shoreline stabilization and restoration, or water control structure installation and replacement will be accomplished through annual funding requests from a variety of funding sources including, but not limited to, Game and Fish Fund, Bonding, Gifts, Federal Sources, Environmental Trust Fund, and Outdoor Heritage Fund.

For shoreline restoration grants, routine maintenance will be accomplished by the local unit of government as part of an overall block grant agreement. Supplemental vegetation planting, watering of the restoration site, and removal of invasive plant species are typical maintenance requirements during the early stages of restoration projects.

Restoring natural channel function or mimicking natural riffles/rapids results in the desired habitat benefit but also provides self-maintenance.

9. How does this action <u>directly</u> restore, enhance, or protect prairies, wetlands, forests or habitat for fish, game, and wildlife?

Acquisition of priority habitats provides permanent protection backed by state and federal laws.

Providing fish passage over in-stream barriers such as low-head dams and culverts by backfilling with rock or recessing in the streambed, respectively, reconnects fish and other aquatic species to upstream habitats essential for spawning, juvenile life stages, and overall abundance and genetic diversity of aquatic species. Stream restoration projects reconstruct the stream's natural pattern, profile, and dimension. Natural stream design favors hydrologic conditions that do not degrade the stream bank and bed and provides a diversity of microhabitats that are more favorable to fish and other aquatic species.

At the end of the L-SOHC grant period, 3.6 miles of public shoreline including AMAs and other state, county, township, and municipal lands will be enhanced to provide erosion protection, habitat diversity for multiple species of fish and wildlife (including game species and SGCNs), and enhanced aesthetics. Native plants and natural materials will be utilized to increase habitat complexity, provide protective cover,

stabilize shorelines, and firmly anchor soils. Project habitat benefits will continue to accrue beyond the term of this grant as project sites mature and the shoreline assumes a more natural character.

10. If you are restoring or enhancing property, is the activity on permanently protected land?

__X__YES _____NO
If yes briefly describe the kind of protection.

Funds from this grant will be used to enhance lakeshore habitats on publicly-owned lands (e.g., State, County, Township, and municipal lands). Stream restoration work will occur on existing DNR perpetual easements or lands acquired in fee title.

11. How will you ensure transparency and provide information about your work and use of Outdoor Heritage Fund dollars.

DNR, as a state agency, is subject to intense scrutiny and operates under well established fiscal laws, rules and policies subject to regular fiscal audits. DNR is also subject to data practices policies that make appropriate information available upon request. DNR will provide all reports, updates and progress reports as requested by the L-SOHC and the Legislature.

12. Why will this strategy work?

The AMA designation unit within the Outdoor Recreation System was established by the Legislature in 1992 and has strong support from conservation groups and anglers. The AMA Program currently has an inventory of 830 miles of shoreline in over 330 AMAs, which provide permanent protection of critical riparian habitats, perpetuate fish and wildlife populations, safeguard water quality, and offer public recreational opportunities as an important additional benefit.

Channel restoration, dam modification, and shoreline enhancement work is based on proven methods and DNR experience with multiple projects. As examples of these successful strategies, DNR has conducted large-scale projects to restore the Whitewater River to its original channel; reconnected nearly the entire Minnesota portions of the Red River by direct dam removal or modification leaving only a few dams presently remaining that impede fish movements (primarily lake sturgeon); and enhanced 21 miles of shoreline on lakes across the state including many challenging high erosion sites. These are significant and durable accomplishments benefiting aquatic habitat.

The DNR has worked on large-scale river and stream restoration projects since 1998 and has completed or assisted in design elements of over 100 stream projects addressing restoration, fish passage, dam removal and dam modification to rapids. DNR successfully reverses these effects by using natural channel design. This promotes stable stream channels that are designed with the appropriate dimension, pattern, and profile with beds that neither aggrade nor degrade over time. Also projects address other key components of a stream: wildlife and fish habitat, water quality, connectivity to the floodplain and upstream reaches, and hydrology. By drawing on the accumulated scientific knowledge on all components of the stream

DNR strives to deliver the best possible restoration projects using the best science available.

The DNR has conducted shoreline enhancement projects for over 10 years and during that time the program has grown in scope and popularity. The annual number of shoreland restoration projects completed has increased from 23 in 2002 to 60 in 2009.

13. Who might make decisions that assist or work against achieving the expected impact program?

Landowners, local units of government, soil and water conservation districts, watershed management organizations, lake associations, partners, other state and federal agencies, permitting authorities.

DNR experience has shown that substantial road blocks to project success can fall quickly by subtle shifts in circumstances or in an individual's opinion. The opposite can be true as well. It is difficult to predict these shifts but DNR's strategy is to maintain open dialog with all affected parties to ensure project success. Recognizing such external barriers to success exist, DNR considers factors such as willing landowners, local support, and energized partners in addition to project benefits to the resource when establishing project priorities.

14. If this is acquisition of land, has the local government formally approved the acquisition?

_____YES **__X__NO**

Township and County support are usually obtained as part of the acquisition process. County Boards are typically notified after AMA parcels have been optioned and consistent with DNR policy.

15. If this is fee simple acquisition of land, is the land free of any other permanent protection such as a conservation easement?

___X__YES **_____NO**

16. If this is an easement acquisition, will the eased land be open for public use?

___X__YES **_____NO**
If Yes what kind of use?

Whenever possible, AMA easement lands will be opened for angling, hunting, and other non-motorized light use activities consistent with M.R. 6270.0200.

Easements for stream channel restoration will provide for DNR management access as the primary easement interest acquired. Public use is a secondary interest that DNR will seek whenever possible.

17. If easement acquisition, will the easement be a permanent conservation easement as described in MS 2009, Chapter 84C.01, specifically protecting the natural resource values of real property forever?

___X___YES **_____NO**

18. If you are proposing funding for a new or ongoing program how long into the future do you expect this program to operate?

___Indefinite___ Years

The AMA program is ongoing as opportunity and need arises. In 2007, the AMA Acquisition Planning Committee developed an acquisition plan that recommended purchasing an additional 2,595 miles of riparian lands over 25 years to meet the habitat protection needs of a rapidly changing Minnesota.

Restoration and enhancement aspects of this proposal will be accomplished by other established programs within DNR.

19. Which planning sections will you work in? Check all that apply in the list below.

__X__ Northern Forest

__X__ Forest/Prairie Transition

__X__ Southeast Forest

__X__ Prairie

__X__ Metropolitan Urbanizing Area

20. Does the request address an urgent conservation opportunity that will be lost if not immediately funded?

___X___YES **_____NO**

If yes, please explain.

In the short-term, land markets are depressed along with the general economy, which has temporarily eased speculative development influence on land sale prices. This will provide a short-term opportunity to extend the state's acquisition buying power. In the long-term, steadily rising land costs, increasing urban development from population expansion, declining water quality, and conversion of existing shoreline habitats to residential lots make protection and restoration of remaining shoreline habitats urgent.

Identified shoreland areas in need of enhancement are no longer providing habitat benefits or are eroding and compromising in-lake habitat. The DNR has a number of willing local government partners ready to initiate shoreline enhancement work with assistance through agency matching grant funds.

Many stream restoration projects are based on timing. Considerable effort has been expended by the DNR on developing projects that are at the top of the priority list. Obtaining funds in a timely manner is crucial to project success and completion.

21. Does the request restore and/or enhance habitat on existing state-owned Wildlife or Aquatic Management Areas or Scientific and Natural Areas?

___X___YES _____NO

If Yes, list the names of the AMAs, WMAs and/or SNAs and the acres to be restored and/or enhanced.

Some of the proposed restoration and enhancement activities will occur on AMA lands. See attached map showing the distribution of AMAs in the state.

22. Is this request based on assessment through a science based strategic planning and evaluation model similar to the United States Fish and Wildlife Service's Strategic Habitat Conservation model?

___X___YES _____NO

If yes explain the model briefly.

Our model is similar in that it is composed of planning, implementation and evaluation phases in the traditional adaptive management framework.

DNR develops management plans based on assessment data for actively managed lakes and streams in the state. Management plans guide fish population management and identify opportunities for habitat protection, restoration, and enhancement. Additional strategic planning documents guide habitat management activities, and these are referenced under Section C of the proposal.

Proposed projects are ranked using specific criteria. Considerable quantitative measurements go into the criteria development for stream restoration projects such as fish survey data, watershed evaluation, and presence of state or federally listed species. Acquisition scoring criteria follow the recommendations of the AMA Acquisition Planning Committee. Ranked projects are approved for implementation through an internal review process.

Evaluation is an integral step and, for stream restorations, involves project monitoring of fish passage, water chemistry, and continued geomorphology surveys to evaluate projects. Similar evaluations are conducted for lakeshore enhancement projects to ensure projects are functioning as designed.

From these evaluations research is driven to improve designs and continue development of future projects. We also use the research to inform professionals working on stream restoration from state, federal and private firms through a series of courses taught by the Stream Habitat Program to further stream restoration efforts.

23. Explain the scientific foundation for your project, and the benefits it will produce.

Clearly, fish need more than water to support abundant and diverse populations.

As residential development increases around lakes, human behaviors and activities in the immediate riparian area lead to physical alteration of aquatic habitats. The attendant loss of near shore habitat, primarily reductions in native vegetation, coarse woody habitat from fallen trees, and physical reshaping of the shoreline and shallow areas, is well documented in the scientific literature as is the correlation between these human-caused changes and reductions in fish species diversity, densities and growth rates. These changes also create new, compromised habitats that in turn aid in the establishment of nonnative species, further disturbing and competing for native game fish habitat. Studies have also documented the negative effects of lakeshore alteration caused by housing development on the composition of breeding birds, reptile and amphibian abundance. As homes become denser, tree-falls dwindle due to thinning and removal of trees along the lakeshore—sometime to better the lake view—and the removal of downed trees from the water. Construction and placement of shoreline erosion control structures, usually needed to compensate for the stability lost from native vegetation removal, reduces complex natural habitat elements. A university study in Maine has quantified significant reductions in habitat complexity along developed shoreline as compared to undeveloped shoreline, and between developed lakes and undeveloped lakes at a system scale. A similar study in Vermont has identified significant negative correlations in habitat quality and shoreline development. DNR is working to identify and protect sensitive shoreland areas through a collaborative pilot project with a local government unit in central Minnesota.

The landscape and rivers of Minnesota have been altered by population growth and associated activities (e.g., timber and food production). This has left many of our river systems in poor ecological condition due to straightening projects, increased erosion and deposition, increased nutrient inputs, and fragmentation by in-stream barriers and structures limiting access to floodplains. The science of stream channel restoration and natural fluvial process is relatively recent (past 30+ years) and guided by the pioneering stream geomorphology work of Luna Leopold and, more recently, David Rosgen. Though the scientific foundation is more recent, the success of the approach is well documented. Traditional “hard” engineering techniques that do not consider the overall hydrology of the stream system have proven to be less durable over time or shifted problems downstream as opposed to “natural” stream design that factors the overall hydrology of the system into the engineering solution.

24. How do you set priorities? *(Be sure to list the criteria you use and the weight you give each one.)*

DNR natural resource plans (listed in Section C below) provide much of the criteria for prioritizing habitat protection, restoration, and enhancement activities. For example, AMA acquisition and large-scale stream restoration and enhancement projects are scored based on a suite of criteria ranging from scope of project and quality of resource benefited to project readiness and feasibility. The sum of these scores creates a ranking value from which to prioritize among the many available project opportunities. See pp. 40-41 of AMA Plan for example of scoring criteria.

Other projects are more opportunity driven such as lakeshore habitat or fish passage enhancement where the needs are ubiquitous. Priorities are then based upon willing landowners, capable partners and the magnitude of the project or benefit to resource. Projects that enhance a sizeable length of shoreline, reconnect access to many miles of

formerly severed stream, or build upon previous projects within a habitat complex are examples of prioritization considerations.

C. Relationship to the *Minnesota Conservation and Preservation Plan* and Other Published Resource Management Plans

MNDNR Strategic Conservation Agenda Update:

Meets the criteria of conservation in the Mission Statement, 'work with citizens to conserve and manage the state's natural resources;" and Strategic Conservation Agenda goals to conserve, restore, and enhance Minnesota's natural lands and habitats, water resources, and watersheds.

Minnesota Conservation and Preservation Plan

This proposal addresses a number of recommendations contained in the Statewide Conservation and Preservation Plan including:

- Habitat Recommendation 2, Protect critical shorelands of streams and lakes (p. 67). Fee acquisition and conservation easements among tools needed for protection of critical shorelines of streams and lakes. Acquiring the highest-priority shorelines "is one essential component of a multi-strategy approach to preserving the clean water legacy that Minnesota's citizens and visitors are used to experiencing. (p.69)" Benefits include protection of critical shoreline habitats from degradation, public angler access, and providing areas for education and research.

- Habitat Recommendation 6A, Restore habitat structure within lakes (p. 76). This recommendation seeks "… to restore the natural features of lakeshore habitats (area comprising the shoreland, shoreline, and near-shore)."

- Habitat Recommendation 6B, Protect and restore in-stream habitats (p. 82). Several approaches can be implemented to protect and restore in-stream habitats. Removal or modification of dams and installing culverts with increased capacity would improve connectivity of aquatic systems. Riparian vegetation can be restored to stabilize stream banks. Channelized streams can be reconstructed to provide a flood plain to dissipate stream energy and allow the channel to remeander, which will provide more diverse habitat for aquatic organisms.

Tomorrow's Habitat for the Wild and Rare

The State's Wildlife Action Plan is a rare species condition assessment and habitat conservation guidance document for Minnesota's species of greatest conservation need. Several aquatic species of biota are included in this plan including plants, insects, mussels, fish, and water-dependent and seasonal migrant bird species.

Minnesota's AMA Acquisition Plan 2008-2033

The DNR's AMA Acquisition Plan calls for shoreline acquisition to ensure shoreline habitat protection, water quality maintenance, and angler access for present and future generations. This plan envisions acquisition of 3,428 miles of lake and stream habitat during the next 25 years. This proposal would fund progress toward that goal.

Strategic Plan for Coldwater Resources Management in Southeast Minnesota 2004-2015
This plan establishes targets to protect, improve, and restore coldwater aquatic habitat and fish communities. The plan identifies important issues and strategies that will enable DNR to maintain and improve the short and long-term values of the unique trout stream resource of the Southeast and provide angling clientele with diverse angling opportunities.

Red River of the North Fisheries Management Plan
The overall approach to habitat management in the Red River is to maintain, restore, enhance, and protect riverine and upland habitats and their functions. The plan includes the following recommended actions:

- Establish and maintain stable stream channels.
- Improve and protect high quality fish spawning and rearing habitats within Red River and tributaries.
- Provide uninterrupted fish passage/river connectivity.
- Provide appropriate heterogeneous and complex physical habitat components.
- Provide water of sufficient water quality to sustain healthy aquatic systems.
- Re-establish a more natural flow regime.

Midwest Glacial Lakes Partnership: Strategic Plan for Fish Habitat Conservation in Midwest Glacial Lakes
The Midwest Glacial Lakes Partnership (MGLP) is a formal Fish Habitat Partnership under the National Fish Habitat Action Plan (.fishhabitat.org). The mission of the Midwest Glacial Lakes Partnership is to work together to protect, rehabilitate, and enhance sustainable fish habitats in glacial lakes of the Midwest for the use and enjoyment of current and future generations. MGLP has developed a strategic plan (.MidwestGlacialLakes.org/resources/) to protect and restore aquatic habitats in naturally-formed glacial lakes across the upper Midwest states. The MGLP strategic plan identifies a number of objectives (p. 26-29) designed to conserve (protect, restore, and enhance) the habitats of Midwestern glacial lake fish populations, to support a broad natural diversity of aquatic species, to promote self-sustaining fish populations, and to provide successful fishing opportunities.

National Fish Habitat Action Plan
The National Fish Habitat Action Plan is a national partnership-based framework for achieving protection and restoration of priority aquatic habitats that support a broad natural diversity of fish and other aquatic species. The plan uses a science-based approach to target priority areas and implement needed projects that address causative factors and use best management practices. The Action Plan is implemented through regional Fish Habitat Partnerships (functionally analogous to Waterfowl Joint Ventures under the North American Waterfowl Management Plan which is supported by the North American Wetlands Conservation Act). Fish Habitat Partnerships leverage national and state resources to achieve local priorities for habitat protection and restoration.
(.fishhabitat.org/documents/plan/National_Fish_Habitat_Action_Plan.pdf)

Individual Lake and Stream Management Plans
The Section of Fisheries produces individual fisheries management plans for every actively managed lake and stream resource in the state. In addition to fish population goals and

objectives, these plans identify habitat actions unique to each waterbody that are needed or beneficial to sustain quality fisheries.

D. Budget ($000s)

Budget Item	Fiscal Year 11	Fiscal Year 12	Fiscal Year 13
Personnel	468	528	463
Contracts			
Design/Construction	1,160	1,115	1,446
MCC Crews	150	100	
Grants	300	300	50
Equipment/Tools/Supplies	140	50	10
Fee Acquisition	3,652	1,826	609
Easement Acquisition	1,765	908	310
Easement Stewardship	50	125	200
Professional Services*	672	392	305
Travel	25	20	20
Additional Budget Items			
TOTAL	$8,382	$5,364	$3,413

* Professional services include Division of Lands & Minerals land acquisition negotiations, appraisals, AGO, and related services; Management Resources engineering design services; and contracted costs for shared services activities including DNR Office of Management and Budget Services, Human Resources, Management Resources and Information & Education base level services.

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E. Personnel Details *In the space below list the names, titles and anticipated program funds to be paid by this recommendation. If you will need to fill a position just list the title and amount.*

Title	Name	Amount.
Land Acq. Specialist (0.5 FTE)		$40,000/year = $120,000
Field Acq. Spec, NE MN (NR Spec Int 8L-06)		$60,000/year = $180,000
Field Acq. Spec, SE MN (NR Spec Int 8L-06)		$60,000/year = $120,000
Restoration Coordinator		$95,000/year = $285,000
River Ecologist		$85,000/year = $255,000
River Ecologist		$85,000/year = $255,000
Shoreland Restoration Specialist (0.5 FTE)		$37,500/year = $112,500
Fish Passage Specialist		$65,000/year = $130,000

F. All Leverage In the table below list the sources and amounts of leverage you anticipate by fiscal year you anticipate receiving it. Include state and non-state leverage.

All Sources of Leverage ($000)	Fiscal Year 11	Fiscal Year 12	Fiscal Year 13
DNR In-Kind Staff Time	150	150	150
LCCMR			
RIM-CHMP	500	1,250	
Donations of cash and land value	1,500	1,250	
Initiative Foundation		100	100
Minnesota Waters		10	
USFWS Fish Passage Grant	10	75	
Dingell-Johnson federal aid			
Local grant match	100	300	250
TOTAL	$2,260	$3,135	$ 500

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G. Outcomes:

1) *In the first table below, quantify the outcomes you plan to achieve with the recommended funds.*
2) *In the second table show list the sections where outcomes will occur.*
3) *In the third table, allocate your recommended funds to each cell with outcomes listed in table1.*
4) *In the fourth table show the leverage to be applied to each cell with outcomes listed in table 1. and*
5) *If you have any outcomes listed in the "protect" row in table1, account for them according to the type of acquisition and PILT status in table 5*

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Table 1 Accomplish-ments	Wetlands	Prairies	Forests	Habitats for Fish, Game and Wildlife
Restore				*Restore 3 miles of stream; and 1 mile of trout stream*
Protect				*Acquire 17.1 miles of lakeshore and warmwater stream; 25.7 miles of coldwater stream*
Enhance				*Enhance 147.5 miles of stream due to removal of fish passage barriers. Enhance 3.6 miles of public lakeshore. Enhance trout stream corridors at multiple sites. Enhance fish passage over 4 outlet control structures. Enhance fish passage through culverts in on up to 5 sites. Complete design work to enhance fish passage under HW61 on 3 Lake Superior tributary streams. Complete pre-design work on 6 large-scale river and stream projects.*

			Complete design work on 3 large-scale river and stream projects.

Table 2 Sections Impacted and Impact Quantifier	Wetlands	Prairies	Forests	Habitats for Fish, Game and Wildlife
Northern Forest				
Restore				
Protect				*Acquire 8.3 miles of lakeshore and warmwater stream; 15.5 miles of trout stream*
Enhance				*10 miles of stream enhanced due to removal of fish passage barriers*
Forest/Prairie Transition				
Restore				*3 miles of stream*
Protect				*Acquire 5.0 miles of lakeshore and warmwater stream; 0.6 miles of trout stream*
Enhance				*106.5 miles of stream enhanced due to removal of barriers*
Southeast Forest				
Restore				*1 mile of trout stream*
Protect				*Acquire 1.1*

				miles of warmwater stream; 6.6 miles of trout stream
Enhance				*100 miles of trout stream*
Prairie				
Restore				
Protect				*Acquire 2.2 miles of lakeshore; 1.2 miles of warmwater and trout stream*
Enhance				*31 miles of stream enhanced due to removal of fish passage barriers*
Metropolitan Urbanizing Area				
Restore				
Protect				*Acquire 0.5 miles of lakeshore and warmwater stream; 1.8 miles of trout stream*
Enhance				

Table 3 Recommend Fund Allocation ($000)	**Wetlands**	**Prairies**	**Forests**	**Habitats for Fish, Game and Wildlife**
Restore				*2,190*
Protect				*10,160*
Enhance				*4,808*

Program Title: DNR AQUATIC HABITAT PROGRAM

Table 4 Leverage $000	Wetlands	Prairies	Forests	Habitats for Fish, Game and Wildlife
Restore				*385*
Protect				*4,500*
Enhance				*1010*

Table 5 Acquisition Data	Wetlands	Prairies	Forests	Habitats for Fish, Game and Wildlife
Acquired in Fee with State PILT Liability				*17.1 miles of lakeshore and warmwater stream*
Acquired in Fee without State PILT Liability				
Permanent Easement				*25.7 miles of trout stream*

H. Accomplishment Time Table Using the headings below, include a clear statement of how much of what is being accomplished and when. Attach a map showing where accomplishments are anticipated. Accomplishments should clearly restore, enhance or protect forests, wetlands, prairies and habitat for fish, game and wildlife.

Milestone	**Date**	**Measure**
AMA Acquisition		
1. Acquire priority fee title and easements	June,30, 2011	25.7 miles
2. Acquire priority fee title and easements	June,30, 2012	12.8 miles
3. Acquire priority fee title and easements	June,30, 2013	4.3 miles
	Total	**42.8 miles**

Lake Habitat Enhancement		
1. Solicit grant requests from LGUs	Fall 2010	No. of grants received
2. Review grant proposals and make funding determination	Sept – Dec, 2010	No. of grants awarded
3. Award grants	Spring 2011	
4. Oversee restoration plans, project installation, and technical advice	Spring 2011 – 2013	Projects completed; linear feet of shoreline restored or enhanced

5. Complete final inspections to assure projects are completed satisfactorily and are providing benefits described	Spring 2012 – 2013	No. of projects maintained
6. Reconstruct lake outlet control structures	Fall 2011-2013	4 dams integrate fish passage

Stream Habitat Restoration and Enhancement

1. Pre-design project plans with conceptual designs completed	June 30, 2011-2013	2 projects per year (6 total)
2. Completed designs ready for construction	June 30, 2011-2013	1 project per year (3 total)
3. Completed major construction projects	June 30, 2013	2 projects completed, restoring 3 mi stream & enhancing 147.5 mi streams
4. Provide matching grant funds to local road authorities	Fall2011-2013	Up to 5 culvert & bridge crossings provide functional fish passage
5. Complete trout stream restoration	June 30, 2012	1 mile of trout stream is restored
6. Complete trout stream corridor enhancement	Fall 2012	Livestock are excluded from stream; invasive species are removed; native vegetation cover is planted

I. Relationship to Your Current Budget

DNR FY 09 Expenditures (all sources, $000)	$350,000
Division of Fish and Wildlife FY09 Expenditures by Program	
Overall (all sources)	$92,600
AMA Acquisition	$2,152
Lake Habitat Enhancement	$731
Trout Stream Restoration/Enhancement	$574
Fish Passage	$36
Division of Ecological Resources FY09 Expenditures by Program	
Overall (all sources)	$25,800
River & Stream Restoration/Enhancement	$118
Division of Waters FY09 Expenditures by Program	
Overall (all sources)	$11,624
Dam modification	$699

J. How Will the Habitat Improvements Be Sustained?

AMA acquisitions will be sustained through fee title ownership and perpetual easements held by the DNR. This is a long-term protection strategy.

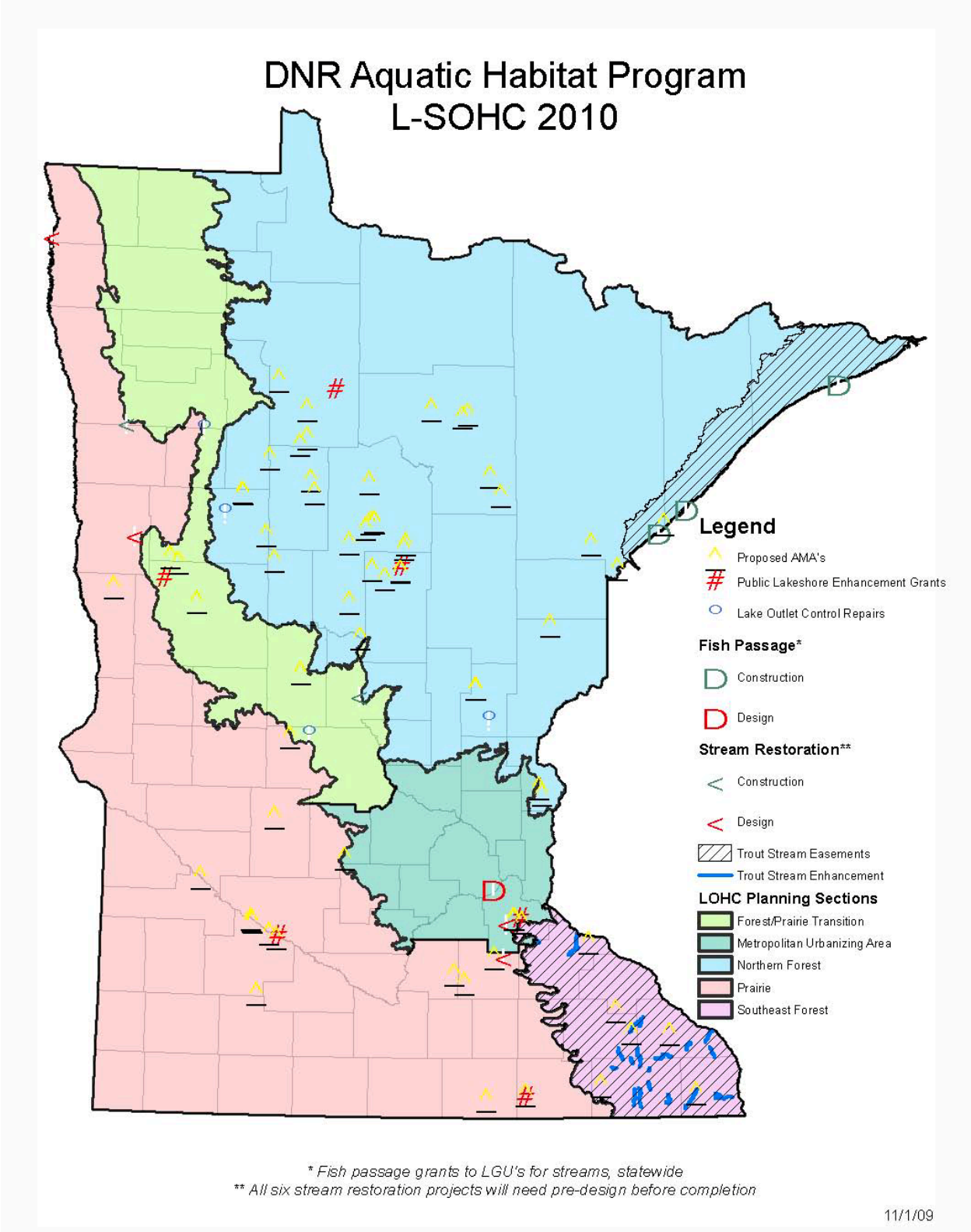
River and stream restoration activities are designed to work with natural hydrology of systems so as to be durable and self-maintaining over time.

Lakeshore enhancement activities will be sustained by the local units of government receiving grant funds. A maintenance plan is required prior to project implementation as well as a 10-year maintenance agreement on all funded projects. Typically if a project is implemented and maintained for a 10-year period, the critical maintenance has been completed and long term project success is likely.

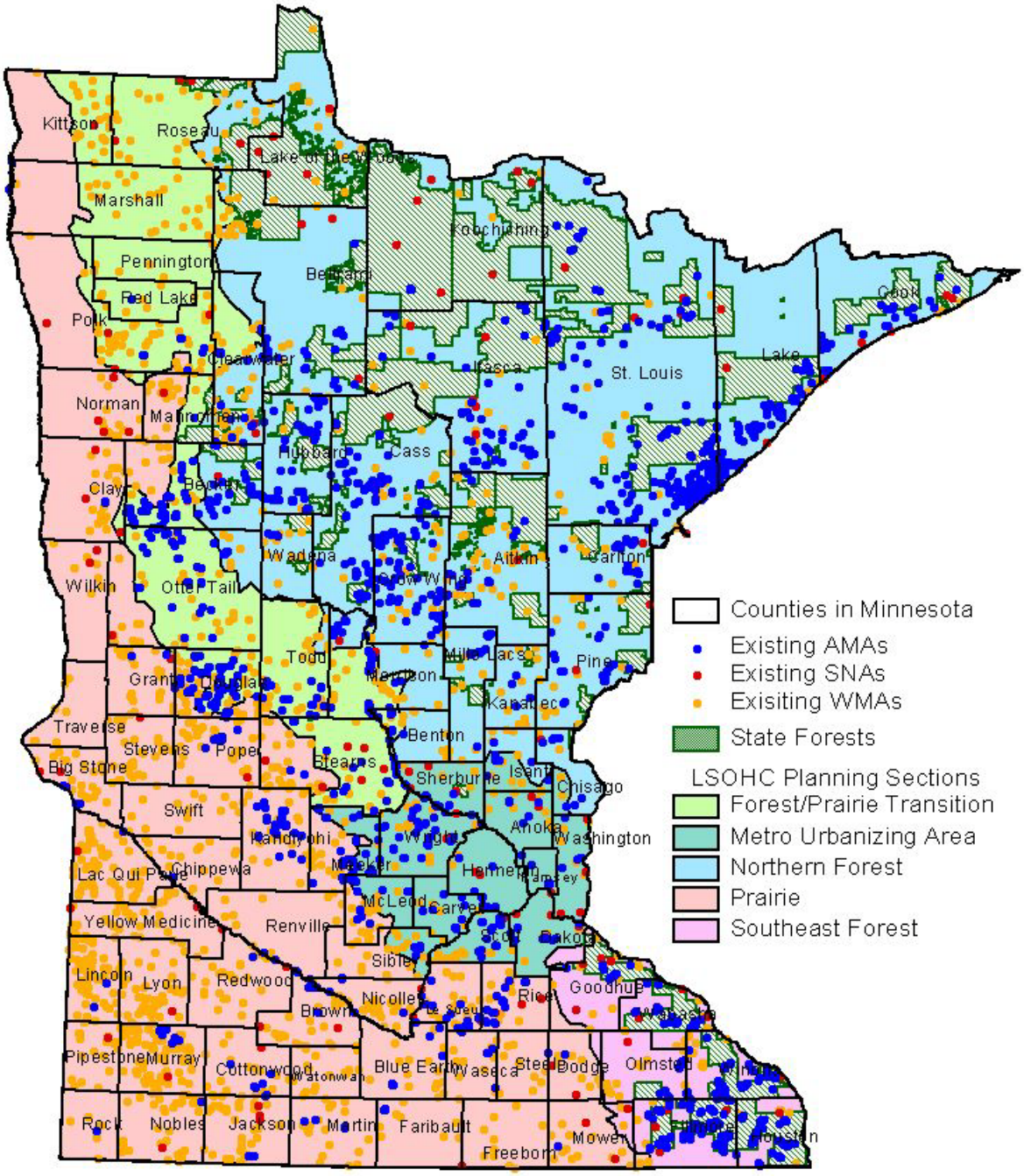
Culvert passage grants issued under this proposal will be sustained through the lifespan of the structure.

K. Attach a list of your projects listing their county location and edit the map of Minnesota on the next page to show each project as a symbol.

See attachments for map and list of projects. NOTE: List of projects is tentative and based upon a point-in-time assessment of opportunities and priorities. Actual project locations may differ although alternate projects will be selected within a strategic decision framework as described previously in this proposal.


DNR Aquatic Habitat Program
L-SOHC 2010
Legend
Proposed AMA's
Public Lakeshore Enhancement Grants
Lake Outlet Control Repairs
Fish Passage*
Construction
Design
Stream Restoration**
Construction
Design
Trout Stream Easements
Trout Stream Enhancement
LOHC Planning Sections
Forest/Prairie Transition
Metropolitan Urbanizing Area
Northern Forest
Prairie
Southeast Forest
* Fish passage grants to LGU's for streams, statewide
** All six stream restoration projects will need pre-design before completion
11/1/09

Existing WMAs, AMAs, SNAs, and State Forests



10/29/09

DNR AQUATIC HABITAT TENTATIVE PROJECT LIST
L-SOHC 2010

Lake/Stream	County/City	Activity
Dead Lake	Otter Tail	AMA
Little Knife	Kanabec	AMA
Big Too Much Lake, P1	Itasca	AMA
Minnesota River	Redwoood	AMA
Bruce Creek	Itasca	AMA
Goodrich Lake	Crow Wing	AMA
Sturgeon Lake	Pine	AMA
Cedar River	Mower	AMA
Eagle Lake	Itasca	AMA
Horseshoe Lake	Itasca	AMA
Cottonwood R	Redwoood	AMA
Star Lake	Crow Wing	AMA
St. Louis River	St. Louis	AMA
North Branch Whitewater R.	Wabasha	AMA
Woman Lake	Cass	AMA
Woman Lake	Cass	AMA
Bull Lake	Chisago	AMA
Goodrich Lake	Crow Wing	AMA
Little Knife	Kanabec	AMA
Minnesota River	Chippewa	AMA
Woman Lake	Cass	AMA
Balm Lake	Beltrami	AMA
Lake Bemidji	Beltrami	AMA
Buck	Becker	AMA
Caron Lake	Rice	AMA
Florida Lake	Kandiyohi	AMA
Greenleaf	Meeker	AMA
Lawndale Cr	Wilkin	AMA
Lawndale Cr	Wilkin	AMA
Lester Lake	Hubbard	AMA
Little Grand	St. Louis	AMA
Woman Lake	Cass	AMA
Maud Lake	Becker	AMA
Middle Br Whitewater R.	Olmsted	AMA
S. Br. Vermillion	Dakota	AMA

Spring Brook	Rice	AMA
Strait River	Becker	AMA
Turtle Lake	Beltrami	AMA
Upper Whitefish	Crow Wing	AMA
Washburn Lake	Cass	AMA
Minnesota River	Redwoood	AMA
Minnesota River	Redwoood	AMA
Bad Medicine Lake	Becker	AMA
Kabekona River	Hubbard	AMA
Knife River	Lake	AMA
Little Sand	Itasca	AMA
Marquette Lake	Bletrami	AMA
Minnesota River	Redwood	AMA
Spring Valley Creek	Fillmore	AMA
Sunrise Lake	Chisago	AMA
Long Prairie River	Todd	AMA
Minnesota River	Redwoood	AMA
Bad Medicine Lake	Becker	AMA
Bullard Creek	Goodhue	AMA
Bullard Creek	Goodhue	AMA
Statewide	Winona	AMA
North Branch Whitewater R.	Winona	AMA
Shell Rock R Albert Lea Lake	Freeborn	AMA
Snowshoe Lake	Cass	AMA
Vermillion River	Dakota	AMA
Vermillion River	Dakota	AMA
West Beaver Creek	Houston	AMA
White Earth	Becker	AMA
La Salle	Hubbard	AMA
Sauk River	Stearns	AMA
Spirit	Wadena	AMA
Mississippi River	Crow Wing	AMA
Statewide	Primarily SE	AMA
Round Lake	Becker	Dam repair
Fish Lake	Kanabec	Dam repair
Sylvia Lake	Stearns	Dam repair
Sand Hill Lake	Polk	Dam repair
Vermillion River	Dakota	Channel modification
Mississippi River	Little Falls	Dam modification

Drayton Dam	Kittson	Dam modification
Sand Hill River	Polk	Dam modification
Cannon River	Rice	Dam modification
Buffalo River	Clay	Channel modification
West Beaver Creek	Houston	Trout stream improvement
Sauk River Watershed	Stearns	Public lakeshore enhancement
Lake Phalen	Ramsey-Washington	Public lakeshore enhancement
Cuyuna AMA	Crow Wing	Public lakeshore enhancement
Seven Mile Lake	Murray	Public lakeshore enhancement
Lake Bemidji State Park	Bemidji	Public lakeshore enhancement
Lake Sallie	Douglas	Public lakeshore enhancement
Crow Wing State Forest	Crow Wing	Public lakeshore enhancement
Keller Lake	Ramsey-Washington	Public lakeshore enhancement
Sucker Creek	Cook	Fish passage
Silver River	Cook	Fish passage
Devils Track River	Cook	Fish passage
Multiple locations	SE Minn	Trout stream corridor enhancement
Multiple locations	Statewide	Culvert fish passage enhancement