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Legislative Commission on Minnesota Resources

*Biennial Report
January 15, 1999*

Pursuant to: M.S. 116P.09, Subd. 7

LEGISLATIVE COMMISSION ON MINNESOTA RESOURCES
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John Velin, Director

January 15, 1999

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Dear Colleagues,

Transmitted herewith is the biennial report of the Legislative Commission on Minnesota Resources (LCMR) as required in MS 116P. On December 3, 1998, the members specifically adopted the new 1999 appropriation recommendations as well as the recommendations for items to be incorporated into the regular agency budgets.

We look forward to presenting this information and certainly encourage questions and discussion. Thank you for the opportunity to serve the Legislature in this capacity.

Sincerely,



Senator Leonard Price,
Vice Chair LCMR

REPRESENTATIVES: Loren Solberg, **CHAIR:** Ron Erhardt; Greg Davids; Alice Hausman; Phyllis Kahn; Willard Munger; Tom Osthoff; Dennis Ozment; Doug Peterson; Tom Rukavina.
SENATORS: Dennis Frederickson; Jerry Janezich; Janet Johnson; Gary Laidig; Bob Lessard; James Metzen; Steven Morse; Leonard Price; Martha Robertson; Jim Vickerman.

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LCMR Staff

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Legislative Commission on Minnesota Resources

LCMR

Issue 11, December, 1998

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James Metzen;
Steve Morse;
Leonard Price, Vice Chair;
Martha Robertson;
Jim Vickerman.

1999 LCMR Process

The Legislative Commission on Minnesota Resources (LCMR) will recommend to the 1999 Legislature 122 natural resource and environmental projects totaling over \$42 million. If passed by the Legislature and signed by the Governor, funding for these projects will begin in July 1999 and run through June 2001.

How the Process Began

Site visits throughout the summer and early fall of 1997 began the process with LCMR members traveling in the Southeast, the metro area, Northeast, and the Minnesota River Valley. The trips offered members the chance to speak directly with the people in the field and learn the current environmental needs throughout the state. Issues addressed in the trips included, but were not limited to; trout preservation, well head protection, land acquisition, GIS applications, forest resources, trail connections, historical site renovations and sustainable farming.

Resource Forums

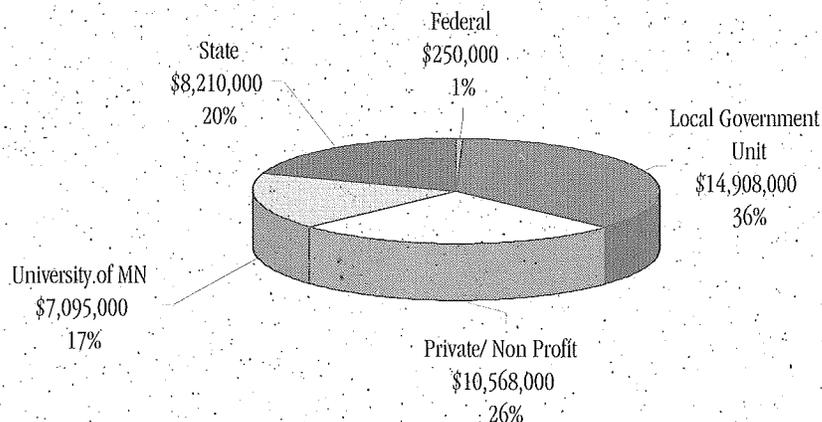
Public Natural Resource Forums on the Environment and Natural Resources Trust Fund were conducted in Two Harbors, St. Louis Park and Redwood Falls on September 18, 1997, to seek ideas and strategies for the future spending priorities from organizations and the public. LCMR Members and Staff, Citizen Advisory Committee Members and over 120 citizen participants met to explore the question of what kinds of efforts should be supported by the Environment and Natural Resources Trust Fund. Individuals unable to attend were encouraged to send e-mails, letters or faxes expressing their opinions. Both the CAC and the LCMR members used the advice from the citizens in their planning processes.

Strategic Plan and Request for Proposal Process

September 23 and 24, 1998, the Citizen Advisory Committee finalized their recommendations on the priorities of the Environment and Natural Resources Trust Fund. The CAC

Continued on page 2

1999 LCMR Recommendations by Affiliation



1999 Recommendations at a Glance

Local Initiatives Grants Program	\$4,850,000
Local and Regional Trails	\$1,350,000
State Parks, Recreation Areas and Trails	\$2,010,000
Metro Parks, Recreation Areas and Trails	\$2,300,000
Historic Sites	\$950,000
Water Quality	\$2,750,000
Agriculture and Natural Resource Based Industries	\$6,850,000
Urbanization Impacts	\$2,398,000
Innovations in Energy and Transportation	\$575,000
Decisionmaking Tools	\$1,705,000
Environmental Education	\$3,505,000
Benchmarks and Indicators	\$4,330,000
Critical Lands or Habitats	\$5,099,000
Native Species Planting	\$1,670,000
Native Fish Species	\$458,000
Exotic Species	\$550,000
<i>Additional Funding Recommendations to 1997 projects are:</i>	
State Park Acquisition	\$496,000
Metropolitan Regional Park System	\$495,000

Continued from page 1

encouraged the LCMR to "step out of the box", and recommended that all projects be innovative and address two key issues: Land Use and Habitat; a sustainable approach being fundamental to both.

The CAC draft strategic plan for the Trust Fund had a significant role in the deliberations of the LCMR strategic planning session. The LCMR final criteria emphasized that all projects must promote a sustainable approach. To be sustainable a project should be compatible with the natural system and balance the benefits to the environment, the community and the economy. The Six-Year Strategic Plan for 1998-2004 was adopted on November 18, 1997.

Response to Request for Proposal

The Request for Proposal was mailed to over 3,500 individuals and organizations in early December 1997. An on-line version was also available at the LCMR web address. Bloomington, Blue Earth, Marshall, Brainerd and Duluth were sites of the 1999 Request for Proposal Workshops held in January 1998. The workshops were designed to be user-friendly by holding them away from the traditional location, the Capitol. Reaching over 100 participants, the LCMR staff presented an overview of the process and answered the questions of potential applicants. By the deadline of February 13, 1998 the LCMR had received 464 proposals, requesting \$196,313,869.

In the Spring of 1998 twenty-one projects were recommended by the CAC to be considered for funding from the Environment and Natural Resources Trust Fund to the LCMR after a review of the 464 proposals. The CAC also encouraged members to continue funding the Local Initiatives Grants Program and State, Metro and Regional Parks and Trails.

Hearings and Additional Information Requested

On May 13, 1998 the LCMR chose 173 projects, including the 21 CAC recommended projects, to be heard throughout the summer of 1998. Additional information was requested from the projects, including detailed budget information.

The hearings were in St. Paul, and in the cities of Mankato and Grand Rapids. The project proposal hearings in greater Minnesota were the first of their kind for the LCMR, and the members and participants found them to be a very successful outreach.

Final Recommendations

The 122 projects that will be recommended to the 1999 Legislature were chosen on July 28-29, 1998 after all the hearings were complete. The package reflects projects from all the strategies put forth by the LCMR. The sponsors of the projects include state agencies, non-profits, academic institutions and local groups, reflecting the "Open to Everyone" philosophy.

The LCMR members would like to express thanks to all who submitted proposals. ♦

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1999 LCMR Recommendations

Funding Sources

Minnesota Environment and Natural Resources Trust Fund (TF) \$26,010,000
Minnesota Future Resources Fund (MFRF) \$16,040,000
Great Lakes Protection Account (GLP) \$200,000

Local Initiatives Grants Program

<u>Project Title</u>	<u>\$ RECOMMEND</u>
TF/MFRF Local Initiatives Grants Program (see page 6 for details)	4,850,000

Local and Regional Trails

<u>Project Title</u>	<u>\$ RECOMMEND</u>
MFRF Mesabi Trail Land Acquisition and Development-Continuation	1,000,000
MFRF Kabetogama to Ash River Community Trail System	100,000
MFRF Mesabi Trail Connection	80,000
MFRF Dakota County Bikeway Mapping	15,000
MFRF Mississippi Riverfront Trail and Access	155,000

State Parks, Recreation Areas and Trails

<u>Project Title</u>	<u>\$ RECOMMEND</u>
TF Management and Restoration of Natural Plant Communities on State Trails	150,000
TF North Shore Touring Trail	550,000
TF State Park and Recreation Area Acquisition, Development, Betterment, and Rehabilitation	1,000,000
TF Ft. Snelling State Park-Upper Bluff Implementation-Continuation	250,000
TF Interpretive Boat Tours of Hill Annex Mine State Park	60,000

Metro Regional Parks, Recreation Areas and Trails

<u>Project Title</u>	<u>\$ RECOMMEND</u>
TF Metropolitan Regional Parks Acquisition, Rehabilitation and Development	2,000,000
MFRF Luce Line Trail Connection through Wirth Park	300,000

Historic Sites

<u>Project Title</u>	<u>\$ RECOMMEND</u>
MFRF Documenting Traditional Cultural Properties in Minnesota	50,000
MFRF Using National Register Properties to Interpret Minnesota History	90,000
TF Historic Site Land Acquisition	175,000
MFRF Murphy's Landing improvements to prairie, accessible trail and ferry landing	110,000
MFRF Gibbs Farm Museum Interpretation	150,000
TF Traverse des Sioux Site Development	250,000
MFRF Old Wadena Historic Site Development	25,000
MFRF Pickwick Mill Machine Restoration	100,000

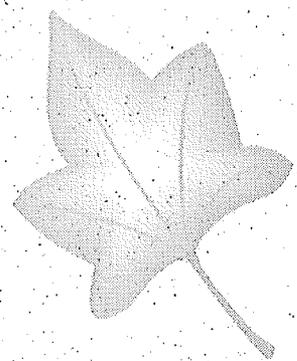
Water Quality

<u>Project Title</u>	<u>\$ RECOMMEND</u>
TF Onsite Sewage Treatment Alternatives, Performance, Outreach and Demonstration -Continuation	550,000
TF Identification of Sediment Sources in Agricultural Watersheds	350,000
MFRF Accelerated State-Wide Local Water Plan Implementation	1,000,000
TF Tracking Sources of Fecal Pollution Using DNA Techniques	300,000
TF Groundwater Flow in the Prairie du Chien Aquifer	110,000
MFRF Lake Minnetonka Citizens Monitoring and Education Network	40,000
TF Erosion Impacts on the Cannon Valley Big Woods	150,000
MFRF Lake Calhoun and Lake Harriet Gravity Flow Stream System	250,000

Agriculture and Natural Resource Based Industries

<u>Project Title</u>	<u>\$ RECOMMEND</u>
TF Green Forest Certification Project	150,000
TF Accelerated Transfer of New Forest-Research Findings	115,000

TF	Minnesota Wildlife Tourism Initiative	250,000
TF	Integrated Prairie Management	350,000
MFRF	Improved Agricultural Systems Overlying Sensitive Aquifers in Southwestern Minnesota	200,000
TF	Diversifying Agriculture for Environmental, Economic, and Social Benefits	600,000
TF	Minnesota River Basin Initiative: Local Leadership	700,000
MFRF	Commercial Fertilizer Plant of Livestock Solid Waste Processing	400,000
MFRF	Preservation of Native Wild Rice Resource	200,000
TF	Mesabi Iron Range, Water and Mineral Resource Planning	650,000
MFRF	Wild Rice Management Planning	200,000
MFRF	Sustainable Aquaculture Development in Minnesota	185,000
MFRF	Sustainable Farming Systems-Continuation	350,000
MFRF	Economic Analysis of Agriculture for Multiple Benefits	250,000
MFRF	Non-Wood Agricultural Fibers and Industrial Hemp for Pulp and Paper Manufacture	200,000
MFRF	Sustainable Livestock Systems	350,000
MFRF	Endowed Forest Wildlife Biologist for Ruffed Grouse	1,000,000
TF	Organic Farming Training Project	350,000
MFRF	Construction and Demolition Waste Abatement Demonstration Project	250,000
MFRF	Minnesota River Valley Scenic Byway Interpretive Signage	100,000



Urbanization Impacts

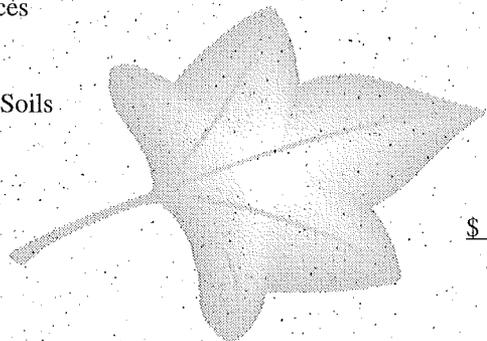
	<u>Project Title</u>	<u>\$ RECOMMEND</u>
MFRF	Resources for Redevelopment: A Community Property Investigation Program	100,000
TF	Tools and Training for Community-Based Planning	450,000
TF	Protecting Dakota County Farmland and Natural Areas	200,000
MFRF	Urban Corridor Design	600,000
TF	Conservation-Based Development Program	150,000
MFRF	Sustainable Stormwater Management and Erosion Control for Athletic Fields and Parking Lot Retrofit	200,000
MFRF	Community -Based Initiatives: Land Use for Sustainable Agriculture-Continuation	400,000
MFRF	Chisago Lakes Outlet Channel Project	40,000
MFRF	Virginia Storm Sewer Project	225,000
MFRF	Blufflands Implementation	33,000

Innovations in Energy and Transportation

	<u>Project Title</u>	<u>\$ RECOMMEND</u>
MFRF	Ice Arena Design for Efficiency and Air Quality-Continuation	100,000
MFRF	Promoting High Efficiency Cogeneration	100,000
TF	Evaluate Biodiesel Made from Waste Fats and Oils	125,000
MFRF	Wind Power for Rural Development-Continuation	250,000

Decisionmaking Tools

	<u>Project Title</u>	<u>\$ RECOMMEND</u>
MFRF	Goodhue County Natural Resources Inventory and Management Plan	75,000
MFRF	Public Access to Mineral Knowledge	100,000
TF	Updating Outmoded Soil Surveys-Continuation	500,000
TF	Climate Variability and Change Impacts on Minnesota Resources	350,000
TF	Minnesota Environmentally Preferable Chemicals Project	150,000
MFRF	GIS Utilization of Historic Timberland Survey Records	120,000
TF	By-Products Application to Agricultural, Mineland and Forest Soils	350,000
TF	Winter Severity Index for Deer	60,000



Environmental Education

	<u>Project Title</u>	<u>\$ RECOMMEND</u>
TF	Uncommon Ground: An Educational Television Series	400,000
MFRF	Ecology Bus Environmental Education	200,000
MFRF	Renovation of Open Spaces: Twin Cities Neighborhoods	200,000
TF	Karst Education for Southeastern Minnesota	120,000
TF	Minnesota Wolf Public Education	120,000
MFRF	North American Bear Center	80,000
TF	Accessible Outdoor Recreation	400,000
TF	Science Outreach and Integrated Learning on Soil	250,000

TF	Southeast Minnesota Streams and Watershed Signage	150,000
TF	Teacher Training in Interdisciplinary Environmental Education	60,000
MFRF	Development and Rehabilitation of Recreational Shooting Ranges	350,000
TF	Youth Outdoor Environmental Education Program	125,000
TF	Twin Cities Environmental Service Learning-Continuation	40,000
MFRF	Minnesota White-tail Deer Resource Center Exhibits	400,000
TF	Sustainability Forums	200,000
MFRF	Minnesota River Watershed Ecology and History Exhibit	90,000
TF	Hyland Lake Environmental Center	220,000
MFRF	Aquaculture, Hydroponics, and Greenhouse Research Lab	100,000

Benchmarks and Indicators

<u>Project Title</u>	<u>\$ RECOMMEND</u>	
TF	Measuring Children's Exposures to Environmental Health Hazards	500,000
TF	Minnesota County Biological Survey-Continuation	1,600,000
TF	Environmental Indicators Initiative - Continuation	400,000
TF	Dakota County Wetland Health Monitoring Program	160,000
TF	Predicting Water and Forest Resources Health and Sustainability	300,000
MFRF	Potential for Infant Risk from Nitrate Contamination	200,000
TF/GLP	Assessing Lake Superior Waters Off the North Shore	400,000
TF	Minnesota's Forest Bird Diversity Initiative-Continuation	450,000
TF	Farm Ponds as Critical Habitats for Native Amphibians	250,000
TF	Improved Minnesota Fungus Collection and Database	70,000

Critical Lands or Habitats

<u>Project Title</u>	<u>\$ RECOMMEND</u>	
TF	Sustainable Woodlands and Prairies on Private Lands-Continuation	450,000
TF	National Prairie Passage-Linking Isolated Prairie Preserves	150,000
TF	Greening the Metro Mississippi-Minnesota River Valleys	800,000
TF	Restoring the Greater Prairie Chicken to Southwestern Minnesota	60,000
TF	The Prairie Heritage Fund -Continuation	500,000
TF/MFRF	Public Boat Access and Fishing Piers	1,299,000
TF	Arboretum Land Acquisition and Wetlands Restoration-Continuation	700,000
TF	Implement the Chisago and Washington Counties Green Corridor Project-Continuation	450,000
TF	RIM Shoreland Stabilization	350,000
MFRF	Enhancing Canada Goose Hunting Opportunities for Recreation and Management Purposes	340,000

Native Species Planting

<u>Project Title</u>	<u>\$ RECOMMEND</u>	
TF/MFRF	Minnesota ReLeaf Matching Grant Program-Continuation	850,000
TF	Landscaping for Wildlife and Nonpoint Source Pollution Prevention	150,000
TF	Lakescaping for Wildlife and Water Quality Initiative	140,000
TF	Development and Assessment of Oak Wilt Biological Control Technologies-Cont.	200,000
MFRF	Saint Paul-Minneapolis Native Plant Habitat Interpretive Program	130,000
TF	Restoring Ecological Health to St. Paul's Mississippi River Bluffs	200,000

Native Fish Species

<u>Project Title</u>	<u>\$ RECOMMEND</u>	
TF	Mussel Resource Survey	400,000
TF	Freshwater Mussel Resources in the St. Croix River	58,000

Exotic Species

<u>Project Title</u>	<u>\$ RECOMMEND</u>	
TF	Biological Control of Eurasian Watermilfoil and Purple Loosestrife-Continuation	150,000
TF	Evaluate establishment, impact of leafy spurge biocontrol agents	140,000
MFRF	Restoring the Outdoor Classrooms at Nature Centers	260,000
TF/MFRF	LCMR Administration	900,000

LCMR FINAL RECOMMEND : 42,250,000

Local Initiatives Grants Aid Local Governments, Private Organizations

by Wayne Sames, DNR Local Grants Section

Six matching grant programs designed to provide assistance to local governments and private organizations for a wide variety of outdoor recreation and natural resource projects have been recommended by the LCMR to receive additional funding. A total of \$4,850,000 has been recommended for these programs, collectively referred to as the Local Initiatives Grant Program.

These programs encourage cooperative partnerships between the state, local governments and private organizations to protect and enhance outdoor recreation areas and natural resources. All grants require a fifty/fifty match. In some cases, in-kind contributions may be used to meet the match requirements. Ongoing operations, maintenance and administrative costs are the responsibility of the grant recipient.

Here is a summary of the individual grant programs and the recommended funding amounts:

Local Park Grants: \$1,950,000

These grants help local governments fund acquisition, development or renovation of local park and recreation areas. A wide variety of projects are eligible, ranging from athletic fields and playgrounds to campgrounds and nature trails. The Legislature has supported this program for over thirty years.

Natural and Scenic Area Grants: \$870,000

This program assists local governments and school districts in their efforts to increase, protect and enhance natural and scenic areas. Grants are available for acquisition of land or scenic easements. Thirty projects protecting almost 930 acres have been approved since 1995.

Cooperative Trail Linkage Grants: \$500,000

This program provides grants to local governments for development of trail linkages between communities, trails and parks.

Regional Trail Initiative Grants: \$720,000

These grants help support locally administered trail projects that are regionally significant. Some locally administered rail trails have recently been assisted through this program.

Conservation Partners Grants: \$610,000

Available to private organizations, local governments and school districts, this program provides matching grants for improvement of fish, wildlife and native plant habitats and research and surveys of fish and wildlife. Almost 200 projects have been funded since 1996.

Environmental Partnership Grants: \$200,000

This program provides grants to private organizations, local governments and school districts for a wide variety of environmental service projects and related educational

activities through public/private partnerships. Thirty three projects were funded in the first grant round of this new program.

The Local Initiative Grants Program is administered by the Local Grants Section of the Department of Natural Resources. In some cases, DNR field staff assist in the solicitation, evaluation, ranking and monitoring of projects. Application information was mailed directly to every city and county in the state and to over 2,500 organizations and private individuals in November. Information is also available on the DNR's website. A series of nine public informational meetings has been scheduled for locations throughout the state in January, 1999. After careful evaluation and ranking of projects based on standard criteria, a list of projects recommended for funding will be submitted to the LCMR for final review and approval. ♦

For more information on the Local Initiatives Grants Program contact the Local Grants Section, Department of Natural Resources, B-10, 500 Lafayette Road, St. Paul, MN, 55155, Phone 651/296-1567
e-mail: wayne.sames@dnr.state.mn.us or the DNR-Regional Office in your area.



Natural and Scenic Area grant recipient in Sherburne County, Mississippi River Bluff Prairie.

World of Resources on the Web

The LCMR encourages readers to utilize information from previously funded projects, to see abstracts of all projects funded from 1991-1997 see the LCMR web page at www.commissions.leg.state.mn.us/lcmr/lcmr.htm.

Examples of the information available:

Agriculture and Natural Resource Industries

Sustainable Farming Systems

www.misa.umn.edu/

A comprehensive program of complementary on-farm and experiment station research, demonstration and educational activities show economic and environmental effects of sustainable farming systems to Minnesota farmers.

Prairie-Grassland Landscapes

www.eerc.und.nodak.edu/rrbin/projects/esp/grass/

Grassland ecosystem stewardship in the Special Lake Agassiz Interbeach Area for the 21st century.

Energy

Sustainable Development Assistance for Municipalities through Electric Utilities

www.mmua.org

Municipal electric utilities advance sustainable renewable energy and energy efficiency developments with demonstration projects implemented in six communities.

Soy-Based Diesel Fuel Study

www.mda.mn.us

A pilot project to test the use of soy-based biodiesel fuel to operate fleet vehicles.

Environmental Education

Comparative Risks of Multiple Chemical Exposures

www.health.state.mn.us

Comparative risk information for managing exposures to multiple environmental hazards derived from measurements of pesticides, volatile organic compounds, and metals in soil, air, water and food.

Electronic Environmental Education Raptor Network

www.raptor.cvm.umn.edu/raptor/meeen/meeenhp.html

An electronic environmental education network using satellite tracking with birds of prey.

Environmental Service Learning

www.cp.duluth.mn.us/~stowe

A partnership of schools, communities, and agencies working to create a model of environmental service learning based upon the application of significant environmental education principles.

School Nature Area Project (SNAP)

www.stolaf.edu/other/snap/index.html

Partnerships between three institutions of higher education and forty schools augment native vegetation in school nature areas, demonstrate methods of ecological enhancement to 140 teachers and integrate into school curriculum.

Fish and Wildlife Habitat

Improved Decisions for Walleye Stocking and Special Regulations

www.fw.umn.edu/

A computer model, field collected data, and genetic-marker tracking of the best performing strains used to maximize benefits of walleye stocking and harvest regulations on individual lakes.

Minnesota County Biological Survey - Continuation

www.dnr.state.mn.us

MCBS systematically collects and interprets data on the distribution and ecology of natural communities, rare plants, and rare animals to provide a foundation for the conservation of critical components of biological diversity.

Land Use and Natural Resource Information

Protecting Rural Historic Landscapes in High Development Areas

www.mnhs.org

Identify and protect landscape with historical significance in Minnesota's St. Cloud-Rochester growth corridor.

New Models for Land-Use Planning

www.misa.umn.edu/

A new, environmentally sound land-use planning approach for city and county.

Recreation, including History

Jeffers Petroglyphs Environmental Assessment and Prairie Restoration

www.umn.edu/marp/

A environmental monitoring program using scientific instrumentation to assess environmental effects on the 2,000 petroglyphs, and restore native prairie grasses and flowers to parts of the site.

Soudan Underground Physics

Laboratory Expansion

mnhepw.hep.umn.edu/soudan/index.html

Interpretation of Soudan Mine, a National Historic Site, through construction of a new deep underground physics laboratory and facilities for scientific interpretation for State Park visitors.

Water Resources

Preventing Stormwater Runoff Problems through Watershed Land Design

www.cala.umn.edu

Watershed-based land design models for preserving habitat and traditional patterns, and preventing flooding and water quality degradation.

Training and Research Vessel for Lake Superior

www.d.umn.edu/llo/wehave.html

A 60-foot long training and research vessel for Lake Superior, to be used for education at primary through university levels, and for research/monitoring offshore. ♦

Citizen Advisory Committee for the Environment and Natural Resource Trust Fund

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District 2 Marvin Tinklenberg
District 3 Jeffrey Johnson
District 4 Christine Kneeland
District 5 Nancy Gibson, Chair
District 6 Guy Glover
District 7 Arlan Anderson
District 8 Ann Glumac
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lcmr/lcmr.htm](http://www.commissions.leg.state.mn.us/lcmr/lcmr.htm)

Trust Fund Revenue Gains Another Extension

by John Helland, Legislative Analyst, House Research

Minnesotans, for the third time in the past ten years, approved a constitutional amendment on November 3rd supporting the Environment and Natural Resources Trust Fund. Each constitutional amendment has received an approval of 3/4 of the voters in the general election. This year's amendment rededicated 40 percent of the state lottery proceeds to the trust fund until the year 2025.

The amendment also allows the maximization of the long-term total return to the trust fund by permitting up to 5.5 percent of the fund's market value to be appropriated each year of a biennium. Up until the 1997 fiscal year, only a limited amount of the trust fund's principal and the interest earned was available for expenditure. The LCMR, with the assistance of the Citizen's Advisory Committee, will continue to review expenditure proposals and make recommendations to the full legislature for appropriation. The State Investment Board, in early projections, estimates that the trust fund's market value may grow to two billion dollars plus in 2025. This would be realized by an investment strategy of 70% stocks and 30% bonds, instead of the current 50/50 investment split. If the projections prove correct, there may be \$100 million available in 2025 for appropriation from the trust fund.

Briefly, about \$81.6 million dollars from the trust fund has been spent on 177 projects since 1991. Under broad categories, the dollar amount has been: Recreation- \$34.5 million; Fish and Wildlife Habitat - \$20.3 million, Water Resources- \$10.2 million, Environmental Education- \$5.6 million, Agriculture- \$2.9 million, Land Use and Natural Resource Information - \$7.9 Million

LCMR
100 Constitution Avenue
Room 65, State Office Building
St. Paul, MN 55155

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I. Strategic Plan

*“ a copy of the current
strategic plan...”*

LCMR Request for Proposal for funding beginning July 1999

Newsletter No. 10

December 1997

OPEN TO EVERYONE

The LCMR will be accepting proposals for projects designed to help sustain and enhance environmental and natural resources.

Applications must be received at the LCMR office or postmarked by February 13, 1998.

ENHANCING AND PROTECTING MINNESOTA RESOURCES

Legislative Commission on Minnesota Resources

REPRESENTATIVES: Loren Solberg, CHAIR; Ron Erhardt; Alice Hausman; Phyllis Kahn; Willard Munger; Tom Osthoff
Dennis Ozment; Tom Rukavina.

SENATORS: Dennis Frederickson; Jerry Janczich; Janet Johnson; Gary Laidig; Bob Lessard; James Metzen; Steve Morse; Leonard Price;
Martha Robertson; Jim Vickerman.

This publication is available in alternate formats, such as large print or cassette tape, upon request.

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THE LEGISLATIVE COMMISSION ON MINNESOTA RESOURCES

1999 REQUEST FOR PROPOSALS

Funding beginning July 1999

The LCMR will accept proposals for projects designed to help sustain and enhance Minnesota's natural resources.

The Request for Proposals (RFP) is for new, innovative or accelerative and sustainable natural resource projects. Proposers are asked to respond to the strategies for funding. Proposals will be evaluated according to the strategies and criteria. Although other proposals may be considered, stated strategies will receive a priority.

LCMR staff will conduct proposal workshops in various locations throughout the state on January 20, 21, 27, 28, 1998. See page 10, and our web page at <http://www.commissions.leg.state.mn.us/lcmr/lcmr.htm> for more details.

DEADLINE FOR SUBMISSION: Received or postmarked no later than **February 13, 1998.**

SUBMIT TO: Legislative Commission on Minnesota Resources
Room 65, State Office Building
100 Constitution Avenue
St. Paul, MN 55155
(612)296-2406
TDD: (612)296-9896 or 1-800-657-3550
Relay: (612)297-5353 or 1-800-627-3529

PROPOSALS SENT BY FAX OR E-MAIL WILL NOT BE ACCEPTED

Only proposals received by the deadline in the proper format specified in this RFP will qualify for consideration.

- **NUMBER OF COPIES TO SUBMIT:** Three (3) copies of proposal (two page limit as specified); one copy of resume of Project Manager (one page limit as specified); and three (3) copies of description of sustainability impact (one page limit as specified).
- **ELIGIBILITY:** Application open to all with demonstrated public benefit. The LCMR is an ADA/equal opportunity employer.
- **PROJECT IMPLEMENTATION:** No expenditures allowed after June 30, 2001 unless requested and approved by specific law. Projects are intended for a two-year duration (July 1999 to June 2001); however, LCMR will consider requests for multiple biennium funding.
- **TOTAL AMOUNT AVAILABLE:** \$38 Million, estimated as of October 1997.
- **FUNDING SOURCES:**
 - Minnesota Future Resources Fund (MS 116P.13), estimated amount available \$15.5 Million
 - Minnesota Environment and Natural Resource Trust Fund (Trust Fund) (MS 116P.08), estimated amount available \$22.4 Million
 - Great Lakes Protection Account (MS 116Q.02), estimated amount available \$100,000

FROM THE DIRECTOR

John R. Velin

The LCMR completed a summer and fall of fact-finding, regional forums and Citizen Advisory Committee (CAC) deliberations with a Strategic Planning seminar in late September. Preparatory for that meeting, the CAC worked hard under the very capable leadership of Chair Nancy Gibson. Their product, a draft strategic plan for the Trust Fund, has already had a significant effect on the LCMR members. It provides the shape and thrust of the overall Strategic Plan and Request for Proposals (RFP). The RFP is detailed in the rest of this newsletter. Congratulations and thanks to the CAC. The LCMR also spent considerable time and effort crafting the Plan. The result is the plan and especially the RFP, which is the substance of this newsletter.

The spirit and intent of LCMR is to provide access to EVERYONE who has ideas for innovation and acceleration in environment and natural resource issues, tempered by the priority strategies and having a distinctive public benefit. No grantsmaking or lobbying assistance is necessary for success. The LCMR staff will assist all proposers in their proposal development. The LCMR will serve the regular standing committees of the legislature by spending the time and effort necessary to create a thoughtful Strategic Plan and to entertain and examine proposals for funding.

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A. PRIORITY STRATEGIES FOR FUNDING

- **FOR ALL PROJECTS:** LCMR is interested in projects that promote a sustainable approach. To be sustainable, a project should be compatible with the natural system and balance the benefits to the environment, the community and the economy.
- LCMR will seek opportunities to coordinate state staff with community-based projects to improve long term coordination and resource sharing.
 - **PRIORITY:** All strategies are priorities for funding. The order does not reflect any other prioritization. Although other proposals may be considered, stated strategies will receive priority.
 - **FUNDING SOURCE:** The strategies apply to all funding sources. Proposers are requested to respond to a strategy not a funding source.
 - **REINVESTMENT IN MINNESOTA:** RIM related activities may be recommended for funding by the LCMR under many of the strategies. The choice of strategy will depend on the activity proposed.

RESPOND TO ONE, OR PART OF ONE, OF THE FOLLOWING STRATEGIES:

- **LOCAL INITIATIVES GRANTS PROGRAM:** The LCMR intends to recommend a matching grants program in the Department of Natural Resources (DNR) for local initiatives for the following types of projects:

In order to simplify and streamline the application process for local projects that fit the categories directly below, we suggest you send those applications directly to: DNR Local Grants Program; 500 Lafayette Rd; St. Paul, MN 55155-4010. They will be reviewed by the DNR in the spring of 1999. For information and applications on these grants contact the Local Grants Unit at DNR, PHONE: 612-296-0565 FAX: 612-296-6047. The LCMR intends to recommend money to support the Local Initiatives Grants Program during the biennium beginning July 1999.

- **LOCAL AND REGIONAL PARKS:** Matching grants for acquisition and development of local and regional park and recreation areas.
 - **REGIONAL TRAIL AND TRAIL LINKAGES GRANTS:** Matching grants to local governments for development of trail linkages between communities, trails and parks and for local trails of regional significance.
 - **NATURAL OR SCENIC AREAS:** For acquisition of land or scenic easements. Pursuant to M.S.85.019.
 - **COMMUNITY ENVIRONMENTAL PARTNERSHIPS:** Up to \$10,000 matching grants for private/public partnerships for environmental service projects and related education activities.
 - **CONSERVATION PARTNERS PROGRAM:** Up to \$10,000 matching grants for private/public partnerships for enhancement, research, surveys and for related education on fish, wildlife, and native plant habitats.
- **STATE AND METRO PARKS, RECREATION AREAS AND TRAILS:** State and Metro regional park, recreation area and trail needs for acceleration of acquisition, development, rehabilitation and enhancement as described in MS 116P.02, Subd. 5 (includes in the definition of natural resources, the state recreation system and the metro regional recreation system).

Projects eligible for funding through the Metro Parks and Open Space program will only be considered as part of the Metro Council and Parks Open Space Commission Capital Improvement Program. The LCMR intends to recommend money to support the State and Metro Parks, Recreation Areas and Trails program during the biennium beginning July 1999.

- **HISTORIC SITES:** Protect, enhance, reuse or interpret historic sites. Priority will be given to projects designated as local, state or federal historic sites.
- **WATER QUALITY:** Improve and protect water quality on a watershed(s) basis through research and implementation of processes to reduce nonpoint source pollution.
- **AGRICULTURAL AND NATURAL RESOURCE BASED INDUSTRIES:** Accelerate the use of farming, forestry, tourism or mineral use practices that enhance wildlife habitat and provide protection of the environment and human health through research, implementation, or analysis of improved management techniques.
- **URBANIZATION IMPACTS ON NATURAL RESOURCES:** Evaluate, develop, and analyze urbanization and sprawl impacts on Minnesota's natural resources and implement mitigation strategies.
- **INNOVATIONS IN ENERGY AND TRANSPORTATION:** Advance the use of renewable and alternative energy that reduces damage from energy generation, consumption and promotes conservation and efficiency.
- **DECISIONMAKING TOOLS:** Facilitate natural resource decision-making through:
 - utilization of Geographic Information Systems (GIS).
 - comparative risk assessment or economic and externality analyses.
 - evaluation of the cumulative environmental impacts of individual land use activities.
 - flood mitigation strategies.
- **ENVIRONMENTAL EDUCATION:** Accelerate the implementation of environmental education activities consistent with the Greenprint Statewide Plan for Environmental Education in Minnesota, with an emphasis on local government official and teacher training. The priority is for implementation of noncapital programmatic activities carried out through partnerships. This includes hunting and sportfishing interests.
- **BENCHMARKS AND INDICATORS:** Create benchmarks, including biological indicators, for key natural resources to permit effective monitoring and assessment of environmental trends and environmental factors affecting human health.
- **CRITICAL LANDS OR HABITATS:** (also see Local Initiatives Grants Program on previous page) Land acquisition (fee or other interest), restoration or enhancements that protect critical habitats, such as: wetlands, native prairies, unique and/or sensitive areas, scenic bluffs, old-growth forests, greenway corridors, projects that connect or reconnect fragmented habitat area, sport-fishing habitat, and lakes and rivers. Public water access for boating and non-boating is included.
- **NATIVE SPECIES PLANTING:** Expand rural and urban revegetation with native species consistent with underlying natural ecosystems. This strategy includes the demonstration of planting and protection of native species on private and public lands.
- **NATIVE FISH SPECIES:** Research and development to enhance native fish and mollusk populations in their natural communities. Expand ecosystem knowledge and classification to guide enhancement.
- **EXOTIC SPECIES:** Research and demonstrate ecologically sound methods to control or eradicate exotic species of plants or animals that are or may become a threat to the environment.

B. CRITERIA FOR EVALUATION OF PROPOSALS

For proposals submitted for the biennium beginning July 1, 1999.

- Project Managers and cooperators must be accountable and able to complete project objectives.
- Trust Fund expenditures must conform to the Trust Fund law (MS 116P.08).
- The following criteria will be applied as one part of the proposal evaluation and recommendation process. The total potential score for each criterion is written in parentheses. All points will be awarded on a sliding scale. Criteria will be applied as one of the screening tools by LCMR members in selecting projects for a hearing. Total maximum points = 65.

1. FOCUS OF SUSTAINABILITY AND ADDRESSES STRATEGY - (14)

FOCUS OF SUSTAINABILITY – The LCMR is interested in projects that promote a sustainable approach. To be sustainable, a project should be compatible with the natural system and balance the benefits to the environment, the community, and the economy. Up to 5 points of the screening criteria will be applied.

ADDRESSES STRATEGY – Up to 9 points of the screening criteria will be applied.

2. RESULTS – Provide for a critical assessment of the project and clear, demonstrated results (9)

3. INNOVATION - Innovative approach. (9)

4. PARTNERSHIPS – Demonstrates a coordinated approach. (9)

5. STATEWIDE SIGNIFICANCE - (7)

6. LEVERAGING - Leverages funding (nonstate cash commitment). The cash match must be money spent directly on the project during the time of the project (July 1, 1999-June 30, 2001). Previously spent money will not qualify as leveraging. (7)

7. DISSEMINATION - Provides data, reports, materials, etc. to the public and other potential users in a readily useable form. (5)

8. INFORMATION BASE - Provides a significant, demonstrated addition to the public environmental and natural resource information base. (5)

C. FORMAT INFORMATION

1. REQUIRED DOCUMENTATION:

Three documents are required:

- the **PROPOSAL** (three copies, two page maximum)
- the **RESUME/BACKGROUND DESCRIPTION** (one copy, one page maximum) of the Project Manager. Additional documentation is required if you have cooperators (team members) see 3 below.
- **SUSTAINABILITY** (three copies, one page maximum) explanation of how the proposed work is sustainable. No required format.

2. PROPOSAL FORMAT:

- **PROPOSAL** - Send 3 copies of proposal (maximum of two 8 1/2 x 11 sheets - single sided).
 - The proposal must be in the format explained on page 9 and is limited to two single sided pages.
 - Minimum font-type size is 10 (this page is typeset on 10 points).
- The proposal format is designed to provide concise information. It begins with a brief project summary and statement of results, followed by an outline of specific project results associated with completion of the activities of the project.
- The proposal must be placed into a larger context.
 - **Significance III. A.** - Explain the significance of the project related to the issue and other work in this area.
 - **Strategy III. B.** - Indicate which strategy the proposal is addressing. Simply type in the title of the strategy. Do not repeat the strategy.
 - **Time III. C.** If the project exceeds two years, explain the additional time and funding requirements and how it is intended that the project will be completed. Multiple year projects (beyond the two years) will be accepted. Explain the funding needs to accomplish the final results and the expected interim results.
 - **Budget History III. D.** Describe the relationship of this project to other work funded currently or in the past. Who else has funded similar work and at what budget level during the previous five years?

3. COOPERATORS:

Partnerships and collaboration are encouraged. If the project has cooperators, (team members working on the project), list on the proposals as indicated and provide documentation of the partnership in a letter from the cooperator(s) indicating their level of involvement in the project.

4. ELIGIBLE EXPENSES:

The LCMR funding is not to supplant or provide existing operation and maintenance funding. See the list of eligible and ineligible expenses on page 11 of the RFP.

5. ELIGIBILITY:

Open to all. However, the project must demonstrate clear public benefits and resulting financial benefits must also accrue to the public.

6. RESUME / BACKGROUND DESCRIPTION OF EXPERIENCE RELATED TO THE PROPOSAL:

Provide a resume/background description of experience related to the proposal of the Project Manager. Limit to one page-8 1/2 x 11inch standard size paper, single sided. Staple to one copy of your proposal. Fill out the title and contact name, affiliation, and telephone number exactly as it appears on the proposal in the upper left-hand corner. Make sure the resume/background description of experience related to the proposal demonstrates a connection to the proposal.

7. ADDITIONAL SUSTAINABILITY ATTACHMENT:

A one-page maximum (three copies) explanation of how the proposed work is sustainable. No required format. Fill out the title and contact name, affiliation, and telephone number exactly as it appears on the proposal in the upper left-hand corner. To be sustainable, a project should be compatible with the natural system and balance the benefits to the environment, the community, and the economy.

D. PROPOSAL FORMAT

Maximum length two 8 1/2 x 11 sheets single sided.

The proposal is composed of the following sections: (Italics are instructions and not to be repeated in the proposal.)

LCMR Proposal 1999 *(repeat this in upper left hand corner)*

Title: *(limit 8 words)*

Project Manager: *(One name only. Note: list team members under cooperators)*

Affiliation:

Mailing Address:

Telephone Number: *(be sure to provide a reliable contact name and phone number in case of questions)*

E-Mail:

Fax:

Web Address:

Total Biennial Project Budget: *(requested)* \$LCMR:

\$Match: *if applicable (nonstate cash only; include source)*

\$Total:

I. PROJECT SUMMARY AND RESULTS:

Provide a clear, concise summary of the proposed project and its results. The summary is limited to 30 words and must be a free standing summation of the project. It is important that the summary be able to stand on its own as a description of the proposal because it will be used with the project title as the project description during the proposal review.

II. OUTLINE OF PROJECT RESULTS:

Provide an outline of the specific project results associated with completion of the activities of the project. Be specific. For example, indicate miles of trail acquired and developed, acres impacted, or number of students reached. Indicate the budget for each result.

III. CONTEXT: *(breakdown context into A, B, C, and D as requested)*

- A. Significance: *Explain the significance of the project in terms of the current state of the issue, other recent work in this subject area, and how your project will enhance the existing knowledge base or situation.*
- B. Strategy: *Indicate the title of the strategy to which the proposal is responding. Do not repeat the strategy. Do not attempt to rationalize just indicate the strategy.*
- C. Time: *If the proposed project will exceed two years, explain the additional time and funding requirements.*
- D. Budget History: *Provide program and budget history. Describe the relationship of this project to other work funded currently or in the past by the public or private sector, not just LCMR funding.*
For 1994-1998:

1. LCMR Budget History: \$
2. Non-LCMR Budget History: (include the source)\$
3. TOTAL: \$

IV. COOPERATION:

If the project has cooperators (project team), list names and agency/entity affiliate (see required attachment).

V. LOCATION:

What cities or counties will the work impact?

E. PROPOSAL DEVELOPMENT AND WORKSHOPS

LCMR staff is available to assist proposers and answer any questions or review draft proposals. The format is designed to be simple and does NOT require professional grantsmaking assistance or lobbying efforts.

LCMR staff will conduct five informational proposal workshops for people who intend to respond to the LCMR Request for Proposals.

PLEASE COPY/POST/DISTRIBUTE THIS NOTICE

THE LEGISLATIVE COMMISSION ON MINNESOTA RESOURCES

1999 REQUEST FOR PROPOSALS WORKSHOPS

Please bring a rough draft of your proposal to the workshop.

It is not necessary to attend a workshop. These workshops are intended to assist proposers in the development of proposals. See our web page at <http://www.commissions.leg.state.mn.us/lcmr/summer97.htm> for more details. If you have special needs that may necessitate accommodations at the meeting, please call Yvonne Fritchie at (612) 296-2406 or email at lcmr@commissions.leg.state.mn.us.

- **BLOOMINGTON**

Tuesday, January 20, 1998
1-3 pm,
Normandale Community College.
College Center Building, McGraw Room,
9700 France Ave. S, Bloomington MN 55431

- **BLUE EARTH**

Wednesday, January 21, 1998
10 am -12 noon,
Blue Earth Elementary/ Jr. High School
Room J-13,
315 East 6th, Blue Earth, MN 56013

- **MARSHALL**

Wednesday, January 21, 1998
7-9 pm,
Southwest State University
Student Center 159,
1501 State Street, Marshall, MN 56258

- **BRAINERD**

Tuesday, January 27, 1998
7-9 pm,
Central Lakes College
Room C-200, 2nd Floor
501 W College Drive, Brainerd, MN 56401

- **DULUTH**

Wednesday, January 28, 1998
2-4 pm,
Duluth City Hall
City Council Chambers, 3rd floor
411 West 1st Street, Duluth, MN 55802

If you cannot make any of these workshops and have questions, call the LCMR staff.

It is our job to help you submit a concise proposal for consideration by the commission members.

We are here to help you.

CONTACT INFORMATION:

LCMR, 100 Constitution Ave., Room 65, State Office Building
St. Paul, MN 55155 Phone:(612)296-2406 Fax:(612)296-1321

F. ADDITIONAL PROPOSAL INFORMATION

A synopsis of the LCMR proposal review timeline is listed in chronological order on page 13 of the RFP. Please note some additional details:

1. **University of Minnesota:** If the Project Manager of the proposal is affiliated with the University of Minnesota, the Office of Research and Technology Transfer Administration (ORTTA) requirements must be fulfilled by submitting the proposal with a BA-23 through that office.
2. **Eligible and Noneligible Expenses:**

A. Eligible Costs

Eligible costs shall be those costs directly incurred by the Recipient in the actual conduct of the Project. Eligible costs shall be based upon the approved work program and list of deliverables and can include the following types of costs provided they are solely related to and necessary for the completion of the Project:

1. Expenditures incurred only after the effective date in the approved work program. No expenditures will be allowed after June 30, 2001 unless approved by specific law.
2. Advertising costs solely for recruitment of personnel, solicitation of bids, or other purposes specifically provided for in the list of deliverables;
3. Capital expenditures for facilities, equipment, and other capital assets; For equipment expenditures of \$3500 per unit or more: It must be clear if there are to be such expenditures, why they are necessary, and what they will be used for after the project is completed.
4. Communication costs incurred for telephone calls and postage;
5. Materials and supplies;
6. Printing and reproduction costs necessary for contract administration; publication costs of reports relating to contract accomplishments;
7. Transportation and travel expenses such as freight relating to goods purchased for the Project, and the lodging, meals, and transportation of personnel involved in the Project in the same manner and in no greater amount than provided for in the current "Commissioner's Plan" promulgated by the Commissioner of Employee Relations.
8. Wages and expenses of salaried Recipient employees;
9. Fringe benefit costs of Recipient's employees;
10. Professional services unless specified in the work program.
11. Education program expenses such as conferences, seminars, books, materials, and supplies;
12. Public utilities such as water, sewage, and electricity;
13. Maintenance and repairs incurred for upkeep of property used directly in the Project which keeps it in an efficient operation condition (for the Project period);
14. Administrative expenses such as accounting and budgeting.

B. Noneligible Costs:

Noneligible costs for reimbursement means all costs not defined as eligible costs, including but not limited to the following:

1. Indirect costs;
2. For State employees; Salaries and benefits unless in the unclassified service or expressly approved in the work program;
3. Any expenditures before July 1, 1999, or work program approval, whichever is the latter;
4. Fund raising;
5. Taxes, except sales tax on goods and services;
6. Insurance, except title insurance;
7. Attorney fees, except for acquisition and clearing title to land;
8. Loans, grants, subsidies to persons or entities for nonpublic development;
9. Bad debts or contingency funds;
10. Interest;
11. Lobbyists;
12. Political contributions.

3. **Match Commitment and Expenditure:**

Match commitments and expenditures must be only for the time period of the project (typically July 1, 1999 to June 30, 2001) and in the form of nonstate cash. The expenditure of match dollars cannot begin before the above project period starts nor occur after its completion. A firm commitment of the match must be received for the project to begin and must be committed by January 1, 2000 or the project will be canceled.

4. **Data Compatibility Requirements:**

During the biennium ending June 30, 2001, the data collected by the projects funded that have common value for natural resource planning and management must conform to information standards adopted by the State of Minnesota. These data must be made accessible and free to the public unless made private under the Data Practices Act.

5. **Land Acquisition Appropriations:**

As part of project expenditures, recipients of land acquisition appropriations must provide the information necessary to update public recreation information maps and other appropriate media to the Department of Natural Resources in the specified form.

G. PROPOSAL EVALUATION AND RECOMMENDATION PROCESS

The Commission employs a variety of tools in the proposal evaluation process.

- **SUMMER AND FALL 1997 RESOURCE EVALUATION:**

Legislative Commission on Minnesota Resources (LCMR) and Citizen Advisory Committee for the Trust Fund summer fact finding and natural resource evaluation. Issues and ideas solicited statewide.

- **JULY 1, 1997 PROJECT COMPLETION:**

Projects conducted July 1, 1995- July 1, 1997, completed and final reports due. Project evaluation.

- **SEPTEMBER 1997 PUBLIC FORUMS:**

Forums held in Two Harbors, Redwood Falls and St. Louis Park. Approximately 120 citizens attended and an additional 100 written comments were received commenting on Trust Fund Expenditure Priorities and Process for Funding. The Forums provided input on the Strategic Plan, review of Trust Fund projects and the Reinvest in Minnesota (RIM) program.

- **SUMMER AND FALL 1997 STRATEGIC PLAN:**

Recommendation of Revision of Strategic Plan for Trust Fund by Citizen Advisory Committee to the LCMR.

- **FALL 1997 STRATEGIC PLAN:**

Adoption of comprehensive Strategic Plan for the Trust Fund, Future Resources Fund, and Great Lakes Protection Account by the LCMR.

- **DECEMBER 1997 REQUEST FOR PROPOSAL:**

Request for Proposal (RFP) for July 1999- June 2001 funding issued by LCMR for the Minnesota Future Resources Fund (MS 116P.13), Trust Fund (MS 116P.08), and Great Lakes Protection Account (MS 116Q.02); one RFP for all funding sources.

- **JANUARY 20, 21, 27, 28, 1998 PROPOSAL DEVELOPMENT ASSISTANCE:**

LCMR staff hold workshop sessions for assistance with proposal development.

- **FEBRUARY 13, 1998 PROPOSALS DUE:**

Proposals submitted to the LCMR.

- **FEBRUARY-MAY 1998 PROJECT RANKING AND OUTSIDE REVIEW:**

Strategies and criteria as presented in the RFP will be applied. LCMR staff will sort all proposals by strategy and rank them according to the criteria for use by the LCMR members during their initial selection process. LCMR members will review all of the proposals for consideration. No proposals will be eliminated by the staff.

During the project ranking, LCMR staff will seek additional outside review as needed to focus on improving proposals and coordination. The staff review may include seeking revisions to the proposals by which proposals may be strengthened, either technically or in terms of the range of activities included. Review may also reveal areas where increased cooperation and coordination on a proposal might be appropriate and result in a request for consideration of merger with one or more other proposals. Additional proposal information to be submitted for projects selected for further consideration.

- **SPRING 1998 CITIZEN ADVISORY COMMITTEE REVIEW:**

In April 1998, the Citizen Advisory Committee (CAC) for the Trust Fund will perform an initial review of proposals and provide the Commission with their determination as to which projects best fit the strategies and criteria in the Strategic Plan for the Trust Fund as well as the Trust Fund law.

• **SPRING-SUMMER 1998 LCMR SELECTION FOR FURTHER CONSIDERATION:**

The LCMR members will review all proposals received, during May-June 1998, and select approximately 140 proposals to schedule for a hearing. After the initial selection of proposals for further consideration, additional information about the proposals will be requested of program managers to aid in decision making. At the hearings, program managers will be requested to appear before the Commission to explain the specific project results associated with completion of the project.

• **SUMMER 1998 ALLOCATIONS:**

LCMR adoption of project recommendations (allocations) for submission to the 1999 Legislature for funding beginning July 1, 1999. The Commission will determine which funding source to recommend for a proposed project.

• **FALL 1998 WORK PROGRAMS:**

Submission of work programs to the LCMR for recommended projects prior to consideration by the 1999 Legislature. Additional outside review of work programs.

• **FALL 1998 PEER REVIEW:**

An additional, separate, technical peer review process will be conducted, before presentation to the Legislature for research proposals recommended by the Commission. An interdisciplinary peer review panel, comprised of natural resource experts from across the U.S., will review recommended projects for the adequacy of the methodology and procedures, the need for the proposed research, and qualifications of the investigators. A detailed work program will be required for these projects by September 1998 to be used in the peer review process. Program managers will be requested to present their proposed work program to the panel.

• **JANUARY 15, 1999 REPORT :**

Biennial report due to the Legislature from LCMR.

• **JANUARY -MAY 1999 LEGISLATIVE REVIEW AND APPROPRIATION:**

Review of LCMR priority recommendations by the 1999 Legislature for adoption.

• **JUNE 1999 WORK PROGRAMS:**

LCMR work program review and approval of project recommendations as appropriated by the Legislature.

• **JULY 1999-JUNE 2001 PROJECT IMPLEMENTATION:**

Project implementation begins July 1, 1999 (final report due July 1, 2001).

LEGISLATIVE COMMISSION ON
MINNESOTA RESOURCES

SIX-YEAR STRATEGIC PLAN FOR 1998-2004

FOR GUIDING RECOMMENDED EXPENDITURES FROM:

MINNESOTA ENVIRONMENT AND NATURAL RESOURCES TRUST FUND

MINNESOTA FUTURE RESOURCES FUND

GREAT LAKES PROTECTION ACCOUNT

Adopted November 18, 1997

Pursuant to Minnesota Statutes 116P.08 this plan incorporates the fourth revision to the first Six Year Strategic Plan for 1990-1996 and is based on a draft submitted by the Citizen Advisory Committee for the Environment and Natural Resources Trust Fund as advisory to the Legislative Commission on Minnesota Resources.

LEGISLATIVE COMMISSION ON MINNESOTA RESOURCES

100 CONSTITUTION AVENUE/ROOM 65/SAINT PAUL, MINNESOTA 55155-1201

PHONE: 612/296-2406 TDD: 612/296-8896 OR 1-800-657-3550 RELAY: 612/297-5350 OR 1-800-627-3529

FAX: 612/296-1321 EMAIL: lcmr@commissions.leg.state.mn.us

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I. LEGISLATIVE COMMISSION ON MINNESOTA RESOURCES

The Legislative Commission on Minnesota Resources (LCMR) was created in 1963 to provide the Legislature with the background necessary to evaluate programs proposed to preserve, develop and sustain Minnesota's natural resources.

The LCMR is comprised of 20 members, consisting of the chairs of the House and Senate Committees on Environment and Natural Resources, the chairs of the House and Senate Committees on Environment and Natural Resources Finance, and the chairs of the House Ways and Means and Senate Finance Committees (or designees appointed for the terms of the chairs). In addition, seven members of the Senate appointed by the Subcommittee on Committees of the Committee on Rules and Administration and seven members of the House appointed by the Speaker. At least three members from the Senate and three members from the House must be from the minority caucus. The members elect their officers, rotating the Chair from the Senate to the House every two years. The LCMR employs a full time professional and support staff.

The LCMR recommends projects to enhance and protect Minnesota's natural resources to the Legislature from four funding sources: (1) the Minnesota Environment and Natural Resources Trust Fund (MS 116P); (2) the Minnesota Future Resources Fund (MS 116P.13); (3) Oil Overcharge Money (MS 4.071); and (4) the Great Lakes Protection Account (MS 116Q.02).

The LCMR makes recommendations to the Legislature each odd year. The appropriations from the Minnesota Future Resources Fund are supported by a portion of the state cigarette tax. In 1988, the LCMR was charged to make funding recommendations for a portion of the oil overcharge money and for the Environment and Natural Resources Trust Fund. The first funding recommendations from the Trust Fund were approved in 1991. Three additional funding cycles have been appropriated. Projects recommended for funding beginning in July 1999 will commence the fifth funding cycle. In 1990, the LCMR was given responsibility for review and recommendation of projects from the Great Lakes Protection Account. The 1995-97 funding biennium was the first funding cycle for the Great Lakes Protection Account.

The LCMR develops its recommendations after an extensive review of natural resource issues. The LCMR requests both written and oral advice from a wide variety of interested and knowledgeable citizens. After examination and discussion of the issues, the members suggest projects as recommended appropriations. The LCMR recommendations become law when enacted by the Legislature.

PLANNING PROCESS

The Citizen Advisory Committee (CAC), consisting of 11 citizen members, advises the LCMR on the development of a statewide Strategic Plan to guide expenditure recommendations from the Trust Fund. The CAC recommended plan for Trust Fund Expenditure is advisory to the LCMR and is used in the development of a comprehensive Strategic Plan for all of the funding sources from which the LCMR makes recommendations. The Governor appoints the CAC Chair, one member from each congressional district, and three additional at large members.

The Strategic Plan is a six-year plan first adopted in December 1989. The plan is to guide recommendations for natural resource expenditures. The plan is revised every two years. The Fall 1997 revision to the Strategic Plan is the fourth biennial revision.

The priority strategies in the plan are to guide the LCMR's biennial recommendations for expenditure from the four funding sources. These strategies are incorporated in the Request for Proposals (RFP) issued by the Commission. The proposals received in response to the RFP are evaluated against the criteria in the plan (also incorporated into the RFP). These strategies and criteria may be modified each time the plan is revised.

RECOMMENDATIONS

The Commission made its last funding recommendations to the Legislature in Summer 1996. The Commission determined which funding source was appropriate for a proposed project recommendation based on the funding criteria. Acted upon by the 1997 Legislature, and with Commission work program approval, funds became available for projects beginning July 1, 1997. The Strategic Plan for 1998-2004 and its accompanying Request for Proposal (RFP) is for funding for projects beginning in July 1999.

II. FUNDING SOURCES

The Strategic Plan guides expenditure recommendations from the Legislative Commission on Minnesota Resources to the Minnesota Legislature for natural resource projects. Funding recommendations will be from the Minnesota Future Resources Fund, Minnesota Environment and Natural Resource Trust Fund, and Great Lakes Protection Account for the biennium beginning July 1999.

- **Minnesota Future Resources Fund (MFRF)** (MS 116P.13) estimated amount available \$15.5 million for July 1999-June 2001 biennium funding. This funding is from a portion of the cigarette tax:

For new, innovative, accelerative natural resource projects designed to help sustain, enhance and utilize Minnesota's natural resources.

This fund can be used for a wider range of projects than the Environment and Natural Resource Trust Fund. Projects eligible for funding from the MFRF may include the utilization of natural resources such as forestry, agriculture, minerals, and/or innovative water pollution and waste disposal initiatives.

- **Minnesota Environment and Natural Resource Trust Fund (Trust Fund)** (MS 116P.08) estimated amount available \$22.4 million for July 1999-June 2001 biennium funding. The state lottery contributes approximately 6 cents per dollar of sales to the Trust Fund. The amount estimated is from earnings of the Trust Fund:

For the management, preservation and enhancement of Minnesota's environment and natural resources. Trust Fund expenditures must conform to the Strategic Plan and Trust Fund law.

A. Trust Fund Vision

All Minnesotans have an obligation to use and manage our natural resources in a manner that promotes wise stewardship and enhancement of the state's resources for ourselves and for future generations. The Trust Fund is a perpetual fund that provides a legacy from one generation of Minnesotans to the many generations to follow. It shall be used to preserve, protect, restore and enhance both the bountiful and the threatened natural resources that are the collective heritage of every Minnesotan. It shall also be used to nurture a sense of responsibility by all, and to further our understanding of Minnesota's resource base and the consequences of human interaction with the environment.

B. Trust Fund Mission

The mission of the Trust Fund is to ensure a long-term secure source of funding for environment and natural resource activities whose benefits are realized only over an extended period of time.

- **Great Lakes Protection Account** (MS 116Q.02) estimated amount available \$100,000 for July 1999-June 2001. This funding is from Minnesota's contribution to the Great Lakes Protection Fund:

For protecting water quality in the Great Lakes. Including supplementing Great Lakes water quality programs and advancing the goals of the regional Great Lakes Toxic Substances Control Agreement and the Binational Great Lakes Water Quality Agreement.

- **Oil Overcharge Money** (MS 4.071) There are no funds expected to be available for July 1999- June 2001 biennium funding. This funding was from a federal court case settlement apportioned among the states:

For projects resulting in decreased dependence on fossil fuels and for technology transfer with the same purpose.

III. PRIORITY FUNDING STRATEGIES

The Commission seeks proposals based on strategies that are developed through fact-finding, public input, the results of previous projects, and Natural Resource Forums. In 1997, there were three regional Natural Resource Forums. Strategies are modified on a two-year time frame.

For the biennium beginning July 1999, the strategies are listed in the 1999 Request for Proposals (RFP) adopted December 1997. See page 4.

IV. CRITERIA FOR EVALUATION OF PROPOSALS

For the biennium beginning July 1999, the criteria are listed in the 1999 Request for Proposals (RFP) adopted December 1997. See page 6.

V. BACKGROUND AND PROPOSAL REVIEW PROCESS

For the biennium beginning July 1999, the process is listed in the 1999 Request for Proposals (RFP) adopted December 1997. See page 13.

VI. TRUST FUND LAW HIGHLIGHTS AND CONSTITUTIONAL AMENDMENT

A. THE TRUST FUND LAW ALLOWS FUNDING IN THE FOLLOWING AREAS:

1. the Reinvest in Minnesota program as provided in section 84.95, subd. 2;
 2. research that contributes to increasing the effectiveness of protecting or managing the state's environment or natural resources;
 3. collection and analysis of information that assists in developing the state's environmental and natural resources policies;
 4. enhancement of public education, awareness, and understanding necessary for the protection, conservation, restoration, and enhancement of air, land, water, forests, fish, wildlife, and other natural resources;
 5. capital projects for the preservation and protection of unique natural resources;
 6. activities that preserve or enhance fish, wildlife, land, air, water, and other natural resources that otherwise may be substantially impaired or destroyed in any area of the state;
 7. administrative and investment expenses incurred by the state board of investment in investing deposits to the trust fund; and
 8. administrative expenses subject to the limits in section 116P.09.
- The state recreation system and the metro regional recreation system are included in the definition of natural resources and therefore are eligible for funding.

B. ACTIVITIES INELIGIBLE FOR FUNDING FROM THE TRUST FUND ARE:

1. purposes of environmental compensation and liability under Chapter 115B and response actions under Chapter 115C;
2. purposes of municipal water pollution control under the authority of Chapters 115 and 116, including combined sewer overflow under Section 116.162;
3. costs associated with the decommissioning of nuclear power plants;
4. hazardous waste disposal facilities;
5. solid waste disposal facilities; or
6. projects or purposes inconsistent with the Strategic Plan.

C. 116P.03 TRUST FUND NOT TO SUPPLANT EXISTING FUNDING

(a) The trust fund may not be used as a substitute for traditional sources of funding environmental and natural resources activities, but the trust fund shall supplement the traditional sources, including those sources used to support the criteria in section 116P.08, subdivision 1. The trust fund must be used primarily to support activities whose benefits become available only over an extended period of time.

D. CONSTITUTION OF THE STATE OF MINNESOTA

**ARTICLE XI
APPROPRIATIONS AND FINANCES**

Sec. 14. Environment and natural resources fund. A permanent Minnesota environment and natural resources trust fund is established in the state treasury. The principal of the environment and natural resources trust fund must be perpetual and inviolate forever, except appropriations may be made from up to 25 percent of the annual revenues deposited in the fund until fiscal year 1997 and loans may be made of up to five percent of the principal of the fund for water system improvements as provided by law. This restriction does not prevent the sale of investments at less than the cost to the fund, however, all losses not offset by gains shall be repaid to the fund from the earnings of the fund. The net earnings from the fund shall be appropriated in a manner prescribed by law for the public purpose of protection, conservation, preservation and enhancement of the state's air, water, land, fish, wildlife and other natural resources. Not less than 40 percent of the net proceeds from any state-operated lottery must be credited to the fund until the year 2001. (Adopted, November 8, 1988; Amended November 6, 1990)

VII. Funded Projects 1991-1999:

Environment and Natural Resource Trust Fund, Future Resources Fund, Great Lakes Protection Account and Oil Overcharge Money

Environment and Natural Resources Trust Fund (Noted as TF)
 Future Resources Fund (Noted as FRF)
 Oil Overcharge Money (Noted as OOC)
 Great Lakes Protection Account (Noted as GLPA)

RECREATION including HISTORY	Source	1991-1999							Totals
		1991	1993	1994	1995	1996	1997		
Off-Highway Vehicle Recreation Area	FRF	75,000							75,000
Superior Hiking Trail	FRF	400,000							400,000
Local Rivers Planning	FRF	400,000							400,000
Access to Lakes and Rivers	FRF	1,000,000							1,000,000
Reclamation of Recreation Systems & Environmental Resources	FRF	200,000							200,000
Preservation of Historic Shipwrecks, Lake Superior	FRF	100,000							100,000
Land & Water Conservation Fund Administration	FRF	84,000	80,000						164,000
Historic Records Database-Final Phase	FRF	180,000							180,000
Fur Trade Research and Planning	FRF	250,000							250,000
Mystery Cave Resource Evaluation	FRF	150,000							150,000
Rails to Trails Acquisition and Development	TF	1,000,000							1,000,000
Land/Water Resource Management Lower St. Croix Riverway	TF	360,000							360,000
Como Park Replanting Program	FRF		93,000						93,000
Reforestation in Ramsey County Parks and Open Space	FRF		50,000						50,000
Initiate Gateway Segment of the Munger Trail into St Paul	FRF		54,000						54,000
Lake Minnetonka Water Access Acquisition	FRF		944,000	154,000					1,098,000
Lake Superior Safe Harbors- Continuation	FRF		1,000,000	1,000,000					2,000,000
Cooperative Trails Grant Program	FRF		800,000						800,000
Agassiz Recreational Trails (A.R.T.)	FRF		650,000						650,000
Mesabi Trail Acquisition, Planning, and Development	FRF		700,000						700,000
Recreational Programming: Inclusiveness for Persons with Disabilities	FRF		160,000						160,000
Enhanced Recreational Opportunities for Southeast Asian Ethnic Communities	FRF		300,000						300,000
Urban Community Gardening Program- Continuation	FRF		110,000		300,000				410,000
National Register Grants Program	FRF		165,000						165,000
Historical Research and Planning for Traverse Des Sioux	FRF		68,000						68,000
Peninsula Point Two Rivers Historical Park	FRF		435,000						435,000
State Park & Recreation Area Acquisition, Development, Betterment & Rehab.	TF		3,000,000	650,000	4,270,000	1,000,000	3,500,000		12,420,000
Initiate Gateway Segment of the Munger State Trail Into St Paul	TF		200,000						200,000
State Trail Development	TF		2,327,000						2,327,000
Access to Lakes and Rivers	TF		1,000,000		600,000		705,000		2,305,000
Saint Louis River Land Acquisition	TF		1,000,000						1,000,000
Americans with Disabilities Act: Retrofitting Regional Parks	TF		220,000						220,000
Trail Linkages, Metropolitan Regional Network	TF		2,327,000						2,327,000
Birch Lake Regional Bikeway/Walkway	TF		450,000						450,000
Cedar Lake Trail Development	TF		610,000						610,000
Shingle Creek Trail Improvements	TF		130,000						130,000
Lilydale/Harriet Island Regional Park Trail	TF		246,000						246,000

RECREATION including HISTORY-

<u>Continued</u>	Source	1991	1993	1994	1995	1996	1997	Total by Project
Como Park East Lakeshore Reclamation	TF		163,000					163,000
Acquisition of Palace Restaurant Site on Mississippi River	TF		325,000					325,000
Local Recreation Grants	FRF			250,000	1,800,000	895,000		2,945,000
Lake Minnetonka Access Acquisition	TF			696,000				696,000
Metropolitan Regional Park System	FRF					850,000		850,000
Renewable Energy Demonstration and Education in State Parks	OOC						150,000	150,000
Minneapolis Park and Trail Connections	FRF				141,000			141,000
Local Share for ISTEAFederal Projects	OOC				300,000			300,000
Pine Point Park Rest Station	FRF				100,000			100,000
Interactive Multi-Media Computer Information System	FRF				45,000			45,000
Upper Sioux Agency State Park	FRF				200,000			200,000
Grain Belt Mississippi Riverfront Development	FRF				500,000			500,000
Wildcat Regional Park	FRF				40,000			40,000
Chippewa County Regional Trail	FRF					410,000		410,000
Arboretum-Boundary Land Acquisition	FRF				680,000			680,000
Restore Historic Mississippi River Mill Site	FRF				120,000			120,000
Pond-Dakota Mission Restoration	FRF				270,000			270,000
Joseph R. Brown Interpretive Center Restoration Project	FRF				75,000			75,000
Heritage Trails	FRF				200,000			200,000
Restoration of Historic Elba Fire Tower	FRF				73,000			73,000
Managing Minnesota Shipwrecks	FRF				100,000			100,000
Lac Qui Parle Mission Historic Trail	FRF				181,000			181,000
Cannon Valley Trail Repair	TF				175,000			175,000
Metropolitan Regional Park System	TF				5,070,000		3,500,000	8,570,000
State Trail Rehabilitation and Acquisition	TF				250,000			250,000
Pickwick Mill	FRF					150,000		150,000
Local Initiatives Grants Program	FRF						2,900,000	2,900,000
Border to Border Trail Study	FRF						100,000	100,000
Ft. Snelling State Park - Upper Bluff Utilization and AYH Hostel	FRF						250,000	250,000
Jeffers Petroglyphs Environmental Assessment and Prairie Restoration	FRF						125,000	125,000
White Oak Learning Center Environmental Awareness through History	FRF						120,000	120,000
Historical and Cultural Museum on Vermilion Lake Indian Reservation	FRF						100,000	100,000
Native American Perspective of the Historic North Shore	FRF						60,000	60,000
Soudan Underground Physics Laboratory Expansion	FRF						400,000	400,000
Connecting People and Places through Yellow Bikes	FRF						95,000	95,000
Sustainable Gardening for Minnesota Homes and Communities	FRF						400,000	400,000
Mesabi Trail Land Acquisition and Development	FRF						600,000	600,000
Chippewa County Regional Trail	FRF						400,000	400,000
Renewable Energy Demonstration and Education in State Parks	TF						80,000	80,000
Development of Birch Coulee State Historic Site	TF						253,000	253,000
Arboretum Land Acquisition	TF						450,000	450,000

FISH and WILDLIFE HABITAT

	Source	1991	1993	1994	1995	1996	1997	Total by Project
Pilot Fish Pond Complex-Fisheries Development and Education	FRF	250,000						250,000
Aquaculture Facility Purchase and Dev and Genetic Gamefish	FRF	1,200,000						1,200,000
Cooperative Urban Aquatic Education Program	FRF	340,000						340,000
Catch and Release Program	FRF	35,000						35,000
Metropolitan Lakes Fishing Opportunities	FRF	75,000						75,000
Lake Minnetonka Bass Tracking	FRF	85,000						85,000
Stocking Survey	FRF	35,000						35,000
Microbial and Genetic Strategies For Mosquito Control	FRF	150,000						150,000
Swan and Heron Lake Area Projects	FRF	1,000,000						1,000,000

FISH and WILDLIFE HABITAT-Continued	Source	1991	1993	1994	1995	1996	1997	Total by Project
Wildlife Oriented Rec Fac/Sandstone Unit Nat Wildlife Refuge	FRF	9,000						9,000
Acquisition and Development of Scientific and Natural Areas	FRF							300,000
Black Bear Research in East Central Minnesota	FRF	300,000						100,000
Partnership for Accelerated Wild Turkey Management	FRF	100,000						50,000
Establish Northern Raptors Rehabilitation and Ed Facility	FRF	50,000						75,000
Effect of Avian Flu Virus in Mallard Ducks	FRF	75,000						16,000
Insecticide Impact on Wetland and Upland Wildlife	FRF	16,000						650,000
Biological Control Eurasian Water Milfoil (Cancelled, Funded @ 160,000 from Future Res. Fd.)	TF	650,000						100,000
Minnesota County Biological Survey	TF	100,000						4,000,000
Data Base for Plants of Minnesota	TF	1,000,000	900,000		900,000		1,200,000	130,000
Aquatic Invertebrate Assessment Archive	TF	130,000						130,000
Wetlands Forum (Cancelled, did not meet match requirement)	TF	40,000						40,000
Easement Acquisition on Restored Wetlands	TF	400,000						50,000
Restore Thomas Sadler Roberts Bird Sanctuary	TF	50,000						1,550,000
Minnesota's Forest Bird Diversity Initiative	TF	300,000	500,000		400,000		350,000	137,000
Anadromous Fish Monitoring	FRF		137,000					100,000
Establishment of Critical Winter Habitat Areas on Intensively Farmed Land	FRF		100,000					39,000
Wild Turkey Hunting Safety/Education	FRF		39,000					500,000
Niameck Watershed Restoration	FRF		500,000					75,000
Deer Critical Habitat Survey- koochiching County	FRF		75,000					
Establishing Goose Nesting Sites in N. Minnesota 21,000 (cancelled by program mgr)	FRF							60,000
Prairie Ecosystem Restoration in the Minneapolis Park System	FRF		60,000					40,000
Theodore Worth Park Tamarack Bog Preservation Project	FRF		40,000					40,000
Replacement of Eurasian Watermilfoil with Native Minnesota Plants	FRF		40,000					90,000
Integrated Control of Purple Loosestrife	FRF		90,000					800,000
Biological Control Eurasian Water Milfoil & Purple Loosestrife	TF		400,000		250,000		150,000	8,020,000
RIM Wildlife - Acquisition, Development, Critical Habitat Match, S N A, Prairie	TF		4,900,000		760,000	630,000	1,730,000	3,034,000
RIM Fisheries - Acquisition, Development, Angler Access, Hatchery Rehabilitation	TF		987,000		855,000		1,192,000	175,000
Ecological Impacts of Releasing Genetically Engineered Fishes	TF		175,000					15,000
Assessment of Wetland Regulations	FRF					15,000		150,000
Urban Wildlife Habitat Program	FRF				150,000			650,000
Statewide Experimental Fishing Regulations	FRF				650,000			445,000
RIM - Accelerate Fisheries Habitat Dev. Hatchery Rehab. and Streamflow Protection	FRF				445,000			140,000
RIM - Accelerate Wildlife Acquisition	FRF				140,000			120,000
RIM - Accelerate Critical Habitat Match Program	FRF					120,000		450,000
RIM - Accelerate Wildlife Habitat Stewardship	FRF				450,000			200,000
Biomass Production, Management and Restoration of Brushland Habitats	FRF				200,000			50,000
Turn in Poachers Youth Activity Book	FRF				50,000			151,000
Investigation of Deformed Frogs in Minnesota	FRF					151,000		200,000
Niameck Watershed Improvement	FRF					200,000		50,000
Biological Control of Eurasian Watermilfoil and Purple Loosestrife - Continuation	FRF				50,000			90,000
Biological Control of Overland Spread of Oak Wilt	FRF				90,000			200,000
Wetland Restoration/Enhancement to Create Community Amenity & Form	TF				200,000			150,000
Accelerate Native Grass and Forbs on Road Rights-of-Way	TF				150,000			100,000
Beneficial Fungal Inoculum for Prairie and Wetland Reclamation	TF				100,000			100,000
Wolf Management Plan	FRF						100,000	20,000
Catch and Release	FRF						20,000	

FISH and WILDLIFE HABITAT-Continued

	Source	1991	1993	1994	1995	1996	1997	Total by Project
Improved Decisions for Walleye Stocking and Special Regulations	FRF						245,000	245,000
Savannah Restoration for Sharpbill Grouse	FRF						30,000	30,000
Ballast Water Technology Demonstration for Exotic Species Control	FRF						250,000	250,000
Loons: Indicators of Mercury in the Environment	TF						230,000	230,000
Prairie Heritage Project	TF						500,000	500,000
Minnesota Rare Mussel Conservation	TF						91,000	91,000

WATER RESOURCES

	Source	1991	1993	1994	1995	1996	1997	Total by Project
Waterwatch-Citizen Monitoring and Protection Program	FRF	272,000						272,000
Bioremedial Technology for Groundwater	FRF	96,000						96,000
Aquifer Analyses in Southeast Minnesota	FRF	73,000						73,000
Development and Application of Aeration Technologies	FRF	148,000						148,000
Lake Superior Initiative/Institute for Research	FRF	400,000						400,000
Lake Mille Lacs Public Land Use Plan	FRF	20,000						20,000
Stream and Watershed Information System	TF	200,000						200,000
S Cen Minnesota Surface Water Resource Atlases/Data Base	TF	300,000					250,000	550,000
Minnesota River Basin Water Quality Monitoring	TF	700,000	1,100,000					1,800,000
County Geologic Atlas and Groundwater Sensitivity Mapping	TF	1,400,000	850,000					2,250,000
Clean Water Partnership/Grants to Local Units of Government	TF	700,000						700,000
Mitigating Mercury in Northeast Minnesota Lakes	TF	300,000						300,000
Ecological Evaluation of Year-Round Aeration	TF	100,000						100,000
Erosion Control Cost-Sharing	TF	250,000						250,000
Well Sealing Cost-Share Grants	TF	750,000						750,000
Cannon River Watershed Strategic Plan	TF	60,000			245,000			305,000
Local River Planning- Continuation	FRF		480,000					480,000
Stream Flow Protection	FRF		280,000					280,000
South Central Minnesota Groundwater Contamination Susceptibility	FRF		290,000					290,000
White Bear Lake Levels Feasibility Study (1994 reduced from 228,000 to 175,000)	FRF		175,000					175,000
Septic System Replacement for Water Related Tourism Businesses	FRF		500,000					500,000
Optical Brighteners: Indicators of Sewage Contamination of Groundwaters	FRF		157,000					157,000
Mercury Reduction in Fish	TF		200,000					200,000
Local River Planning - Continuation	FRF				140,000			140,000
Cannon River Watershed Strategic Plan: Integrated Management	FRF				80,000			80,000
Tri-County Leech Lake Watershed Project	FRF				300,000			300,000
Atmospheric Mercury Emissions, Deposition, and Environmental Cost Evaluation	FRF				575,000			575,000
Mercury Deposition and Lake Quality Trends (130,000 GLPA)	FRF				250,000			250,000
Shoreland Septic Inventory and Education	FRF				145,000			145,000
Alternative Individual Sewage Treatment Systems Development and Demonstration	FRF				425,000			425,000
Upper Mississippi River Protection Project	FRF				200,000			200,000
Upper Mississippi River Assessment	FRF					57,000		57,000
Maplewood Innovative Storm Water Management Project	FRF				100,000			100,000
Assessing Wetland Quality With Ecological Indicators	TF				275,000			275,000
Phalen Wetland Restoration	TF				115,000		600,000	715,000
Metro Area Groundwater Model to Predict Contaminant Movement	TF				250,000		300,000	550,000

<u>WATER RESOURCES-Continued</u>	Source	1991	1993	1994	1995	1996	1997	Total by Project
On-Site Sewage Treatment Alternatives and Technology Transfer	FRF						500,000	500,000
Evaluation of Watershed-Based Watershed District Management	FRF						150,000	150,000
Preventing Stormwater Runoff Problems through Watershed Land Design	FRF						280,000	280,000
Miller Creek Watershed Management	FRF						100,000	100,000
Wetland Ecosystems Monitoring	FRF						160,000	160,000
Cannon River Watershed: Integrated Management	FRF						350,000	350,000
Training and Research Vessel for Lake Superior (GLPA)	FRF						120,000	120,000
Sustainable Lake Plans	TF						270,000	270,000
Atmospheric and Nonpoint Pollution Trends in Lakes	TF						325,000	325,000
Lakeshore Restoration-Minneapolis Chain of Lakes	TF						300,000	300,000
Training and Research Vessel for Lake Superior	TF						130,000	130,000
Water Quality Indicators of Endocrine Disrupting Chemicals	TF						250,000	250,000

AGRICULTURE AND NATURAL RESOURCE INDUSTRIES

	Source	1991	1993	1994	1995	1996	1997	Total by Project
Review Levels of Pesticides at Spill Sites	FRF	300,000						300,000
Effective Nitrogen/Water Mgt for Sensitive Areas	FRF	300,000						300,000
Native Grass and Wildflower Seed	FRF	130,000						130,000
Community Gardening Program	FRF	110,000						110,000
Land Spreading of Yard Wastes	FRF	100,000						100,000
Biological Control of Pests	TF	650,000					200,000	850,000
Conservation Reserve Easements	TF	600,000	500,000					1,100,000
Nutrient Cycling and Tree Species Suitability	FRF	220,000						220,000
State Forest Land Acquisition	FRF	500,000						500,000
Regeneration and Management of Minnesota's Oak Forests	FRF	225,000						225,000
Private Forest Management for Oak Regeneration	FRF	200,000						200,000
Aspen Hybrids and New Tissue Culture Techniques	FRF	70,000						70,000
Aspen Decay Models for Mature Aspen Stands	FRF	85,000						85,000
Minnesota's Old-Growth Forests: Character and Identification	FRF	150,000	250,000					400,000
Biological Control of Plant and Animal Pests- Continuation	OOO		880,000					880,000
Cover Crops in a Corn and Soybean Rotation	FRF		150,000					150,000
Increasing Utilization of Federal Cost Share Feedlots Funds	FRF		480,000					480,000
Demonstration of Production Scale Waste Collection in Aquaculture	FRF		100,000					100,000
RIM Conservation Reserve Easements	FRF		323,000					323,000
Alternative Aquaculture Methods	FRF		230,000					230,000
Minnesota Aquaculture Development Program	FRF		230,000					230,000
Managing Agricultural Environments of N-Central Minnesota Sandy Soils-Continuation	FRF		480,000					480,000
Nutrient Availability from Land-Applied Manure	FRF		280,000					280,000
Effective Manure Mgmt. In Cons. Tillage Systems for Karst Areas	FRF		500,000					500,000
Nutrient Recycling Through Plants and Animals	FRF		260,000					260,000
Developing Soil Specific Nitrogen Management As a BMP	OOO		294,000					294,000
Development of Tree Seed Orchard Complex	FRF		80,000					80,000
Developing Quality Hardwood Forests	FRF		210,000					210,000
Feedlot and Manure Management Practices Assistance					200,000			200,000
Water Quality Impacts of Feedlot Pollution Control Systems	FRF				300,000			300,000
Sustainable Grassland Conservation and Utilization	FRF				125,000			125,000
Developing, Evaluating, and Promoting Sustainable Farming Systems	FRF				225,000			225,000
Cooperatives to Promote Sustainable Agricultural Practices and Research	FRF				100,000			100,000
Minnesota River Tile System Research - Continuation	FRF				150,000			150,000

AGRICULTURE AND NATURAL**RESOURCE INDUSTRIES-Continued**

	Source	1991	1993	1994	1995	1996	1997	Total by Project
Analysis of Lands Enrolled in the Conservation Reserve Program	FRF				200,000			200,000
Reinventing the Agricultural Land Preservation Program	FRF					100,000		100,000
Alfalfa Biomass Production	FRF					200,000		200,000
Reducing Minnesota River Pollution from Lacustrine Soils	FRF					250,000		250,000
Mercury Manometers	FRF					250,000		250,000
Control of Weeds in Native Wild Rice	FRF					100,000		100,000
Crop Management to Minimize Pesticide Inputs	TF					300,000		300,000
Sustainable Farming Systems	TF					560,000		560,000
Prairie-Grassland Landscapes	TF					125,000		125,000

ENVIRONMENTAL**EDUCATION/INFORMATION**

	Source	1991	1993	1994	1995	1996	1997	Total by Project
Teacher Training for Environmental Education	FRF	5,000						5,000
Continuing Ed in Outdoor Rec For Natural Resource Mgrs	FRF	125,000						125,000
Upper Mississippi River Environmental Education Center	FRF	600,000						600,000
Urban Rangers Program	FRF	100,000						100,000
Crosby Farm Park Nature Program	FRF	85,000						85,000
Youth in Natural Resources	FRF	250,000						250,000
Environmental Education for Handicapped	FRF	130,000						130,000
Environmental Education Program	TF	790,000						790,000
Video Education Research and Demonstration Project	TF	100,000						100,000
Integrated Resource Mgmt Education and Training Program	TF	300,000						300,000
Environmental Exhibits Collaborative	TF	400,000						400,000
Mississippi Headwaters River Inquiry and Education Project	FRF		75,000					75,000
Developing Multi-use Urban Green Space	FRF		220,000					220,000
K-12 Prairie Wetland Field Study Program- Ecology Bus	FRF		270,000					270,000
Environmental Education Outreach Program 215,000 (Cancelled - did not meet match requirement)	FRF							
Summer Youth History Program	FRF		100,000					100,000
The Ecology of Minnesota - Book	FRF		51,000					51,000
Nicollet Conservation Club Swab Lake Interpretive Room	FRF		18,000					18,000
Project City Camp: Experiential Urban Environmental Education	FRF		130,000					130,000
Granite Quarry Park and Interpretive Center Planning	FRF		50,000					50,000
Expanded Crosby Farm Park Nature Program- Continuation	FRF		91,000					91,000
Multiple-Use Forest Management Learning Kit	FRF		15,000					15,000
An Outdoor Classroom to Improve Rural Environmental Education	FRF		60,000					60,000
The On-Line Museum: Computer and Interactive Video	TF		260,000					260,000
Green Street: An Urban Environmental Awareness Project	TF		550,000					550,000
Minnehaha Park Environmental Interpretive Center	TF		300,000					300,000
Environmental Video Resource Library and Public Television Series	FRF				250,000			250,000
Development, Assimilation and Distribution of Wolf Educational Materials	FRF				100,000			100,000
Electronic Environmental Education Network	FRF				250,000			250,000
Three Rivers Initiative	FRF				750,000			750,000
Interactive Computer Exhibit on Minnesota Renewable Energy Sources	OOO				150,000			150,000
Trees for Teens: Training, Resources, Education, Employment, Service	FRF				75,000			75,000
Redwood Falls School District #637 Environmental Education Project	FRF				250,000			250,000
Together Outdoors Minnesota	FRF				575,000			575,000

ENVIRONMENTAL**EDUCATION/INFORMATION-Continued**

	Source	1991	1993	1994	1995	1996	1997	Total by Project
Enhanced Natural Resource Opportunities for Asian-Pacific Minnesotans	FRF				150,000			150,000
Deliver Ecological Information and Technical Assistance to Local Governments	FRF				100,000			100,000
Nonpoint Source Pollution Public Education Demonstration Project	FRF				100,000			100,000
Whitetail Deer Resource Center	FRF				50,000			50,000
Gordon Gullion Chair in Forest Wildlife Research and Education	FRF				350,000			350,000
Ney Environmental Center	FRF				100,000			100,000
Lawndale Environmental Center	FRF				400,000			400,000
Sugarloaf Site Assessment and Interpretation	FRF				70,000			70,000
Pathways to Sustainable Development	TF				200,000			200,000
Leopold Education Project Curriculum	TF				100,000			100,000
Environmental Education Teacher Training	TF				500,000		100,000	600,000
Sharing Environmental Education Knowledge	TF				200,000			200,000
Environmental Action Grants for Minnesota Schools	TF				200,000		250,000	450,000
Pollution Prevention Training Program for Industrial Employees	FRF						200,000	200,000
Comparative Risks of Multiple Chemical Exposures	FRF						150,000	150,000
Watershed Science: Integrated Research and Education Program	FRF						500,000	500,000
Environmental Service Learning Projects in Minneapolis Schools	FRF						100,000	100,000
Greenprint Success	FRF						136,000	136,000
St. Paul & Mpls. Regional Park Urban Interpretation Program	FRF						200,000	200,000
Point Douglas Bluffland Acquisition	FRF						125,000	125,000
Minnesota Frog Watch	TF						300,000	300,000
Partners in Accessible Recreation and Environmental Responsibility	TF						550,000	550,000
State Wolf Management: Electronically Moderating the Public Discussion	TF						100,000	100,000
Electronic Environmental Education Raptor Network	TF						222,000	222,000
Nitrate Education and Testing	TF						150,000	150,000
Snake River Watershed BMP's	TF						100,000	100,000

LAND USE & NATURAL RESOURCE INFORMATION

	Source	1991	1993	1994	1995	1996	1997	Total by Project
Accelerated Soil Survey	FRF	1,270,000						1,270,000
Statewide Land Use Update	FRF	338,000						338,000
Local Geographic Information System Program	FRF	143,000						143,000
Geographic Information System Control Point Inventory	FRF	175,000						175,000
Land Use and Design Strategies to Enhance Env Quality	FRF	100,000						100,000
Model Residential Land Use Guidelines	FRF	150,000						150,000
Subsurface Greenstone Belts in Southwestern Minnesota	FRF	120,000						120,000
Remediation of Soils by Co-Composting with Leaves	FRF	135,000						135,000
Base Maps for 1990's	TF	1,900,000	710,000		600,000			3,210,000
Statewide Nat'l Wetlands Inv/PWI/Watershed Map Digitization	TF	750,000						750,000
Generic Environmental Impact Statement	TF	400,000						400,000
Mississippi River Valley Blufflands Initiative	TF	150,000						150,000
Quantify Pesticide and Fertilizer Runoff from Golf Courses	FRF		49,000					49,000
Rural County Use of NAPP Flight	FRF		90,000					90,000
Recreational Resource Planning in the Metro Mississippi Corridor	FRF		175,000					175,000
Mitigating Concrete Aggregate Problems in Minnesota Blufflands Landscape	FRF		179,000					179,000
Forest Management to Maintain Structural and Species Diversity	TF				450,000			450,000
Environmental Indicators Initiative	TF				160,000			160,000
Blufflands Landscape	FRF				350,000		250,000	600,000
	FRF				180,000			180,000

LAND USE & NATURAL RESOURCE

INFORMATION-Continued

	Source	1991	1993	1994	1995	1996	1997	Total by Project
Glacial Lake Agassiz Beach Ridges: Mining and Protection	FRF				85,000			85,000
Accelerate Landscape Management Activities in Whitewater Watershed	FRF				60,000			60,000
Recycled Biosolids Product used to Reclaim Disturbed Areas	OOC				200,000			200,000
Completion of Statewide Land Use Update - Continuation	FRF				380,000			380,000
Fillmore County Soil Survey Update	FRF				65,000			65,000
Public Internet Access to Data and Information	FRF					360,000		360,000
Greenway Corridors and Natural Areas Project	FRF					50,000		50,000
Grants to Local Governments to Assist Natural Resource Decision-Making	FRF						150,000	150,000
Evaluation of Urban Growth Economic and Environmental Costs and Benefits	FRF						275,000	275,000
North Minneapolis Upper River Master Plan	FRF						300,000	300,000
Trout Habitat Preservation Using Alternative Watershed Management Practices	FRF						250,000	250,000
Statewide Digital Soil Database - Phase 1	FRF						145,000	145,000
Foundations to Integrated Access to Environmental Information	FRF						650,000	650,000
Public Access to Archaeological Knowledge	FRF						200,000	200,000
Economics for Lasting Progress	FRF						250,000	250,000
Sustainable Woodlands on Private Lands	FRF						875,000	875,000
Peatland Restoration	FRF						275,000	275,000
Minnesota Point Protection	FRF						75,000	75,000
Prairie and Oak Savannah Restoration	FRF						50,000	50,000
Red River Valley Planning and Management	TF						375,000	375,000
New Models for Land Use Planning	TF						530,000	530,000
Land Use Development and Natural Resource Protection Model	TF						400,000	400,000
Protecting Rural Historic Landscapes in High Development Areas	TF						80,000	80,000
Restoring White Pine in the Minnesota Landscape	TF						120,000	120,000
Sand Dunes State Forest Acquisition	TF						400,000	400,000
Oak Savannah Restoration in St Paul Regional Parks	TF						200,000	200,000
Fillmore County Soils Survey Update	TF						65,000	65,000
Toxic Emissions from Fire Training	TF						65,000	65,000

ENERGY

	Source	1991	1993	1994	1995	1996	1997	Total by Project
Traffic Signal Timing and Optimization Program	OOC	1,175,000						1,175,000
Waste Crumb Rubber in Roadways	OOC	100,000						100,000
Biodegradable Plastics-Microbial and Crop Plant Systems	OOC	150,000						150,000
Agricultural Energy Savings Information	OOC	150,000						150,000
Residential Urban Environmental Resource Audit	OOC	150,000						150,000
Means for Producing Lignin-Based Plastics	OOC	100,000						100,000
Cellulose Rayons for Packaging	OOC	150,000						150,000
Tree and Shrub Planting for Energy in Minnesota Communities	OOC	1,250,000			400,000			1,650,000
Oil Overcharge Program Administration	OOC	200,000						200,000
Energy Efficiency Standards for Residential Construction	OOC	75,000						75,000
Reducing Energy and CO2	OOC		230,000					230,000
Photovoltaic Demonstration Project	OOC		230,000					230,000
Operational Implications of Alternate Transit Bus Fuels	OOC		78,000					78,000
The Bus, The Bike, or Car Pool (B-Bop) Challenge	OOC		150,000					150,000
Tree and Grass Production for Ethanol	OOC		380,000					380,000
Microbial Deterioration of Asphalt Materials and its Prevention	OOC				60,000			60,000
Inter-city Electric Vehicle Transportation Demonstration (Project cancelled)	OOC				150,000			150,000

VIII. TRUST FUND LAW

Environmental Protection Funds

CHAPTER 116P ENVIRONMENT AND NATURAL RESOURCES TRUST FUND

116P.01 FINDINGS.

The legislature finds that all Minnesotans share the responsibility to ensure wise stewardship of the state's environment and natural resources for the benefit of current citizens and future generations. Proper management of the state's environment and natural resources includes and requires foresight, planning, and long-term activities that allow the state to preserve its high quality environment and provides for wise use of its natural resources. The legislature also finds that to undertake such activities properly, a long-term, consistent, and stable source of funding must be provided. HIST: 1988 c 690 art 1 s 5

116P.02 DEFINITIONS.

Subdivision 1. **Applicability.** The definitions in this section apply to sections 116P.01 to 116P.13.

Subd. 2. **Advisory committee.** "Advisory committee" means the advisory committee created in section 116P.06.

Subd. 3. **Board.** "Board" means the state board of investment.

Subd. 4. **Commission.** "Commission" means the legislative commission on Minnesota resources.

Subd. 5. **Natural resources.** "Natural resources" includes the outdoor recreation system under section 86A.04 and regional recreation open space systems as defined under section 473.351, subdivision 1.

Subd. 6. **Trust fund.** "Trust fund" means the Minnesota environment and natural resources trust fund established under Minnesota Constitution, article XI, section 14.

HIST: 1988 c 690 art 1 s 6; 1989 c 335 art 1 s 269

116P.03 TRUST FUND NOT TO SUPPLANT EXISTING FUNDING.

- (a) The trust fund may not be used as a substitute for traditional sources of funding environmental and natural resources activities, but the trust fund shall supplement the traditional sources, including those sources used to support the criteria in section 116P.08, subdivision 1. The trust fund must be used primarily to support activities whose benefits become available only over an extended period of time. (b) The commission must determine the amount of the state budget spent from traditional sources to fund environmental and natural resources activities before and after the trust fund is established and include a comparison of the amount in the report under section 116P.09, subdivision 7.

HIST: 1988 c 690 art 1 s 7

116P.04 TRUST FUND ACCOUNT.

Subdivision 1. **Establishment of account and investment.**

A Minnesota environment and natural resources trust fund, under article XI, section 14, of the Minnesota Constitution, is established as an account in the state treasury. The commissioner of finance shall credit to the trust fund the amounts authorized under this section and section 116P.10. The state board of investment shall ensure that trust fund money is invested under section 11A.24. All money earned by the trust fund must be credited to the trust fund. The principal of the trust fund and any unexpended earnings must be invested and reinvested by the state board of investment.

Subd. 2. Repealed, 1990 c 610 art 1 s 59

Subd. 3. **Revenue.** Nothing in sections 116P.01 to 116P.12 limits the source of contributions to the trust fund.

Subd. 4. **Gifts and donations.** Gifts and donations, including land or interests in land, may be made to the trust fund. Noncash gifts and donations must be disposed of for cash as soon as the board prudently can maximize the value of the gift or donation. Gifts and donations of marketable securities may be held or be disposed of for cash at the option of the board. The cash receipts of gifts and donations of cash or capital assets and marketable securities disposed of for cash must be credited immediately to the principal of the trust fund. The value of marketable securities at the time the gift or donation is made must be credited to the principal of the trust fund and any earnings from the marketable securities are earnings of the trust fund.

Subd. 5. **Audits required.** The legislative auditor shall audit trust fund expenditures to ensure that the money is spent for the purposes provided in the commission's budget plan.

HIST: 1988 c 690 art 1 s 8; 1990 c 610 art 1 s 44; 1991 c 343 s 1

116P.05 LEGISLATIVE COMMISSION ON MINNESOTA RESOURCES.

Subdivision 1. **Membership.** (a) A legislative commission on Minnesota resources of 20 members is created consisting of the chairs of the house and senate committees on environment and natural resources or designees appointed for the terms of the chairs, the chairs of the house and senate committees on environment and natural resources finance or designees appointed for the terms of the chairs, the chairs of the house ways and means and senate finance committees or designees appointed for the terms of the chairs, seven members of the senate appointed by the subcommittee on committees of the committee on rules and administration, and seven members of the house appointed by the speaker. At least three members from the senate and three members from the house must be from the minority caucus. Members are entitled to reimbursement for per diem expenses plus travel expenses incurred in the services of the commission.

(b) Members shall appoint a chair who shall preside and convene meetings as often as necessary to conduct duties prescribed by this chapter.

(c) Members shall serve on the commission until their successors are appointed.

(d) Vacancies occurring on the commission shall not affect the authority of the remaining members of the commission to carry out their duties, and vacancies shall be filled in the same manner under paragraph (a).

Subd. 2. **Duties.** (a) The commission shall recommend a budget plan for expenditures from the environment and natural resources trust fund and shall adopt a strategic plan as provided in section 116P.08.

(b) The commission shall recommend expenditures to the legislature from the Minnesota future resources fund under section 116P.13.

(c) It is a condition of acceptance of the appropriations made from the Minnesota future resources fund, Minnesota environment and natural resources trust fund, and oil overcharge money under section 4.071, subdivision 2; that the agency or entity receiving the appropriation must submit a work program and semiannual progress reports in the form determined by the legislative commission on Minnesota resources. None of the money provided may be spent unless the commission has approved the pertinent work program.

(d) The peer review panel created under section 116P.08 must also review, comment, and report to the commission on research proposals applying for an appropriation from the Minnesota resources fund and from oil overcharge money under section 4.071, subdivision 2.

(e) The commission may adopt operating procedures to fulfill its duties under sections 116P.01 to 116P.13. HIST: 1988 c 690 art 1 s 9; 1989 c 335 art 1 s 269; 1990 c 594 art 1 s 56; 1991 c 254 art 2 s 39; 1991 c 343 s 2; 1993 c 4 s 15; 1994 c 580 s 1; 1997 c 202 art 2 s 36

116P.06 ADVISORY COMMITTEE.

Subdivision 1. **Membership.** (a) An advisory committee of 11 citizen members shall be appointed by the governor to advise the legislative commission on Minnesota resources on project proposals to receive funding from the trust fund and the development of budget and strategic plans. The governor shall appoint at least one member from each congressional district. The governor shall appoint the chair.

(b) The governor's appointees must be confirmed with the advice and consent of the senate. The membership terms, compensation, removal, and filling of vacancies for citizen members of the advisory committee are governed by section 15.0575.

Subd. 2. **Duties.** (a) The advisory committee shall: (1) prepare and submit to the commission a draft strategic plan to guide expenditures from the trust fund;

(2) review the reinvest in Minnesota program during development of the draft strategic plan;

(3) gather input from the resources congress during development of the draft strategic plan;

(4) advise the commission on project proposals to receive funding from the trust fund; and

(5) advise the commission on development of the budget plan.

(b) The advisory committee may review all project proposals for funding and may make recommendations to the commission on whether the projects:

(1) meet the standards and funding categories set forth in sections 116P.01 to 116P.12;

(2) duplicate existing federal, state, or local projects being conducted within the state; and

(3) are consistent with the most recent strategic plan adopted by the commission. HIST: 1988 c 690 art 1 s 10; 1989 c 335 art 1 s 269; 1991 c 254 art 2 s 40; 1991 c 343 s 3

116P.07 RESOURCES CONGRESS.

The commission must convene a resources congress at least once every biennium and shall develop procedures for the congress. The congress must be open to all interested individuals. The purpose of the congress is to collect public input necessary to allow the commission, with the advice of the advisory committee, to develop a strategic plan to guide expenditures from the trust fund. The congress also may be convened to receive and review reports on trust fund projects. The congress shall also review the reinvest in Minnesota program. HIST: 1988 c 690 art 1 s 11; 1991 c 254 art 2 s 41; 1991 c 343s 4

116P.08 TRUST FUND EXPENDITURES; EXCEPTIONS; PLANS.

Subdivision 1. **Expenditures.** Money in the trust fund may be spent only for:

- (1) the reinvest in Minnesota program as provided in section 84.95, subdivision 2;
- (2) research that contributes to increasing the effectiveness of protecting or managing the state's environment or natural resources;
- (3) collection and analysis of information that assists in developing the state's environmental and natural resources policies;
- (4) enhancement of public education, awareness, and understanding necessary for the protection, conservation, restoration, and enhancement of air, land, water, forests, fish, wildlife, and other natural resources;
- (5) capital projects for the preservation and protection of unique natural resources;
- (6) activities that preserve or enhance fish, wildlife, land, air, water, and other natural resources that otherwise may be substantially impaired or destroyed in any area of the state;
- (7) administrative and investment expenses incurred by the state board of investment in investing deposits to the trust fund; and
- (8) administrative expenses subject to the limits in section 116P.09.

Subd. 2. **Exceptions.** Money from the trust fund may not be spent for:

- (1) purposes of environmental compensation and liability under chapter 115B and response actions under chapter 115C;
- (2) purposes of municipal water pollution control under the authority of chapters 115 and 116, including combined sewer overflow under section 116.162;
- (3) costs associated with the decommissioning of nuclear power plants;
- (4) hazardous waste disposal facilities;
- (5) solid waste disposal facilities; or
- (6) projects or purposes inconsistent with the strategic plan.

Subd. 3. **Strategic plan required.** (a) The commission shall adopt a strategic plan for making expenditures from the trust fund, including identifying the priority areas for funding for the next six years. The strategic plan must be updated every two years. The plan is advisory only. The commission shall submit the plan, as a recommendation, to the house of representatives appropriations and senate finance committees by January 1 of each odd-numbered year.

(b) The commission may accept or modify the draft of the strategic plan submitted to it by the advisory committee before voting on the plan's adoption.

Subd. 4. **Budget plan.** (a) Funding may be provided only for those projects that meet the categories established in subdivision 1.

(b) Projects submitted to the commission for funding may be referred to the advisory committee for recommendation.

(c) The commission must adopt a budget plan to make expenditures from the trust fund for the purposes provided in subdivision 1. The budget plan must be submitted to the governor for inclusion in the biennial budget and supplemental budget submitted to the legislature.

(d) Money in the trust fund may not be spent except under an appropriation by law.

Subd. 5. **Public meetings.** All advisory committee and commission meetings must be open to the public. The commission shall attempt to meet at least once in each of the state's congressional districts during each biennium.

Subd. 6. **Peer review.** (a) Research proposals must include a stated purpose, timeline, potential outcomes, and an explanation of the need for the research. All research proposals must be reviewed by a peer review panel before receiving an appropriation. (b) In conducting research proposal reviews, the peer review panel shall:

- (1) comment on the methodology proposed and whether it can be expected to yield appropriate and useful information and data;
- (2) comment on the need for the research and about similar existing information available, if any; and
- (3) report to the commission and advisory committee on clauses (1) and (2).

(c) The peer review panel also must review completed research proposals that have received an appropriation and comment and report upon whether the project reached the intended goals.

Subd. 7. **Peer review panel membership.** (a) The peer review panel must consist of at least five members who are knowledgeable in general research methods in the areas of environment and natural resources. Not more than two members of the panel may be employees of state agencies in Minnesota.

(b) The commission shall select a chair every two years who shall be responsible for convening meetings of the panel as often as is necessary to fulfill its duties as prescribed in this section. Compensation of panel members is governed by section 15.059, subdivision 3.

HIST: 1988 c 690, art 1 s 12; 1989 c 335 art 1 s 178; 1991 c 254 art 2 s 42,43; 1991 c 343 s 5,6; 1994 c 580 s 2,3

116P.09 ADMINISTRATION.

Subdivision 1. **Administrative authority.** The commission may appoint legal and other personnel and consultants necessary to carry out functions and duties of the commission. Permanent employees shall be in the unclassified service. In addition, the commission may request staff assistance and data from any other agency of state government as needed for the execution of the responsibilities of the commission and advisory committee and an agency must promptly furnish it.

Subd. 2. **Liaison officers.** The commission shall request each department or agency head of all state agencies with a direct interest and responsibility in any phase of environment and natural resources to appoint, and the latter shall appoint for the agency, a liaison officer who shall work closely with the commission and its staff.

Subd. 3. **Appraisal and evaluation.** The commission shall obtain and appraise information available through private organizations and groups, utilizing to the fullest extent possible studies, data, and reports previously prepared or currently in progress by public agencies, private organizations, groups, and others, concerning future trends in the protection, conservation, preservation, and enhancement of the state's air, water, land, forests, fish, wildlife, native vegetation, and other natural resources. Any data compiled by the commission shall be made available to any standing or interim committee of the legislature upon the request of the chair of the respective committee.

Subd. 4. **Personnel.** Persons who are employed by a state agency to work on a project and are paid by an appropriation from the trust fund or Minnesota future resources fund are in the unclassified civil service, and their continued employment is contingent upon the availability of money from the appropriation. When the appropriation has been spent, their positions must be canceled and the approved complement of the agency reduced accordingly. Part-time employment of persons for a project is authorized. The use of classified employees is authorized when approved as part of the work program required by section 116P.05, subdivision 2, paragraph (c).

Subd. 5. **Administrative expense.** The administrative expenses of the commission shall be paid from the various funds administered by the commission as follows: (1) Through June 30, 1993, the administrative expenses of the commission and the advisory committee shall be paid from the Minnesota future resources fund. After that time, the prorated expenses related to administration of the trust fund shall be paid from the earnings of the trust fund.

(2) After June 30, 1993, the prorated expenses related to administration of the trust fund may not exceed an amount equal to four percent of the projected earnings of the trust fund for the biennium.

Subd. 6. **Conflict of interest.** A commission member, advisory committee member, peer review panelist, or an employee of the commission may not participate in or vote on a decision of the commission, advisory committee, or peer review panel relating to an organization in which the member, panelist, or employee has either a direct or indirect personal financial interest. While serving on the legislative commission, advisory committee, or peer review panel, or being an employee of the commission, a person shall avoid any potential conflict of interest.

Subd. 7. **Report required.** The commission shall, by January 15 of each odd-numbered year, submit a report to the governor, the chairs of the house appropriations and senate finance committees, and the chairs of the house and senate committees on environment and natural resources. Copies of the report must be available to the public. The report must include:

- (1) a copy of the current strategic plan;
- (2) a description of each project receiving money from the trust fund and Minnesota future resources fund during the preceding biennium;
- (3) a summary of any research project completed in the preceding biennium;
- (4) recommendations to implement successful projects and programs into a state agency's standard operations;
- (5) to the extent known by the commission, descriptions of the projects anticipated to be supported by the trust fund and Minnesota future resources account during the next biennium;

- (6) the source and amount of all revenues collected and distributed by the commission, including all administrative and other expenses;
- (7) a description of the assets and liabilities of the trust fund and the Minnesota future resources fund;
- (8) any findings or recommendations that are deemed proper to assist the legislature in formulating legislation;
- (9) a list of all gifts and donations with a value over \$1,000;
- (10) a comparison of the amounts spent by the state for environment and natural resources activities through the most recent fiscal year; and
- (11) a copy of the most recent compliance audit.

HIST: 1988 c 690 art 1 s 13; 1991 c 254 art 2 s 44-46; 1991 c 343 s 7-10; 1994 c 580 s 4

116P.10 ROYALTIES, COPYRIGHTS, PATENTS.

This section applies to projects supported by the trust fund, the Minnesota future resources fund, and the oil overcharge money referred to in section 4.071, subdivision 2, each of which is referred to in this section as a "fund." The fund owns and shall take title to the percentage of a royalty, copyright, or patent resulting from a project supported by the fund equal to the percentage of the project's total funding provided by the fund. Cash receipts resulting from a royalty, copyright, or patent, or the sale of the fund's rights to a royalty, copyright, or patent, must be credited immediately to the principal of the fund. Before a project is included in the budget plan, the commission may vote to relinquish the ownership or rights to a royalty, copyright, or patent resulting from a project supported by the fund to the project's proposer when the amount of the original grant or loan, plus interest, has been repaid to the fund.

HIST: 1988 c 690 art 1 s 14; 1993 c 172 s 79

116P.11 AVAILABILITY OF FUNDS FOR DISBURSEMENT.

(a) The amount biennially available from the trust fund for the budget plan developed by the commission consists of the earnings generated from the trust fund. Earnings generated from the trust fund shall equal the amount of interest on debt securities and dividends on equity securities. Gains and losses arising from the sale of securities shall be apportioned as follows:

(1) if the sale of securities results in a net gain during a fiscal year, the gain shall be apportioned in equal installments over the next ten fiscal years to offset net losses in those years. If any portion of an installment is not needed to recover subsequent losses identified in paragraph (b), it shall be added to the principal of the fund; and

(2) if the sale of securities results in a net loss during a fiscal year, the net loss shall be recovered from the gains in paragraph (a) apportioned to that fiscal year. If such gains are insufficient, any remaining net loss shall be recovered from interest and dividend income in equal installments over the following ten fiscal years.

(b) For funding projects until fiscal year 1997, the following additional amounts are available from the trust fund for the budget plans developed by the commission:

(1) for the 1991-1993 biennium, up to 25 percent of the revenue deposited in the trust fund in fiscal years 1990 and 1991;

(2) for the 1993-1995 biennium, up to 20 percent of the revenue deposited in the trust fund in fiscal year 1992 and up to 15 percent of the revenue deposited in the fund in fiscal year 1993;

(3) for the 1993-1995 biennium, up to 25 percent of the revenue deposited in the trust fund in fiscal years 1994 and 1995, to be expended only for capital investments in parks and trails; and

(4) for the 1995-1997 biennium, up to 25 percent of the revenue deposited in the fund in fiscal year 1996, to be expended only for capital investments in parks and trails. (c)

(c) Any appropriated funds not encumbered in the biennium in which they are appropriated cancel and must be credited to the principal of the trust fund.

HIST: 1988 c 690 art 1 s 15; 1990 c 594 art 1 s 57; 1990 c 612 s 14; 1992 c 513 art 2 s 27; 1992 c 539 s 10; 1993 c 300 s 10; 1994 c 580 s 5; 1995 c 220 s 11.1

116P.12 WATER SYSTEM IMPROVEMENT LOAN PROGRAM.

Subdivision 1: **Loans authorized.** (a) If the principal of the trust fund equals or exceeds \$200,000,000, the commission may vote to set aside up to five percent of the principal of the trust fund for water system improvement loans. The purpose of water system improvement loans is to offer below market rate interest loans to local units of government for the purposes of water system improvements. (b) The interest on a loan shall be calculated on the declining balance at a rate four percentage points below the secondary market yield of one-year United States treasury bills calculated according to section 549.09, subdivision 1, paragraph (c).

(c) An eligible project must prove that existing federal or state loans or grants have not been adequate.

(d) Payments on the principal and interest of loans under this section must be credited to the trust fund.

(e) Repayment of loans made under this section must be completed within 20 years.

(f) The Minnesota public facilities authority must report to the commission each year on the loan program under this section.

Subd. 2. **Application and administration.** (a) The commission must adopt a procedure for the issuance of the water system improvement loans by the public facilities authority.

(c) The commission also must ensure that the loans are administered according to its fiduciary standards and requirements.

HIST: 1988 c 690 art 1 s 16

116P.13 MINNESOTA FUTURE RESOURCES FUND.

Subdivision 1. **Revenue sources.** The money in the Minnesota future resources fund consists of revenue credited under section 297F.10, subdivision 1, paragraph (b), clause (1).

Subd. 2. **Interest.** The interest attributable to the investment of the Minnesota future resources fund must be credited to the fund.

Subd. 3. **Revenue purposes.** Revenue in the Minnesota future resources fund may be spent for purposes of natural resources acceleration and outdoor recreation; including but not limited to the development, maintenance, and operation of the state outdoor recreation system under chapter 86A and regional recreation open space systems as defined under section 473.351, subdivision 1.

HIST: 1988 c 690 art 1 s 17; 1989 c 335 art 1 s 179; 1997 c 106 art 2 s 4

IX. THE LEGISLATIVE COMMISSION ON MINNESOTA RESOURCES

• COMMISSION MEMBERS

REPRESENTATIVES: Loren Solberg, Chair; Ron Erhardt; Alice Hausman; Phyllis Kahn; Willard Munger; Tom Osthoff; Dennis Ozment; Tom Rukavina

SENATORS: Dennis Frederickson; Jerry Janezich; Janet Johnson; Gary Laidig; Bob Lessard; James Metzen; Steve Morse; Leonard Price; Martha Robertson; Jim Vickerman

• CITIZEN ADVISORY COMMITTEE (CAC) FOR THE ENVIRONMENT AND NATURAL RESOURCES TRUST FUND

Nancy Gibson, Chair; Arlan Anderson; Greta Hesse Gauthier; Guy Glover; Ann Glumac; Jeffrey Johnson; Christine Kneeland; Nancy Reynolds; Marvin Tinklenberg; Michael Triggs; Charles Winkelman.

Sec. 14. ENVIRONMENT AND NATURAL RESOURCES FUND.

A permanent environment and natural resources trust fund is established in the state treasury. Loans may be made of up to five percent of the principal of the fund for water system improvements as provided by law. The assets of the fund shall be appropriated by law for the public purpose of protection, conservation, preservation, and enhancement of the state's air, water, land, fish, wildlife, and other natural resources. The amount appropriated each year of a biennium, commencing on July 1 in each odd-numbered year and ending on and including June 30 in the next odd-numbered year, may be up to 5-1/2 percent of the market value of the fund on June 30 one year before the start of the biennium. Not less than 40 percent of the net proceeds from any state-operated lottery must be credited to the fund until the year 2025. [Adopted, November 8, 1988; Amended, November 6, 1990; November 3, 1998]

II. and III. Project Description

“ a description of each project receiving money from the trust fund and Minnesota future resources fund during the preceding biennium; a summary of any research project completed in the preceding biennium...”

The following documents are short abstracts for projects funded during the 1997-1999 biennium. The abstracts describe the general accomplishments of each project as well as providing selected specific details, such as amount of land impacted, species studied, number of school children reached, or products produced. Research projects have been marked as such in the description. Full workprograms are available at the LCMR office Room 65, State Office Building. The abstracts are current as of 12/1/98.

Laws 1997, Chapter 216, Section 15

Subd. 4 Recreation p. 7

- 4(a) State Park & Recreation Area Acquisition, Development, Betterment & Rehab.
- 4(b) Metropolitan Regional Park System
- 4(c) Local Initiatives Grants Program
- 4(d) Border to Border Trail Study *

Subd. 5 Historic Sites p. 9

- 5(a) Ft. Snelling State Park - Upper Bluff Utilization and AYH Hostel
- 5(b) Protecting Rural Historic Landscapes in High Development Areas
- 5(c) Jeffers Petroglyphs Environmental Assessment and Prairie Restoration
- 5(d) Development of Birch Coulee State Historic Site
- 5(e) White Oak Learning Center Environmental Awareness through History
- 5(f) Historical and Cultural Museum on Vermilion Lake Indian Reservation
- 5(g) Native American Perspective of the Historic North Shore
- 5(h) Soudan Underground Physics Laboratory Expansion

Subd. 6 Water Resources p. 10

- 6(a) On-Site Sewage Treatment Alternatives and Technology Transfer: Research
- 6(b) Nitrate Education and Testing
- 6(c) Snake River Watershed BMP's
- 6(d) Evaluation of Watershed-Based Watershed District Management
- 6(e) Red River Valley Planning and Management
- 6(f) Sustainable Lake Plans
- 6(g) Lakeshore Restoration - Minneapolis Chain of Lakes
- 6(h) Atmospheric and Nonpoint Pollution Trends in Minnesota Lakes: Research

Subd. 7 Agricultural Practices p. 12

- 7(a) Biological Control of Agricultural Pests: Research
- 7(b) Crop Management to Minimize Pesticide Inputs: Research
- 7(c) Sustainable Farming Systems
- 7(d) Prairie-Grassland Landscapes
- 7(e) Reducing Minnesota River Pollution from Lacustrine Soils: Research
- 7(f) Mercury Manometers *

Subd. 8 Pollution Prevention p. 14

- 8(a) Toxic Emissions from Fire Training
- 8(b) Pollution Prevention Training Program for Industrial Employees

Subd. 9 Impacts on Natural Resources p. 14

- 9(a) Grants to Local Governments to Assist Natural Resource Decision-Making
- 9(b) Evaluation of Urban Growth Economic and Environmental Costs and Benefits: Research
- 9(c) Reinventing the Agricultural Land Preservation Program
- 9(d) New Models for Land-Use Planning
- 9(e) North Minneapolis Upper River Master Plan
- 9(f) Preventing Stormwater Runoff Problems through Watershed Land Design
- 9(g) Miller Creek Watershed Management

9(h) Trout Habitat Preservation Using Alternative Watershed Management Practices *

Subd. 10 Decision-Making Tools p.16

- 10(a) Comparative Risks of Multiple Chemical Exposures
- 10(b) Metropolitan Area Groundwater Model
- 10(c) Wolf Management Plan
- 10(d) Minnesota River Basin Natural Resource Data
- 10(e) Land Use Development and Natural Resource Protection Model
- 10(f) Statewide Digital Soil Database - Phase 1
- 10(g) Fillmore County Soils Survey Update

Subd. 11 Public Access to Natural Resource Data p.18

- 11(a) Foundations to Integrated Access to Environmental Information
- 11(b) Public Access to Archaeological Knowledge

Subd. 12 Sustainable Development Activities p.18

- 12(a) Sustainable Development Assistance for Municipalities through Electric Utilities
- 12(b) Renewable Energy Demonstration and Education in State Parks
- 12(c) Alfalfa Biomass Production :Research
- 12(d) Sustainable Development of Wind Energy on Family Farms
- 12(e) Connecting People and Places through Yellow Bikes
- 12(f) Sustainable Gardening for Minnesota Homes and Communities
- 12(g) Economics for Lasting Progress
- 12(h) Soy-Based Diesel Fuel Study *

Subd. 13 Environmental Education p.21

- 13(a) School Nature Area Project (SNAP)
- 13(b) Watershed Science: Integrated Research and Education Program: Research
- 13(c) Minnesota Frog Watch
- 13(d) Environmental Service Learning Projects in Minneapolis Schools
- 13(e) Partners in Accessible Recreation and Environmental Responsibility
- 13(f) Environmental Service Learning
- 13(g) State Wolf Management: Electronically Moderating the Public Discussion
- 13(h) Catch and Release
- 13(i) Electronic Environmental Education Raptor Network
- 13(j) Greenprint Success
- 13(k) St. Paul & Mpls. Regional Park Urban Interpretation Program *

Subd. 14 Benchmarks and Indicators p.24

- 14(a) Environmental Indicators Initiative - Continuation
- 14(b) Minnesota's Forest Bird Diversity Initiative-Continuation: Research
- 14(c) Water Quality Indicators of Endocrine Disrupting Chemicals: Research
- 14(d) Stream Habitat Protection: Continuation
- 14(e) Wetland Ecosystems Monitoring
- 14(f) Loons: Indicators of Mercury in the Environment: Research
- 14(g) Training and Research Vessel for Lake Superior

Subd. 15 Native Fisheries p.26

- 15(a) Improved Decisions for Walleye Stocking and Special Regulations: Research

15(b) Minnesota Rare Mussel Conservation: Research

Subd. 16 Land Acquisition in High Growth Areas p.27

- 16(a) Sand Dunes State Forest Acquisition
- 16(b) Arboretum Land Acquisition

Subd. 17 Critical Lands or Habitats p.27

- 17(a) Sustainable Woodlands on Private Lands
- 17(b) Cannon River Watershed: Integrated Management
- 17(c) Peatland Restoration
- 17(d) Prairie Heritage Fund
- 17(e) Phalen Area Wetland Restoration, Phase II
- 17(f) Point Douglas Bluffland Acquisition
- 17(g) Minnesota Point Protection
- 17(h) Savannah Restoration for Sharptail Grouse
- 17(i) RIM - Critical Habitat Acquisition and Enhancement
- 17(j) RIM - Wildlife Habitat Stewardship
- 17(k) Scientific and Natural Area Acquisition
- 17(l) RIM - Wildlife Habitat Acquisition
- 17(m) RIM - Accelerate Fisheries Acquisition
- 17(n) Minnesota County Biological Survey - Continuation
- 17(o) Fishing Pier and Public Shore Access
- 17(p) Public Boat Access
- 17(q) Fisheries Statewide Hatchery Rehabilitation

Subd. 18 Wildlife or Trail Corridors p.31

- 18(a) Mesabi Trail Land Acquisition and Development
- 18(b) Chippewa County Regional Trail

Subd. 19 Native Species Planting p.32

- 19(a) Minnesota Releaf Tree Planting and Preservation Grant Program
- 19(b) Restoring White Pine in the Minnesota Landscape: Research
- 19(c) Oak Savannah Restoration in St. Paul Regional Parks *
- 19(d) Prairie and Oak Savannah Restoration

Subd. 20 Exotic Species p.33

- 20(a) Ballast Water Technology Demonstration for Exotic Species Control: Research
- 20(b) Biological Control of Eurasian Watermilfoil & Purple Loosestrife - Continuation: Research
- 20(c) Control of Weeds in Native Wild Rice: Research

**Appropriation added by the 1997 Legislature to the LCMR Recommendations*

SUBD. 4 RECREATION

STATE PARK AND RECREATION AREA
ACQUISITION, DEVELOPMENT, BETTERMENT AND
REHABILITATION

4(a) \$3,500,000.00 TF

John Strohkirch

DNR

Box 39, 500 Lafayette Road

St. Paul, MN 55155

Phone: 612/296-8289

Fax: 612/297-1157

This project includes the major rehabilitation and development of state park and recreation area buildings, structures and utility systems and the rehabilitation and betterment of non-building facilities such as trails,

roads, campgrounds and resources. This also includes the acquisition of lands within the boundaries of state park and recreation areas from willing sellers. Note: Funding for this program is obtained from a variety of state sources, including but not limited to the Minnesota Environment and Natural Resources Trust Fund (TF) and the Minnesota Future Resources Fund (FRF).

Results of this appropriation will include the following results:

1. Approximately 900 acres of land within the legislatively authorized state park boundaries will be acquired. Acquisitions will occur in the following state parks: Cuyuna, Flandrau, Forestville, Fort Snelling, John Latsch, Old Mill, Split Rock Creek, Split Rock Light House, and Tettegouche.
2. The Old Mill State Park contact station will be replaced.
3. A new visitor center will be constructed at Lake Bronson State Park. This construction will combine money from this appropriation with 1996 bonding funds.
4. A sewer system will be restored in Gooseberry State Park.
5. A road within Mille Lacs Kathio State Park will be rehabilitated.

Project due to be completed by June 30, 2000.

METROPOLITAN REGIONAL PARK SYSTEM

4(b) \$3,500,000.00 TF

Arne Stefferud

Metropolitan Council

Mears Park Centre,

230 E. Fifth

St. St. Paul MN 55101-1634

Phone: 612/602-1360

Fax: 612/291-6550

E-mail: arne.stefferud@metc.state.mn.us

This appropriation will finance the acquisition of approximately 90-150 acres of land for the Metropolitan Regional Park System. Portions of two regional parks will be redeveloped, while portions of three regional parks, one park reserve, and one regional trail will be developed. Note: Funding for this program is obtained from a variety of state sources, including but not limited to the Minnesota Environment and Natural Resources Trust Fund (TF) and the Minnesota Future Resources Fund (FRF).

Project due to be completed by June 30, 2000.

LOCAL INITIATIVES GRANTS PROGRAM

4(c) \$2,900,000.00 FRF

Wayne Sames

DNR

500 Lafayette Road

St. Paul, MN 55155

Phone: 612/296-1567

Fax: 612/296-6047

E-mail: wayne.sames@dnr.state.mn.us

The local initiative grants program includes four existing programs and two new programs to be initiated

in 1997. Every year the Department of Natural Resources solicits grant proposals from local governments for local parks, natural and scenic areas and cooperative trail projects. In 1995, the DNR initiated the Conservation Partners Grant program, which provides small grants to private organizations for fish and wildlife or native plant habitat related projects. Project proposals for all of these programs are evaluated and ranked on a competitive basis, with grants being awarded to the highest-ranking projects.

Six distinct grant programs provide matching grants to local governments and/or private organizations for acquisition, development, renovation, enhancement, research and education associated with parks and trails, natural and scenic areas, natural habitat, and other environmental projects. These programs are: 1) local park grant program; 2) natural and scenic area grant program; 3) cooperative trail grant program; 4) conservation partners grant program; 5) environmental partnerships grant program; and 6) regional trail initiative grant program. Note: Funding for this program is obtained from a variety of state sources, including but not limited to the Minnesota Environment and Natural Resources Trust Fund (TF) and the Minnesota Future Resources Fund (FRF).

Project due to be completed by June 30, 2000.

BORDER TO BORDER TRAIL STUDY

4(d) \$100,000.00 FRF

Dennis Asmussen

DNR

500 Lafayette Road

St. Paul, MN 55155

Phone: 612/296-4822

Fax: 612/297-5475

Appropriation added by the 1997 Legislature to the LCMR Recommendations

This study will provide various tools for policy makers and elected officials to evaluate trail proposals while promoting dialogue between similar trail interests. It will also document the size, distribution, potential for growth, desires and needs of Minnesota's motorized and non-motorized trail users, document the present status of Minnesota's abandoned railroad grades, and produce a statewide inventory and map of long-distance off-road trails as well as an integrated inventory of current local, regional and federal trail proposals. Of special note is the application of a geographic information system (GIS) database to store much of this information and the capability of a GIS to generate unique analysis maps. These evaluation tools will serve as a framework for future trail partnerships and investments regionally and statewide. The final report produced by this project will be distributed statewide to trail advocacy groups, local units of government, legislators, select state and federal offices, and other concerned with the development of trails.

This project is due to be completed by June 30, 2000.

SUBD. 5 HISTORIC SITES

FT. SNELLING STATE PARK - UPPER BLUFF UTILIZATION AND AYH HOSTEL

5(a) \$250,000.00 FRF
Nonstate Match \$20,000.00
Bill Weir

DNR
500 Lafayette Road
St. Paul MN 55155
Phone: 612/772-7994
Fax: 612/297-1157
E-mail: bill.weir@dnr.state.mn.us

This project is a joint venture between the Minnesota DNR, Minnesota Historical Society, Hosteling International and community cooperators. It will provide a complete evaluation of buildings in the Upper Bluff Area at Fort Snelling State Park, identify one for an AYH hostel, create the design and construction documents for its future renovation and identify future cooperators for development of other buildings and property. The development of the Fort Snelling Hostel will provide lodging and easy access for groups, families and travelers to the recreational and educational opportunities the park provides.

The availability of the appropriation is extended until June 30, 2000; pending Legislative approval.

PROTECTING RURAL HISTORIC LANDSCAPES IN HIGH DEVELOPMENT AREAS

5(b) \$80,000.00, TF
Britta Bloomberg
MN Historical Society
345 Kellogg Blvd. W.
St. Paul, MN 55155
Phone: 612/296-5471
Fax: 612/282-2374
E-mail: britta.bloomberg@mnhs.org
Web Address: <http://www.mnhs.org>

Some portions of Minnesota's St. Cloud-Twin Cities-Rochester growth corridor still retain significant features reflecting the state's agricultural history, including fields, windbreaks, barns and farmhouses. These features may illustrate the evolution of farming practices, the types of buildings constructed by a particular ethnic group, or the particular settlement patterns of a particular locality. In order to identify these landscapes and include their protection within the land use planning process, this project will: 1) survey and document two areas with historic agricultural landscapes within the St. Cloud-Twin Cities-Rochester growth corridor; 2) develop a management plan for protecting these landscapes; and 3) conduct two workshops with local and state land use planning agencies to explore ways to implement the plan. Project due to be completed by June 30, 1999.

JEFFERS PETROGLYPHS ENVIRONMENTAL
ASSESSMENT AND PRAIRIE RESTORATION
5(c) \$125,000.00, FRF
Robert Clouse

MN Historical Society
345 Kellogg Blvd. W.
St. Paul, MN 55155
Phone: 612/726-1171
Fax: 612/725-2429
E-mail: clous002@maroon.tc.umn.edu
Web Address: <http://www.umn.edu/marp/>

The project will also finish the restoration of native prairie at the Jeffers Petroglyphs site. About half of the 80 acre site is currently covered by native prairie vegetation. The remaining 40 acres was restored as prairie habitat in the 1960's using vegetation native to Nebraska. This project will replace approximately 35 acres of the restored prairie with plants native to Minnesota. Visitors walking along the new trails through the site will then be able to compare and contrast the newly restored site with an undisturbed Minnesota prairie.

The availability of the appropriation is extended until June 30, 2000; pending Legislative approval.

DEVELOPMENT OF BIRCH COULEE STATE HISTORIC SITE

5(d) \$253,000.00, TF
Wayne Cavadini
MN Historical Society
345 Kellogg Blvd.
St. Paul, MN 55155
Phone: 612/297-7451
Fax: 612/297-3343
E-mail: wayne.cavadini@mnhs.org

Birch Coulee is the site of a major battle in the United States-Dakota Conflict of 1862, resulting in approximately 60 casualties. However, the historic site is currently undeveloped, with very limited use to the public. This project will construct new access roads, upgraded toilet facilities and walking trails to make the site usable to visitors and post interpretive signs so that visitors can learn the story of the site. The project is also expected to include prairie restoration and a reconstruction of the knolls and depressions that existed during the battle to enhance the visitors' understanding of the events that took place in 1862 at Birch Coulee. Project due to be completed by June 30, 1999.

WHITE OAK LEARNING CENTER ENVIRONMENTAL AWARENESS THROUGH HISTORY

5(e) \$120,000.00, FRF
Raymon Nyberg
White Oak Society, Inc
P.O. Box 306
Deer River MN 56636-0306
Phone: 218/246-9393
Fax: 218/246-9393
E-mail: djpowers@duluth.infi.net

This project will use the reconstructed White Oak historical site and the soon-to-be constructed White Oak Educational Building as the location for an educational facility that fosters learning about environmental issues within ongoing multi-cultural, historical and social

contexts. During 1997, the curriculum will be finalized, staff hired, and initial classes conducted. A year-end evaluation will provide the basis for appropriate modifications to curriculum and operations for the 1998 year.

Several target populations will be served by the project including primary and middle school students, elderhostel, and the general public. However, the primary focus will be middle and high school students in alternative learning centers. Over the two year period, the project hopes to reach 3,100 students (7-12 grades) with primary alternative education curriculum and 2,100 students (K-6) with a history-oriented curriculum.

Project due to be completed by June 30, 1999.

HISTORICAL AND CULTURAL MUSEUM ON VERMILION LAKE INDIAN RESERVATION

5(f) \$100,000.00 FRF
Nonstate Match \$100,000.00
David Danz
Bois Forte Reservation
Box 16
Nett Lake MN 55772
Phone: 218/757-3261
Fax: 218/757-3312

This project will construct an approximately 2500 square foot historical museum and heritage center which utilizes a multi-cultural perspective on the early development of northern Minnesota. Located adjacent to an historic gold mine and fur post site on Lake Vermilion, near Tower, MN., the museum will be a center for interpretation and education about the history and culture of the Bois Forte Band of Chippewa Indians, with special attention to the historical interaction of the Native Americans and Europeans in northern Minnesota. Interpretation, preservation, and possible restoration of the gold mine and fur post sites will also be done, separate from this project but complimentary to it.. The museum will be open to the general public, with special programs made available to area schools and educational organizations.

The availability of the appropriation is extended until June 30, 2001; pending Legislative approval.

NATIVE AMERICAN PERSPECTIVE OF THE HISTORIC NORTH SHORE

5(g) \$60,000.00, FRF
Nonstate Match \$30,000.00
Norman Deschampe, Chair
Grand Portage Reservation Tribal Council
PO Box 428
Grand Portage MN 55605
Phone: 612/338-1015
Fax: 612/332-8870

The goal of this project is to provide an in-depth interpretive study of the day-to-day lives and practices of Native Americans on the North Shore of Lake Superior prior to European settlement.
Project due to be completed by June 30, 1999.

SOUDAN UNDERGROUND PHYSICS LABORATORY EXPANSION

5(h) \$400,000.00, FRF
Marvin Marshak
UofM
116 Church Street S.E.
Minneapolis MN 55455
Phone: 612/624-6062
Fax: 612/624-4578
E-mail: marshak@mnhep2.hep.umn.edu

This project will protect, enhance, reuse and interpret the Soudan Mine, a National Historic Site located in Soudan Underground Mine State Park in northern St. Louis County. This includes the design and construction of a new deep underground physics laboratory and facilities to facilitate an international effort to investigate the question of dark matter by measuring the mass of elementary particles known as neutrinos. Scientific interpretation of these facilities will be provided for State Park visitors. Some renovation of mechanical and electrical systems currently in the mine will occur by restoring the capability for mining approximately 50,000 tons of Ely greenstone from the site of the new laboratory. In conjunction with the lab construction, the mine will be surveyed and enhanced as a bat hibernaculum.
Project due to be completed by June 30, 1999.

SUBD. 6 WATER RESOURCES

ON-SITE SEWAGE TREATMENT ALTERNATIVES AND TECHNOLOGY TRANSFER

6(a) \$500,000.00, FRF
Gretchen Sabel
MPCA
520 Lafayette Road
St. Paul, MN 55155
Phone: 612/297-7574
Fax: 612/282-6247
E-mail: g.sabel@pca.state.mn.us
RESEARCH PROJECT

This study builds on a project funded during FY96 and FY97 (ML95 Chap. 220 Sec. 19 Subd. 5(k).) It will continue to test and demonstrate feasible and effective alternative Individual Sewage Treatment Systems (ISTS) that 1) reduce nitrogen to acceptable levels and 2) adequately treat sewage above seasonally high water tables, and determine their ability to remove pathogens. One intended outcome of this project is to have one or two affordable ISTS that can be confidently recommended for nitrogen removal in geologically sensitive areas of Minnesota and in areas where the desired lot size is between 1 and 3 acres. The other intended outcome is to have one or two effective ISTS that can be installed and maintained in areas with seasonally high water tables at a cost that is lower than conventional mound systems.

Project due to be completed by June 30, 1999.

NITRATE EDUCATION AND TESTING
6(b) \$150,000.00, TF

Nonstate Match \$50,000.00
Bruce Montgomery
MN Dept of Ag
90 W. Plato Blvd.
St. Paul, MN 55155
Phone: 612/297-7178
Fax: 612/297-2271

E-mail: bruce.montgomery@state.mn.us
This appropriation is designed to accelerate knowledge of nitrate levels in private drinking water supplies through development of water testing clinics for rural wellowners and education programs. The project proposes to: 1) organize and conduct approximately 80 individual nitrate water testing clinics covering 60+ counties; 2) provide free nitrate analysis for private wells to an estimated 6,000-10,000 Minnesota families each year; 3) provide technical assistance to private wellowners related to nitrate occurrence in drinking water supplies and causative factors; 4) conduct educational programs in 15-20 groundwater sensitive counties informing students about their drinking water and its relationship to the surrounding environment; and 5) develop a summary report of information related to well construction, nitrate levels, depth, age, approximate location and other pertinent factors.
Project due to be completed by June 30, 1999.

SNAKE RIVER WATERSHED BMP'S
6(c) \$100,000.00, TF
Wes Cashman
Joint Powers Board, Mille Lacs/Pine/Kanabec/Aitkin Counties
2106-300th Ave.
Mora, MN 55051
Phone: 612/679-2921
Fax: 612/679-2921

This project will accelerate implementation of action items of the 1996 Snake River Watershed Management Plan to apply Best Management Practices (BMP) and facilitate decision making which affects water quality through utilization of the Snake River Watershed Management Board (SNWMB) Geographic Information System (GIS). The results of implementation of BMP will be measurable and visible through the water monitoring program. The SRWMP GIS will provide information to aid in sound management decisions by individuals, units of government, agencies and organizations to prevent additional problems which are less costly to prevent than to correct.
Project due to be completed by June 30, 1999.

EVALUATION OF WATERSHED-BASED WATERSHED DISTRICT MANAGEMENT
6(d) \$150,000.00, FRF
Nonstate Match \$75,000.00
Kathryn Draeger
MN Association of Watershed Districts
360 N Robert Street, Suite 414
St. Paul MN 55101
Phone: 612/224-8488
Fax: 612/228-1969
E-mail: draeg001@tc.umn.edu

Minnesota, because of the quantity and importance of water to the people of the state, has a variety of water management organizations/agencies across the landscape. Watershed districts, special purpose local units of government based on the hydrological boundaries of the watershed, are the most prevalent. This project will determine the role of Minnesota watershed districts in addressing water quality issues, address water quality issues in areas where there are no organized watershed districts, and promote watershed identity and water quality training to the citizens of Minnesota.
Project due to be completed by June 30, 1999.

RED RIVER VALLEY PLANNING AND MANAGEMENT
6(e) \$375,000.00, TF
Nolan Baratono
MPCA
520 Lafayette Rd.
St. Paul, MN 55155
Phone: 612/296-7359
Fax: 612/297-8683
E-mail: glenn.skuta@pca.state.mn.us
Web Address: <http://www.pca.state.mn.us>

This project seeks to promote local action and interagency cooperation to develop holistic land and water management strategies in the Red River Basin through three mechanisms. First, this project would bolster locally-driven water planning organization by supporting a planning group representing all interests in the Red River Basin. Second, this project will promote collaboration between PCA and DNR in the development of their Basin and Ecosystem Management strategies and help the agencies build on each others efforts for managing land and water resources in the Red River Basin. Finally, this project will fund research by the US Geological Survey (USGS) into the causes and processes of erosion and sedimentation in the Red River Basin.

Project due to be completed by June 30, 1999.

SUSTAINABLE LAKE PLANS
6(f) \$270,000.00, TF
George Orning
CURA,
U of M
30 HHH Center, 301 - 19th Ave. S.
Minneapolis MN 55455
Phone: 612/625-0081
Fax: 612/626-0273
E-mail: prolake@uslink.com

This project will sustain lake resources through the development of an inexpensive and easily transferable comprehensive lake planning process. The Minnesota Lake Association will develop five pilot lake comprehensive plans that will be broad based and cover land use, water management, and water quality issues, will follow a sustainable development format, and will require extensive participation of the host lake association, county COLA's and local water planning

programming. The plans will be designed so lake associations working through the local government water planning process can continuously evaluate and update plans.

The project will also increase the effectiveness and efficiency of local and state lake managers by developing and making sustainable a process of training lake association representatives on lake management regulations. These volunteers will receive extensive training and user-friendly information on shoreland best management practices, regulations and rationale for regulations; and administrative procedures affecting lakeshore property and the lake. The volunteers will then serve as information resources in their lakeshed and can teach and advise their lake neighbors enabling everyone to become more effective stewards of their lake resources. Project due to be completed by June 30, 1999.

LAKESHORE RESTORATION-MINNEAPOLIS CHAIN OF LAKES

6(g) \$300,000.00, TF
Nonstate Match \$150,000.00
Jeff Lee

Minneapolis Park and Recreation Board
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The Chain of Lakes system, comprised of lakes Calhoun, Harriet, Isles and Cedar, is one of the most heavily-used regional park systems in the metropolitan area. Shoreline areas that have been severely impacted due to heavy visitor use or erosion will be restored so as to permit continued recreational use while mitigating negative environmental impacts. Outcomes of the project will include: 1) long-term shoreline erosion protection; 2) re-establishment of littoral wetland plant communities; 3) increase in native plant diversity; 4) improved lake water quality; and 5) creation of fish and wildlife habitat. Smaller but comparable projects using bioengineering have been implemented in the Minneapolis Park system, and the techniques developed through these pilot projects will be drawn upon in this project.

The availability of the appropriation is extended until June 30, 2000; pending Legislative approval.

ATMOSPHERIC AND NONPOINT POLLUTION TRENDS IN MINNESOTA LAKES

6(h) \$325,000.00, TF
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St. Paul, MN 55155
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E-mail: edward.swain@pca.state.mn.us

RESEARCH PROJECT

This project documents geographic and historic trends in a) lake eutrophication and b) inputs of toxic metals and organic pollutants. Two major issues facing lake

managers will be addressed: 1) atmospheric inputs to lakes of metals and semivolatile organics and 2) eutrophication caused by soil erosion, urbanization, agricultural land-use practices, and atmospheric inputs of phosphorus and nitrogen. Land-use impacts will be separated from atmospheric sources in the 55-lake study of nonpoint pollution. This monitoring and assessment project will document environmental trends by using location where the impact occurs (the lake) as the data archiving device.

Project due to be completed by January 1, 2000.

SUBD. 7 AGRICULTURAL PRACTICES

BIOLOGICAL CONTROL OF AGRICULTURAL PESTS

7(a) \$200,000, TF

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St. Paul MN 55108
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RESEARCH PROJECT

This appropriation will fund research focused on Minnesota production systems which use pesticides extensively. The goal of this research is to reduce reliance upon chemical control for key pest species in these agricultural production systems by developing biologically based methods of pest control. Under this premise, four separate subprojects were selected for funding. One project will focus on discovering which natural enemies of filth breeding flies might be suitable for importation. A second project will focus on conserving naturally existing parasitic fungi that attack aphids in potato by selecting potato fungicides that are less harmful to these beneficial fungi. The third project will focus on discovering a novel means to implement cover crops for early season weed control in field crops. The final project will focus on replacing conventional pesticides with biologically based materials that work in concert with existing predators and parasites. Project due to be completed by December 31, 1999.

CROP MANAGEMENT TO MINIMIZE PESTICIDE INPUTS

7(b) \$300,000.00, TF

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RESEARCH PROJECT

This project will determine the utility of novel, non-pesticidal management strategies for diverse crops throughout Minnesota. These strategies include organic mulching systems, crop rotation, green manures,

animal grazing, and manipulation of local non-crop vegetation. Research will be conducted on potato, soybean, wild rice, and strawberry, crops important throughout Minnesota. Target pests include weeds, soil-borne microbial plant pathogens, nematodes, and leaf-spotting fungi. Results from this work will provide the basis for controlling significant plant pests on Minnesota crops with minimal use of pesticides.

Project due to be completed by June 30, 1999.

SUSTAINABLE FARMING SYSTEMS

7(c) \$560,000.00, TF

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Web Address: <http://www.misa.umn.eduhttp://www.misa.umn.edu/>

This project will provide a comprehensive program of complementary on-farm and experiment station research, demonstration, and educational activities to examine economic and environmental effects of sustainable farming systems to Minnesota farmers. Emphasis will be placed on farming systems in the southeast, southwest, and west central regions of the state. Major project results will be: 1) Functional partnerships between farmers, researchers, land owners, private sector representatives, agency personnel, community members and non-profit organizations to plan, implement, and deliver cooperative research and demonstration projects on sustainable farming systems; 2) Initiation of research on the economic and environmental impacts of sustainable farming systems at 20 sites; and 3) Outreach programs which will reach approximately 800 farmers through a minimum of 20 field days/workshops and related written materials.

Project due to be completed by June 30, 1999.

PRAIRIE-GRASSLAND LANDSCAPES

7(d) \$125,000.00, TF

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1221 E. Fir Ave.
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E-mail: pbuessel@fergus.cfa.org

Web Address: <http://www.eerc.und.nodak.edu/rrbin/projects/esp/>

This appropriation seeks to halt the loss of tallgrass prairie habitat in the Northern Tallgrass Prairie Region by soliciting, promoting, and funding a variety of local projects. Supported projects will address the decline of grass and forage based agriculture in the region, upcoming end of CRP contracts, accelerating loss of biodiversity, or improving ecosystem stewardship in the region. All activities will be locally driven and will benefit, and have participation from, the region as a

whole. This project is an outgrowth of the 1996-97 LCMR Sustainable Grasslands Conservation and Utilization project (ML95 Chap. 220 Sec. 19 Subd. 5(q).)

Project due to be completed by June 30, 1999.

REDUCING MINNESOTA RIVER POLLUTION FROM LACUSTRINE SOILS

7(e) \$250,000.00, FRF

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MN Dept of Ag
90 W. Plato Blvd.
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E-mail: gheil@mda-is.mda.state.mn.us

Web Address: <http://www.soils.agri.umn.edu/research/mn-river>

RESEARCH PROJECT

River water monitoring data implicates lacustrine soils, soils that have a high proportion of clay and are flat with poor surface and internal drainage, as a potentially significant contributor to sediment in the Minnesota River. A major strategy recommended to reduce potential sedimentation is to increase the practice of conservation tillage on those soils. However, the recommendation to leave crop residues on the soil to reduce runoff losses is untested for effectiveness or economic risk on these landscapes and soils. This research and education program is designed to evaluate these practices using a paired watershed technique. Project results will be: 1) an interpretations of the baseline data collected as part of a 1995-97 LCMR project, Feedlot and Manure Management Practices Assistance (ML95 Chap. 220 Sec. 19 Subd. 5(h)); 2) to continue data collection on existing watersheds; and 3) to evaluate the profitability of conservation systems.

Project due to be completed by June 30, 1999.

MERCURY MANOMETERS

7(f) \$250,000.00, FRF

Gerry Heil
Dept of Ag
90 W. Plato Blvd.
St. Paul, MN 55155
Phone: 612/296-1486

Appropriation added by the 1997 Legislature to the LCMR Recommendations

This project will remove mercury manometers from dairy farms and replace them with bourdon tube vacuum gauges. The mercury will be collected and sent to a recycler for proper disposal. This project consists of three main tasks: 1) removal and replacement of manometers; 2) proper disposal of the old mercury manometers; and 3) location of mercury manometers on dairy farms. It is estimated that this program will remove almost one ton of mercury that otherwise could become an environmental pollutant.

Project due to be completed by June 30, 1999.

SUBD. 8 POLLUTION PREVENTION

TOXIC EMISSIONS FROM FIRE TRAINING

8(a) \$65,000.00, TF

Kirby Kiefer

FIRE/EMS Center-Metropolitan State Univ

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Fax: (612)649-5409

E-mail: kkiefer@fire_center.tec.mn.us

This project will identify and quantify airborne emissions from fire department structural fire training exercises. First, the number of live structural fire training exercises that actually took place will be determined. Then emissions from several structural fire training exercises conducted by various technical colleges will be measured. Materials measured will include the 'big seven' criterion pollutants designated by the Environmental Protection Agency in 1970, particulate matter less than 2.5 micrometers in diameter and cyanide. Data will be compiled and the gross annual release will be compared to other sources of pollution. When an "environmental cost" of the exercises is determined, it will be compared with the costs of other training alternatives.

Project due to be completed by June 30, 1999.

POLLUTION PREVENTION TRAINING PROGRAM FOR INDUSTRIAL EMPLOYEES

8(b) \$200,000.00, FRF

Ian Greaves

University of Minnesota

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Minneapolis MN 55455

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Fax: (612) 625-0650

E-mail: igreaves@cccs.umn.edu

This project will develop programs which provide the training and technical assistance needed for industrial employees to play a positive role in fostering pollution prevention in Minnesota. These goals will be met through the following project results: 1) A curriculum will be developed for industrial plants on environmental issues with a special emphasis on pollution prevention; 2) 110 employees around Minnesota will be trained using the aforementioned curriculum; 3) 15-20 employees will receive extensive training of the aforementioned curriculum to become pollution prevention advocates. These employees will train fellow employees and work with plant management and plant employees to develop and implement pollution prevention plans. This project will also work to develop partnerships with a variety of stakeholders to provide the constituency needed to support the program on a long-term basis.

Project due to be completed by June 30, 1999.

SUBD. 9 IMPACTS ON NATURAL RESOURCES

GRANTS TO LOCAL GOVERNMENTS TO ASSIST

NATURAL RESOURCE DECISION-MAKING

9(a) \$150,000.00, FRF

Jim Birkholz

MN Board of Water & Soil Resources

One West Water St.

St. Paul MN 55107

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Fax: 612/297-5615

E-mail: jim.birkholz@bwsr.state.mn.us

The project involves making grants to selected local governments. Local governments would use the funds to enhance their staff ability to utilize emerging technologies and state-of-the-art concepts to make land-use, zoning, and permitting decisions which are appropriate to the land and water resources and result in sustainable development. Priority will be given to local governments which agree to provide a match to the grant and which indicate a willingness to continue funding the activity after the end of the LCMR project. It is expected that 3-4 projects will be selected for funding. Anticipated results will be developed after selection of individual projects and incorporated into agreements with local governments.

Project due to be completed by June 30, 1999.

EVALUATION OF URBAN GROWTH ECONOMIC AND ENVIRONMENTAL COSTS AND BENEFITS

9(b) \$275,000.00, FRF

J. Drake Hamilton

Minnesotans for Energy-Efficient Economy

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St. Paul MN 55101

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Fax: 612/225-0870

E-mail: hamilton@me3.org

Web Address: <http://www.me3.org>

RESEARCH PROJECT

This project will evaluate the benefits, costs, and environmental impacts of two alternative metropolitan growth patterns. One development alternative will use a status quo development pattern while the second alternative will be based on a more compact development pattern and decreased investments in regional infrastructure. Maps and economic and environmental data will also be used to gather public reactions to alternative development patterns. Two final reports will be produced. One will compare the costs of the two alternative growth scenarios, and the other will document citizens' values and goals relative to these alternative development patterns.

Project due to be completed by June 30, 1999.

REINVENTING THE AGRICULTURAL LAND PRESERVATION PROGRAM

9(c) \$100,000.00, FRF

Nonstate Match \$100,000.00

Robert Patton

MN Dept of Ag

90 W. Plato Blvd.

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Web Address: <http://www.mda.state.mn.us>

This project will evaluate the effectiveness of Minnesota's agricultural land preservation programs, make recommendations for necessary statutory amendments and programmatic improvements to increase program effectiveness, and identify and quantify fiscal impacts of "rural sprawl." This will be accomplished through three main tasks. First, a contractor will be retained to perform a written evaluation of Minnesota's agricultural land preservation programs. Second, a contractor will conduct five studies and produce five reports which will identify and quantify the fiscal impacts of "rural sprawl." Finally, a contractor will develop a handbook, manual, or guide, and analysis tools that will enable local governments to analyze the cost/revenue relationships of growth at relatively low cost and without special expertise. This information and these tools will assist local governments in policy-making and implementation of the Community-Based Planning Act.

Project due to be completed by July 30, 1999.

NEW MODELS FOR LAND-USE PLANNING
9(d) \$530,000.00, TF
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Land Stewardship Project
2200 Fourth Street
White Bear Lake MN 55110
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A new, environmentally sound land-use planning approach for city and county planners based on adapting Holistic Resource Management concepts and principles for decision-making, visioning and goal setting. This project provides for the development of new models for land-use planning in Washington and Chisago Counties, two of the fastest growing counties in Minnesota. The program includes planning, inventory, technical assistance and education addressing voluntary easements, purchase of development rights, and transfer of development rights to create a permanently protected 10,000 acre green corridor in Washington and Chisago Counties. As a result of this pilot project, 1,000-1,500 acres of this corridor will be protected during the 1997-99 biennium.

In addition, landowners, local units of government and land preservation organizations will be equipped with the knowledge, tools and incentives necessary to protect the remaining land in this green corridor.

Project due to be completed by June 30, 1999.

NORTH MINNEAPOLIS UPPER RIVER MASTER PLAN
9(e) \$300,000.00, FRF
Nonstate Match \$100,000.00

Robert Mattson
Minneapolis Park and Recreation Board
200 Grain Exchange, 400 S. 4th St.
Minneapolis MN 55415-1400
Phone: (612)661-4822
Fax: (612)661-4777

The Mississippi River corridor from the Plymouth Avenue Bridge to the Minneapolis city limits will be studied and a master plan developed addressing greenspace and trail development, riverbank restoration, and stimulation of river-oriented land uses. A parallel study will address two major potential adjacent redevelopment areas (Humboldt Avenue Greenway and Shoreham railyards) dealing with similar planning issues as the Riverfront Corridor, but also including economic development. The implementation of these plans will provide the final link in the Minneapolis riverfront greenspace system.

The availability of the appropriation is extended until June 30, 2000; pending Legislative approval.

PREVENTING STORMWATER RUNOFF PROBLEMS THROUGH WATERSHED LAND DESIGN
9(f) \$280,000.00, FRF
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The current magnitude of urbanization in the rural landscape of Minnesota threatens water resources in new ways. New approaches to land design are needed to protect these resources. This project will pursue protection by preventative means through integrated regulation and guidance of development on a watershed basis. The goal of the project is to promote transformation of the current land development process and design patterns aimed at preventing flooding and storm water runoff quality degradation, and preserving habitat biodiversity and traditional land design patterns, through the development of new, watershed based, environmentally sensitive land design model codes and design guides. The project focuses on achieving three objectives. Using the case study method, develop new patterns for land design that: 1) contribute to holding runoff yield from new development at or below pre-development conditions; 2) contribute to holding runoff velocities at or below pre-development conditions; and 3) are documented and explained to address perceived concerns and promote adoption by policy-makers.

Project due to be completed by June 30, 1999.

MILLER CREEK WATERSHED MANAGEMENT
9(g) \$100,000.00 FRF
Nonstate Match \$100,000.00
City of Hermantown
5255 Maple Grove Road

Hermantown MN 55811
Phone: 218/729-6331
Fax: 218/729-9860

Phone: (612)215-0976
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Web Address: <http://www.health.state.mn.us>

Since 1993, the Miller Creek Task Force has focused on activities necessary for restoration and preservation of the stream and brook trout habitat. This project will help with the continuation of this task by producing the following three results: 1) repair of eroded stream banks, and construction of fish habitat; 2) restoration of Miller Creek in the area below Miller Hill Mall; and 3) create a stream water quality monitoring and temperature impact model. These activities will help eliminate a major source of contamination and provide a significant improvement for trout habitat.

The availability of the appropriation is extended until June 30, 2000; pending Legislative approval.

**TROUT HABITAT PRESERVATION USING
ALTERNATIVE WATERSHED MANAGEMENT
PRACTICES**

9(h) \$250,000.00, FRF
Mark Doneux
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Stillwater MN 55082
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**Appropriation added by the 1997 Legislature to the
LCMR Recommendations**

The objective of the project is to protect the lower reaches of Browns Creek, a DNR Designated Trout Stream. The main parameters in sustaining the Brown's Creek trout fisheries is control of thermal, hydrologic (e.g., stream flow rate and volume) and water quality impacts of urban development. This project will create a system of interconnected wetlands, infiltration ponds and vegetated overflow swales, in lieu of more traditional watershed approaches such as outlets, and diversion. The more traditional approaches are not appropriate here due to the sensitivity of the trout themselves. The trout fisheries occurs in the lower one mile of the stream making it particularly sensitive to activities in the headwaters of the watershed, the project will therefore focus on that area. The ongoing monitoring of the alternative methods will help gather information for development of future projects to protect Brown's Creek and other Minnesota Trout Streams.

The availability of the appropriation is extended until June 30, 2000; pending Legislative approval.

SUBD. 10 DECISION-MAKING TOOLS

**COMPARATIVE RISKS OF MULTIPLE CHEMICAL
EXPOSURES**

10(a) \$150,000.00, FRF
Pamela Shubat
MN Dept of Health
121 East 7th Place,
Suite 220
St. Paul, MN 55155

This appropriation will be used to produce Minnesota comparative risk data by expanding a federal study of environmental exposures. The federal study will measure environmental and biological levels of metals and volatile organic compounds in a random sample of residences in EPA Region 5. However, the federal study will produce exposure data representative of the region but not the state. As a result of this appropriation, an LCMR enhanced study will produce data representative of Minnesota, and decision-makers will be able to use the results to compare Minnesota exposures, and health risks from exposures, to EPA Region 5 exposures.

Project due to be completed by June 30, 1999.

METROPOLITAN AREA GROUNDWATER MODEL

10(b), \$300,000.00 TF
Andrew Streitz
MPCA
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Phone: (612)296-7791
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E-mail: andrew.streitz@pca.state.mn.us

This project is an additional appropriation to improve and refine the metropolitan groundwater model begun during the 1995-97 biennium (ML95 Chap. 220 Sec. 19 Subd. 8(g).) Results during this biennium will include: 1) a refinement to areas within the model where more detail is needed and available from local studies; 2) a continued effort to make the model and its GIS databases more easily accessible to public and private sector users, assistance to them in using it, and a more active involvement in the advisory workgroup in shaping the model to meet more needs; and 3) application of the enhanced model to evaluate additional contaminant movement and cleanup problems. This work will complete the LCMR development phase of the steady-state model. The MPCA and other agencies will work with the legislature to identify appropriate ways to update, administer, and support the model after fiscal year 1999.

Project due to be completed by June 30, 1999.

WOLF MANAGEMENT PLAN

10(c) \$100,000.00, FRF
Michael DonCarlos
DNR
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500 Lafayette Road
St. Paul, MN 55155
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Fax: (612)297-4961

This project will prepare a biologically sound and socially acceptable management plan for Minnesota wolves, with extensive public involvement, for implementation when Minnesota wolves are removed

from the federal Endangered Species list. The project includes three primary tasks. First, roundtables and other public participation events will be designed and conducted to directly involve the public in establishing wolf management goals for Minnesota. Second, a statewide wolf population survey will be conducted to provide precise current information on the numbers and distribution of wolves in Minnesota. Third, management plans will be developed with the participation of leading international wolf biologists, affected government agencies, stakeholder groups, and the Minnesota public. All results will be accomplished on or before June 30, 1999. However, implementation of the results may be delayed pending federal action on wolf delisting.

Project due to be completed by June 30, 1999.

MINNESOTA RIVER BASIN NATURAL RESOURCE DATA

10(d) \$250,000.00, TF
Nonstate Match \$100,000.00

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The Minnesota River Basin Natural Resource Data Project will develop a centralized resource center to assist environmental managers in the acquisition of data for the 1208 minor watersheds within the 37 counties of the Minnesota River Basin. The project will: 1) develop status and availability inventories of data for each of the minor watersheds, and will acquire GIS data sets for each of the major and minor watersheds within the basin; 2) set up and maintain a Minnesota River Basin Natural Resource Data internet site that will provide access to GIS, database inventories, and general information about Minnesota River Basin activities; 3) provide an accessible environment for county water planners to utilize ArcView GIS software and computer hardware which will improve their efficiency; and 4) result in an internet site specifically designed to provide data or links to data where individuals can acquire information necessary to facilitate natural resource decision making and education in a region with state significance and priority for the reduction of nonpoint source pollution.

Project due to be completed by June 30, 1999.

LAND USE DEVELOPMENT AND NATURAL RESOURCE PROTECTION MODEL

10(e) \$400,000.00, TF
Nonstate Match \$88,000.00

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This project will provide GIS capabilities to the City of Winona not only for land within the city limits but also include the natural and semi-natural areas within and surrounding Winona. It will be developed as a values-based, decision making tool, reflecting the strong desire of local residents to maintain a quality environment while still pursuing development needs. Once completed, this GIS will be a tool for balancing development and the natural environment in decision making, and will be publicized and promoted among other cities and other governmental units.

Project due to be completed by June 30, 1999.

STATEWIDE DIGITAL SOIL DATABASE-PHASE I

10(f) \$145,000.00, FRF

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21 of Minnesota's 87 counties have completed or nearly completed county soil-surveys that are inventoried with the modern soil classification system and mapped on high-quality digital orthophoto basemaps (category 1). Another 42 counties have older soil surveys mapped on photographic basemaps (category 2). These older soil surveys are adequate for land use interpretations, but are not well suited for digitizing. However, as digital databases from county soil surveys are the state's highest priority GIS data need, this project will involve research to determine the most cost effective methods to produce a modern digital database in the 42 counties with category 2 maps. This will involve the exploration of various techniques for converting category 2 soil surveys to a product suitable for digitizing. To test these various methods, soil surveys for at least one of these counties will be digitized this biennium.

Project due to be completed by June 30, 1999.

FILLMORE COUNTY SOILS SURVEY UPDATE

10(g) \$65,000.00 TF
Nonstate Match \$130,000.00

Kevin Scheidecker
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900 Washington Street
Preston MN 55965-9511
Phone: (507)765-3879
Fax: (507)765-2243

The purpose of this project is to begin the several year process of updating the Fillmore County Soil Survey. This will be accomplished by refining the composition of soil map units, checking and refining soil map unit delineations on the existing soil survey, gathering field documentation and updating the soil database. Although most production soil mapping will be done subsequent to this phase, some production mapping will

be done so that information is available to land users. All soil mapping will be compiled on an orthophotographic basemap. No commitment has been made regarding digitizing the updated soil survey. Digitizing is not budgeted as a component of this project. However, when digitized, the updated soil survey will meet the USDA's Natural Resources Conservation Service (NRCS) Soil Survey Geographic Database (SSURGO) standards and be part of the State of Minnesota digital soil database.

The availability of the appropriation is extended until June 30, 2000; pending Legislative approval.

SUBD. 11 PUBLIC ACCESS TO NATURAL RESOURCE DATA

FOUNDATIONS TO INTEGRATED ACCESS TO ENVIRONMENTAL INFORMATION

11(a) \$650,000.00 FRF
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Web Address: <http://bridges.state.mn.us/>

This project will fund long range planning for a collaborative effort among natural resource agencies to design, develop and test a solution to provide integrated electronic access to environmental and natural resources data. Designed to improve the public's access to this data, this project will develop a framework for multi-agency environmental information resource management plans. This integrated solution, based upon a "consumer view" of information search and retrieval, will result in a more responsive solution to information access.

This project will accomplish the following seven objectives: 1) clearly identify consumer-oriented needs for information and data maintained by or available through state agencies; 2) design an approach to providing integrated access to information and data that is consistent with emerging technology standards, guidelines and best practices; 3) fully evaluate the effectiveness of the design for integrated access, using external reviewers representing a diverse range of public points of view; 4) prepare a workable blueprint for guiding environmental information technology investments beyond the scope of this project; 5) design, evaluate and implement standards for documentation and indexed directories that promote responsive search and retrieval procedures; 6) design, evaluate and implement strategically selected web sites, building upon ongoing efforts and making adjustments in compliance with the goals of this project; and 7) conduct outreach to promote the long-term effectiveness and sustainability of the technology blueprint.

The availability of the appropriation is extended until June 30, 2000; pending Legislative approval.

PUBLIC ACCESS TO ARCHAEOLOGICAL KNOWLEDGE

11(b) \$200,000.00, FRF
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Web Address: <http://www.imacinc.com>

This project will enhance and distribute a body of unpublished and unavailable regional archaeological information that has been assembled over the last twenty years in Minnesota. "Enhancing Public Access to Archaeological Knowledge" will focus on three areas of Minnesota along the Mississippi River: the Headwaters region, the Twin Cities metropolitan area, and the Red Wing locality. Products of the project will include archaeological and environmental information, including primary data on artifacts, archives of photographs and illustrations, and site analyses, and will benefit educators, agency staff, site managers, and local museums and heritage organizations. Project results will be distributed using state-of-the-art internet technology. This electronic formatting will also allow data to be downloaded for further study and manipulation, or to be revised to include new information at a later date.

Project due to be completed by June 30, 1999.

SUBD. 12 SUSTAINABLE DEVELOPMENT ACTIVITIES

SUSTAINABLE DEVELOPMENT ASSISTANCE FOR MUNICIPALITIES THROUGH ELECTRIC UTILITIES

12(a) \$240,000.00, FRF
Nonstate Match \$250,000.00
Jack Kegel
MN Municipal Utilities Association
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Fax: 612/551-0459
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Web Address: <http://www.mmua.org>

Developing renewable energy and energy-efficiency projects can be an overwhelming task for the typical municipal utility, which has about 1200 customers and only a handful of employees. This project will assist municipal utilities in planning and implementing sustainable renewable energy and energy efficiency projects.

Municipal electric utilities statewide will be assessed to determine which communities have the greatest potential for near-term sustainable development. The Minnesota Municipal Utilities Association and its cooperators will develop decision-making tools and technical resources to be made available to

municipalities, relieving individual utilities of redundant and prohibitively costly development work. Using these tools, municipal utilities will be assisted in implementing at least four sustainable development projects that will reduce environmental degradation and boost the local economy. These pilot projects will demonstrate the value of sustainable development tools and assistance, and are expected to lead to ongoing financial support of these services by the municipal utilities themselves.

The availability of the appropriation is extended until June 30, 2000; pending Legislative approval.

RENEWABLE ENERGY DEMONSTRATION AND EDUCATION IN STATE PARKS

12(b) \$230,000.00, TF/OOC
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This project will demonstrate cost-effective applications of renewable energy technologies in state parks. The focus will be on technologies that are commercially available and have been successfully implemented as part of demonstration projects in other public spaces, including photovoltaics, wind generators, alternative fuel vehicles, and passive solar systems, as well as energy efficient technologies. Guidelines focusing on cost/benefit analysis of each technology versus competing traditional applications, including total life cycle-costs, will be developed and distributed to park managers throughout the state park system and to county and community boards.

In addition, a needs assessment for renewable energy technologies will be performed for four selected state parks with existing or future needs for off-grid electric power or other energy services. Based on these guidelines, at least 20, and up to 30, renewable energy and energy efficient projects will be installed in at least three selected state parks. These state park projects will decrease state park dependency on non-renewable energies, as well as provide public education about renewable energy.

Project due to be completed by December 31, 1999.

ALFALFA BIOMASS PRODUCTION

12(c) \$200,000.00, FRF
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RESEARCH PROJECT

This project evaluates the environmental impacts and benefits of productions of alfalfa for electrical power generation. Alfalfa will be introduced into cropping

systems that are currently predominantly corn and soybeans. The alfalfa leaf and stem components will be separated, and the leaves sold as a co-product. The stems will then be gasified and used for the generation of electricity. The project will also develop guidelines for utilizing the ash byproduct of this process.

The project is subdivided into the following three sections: 1) Measurement of the impact on surface water quality on small watersheds and with simulated rainfall; 2) Estimation of the impact of the change in cropping systems that include alfalfa on the Upper Minnesota River Basin using computer simulation; and 3) Physical and chemical characterization of the ash as well as evaluation as a soil amendment for crop production.

Project due to be completed by March 31, 2000.

SUSTAINABLE DEVELOPMENT OF WIND ENERGY ON FAMILY FARMS

12(d) \$200,000.00, FRF
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With this appropriation, the Sustainable Resources Center (SRC) will provide information and technical assistance encouraging economically viable wind energy development in small dispersed cluster projects through orderly and sustainable community development practices. They will reach this goal through the following objectives. First, this project will provide outreach and education to farmers and local rural communities where there is interest and potential for wind energy. SRC will meet with people through their civic organizations, city councils, regional development committees, community education, and places of employment, invite them into discussions on wind energy and give them a framework of how to assess the feasibility for establishing wind energy projects in their community or on their farm.

Second, this project will provide technical assistance to farmers and rural communities who are working to address the local issues involved in distributed wind development. In addition, SRC will bring in experts to address in depth the most important issues that farmers and rural communities need to understand in order to successfully invest in wind energy development. These emerging wind energy issues include orderly development, local ownership structures for wind development, turbine technology, investment options, and legal issues such as eminent domain.

Finally, this project will explore ways to protect farmers' wind rights. SRC will work with legal counsel to legally define wind rights and determine how they can be bought, sold, or leased in regard to the land for which they are associated. "Town meeting" type presentations to address this issue will be held in several locations in western and southern Minnesota, and fact sheets will be

produced with references for additional distribution in SRC's education and outreach channels.

Project due to be completed by June 30, 1999.

CONNECTING PEOPLE AND PLACES THROUGH
YELLOW BIKES

12(e) \$95,000.00, FRF

Laurie Lundy

Yellow Bike Coalition

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This appropriation will fund a project through The Yellow Bike Coalition to expand and develop a bicycle recycling and transportation program in Minneapolis, St. Paul, and Houston County. Project goals include the following results: 1) Prepare and deploy more than 500 additional bikes for use in spring, summer and fall of 1997-1999; 2) Provide the coordination and organization needed for the Yellow Bike program in Minneapolis, St. Paul and Houston County; and 3) Increase collaborative work with at-risk youth and other volunteers to refurbish bikes.

Project due to be completed by June 30, 1999.

SUSTAINABLE GARDENING FOR MINNESOTA
HOMES AND COMMUNITIES

12(f) \$400,000.00, FRF

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With this appropriation, the Sustainable Resources Center (SRC), Minnesota State Horticultural Society (MSHS), and the Duluth Community Garden Program will cooperate to provide information and technical assistance encouraging ecologically-sound home landscape plantings and maintenance, beautification and reclamation of lands through community gardening, and sustainable community development. To reach these goals, this project proposes to:

1) Host nine sustainable landscape fairs featuring speakers on key aspects of ecologically sound landscaping and provide approximately 3,600 residents with an opportunity to meet sustainable landscape designers, non-chemical lawn care services, native plant nurseries, and educational organizations.

2) Provide technical and horticultural assistance to community gardeners developing and maintaining community gardens, orchards, native plantings and tree plantings statewide, link existing resources with expertise, and encourage high quality community planting projects through events and awards.

3) Provide education on environmentally sound gardening through a variety of outreach sources.

4) Facilitate urban/rural links between sustainable farmers and urban communities and provide information, resources, and technical assistance to develop sustainable food projects. Land Stewardship Project (LSP) will cooperate with SRC on this goal.

Project due to be completed by June 30, 1999.

ECONOMICS FOR LASTING PROGRESS

12(g) \$250,000.00, FRF

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The purpose of the "Economics for Lasting Progress" project is to determine if our current measures of economic activity provide accurate and sufficient information for decision-makers to support policies that promote the long-term prosperity in Minnesota. Based on the premise that prosperity consists of no less than the economic, environmental, and community systems of a place, the project will investigate the Genuine Progress Indicator (GPI) as an alternative to the Gross Domestic Product (GDP) and Gross State Product (GSP) and develop a Minnesota-specific GPI for use by Minnesota policy makers and citizens.

The project will also investigate the major fiscal instruments used in Minnesota to promote economic well being. Selected policies and programs will be evaluated, including the Governor's draft strategic plan "Challenges for a Sustainable Minnesota," and the principles of sustainable development adopted by the Governor's Round Table on Sustainable Development.

Project due to be completed by June 30, 1999.

SOY-BASED DIESEL FUEL STUDY

12(h) \$83,000.00, FRF

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**Appropriation added by the 1997 Legislature to the
LCMR Recommendations**

Biodiesel fuel, a clean burning product produced from renewable resources such as soybeans, is an alternative fuel recognized by the US Department of Energy. In order to make biodiesel commercially viable, year-round tests with significant mileage must be conducted in cold climate states like Minnesota to: prove that no adverse effects will occur to the fuel or engines; prove that biodiesel will function year round in cold climate

states; provide fleet managers and purchasing agents with information so they can determine the viability of biodiesel as an alternative fuel; and educate the general public as to the benefits of biodiesel use.

This project will include four biodiesel-fueled vehicles and one petroleum fueled vehicle as a control, operating for approximately 18 months. Hennepin County has tentatively agreed to provide five trucks used for road maintenance. Project dollars will be allocated to the purchase of fuel storage facilities, fuel acquisition, fuel and engine oil sampling, quality control and analysis, review and documentation of equipment maintenance and repair, project supervision, review of existing research and marketing information, data analysis and reporting. The field study will include: monitoring of fuel and vehicle performance; obtaining drivers' impressions of vehicle performance; using existing emissions data to analyze the environmental impact of biodiesel fuel; and analysis of obstacles to wider use of biodiesel in the Minnesota fleet market. The study will also include an examination of market profiles for soy and petroleum products, the costs for changes that may be required for using biodiesel, and the potential environmental benefit of reduced engine emissions from burning biodiesel will be projected.

The availability of the appropriation is extended until June 30, 2000; pending Legislative approval.

SUBD. 13 ENVIRONMENTAL EDUCATION

SCHOOL NATURE AREA PROJECT (SNAP)

13(a) \$250,000.00 , TF

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This appropriation will enable School Nature Area Project (SNAP) to create partnerships between higher education institutions in three Minnesota biomes and K-12 schools in each of these regions. The partnerships will employ resources of the colleges and universities to educate teachers about regional ecology and native species enhancement, as the teachers plan and develop their own school nature areas. Teachers will study and visit eco-demonstration sites on the campuses to learn about the historical vegetation of their region and the challenges of restoring it. They will employ this training in their own native vegetation enhancement projects and incorporate their knowledge into school curriculum.

Project results will include site assistance and regional ecological instruction to 50 teachers from 25 schools selected statewide, three regional eco-demonstration sites to be used with K-12 teachers in eco-education workshops, and three eco-education workshops presenting information on regional ecology, native

species enhancement, and environmental education curriculum development.

Project due to be completed by June 30, 1999.

WATERSHED SCIENCE: INTEGRATED RESEARCH AND EDUCATION PROGRAM

13(b) \$500,000.00, FRF

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RESEARCH PROJECT

This project will enable the Science Museum of Minnesota (SMM) to develop and establish a watershed science program that will integrate research and public education. These results will be met through the following three objectives. First, SMM's St. Croix Watershed Research Station (SCWRS) will initiate a long-term study of the Valley Creek watershed in southern Washington County. This will include establishing automated stream monitoring and weather stations, developing watershed and groundwater models for the creek, using the model to identify the effects of urbanization of land-water interactions, and producing methodology that could be applied to other watersheds. SMM will also develop a Public GIS Map Laboratory for use in the museum to acquaint the public with this important research tool. Visitors to the Public GIS Lab will be able to develop, print out, and take home watershed/land-use maps tailored to their specific environmental interests.

Finally, staff from SMM and scientists from SCWRS will develop a partnership with Stillwater High School that allows the school's teachers and students to participate directly in the study of Valley Creek watershed, including the production and maintenance of a special web site by the high school students.

Project due to be completed by June 30, 1999

MINNESOTA FROG WATCH

13(c) \$300,000.00, TF

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The Minnesota Frog Watch project will provide the opportunity to gather information about the deformed frog phenomenon occurring within Minnesota, combining a state-wide monitoring of frogs as indicators of environmental health, with a state-wide, multi-media, interdisciplinary environmental education project for youth and families in both formal and non-formal education settings. It will also provide the scientific community with additional data gathered about

Minnesota's frog population. The project will meet these goals through the following three objectives:

1) The "Frogs as Bio-indicator Environmental Education Project" will be developed and implemented, providing educational materials and experiences to over 60,000 students and their families throughout Minnesota.

2) The "A Thousand Friends of Frogs" project, an informal, statewide frog-monitoring project, will continue to be developed and implemented. Designed to be the experiential component to the education project, this survey will provide useful information to the MPCA based on physical observations of frogs.

3) Finally, the Minnesota Frog and Toad Survey will be implemented. Based on frog vocalizations rather than physical observations, this more involved survey will incorporate exacting scientific criteria to provide accurate baseline information about the frog population. Project results will be disseminated through educational programs, scientific and general media, and a web site focused on this project.

Project due to be completed by December 31, 1999.

ENVIRONMENTAL SERVICE LEARNING PROJECTS IN MINNEAPOLIS SCHOOLS

13(d) \$100,000.00, FRF

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As a result of this appropriation, teachers, students, and administrators at up to 20 Minneapolis schools will partner with Eco Education to carry out environmental service learning projects in the schools' neighborhoods. Specific aspects of the project will include:

1. Eco Education workshops will be held to train between 50 and 80 5th-8th grade teachers and up to 20 administrators in methods of environmental service learning, grant proposal preparation and initial evaluation, and a final evaluation of project results and possible improvements.

2. Eco Education staff will visit classrooms as needed to facilitate development and execution of service learning projects and to help teachers make connections to their curriculum.

3. Participating student groups, with their teachers, will submit minigrant proposals to fund service learning projects that are designed and carried out by the students.

4. Student grants totaling up to \$30,000 over two years will be selected.

5. Eco Education will publish a manual for integrating environmental service and learning and distribute it to all Minneapolis schools. It will also be made available to other school districts in Minnesota. The manual will outline how environmental service learning can meet outcomes in the Green Print for Minnesota, the graduation rule, and outcomes specific to the Minneapolis schools.

This project will result in educating between 1,500 and 2,400 students over two years. Project due to be completed by August 31, 1999.

PARTNERS IN ACCESSIBLE RECREATION & ENVIRONMENTAL RESPONSIBILITY

13(e) \$550,000.00, TF

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With this appropriation, Wilderness Inquiry will work cooperatively with over 3500 students, parents, and teachers in 6-12 Minnesota school districts to provide program development assistance in both environmental education and inclusive education for students of all abilities, with an emphasis on serving students with disabilities and people of color. A combination of urban, suburban, and rural elementary and high schools will be selected. Participating schools will serve as models for inclusive environmental education, consistent with state goals for environmental education.

As a result of this project, Wilderness Inquiry will: 1) provide inclusive environmental education classroom instruction for 1000-1200 elementary students; 2) provide intensive leadership training to 350 selected high school students to enable them to serve as schoolwide "environmental stewardship mentors"; 3) involve 2000 students, teachers and parents in "hands on" outdoor activities; 4) coordinate 6-12 environmental community service projects in Minnesota school districts; and 5) disseminate project results through statewide educational conferences, publications, and the SEEK network.

Project due to be completed by June 30, 1999.

ENVIRONMENTAL SERVICE LEARNING

13(f) \$100,000.00, TF

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This project represents a partnership of schools, communities, and agencies working to create a model of environmental service learning based upon the application of significant environmental education principles. Through this partnership, a team of

elementary classroom educators, students, cooperating agencies, community members and project staff will work together to implement service learning projects that will incorporate principles and concepts found in the GreenPrint for Minnesota Schools. During this process, project participants will be trained in effective environmental service principles and procedures. Students will have the opportunity to work with educators, agency representatives and community members to develop a greater understanding of the environment via classroom and field learning. The active participation in the learning, decision-making and service will strongly influence attitudes and future actions that these children, their families and communities will make in regard to their environment. In addition, agency personnel will develop a better understanding of working with teachers and how service learning can be incorporated into their area of expertise. Upon completion of this project, a Multi-Media Guide will be compiled. This Guide will clearly define the process followed by this project and will be available for use by other schools.

Project due to be completed by June 30, 1999.

STATE WOLF MANAGEMENT: ELECTRONICALLY
MODERATING THE PUBLIC DISCUSSION
13(g) \$100,000.00, TF
Nonstate Match \$20,000.00
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The Minnesota Timberwolf will be removed from the Federal List of Endangered Species soon, returning responsibility for its management to the state. Anticipating an imminent debate over wolf management, this project will enable to International Wolf Center (IWC) to provide a public electronic forum for moderating the debate as well as the information necessary to ground the debate in fact. Stakeholders will be able to exchange updates position statements, comments, questions, and responses through a specialized e-mail delivery system and an electronic bulletin board, moderated by both IWC's wolf biologist and its information resources coordinator. The IWC will also add a wolf management section to its web site (<http://www.wolf.org>).

Finally, in conjunction with the Biological Research Division of the US Geological Survey and the Minnesota Department of Natural Resources, the IWC will develop a public information package addressing frequently asked questions and common misconceptions pertaining to wolves and wolf management. These endeavors will help the public and key stakeholders of the wolf management debate make informed opinions and decisions regarding wolves and wolf management in Minnesota.

The availability of the appropriation is extended until

June 30, 2000; pending Legislative approval.

CATCH AND RELEASE
13(h) \$20,000.00, FRF
Nonstate Match \$10,000.00
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The Rainy Lake Sport Fisher's Club (RLSFC) has been working to improve the quality of fishing on Rainy Lake since 1984, including the improvement of habitat as well as by increasing the awareness to the peoples using the lake of the importance of such programs as "Catch and Release." This appropriation will enable the RLSFC to accelerate this program over the next two years. Results will be accomplished by implementing the following methods:

1. Increased periodic advertising of the program through local radio stations, and local and statewide media;
2. Distribution of posters promoting the program at all sportsman stores, landings, resorts, and motels;
3. Working in collaboration with "The Daily Journal" in the promotion of the annual fishing contest;
4. Providing education to the public on proper handling and releasing techniques of fish to ensure lower mortality rates; and
5. Awarding caps and rulers with the "Catch and Release" Logo to all persons releasing large fish.

Project due to be completed by June 30, 1999.

ELECTRONIC ENVIRONMENTAL EDUCATION
RAPTOR NETWORK
13(i) \$222,000.00, TF
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Web Address: <http://www.raptor.cvm.umn.edu/raptor/meeen/meeenhp.html>

This project will allow students from all parts of Minnesota to participate as satellite monitored radio-tracking equipment follows Minnesota raptors during their migration. Ten raptors in the summer of 1997 and ten more in 1998 will be trapped at nest sites in Minnesota and a satellite radio-transmitter will be placed on each bird. Information on each bird will be collected for up to one year.

Participation in this research, and the discovery of other natural phenomena will be accomplished using the internet. Data and information concerning raptor location will be placed on the project web page. Additional information that will complement raptor data, including supplementary data, biological, natural

history, and geographic information, will also be placed on the project web page.

In addition, materials designed to supplement teacher lesson plans produced in 1995-97 will be developed and the program marketed to teachers and other interested non-government organizations. This experience will be integrated into a total environmental education program that includes classroom materials and activities.

Project due to be completed by June 30, 1999.

GREENPRINT SUCCESS

13(j) \$136,000.00, FRF

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Appropriation added by the 1997 Legislature to the LCMR Recommendations

This project represents a cooperative effort between environmental learning centers, counties, and school districts to prepare, pilot, and disseminate information on successful implementation of the Minnesota GreenPrint Plan on Environmental Education. To obtain these results, the project will:

1. Conduct monthly meetings to direct and manage project development and implementation;
2. Utilize first-year pilot project teachers and naturalists to train and build new teacher teams;
3. Conduct training sessions to educate teachers and naturalists on a three-tier intergovernmental approach to delivering environmental education;
4. Design and develop interactive inquiry-based units of instruction that meet the State Graduation Standards;
5. Provide teachers with "user friendly" units of environmental education instruction;
6. Involve approximately 3700 students, teachers, and parents in hands-on, interdisciplinary environmental education activities that foster inquiry-based learning, environmental awareness and stewardship.
7. Disseminate the Cooperative Planning Model results through conferences, publications, and SEEK;
8. Develop an "Educators Guide for Cooperative Planning in Environmental Education" and disseminate it statewide.

Project due to be completed by June 30, 1999.

ST. PAUL AND MINNEAPOLIS REGIONAL PARK URBAN INTERPRETATION PROGRAM

13(k) \$200,000.00, FRF

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Appropriation added by the 1997 Legislature to the LCMR Recommendations

Saint Paul Parks and Recreation, the Minneapolis Parks and Recreation Board, and the public school systems in both cities are partners in an innovative collaborative project. With this appropriation, this partnership proposes to:

1. Prepare environmental education programs, activities and self-guided booklets for six regional parks located in Minneapolis and St. Paul (Como, Crosby, Lilydale, Chain of Lakes, Theodore Wirth, Minnehaha) including information on park history and development, natural resources and stewardship opportunities;
2. Create a Junior Naturalist-Interpreter Program involving K-12 students in interpretive programs in regional parks;
3. Conduct accessible, low-cost interpretive programs for school children and park visitors, fostering an awareness of the environment; and
4. Demonstrate new models for providing environmental education program.

Schools and Park and Recreation departments across the state will be able to utilize this model program and materials for developing similar interpretive programs in local and regional parks.

Project due to be completed by June 30, 1999.

SUBD. 14 BENCHMARKS AND INDICATORS

ENVIRONMENTAL INDICATORS INITIATIVE-CONTINUATION

14(a) \$250,000.00, TF

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This project continues the statewide environmental indicator development process initiated in the 1995-1997 biennium. The overall goal of the Environmental Indicators Initiative (EII) is to create the first statewide framework to select and monitor an integrated set of environmental indicators capable of assessing and communicating Minnesota's health status and trends. To meet this goal, general objectives for the project include: 1) an assessment of the status of ecosystems and their ability to provide benefits to society; 2) understanding trends in ecosystem health; 3) anticipating emerging environmental problems; and 4) monitoring progress in restoring and sustaining ecosystems. Anticipated results for the 1997-99 biennium include the development of indicators and reports on the results of all indicator selection workshops, as well as the implementation of the Environmental Indicators Network through technical assistance and other outreach activities.

Project due to be completed by June 30, 1999.

MINNESOTA'S FOREST BIRD DIVERSITY INITIATIVE-CONTINUATION

14(b) \$350,000.00, TF

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RESEARCH PROJECT

The goal of Minnesota's Forest Bird Diversity Initiative is to develop landscape management tools to maintain Minnesota's rich diversity of forest birds. This appropriation represents the fourth biennium of funding for this project (ML91 Chap. 254 Sec. 14 Subd. 9(o); ML93 Chap. 172 Sec. 14 Subd. 6(b); ML95 Chap. 220 Sec. 19 Subd. 7(d).) The first six years of funding have resulted in: 1) the establishment of a powerful monitoring system to begin detecting changes in forest bird populations and to assess the potential causes for the changes observed; 2) the development of more detailed methods including a combinations of field sites, field experiments, and technology to better predict how forest bird populations may respond to changes in forest vegetation; and 3) the transfer of information gathered to natural resource managers throughout the state through publications, workshops, meetings and special events. Specific project results for the 1997-1999 biennium are designed to support these previous efforts and long-term goals. Expected results include: 1) an analysis of forest bird population trends; 2) the identification of factors that affect reproductive success; 3) a refinement and verification of the ability of the LANDIS model to predict bird distribution and abundance in relation to the patterns and composition of forest vegetation; and 4) the development of education materials and management prescriptions. The future of this initiative is to identify species that are most at risk and what factors are most likely responsible for this risk. This project will work with resource managers to maintain populations of these species through coordinated and prudent changes in forest practices that insure their perpetuation while maintaining a healthy and sustainable forest industry.

Project due to be completed by December 31, 1999.

**WATER QUALITY INDICATORS OF ENDOCRINE
DISRUPTING CHEMICALS**

14(c) \$250,000.00, TF
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RESEARCH PROJECT

The results of this project will be used to determine the extent of endocrine disrupting chemical (EDC) activity in surface waters in Minnesota. The project will also evaluate the appropriate use of biological indicators of EDC activity for surface water quality assessment. Data will be collected from native fish and frog species using

a variety of methods depending on the information required. An outcome of the project will be a refinement of protocols for the analysis of EDC activity in surface waters using biological response indicators for water quality monitoring programs. While this project will collect data from frogs in Minnesota, this project is not an extension of the investigation of deformed frogs carried out in 1996 with an appropriation from LCMR (ML96 Chap. 407 Sec. 8 Subd. 7(b)).

Project due to be completed by June 30, 2000.

STREAM HABITAT PROTECTION - CONTINUATION

14(d) \$225,000.00, TF
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This program is designed to help protect stream resources by establishing a watershed level stream habitat database, and developing the tools to set protected flows based on habitat diversity and ecosystem integrity. This appropriation represents the third biennium of funding for this project (ML93 Chap. 172 Sec. 14 Subd. 11(d); ML95 Chap. 220 Sec. 19 Subd. 9(c)).

With this funding, the project will collect stream habitat data, use it to model the stream, and then combine this stream habitat data with information on the habitat requirements of the aquatic community. The final objective will then be to determine how much water needs to remain in a stream to protect aquatic communities.

Project due to be completed by December 31, 1999.

WETLAND ECOSYSTEMS MONITORING

14(e) \$160,000.00, FRF
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While the importance of proper planning and implementation to wetland ecosystem recovery is generally understood, specific information on how to improve restoration practices to maximize success is lacking. This study will address two major aspects of this issue. It will examine to what extent revegetation stimulates overall ecosystem recovery in restored wetlands. It will also examine how the habitats and expectations of those responsible for restoring and maintaining wetlands and of the neighboring public affect ecosystem recovery.

Wetland restoration success will be evaluated on eight wetlands currently being restored and compared to

reference wetlands. Ecosystem structure and function will be measured, and ecosystem recovery rates and cultural challenges to ecosystem recovery will be characterized. By the end of this study establishment phase, a long-term monitoring system will be in place that will allow for the assessment of ecosystem recovery.

Project due to be completed by June 30, 1999.

LOONS: INDICATORS OF MERCURY IN THE ENVIRONMENT

14(f) \$230,000.00, TF

Francesca Cuthbert

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Department of Fisheries and Wildlife

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RESEARCH PROJECT

Previous research has shown that Common Loons are exceptionally sensitive to elevated concentrations of mercury and are excellent indications of environmental quality. Loons are also ideal early warning indicators of mercury contamination because they bioaccumulate methylmercury, are obligate fish-eaters, live 2-3 decades, and are easily captured and recaptured. This study will determine mercury levels in approximately 100 adults and 60 juvenile loons captured on experimentally paired historically studied lakes in Minnesota as well as data collect data on loon survival and reproductive success. Anticipated project results include: 1) levels of mercury in feather and blood of Minnesota loons, 2) mercury levels in loon prey species (fish); 3) examining the relationship between lake mercury levels and loon biology, and 4) a spatial data base integrating the project data with other appropriate state databases containing information pertinent to reducing mercury in Minnesota's aquatic ecosystems.

Project due to be completed by June 30, 1999.

TRAINING AND RESEARCH VESSEL FOR LAKE SUPERIOR

14(g) \$250,000.00, TF/GLPA

Nonstate Match \$250,000.00

Thomas Johnson

University of MN- Duluth

University of Minnesota Large Lakes Observatory

Duluth, MN 55812

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E-mail: tcj@d.umn.edu

Web Address: <http://www.d.umn.edu/llo/#Inst&Fac>

This appropriation will enable the Large Lake Observatory of the University of Minnesota to acquire, modify and operate the F/V FAIRTRY for use in Lake Superior and the other Great Lakes. These funds will be used in conjunction with \$700,000 provided by the Federal Government in the National Fishing Capacity Reduction Initiative. This boat will be modified to meet the special needs of education and research

activities of the Large Lakes Observatory and the Lake Superior Center. It will be capable of taking 20 students out for trips of one day duration, and capable of taking research groups of up to six scientists for periods of 10 days at a time.

Project due to be completed by June 30, 1999.

SUBD. 15 NATIVE FISHERIES

IMPROVED DECISIONS FOR WALLEYE STOCKING AND SPECIAL REGULATIONS

15(a) \$245,000.00, FRF

Ira Adelman

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RESEARCH PROJECT

Over the past four years, University of Minnesota researchers, in cooperation with the Minnesota DNR, have developed a computer model to predict the effect of both stocking activities and harvest regulations on future walleye population structure. The model has been refined into a highly user-friendly decision making tool, but a final validation of the model is needed to prove its effectiveness. This project will complete the model validation.

Two approaches will be undertaken to validate the model. First, DNR will experimentally stock fry in 20-40 lakes in 1997 to determine if less costly fry stocking can replace the previously used, more expensive, fingerling stocking. The computer model will be used to predict the effect of these stockings and results will be compared with post-stocking data. Second, the DNR is using the MANSIM model to develop harvest regulations for individual lakes. The same regulations have been entered into the new computer model, and the predictions of both programs will be compared to the lakes surveyed to validate the new model, and determine which of the two models is superior. The validated computer model will be the final project product. The model will be made available to stakeholders via the World Wide Web. In addition, two workshops will be conducted with potential users to first determine how stakeholders might use the model and later to actually teach stakeholders how to use the model.

Finally, a portion of the project will identify and then apply diagnostic DNA markers that can separate the two walleye strains that DNR uses for stocking in the southern portion of Minnesota. Non-lethally collected fish scales or fin-tissue slivers will be screened and performances compared based on relative survival rates, growth rates, and condition factor of fish of the two strains. These results in conjunction with the model's predicted success of the strains based on growth rate data will be used to determine which of the two strains is superior for stocking in southern Minnesota.

Project due to be completed by June 30, 2000.

MINNESOTA RARE MUSSEL CONSERVATION
15(b) \$91,000.00, TF
Mark Hove
University of MN
1980 Folwell Ave.
St. Paul MN 55108-
Phone: (612)624-3019
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E-mail: mh@fw.umn.edu
RESEARCH PROJECT

This project will improve freshwater mussel conservation and water resource management. These results will be obtained by: 1) establishing and monitoring study refugia in the St. Croix River to protect freshwater mussels from invading zebra mussels, and formulate general recommendations for making refugia effective; 2) determining the required fish hosts for three threatened Minnesota mussels; and 3) surveying co-occurring mussel and fish resources at 50 sites in northern Minnesota's Little Fork and Big Fork rivers of St. Louis, Koochiching, and Itasca counties, providing crucial baseline data for water resource managers.

Project due to be completed by June 30, 1999.

SUBD. 16 LAND ACQUISITION IN HIGH GROWTH AREAS

SAND DUNES STATE FOREST ACQUISITION
16(a) \$400,000.00, TF
Steve Simmer
DNR Division of Forestry
500 Lafayette Rd
St. Paul, MN 55155
Phone: (651)297-3508
Fax: (651)689-7120
E-mail: steve.simmer@dnr.state.mn.us

Residential development in and around the Sand Dunes State Forest has increased dramatically. This project will acquire 200 of the currently 700 acres of private land within the forest considered for potential purchase. This acquisition will protect and preserve rare Anoka Sand Plain plant and animal communities, and prevent major disruptions of on-going recreation, wildlife and other resource management programs.

Project due to be completed by June 30, 1999.

ARBORETUM LAND ACQUISITION
16(b) \$450,000.00, TF
Nonstate Match \$450,000.00
Peter Olin
University of Minnesota
3675 Arboretum Dr., Box 39
Chanhassen MN 55317
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E-mail: olin002@maroon.tc.umn.edu

This appropriation will fund the acquisition of at least

50 acres of land adjacent to existing Arboretum land as part of the Minnesota Landscape Arboretum Land Acquisition Plan. This project is part of a long-term strategy to acquire lands within the Arboretum's watershed for ecological protection. It also provides the opportunity to develop public models for restoration of native Minnesota landscapes in the future.

The availability of the appropriation is extended until June 30, 2001; pending Legislative approval.

SUBD. 17 CRITICAL LANDS OR HABITATS

SUSTAINABLE WOODLANDS ON PRIVATE LANDS
17(a) \$875,000.00, FRF
Darrell Lauber
MN Forestry Association
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St. Paul MN 55101
Phone: (612)290-6266
Fax: (612)290-2266

The intent of this project is to develop sustainable, ecosystem-based Woodland Stewardship plans for private landowners. The goal is to prepare plans for approximately 2,000 landowners covering approximately 200,000 acres of forests, wetlands, brushlands, and prairies. Developed around landowner goals and land capability, the plans will offer alternatives to meet both landowner and landscape objectives.

The project will also implement a wide variety of approved projects on private lands and will require a 50% landowner match to assure 50% leverage on cost-sharing. Implementation of the plans is expected to result in projected increases of the following habitats. (Actual category figures could vary based on priorities of partner matching funds):

Category	Projected Increase
Wildlife Habitat	3,100 acres
Reforestation	1,000 acres
Fish Habitat	460 acres
Soil/Water Protection	1,150 acres
Forest Improvements	1,800 acres

The availability of the appropriation is extended until June 30, 2000; pending Legislative approval.

CANNON RIVER WATERSHED: INTEGRATED MANAGEMENT
17(b) \$350,000.00, FRF
Allene Moesler
Cannon River Watershed Partnership
P.O. Box 501
Faribault MN 55009
Phone: (507)332-0488
Fax: (507)332-0513

This appropriation represents the third biennium of a project designed to implement integrated management activities in the Cannon River Watershed. During this biennium, the project will address four objectives.

These objectives are listed below and include some, but not all, of the results expected for each objective.

1) Resource protection: Increase permanent native vegetation to stabilize soils, enhance natural communities and protect water and soil resources. Provide management assistance to farmers and other individual landowners for natural resource protection and implementation of best management practices. Citizen initiatives begun in three sub-watersheds of the Cannon River with 1995-97 funding through the LCMR will continue, as will projects that address non-point source pollution. Local citizens will direct projects with technical support from agencies, academic institutions and organizations.

2) Cost share: Management assistance and cost share incentives will be delivered to landowners with a menu of state and federal program options. CRWP cost share is for priority projects not qualifying for state or federal programs, such as forest tracts less than 20 acres. Permanent native vegetative cover on highly erodible sites will reduce runoff and erosion meanwhile preserving and/or restoring biologically significant ecosystems.

3) Conservation easements/acquisition: A Cannon River Chapter of the Minnesota Land Trust will place conservation easements on or acquire and donate priority lands. This funding targets sites that would not otherwise be protected. Conservation clubs are active partners.

4) Trout stream protection: Spring Brook, the only cold water trout stream in Rice County will be protected from the impacts of impeding development through proactive and collaborative efforts with landowners and multiple local jurisdictions.

Project due to be completed by June 30, 1999.

PEATLAND RESTORATION

17(c) \$275,000.00, FRF

Kurt Johnson

NRRI

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The goal of this project is to promote reestablishment of diverse, sustainable peatland ecosystems on harvested peatland sites, through accelerated development of cost effective, reliable peatland restoration techniques consistent with state and federal regulatory requirements. The project will begin with a review of literature relevant to peatland restoration in Minnesota to refine project design and produce a bibliography. Based on this review, and the experience of team members, two 3-5 acres research sites will be selected on harvested peatlands to determine suitable restoration practices for Minnesota conditions. Peat companies, regulatory agencies, and international restoration experts will be solicited for their input regarding

peatland restoration in Minnesota.

A final document for the project will be produced. Drawing from the literature review, research sites, and solicited input, this product will be a draft peatland restoration guidebook. This guidebook will be specifically focused on Minnesota environmental conditions and regulatory requirements. Project results will also be disseminated through a field day, and restoration workshop.

Project due to be completed by June 30, 1999.

PRAIRIE HERITAGE FUND

17(d) \$500,000.00, TF

Nonstate Match \$500,000.00

Dave Nomsen

Pheasants Forever, Inc

2101 Ridgewood Dr. NW

Alexandria MN 56308

Phone: (320)763-6103

Fax: (320)763-6103

This project will result in the acquisition and development of land for prairie grasslands and wetlands to be donated to the public. This process will involve: a) the development of promotional materials and an application procedure packet; b) conducting up to 5 Regional Information Meetings to invoke involvement of conservation organizations; c) the acquisition of remnant prairie grasslands, wetlands and restorable adjacent properties and subsequent deeding to a public agency; and d) providing assistance with restoration of parcels acquired and cooperation with the agency deeded the property.

Project due to be completed by June 30, 1999.

PHALEN WETLAND RESTORATION: PHASE II

17(e) \$600,000.00, TF

Allan Torstenson

City of Saint Paul

1100 City Hall Annex

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Fax: (612)228-3314

E-mail: allan.torstenson@stpaul.gov

The Phalen Wetland Restoration Project, Phase II (Ames Lake) will restore about nine acres of an obsolete, largely vacant shopping center site back into a wetland. (This is not an extension of a previous project, but is a new wetland restoration project.) The Ames Lake wetland will be restore the site's natural storm water cleaning function, reduce non-point source pollution, and enhance wildlife habitat and storm water detention. The project will also expand our understanding of how to achieve biodiversity in restored wetlands, and provides an environmental education resource. This project will not be funded entirely through the LCMR. St. Paul will acquire the site prior to project initiation, and will also spend an additional \$625,000 from other funds for wetland design and development.

Project due to be completed by June 30, 1999.

POINT DOUGLAS BLUFFLAND ACQUISITION

17(f) \$125,000.00, FRF
Jim Fitzpatrick
Carpenter St. Croix Valley Nature Center
12805 St. Croix Trail So.
Hastings MN 55033
Phone: (612)437-4359
Fax: (612)438-2908
E-mail: jmfitzptrk@aol.com

This appropriation will fund the process of appraisal, negotiation and complete purchase of two different parcels of land consisting of approximately 10.5 acres. (One parcel is a 3 acres lot on the Mississippi and St. Croix bluff. The second parcel is approximately 7.5 acres of wooded land primarily on the bluff of the St. Croix River.) Both parcels contain remnant Native American burial mounds. Once purchased in fee simple, this land will be converted to wildlife habitat, and added to the Carpenter Nature Center Trail system for use within their interpretive programs.

Project due to be completed by June 30, 1999.

MINNESOTA POINT PROTECTION

17(g) \$75,000.00, FRF
Kinnan Stauber
Park Point Community Club
4139 Lake Avenue South
Duluth MN 55802-2404
Phone:(218)-722-6255

The objective of this project is to protect a unique ecosystem, including a 45 acre stand of old growth white and red pine forest, a bird sanctuary, beach dunes and other habitats from partial destruction by the Duluth Airport Authority. This objective will be met by establishing permanent conservation easements, and developing a binding management plan "that will provide a level of protection sufficient to ensure the continue ecological integrity of the area and to prohibit further cutting of the old growth forest area." Project information will be disseminated through the establishment of a Web site, publication of technical data to governmental agencies and educational institutions, publication of booklets for the general public, and production of a 25-minute video program regarding the history and nature of the project area.

The management plan and communications products will document the value of this unique habitat in a scientific manner for decision-makers at municipal and state levels of government. They will also inform the general public about this project and unique ecosystem.

Project due to be completed by June 30, 1999.

SAVANNA RESTORATION FOR SHARPTAIL GROUSE

17(h) \$30,000.00, FRF
James Slade
MN Sharp-tailed Grouse Society
920C Butler Sq., 100 N. 6th St.
Minneapolis MN 55403
Phone: (612)343-0310

Fax: (612)344-1719

The dramatic drop in populations of Sharp-tailed Grouse can be attributed to the loss of habitats they require, such as brushlands, savannas and similar open-country. This project will focus on two of these plant communities which have traditionally supported Sharp-tailed Grouse: Jack Pine Barrens; and Northern Conifer Scrublands. As these two communities are themselves disappearing, the project will:

- 1) identify ten sites where remnants of these communities exist;
- 2) determine the feasibility of restoring and maintaining these sites; and
- 3) prepare and disseminate reports of the project to interested groups, such as the US Fish and Wildlife Service and The Nature Conservancy. During the course of this project, groups will be enlisted with the goal of eventually securing and maintaining these areas on a long-term basis.

Project due to be completed by June 30, 1999.

RIM - Critical Habitat Acquisition and Enhancement

17(i) \$630,000.00, TF
Kim Hennings
DNR
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Phone: (612)297-2823
Fax: (612)297-4961
E-mail: kim.hennings@dnr.state.mn.us

This program provides an opportunity for private individuals, groups, and businesses to help fund the cost of acquiring or improving critical fish, wildlife, and native plant habitats. State funds in the Minnesota Critical Habitat Private Sector Matching account (CHM) are matched dollar-for-dollar by restricted and unrestricted contributions of land easements, or cash to the program. Land donations and purchases have been primarily for wildlife management areas (WMA), with other projects involving acquisitions in scientific and natural areas (SNA), state parks, aquatic management areas (AMA), and state forests.

In addition to acquisition, critical habitat may be improved in order to protect and restore fish and wildlife populations and native plant communities. The most common projects are planting critical winter cover and secure nesting cover, restoring wetlands, and improving forest habitat. Fisheries habitat may be protected or improved by acquiring riparian lands, stabilizing lake or stream shores, restoring aquatic vegetation, improving fish habitat in stream, reclaiming watersheds, and other fisheries management activities. Work is also undertaken to improve habitat for non-game wildlife management. The private match for non-game projects comes from contributions to the non-game wildlife management account.

Project due to be completed by June 30, 1999.

RIM - WILDLIFE HABITAT STEWARDSHIP

17(j) \$400,000.00, TF

Richard Carlson

DNR

Box 7, 500 Lafayette Road

St. Paul, MN 55155

Phone: (612)296-0705

Fax: (612)297-4961

E-mail: dick.carlson@dnr.state.mn.us

This stewardship program provides opportunities to accelerate the development, improvement, and enhancement of wildlife lands, wildlife habitat, natural communities and natural ecosystems on State Wildlife Management Areas (WMA) and other state land that is not available through normal appropriations. Projects chosen to utilize appropriated funds are based on the statewide significance or cooperative nature of a project followed by highest priority development activities. Projects vary depending upon the type and amount of funding involved.

This appropriation is expected to produce the following results:

1. Forest Uplands and Brushland Community Development and Improvement – 97 sites, 26,500 acres
2. Prairie, Grassland and Farmland Community Development and Improvement – 259 sites, 18,500 acres

Project due to be completed by June 30, 1999.

RIM - SCIENTIFIC AND NATURAL AREA ACQUISITION

17(k) \$200,000.00, TF

Bob Djupstrom

DNR

500 Lafayette Road

St. Paul, MN 55155

Phone: (612)297-2357

Fax: (612)297-4961

E-mail: bob.djupstrom@dnr.state.mn.us

The Department of Natural Resources has developed a long-range plan for Scientific and Natural Areas (SNA) acquisition designation and management. The program's goal is to preserve and perpetuate the ecological diversity of Minnesota's natural heritage for scientific study, education, and nature observation. To adequately protect Minnesota's critical resource "elements" the SNA long-range plan calls for the protection of five sites for plant communities and three sites for rare species in each ecological region of the State.

This appropriation will be used for the acquisition of a 1356 acre oak forest complex, identified by the County Biological Survey, located in Morrison County.

Project due to be completed by June 30, 1999.

RIM - WILDLIFE HABITAT ACQUISITION

17(l) \$500,000.00, TF

Kim Hennings

DNR

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Fax: (612)297-4961

E-mail: kim.hennings@dnr.state.mn.us

Acquisition of wildlife lands is focused on protecting critical sites for wildlife and native plants, and providing public hunting and other wildlife-related activities, with primary emphasis on completing existing State Wildlife Management Areas. Many critical habitats in the state are irreplaceable and need protection, especially wetland ecosystems.

This appropriation will be used to acquire approximately 350 acres as outlined below:

1. Purchase 180-225 acres of wetlands, restorable drained wetlands and adjacent uplands at Swan Lake, Heron Lake, and as part of the Minnesota River Project and other North American Waterfowl Management Plan (NAWMP) projects.
2. Purchase 100-200 acres of WMA lands in high population corridor.

Project due to be completed by June 30, 1999.

RIM - ACCELERATE FISHERIES ACQUISITION

17(m) \$567,000.00, TF

Dirk Peterson

DNR

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St. Paul, MN 55155

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Fax: (612)297-4916

E-mail: dirk.peterson@dnr.state.mn.us

This program exists to acquire aquatic management areas that include both easements and fee title on lakes and streams. Areas this program focuses on include easements along trout streams, as well as fee title acquisition of riparian zones that provide critical fisheries habitat along lakes and streams.

Project due to be completed by June 30, 2000.

MINNESOTA COUNTY BIOLOGICAL SURVEY - CONTINUATION

17(n) \$1,200,000.00, TF

Carmen Converse

DNR

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Web Address: http://www.dnr.state.mn.us/fish_and_wildlife/mcbs.html

The Minnesota County Biological Survey (MCBS) is a systematic survey of rare biological features that began in 1987 in response to the need to determine the status of biological diversity in Minnesota. The goal of the MCBS is to identify significant natural areas and to collect and interpret data on the distribution and ecology of rare plants, rare animals and natural communities. As of July 1, 1997, MCBS has completed surveys in a total of 29 counties, is continuing in 12, and is expanding into 10 new counties.

This appropriation represents the sixth biennium in a proposed twelve-biennium project. During FY98-99, surveys that began in five counties in the previous biennium will be completed (Carver, Hennepin, LeSueur, Scott, and Wright counties). Work will begin in nine additional counties bordering the Minnesota River (Blue Earth, Brown, Chippewa, Nicollet, Redwood,

Renville, Sibley, Swift, and Yellow Medicine counties). Surveys will also begin and are scheduled for completion in Stearns County. Rare plant and natural community surveys will be completed in the Mille Lacs Uplands and Glacial Lake Superior Plain subsections (including Aitkin, Carlton, Benton, Crow Wing, Kanabec, Mille Lacs, and Pine counties). In the northern forested region, procedures to evaluate existing natural resource inventory data will continue to be refined and expanded in order to assist in the identification of important areas of biodiversity. The addition of a northern MCBS coordinator will accelerate this process and provide for increased coordination with other related surveys.

Project due to be completed by June 30, 1999.

FISHING PIER AND PUBLIC SHORE ACCESS

17(o) \$355,000.00, TF

Michael Markell

DNR

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Fax: (612)297-5475

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This program will provide the public with access to lakes and river statewide. Access includes fishing piers and shoreline access, and will provide fishing opportunities with or without a boat. This appropriation will construct twelve fishing piers and three shorefishing sites.

Project due to be completed by June 30, 1999.

PUBLIC BOAT ACCESS

17(p) \$350,000.00, TF

Michael Markell

DNR

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St. Paul, MN 55155

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Fax: (612)297-5475

E-mail: mike.markell@dnr.state.mn.us

This program will provide the public with access to lakes and river statewide. Access includes boat access, and will provide fishing opportunities with or without a boat. This appropriation will construct two public boat access sites on Lake of the Woods at Warroad and Pelican Lake at Orr. Construction will be completed in 1999.

Project due to be completed by June 30, 1999.

RIM - FISHERIES STATEWIDE HATCHERY

REHABILITATION

17(q) \$400,000.00, TF

Roy Johannes

DNR

500 Lafayette Road

St. Paul, MN 55155

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Fax: (612)297-4916

E-mail: roy.johannes@dnr.state.mn.us

This project exists to improve and maintain statewide facilities for fish culture, rearing, and holding. There are 17 fish hatcheries statewide, including 5 cold water hatcheries that provide trout and salmon and 12 warm water hatcheries that provide walleye, muskellunge, channel catfish, and smallmouth bass.

This appropriation will fund projects at two cold water hatcheries and a warm water facility. The specific sites are:

1. Access area at Peterson Hatchery – This project will provide a needed upgrade for ingress and egress of large fish transportation vehicles to reduce the risk of damage to the hatchery facility and reduce handling and stress on fish stocks.

2. Linear clarifier (pond) at the Lanesboro Hatchery - This project will change the course of effluent, improve treatment of fish waster and reduce nutrient loading in Duschee Creek.

3. Pond and water supply restoration at the Waterville Hatchery – This project will redesign and replace the water supply and drainage lines for eleven ponds at the Waterville Hatchery, resulting in an improvement of fish rearing capabilities for channel catfish and muskellunge fingerlings.

Project due to be completed by December 31, 1999.

SUBD. 18 WILDLIFE OR TRAIL CORRIDORS

MESABI TRAIL LAND ACQUISITION AND DEVELOPMENT

18(a) \$600,000.00, FRF

Nonstate Match \$600,000.00

Bob Manzoline

St. Louis & Lake Counties Regional Rail Authority

307 First Street So., Room 113

Virginia MN 55792

Phone: (218)749-0697

Fax: (218)749-7123

This appropriation will fund the third biennium of a project to develop and acquire segments of the Mesabi Trail in St. Louis and Lake Counties. The trail is being developed for multiple user groups in most areas and will make connections to the Taconite Trail, local trails and many State Parks and facilities. The 1997 appropriation and local match will result in an additional 16.5 miles of new trail and 2 miles of land acquisition.

Project due to be completed by June 30, 2000.

CHIPPEWA COUNTY REGIONAL TRAIL

18(b) \$400,000.00, FRF

Nonstate Match \$226,000.00

Steve Jones

City of Montevideo

103 Canton Ave.

Montevideo MN 56265

Phone: (320)269-5528

Fax: (320)269-9340

This appropriation will fund the completion of the

Chippewa County Regional trail system in Montevideo begun in 1995-1997. During this biennium, approximately 5.3 additional miles of the 16.2 mile Chippewa County Regional Trail, and will construct two final core segments of the system. This will assist local planners in completing the core of the system, providing needed linkages to all prior segments, and connecting major regional and local facilities located on the trail.

Project due to be completed by June 30, 2000.

SUBD. 19 NATIVE SPECIES PLANTING

MINNESOTA RELEAF TREE PLANTING AND PRESERVATION GRANT PROGRAM

19(a) \$300,000.00, FRF

Peggy Sand

DNR

1200 Warner Road

St. Paul, MN 55155

Phone: (612)772-7562

Fax: (612)772-7599

E-mail: peggy.sand@dnr.state.mn.us

This project provides matching grants to local communities to plant predominantly native trees and protect native oak forests from oak wilt. This appropriation represents the third biennium of funding for this program. As part of the tree-planting program, grant agreements for about 40-50 approved projects will be signed. An estimated 3000 – 5000 trees will be planted to restore habitats, save energy, benefit wildlife, reduce erosion and facilitate educational opportunities. At least nine publications will be distributed and approximately 30 or more educational programs will be given, targeted to local participants as well as the general public.

As part of the oak forest preservation program, grant agreements will be signed with about 8-15 local project sponsors. An estimated 125-175 oak wilt infection centers will be treated in order to protect thousands of acres of native oak forests.

Project due to be completed by June 30, 1999.

RESTORING WHITE PINE IN THE MINNESOTA LANDSCAPE

19(b) \$120,000.00, TF

Klaus Puettmann

University of MN

Forest Resources Dept.,

115 Green Hall

St. Paul MN 55108

Phone: (612)625-3733

Fax: (612)625-5212

E-mail: kpuettma@forestry.umn.edu

RESEARCH PROJECT

This study will investigate two components that are critical for the survival and growth of advance regeneration of white pine. The project will first investigate the efforts of overstory, mid-story, and understory vegetation as they alter the environment and

compete with seedlings for light and water. A manipulative study will quantify these relationships to guide natural resource managers in providing suitable growing conditions for white pine seedlings.

Second, the project will investigate criteria that natural resource managers can use to prepare advanced regeneration for the removal or death of overstory trees and to decide whether a stand is suitable for release. A survey of recently released stands and establishment of release studies will provide information about the effects of initial size, growing conditions, and overstory effects on a seedling's ability to respond to release. Project results will be organized and presented as management recommendations to facilitate the efforts to restore white pine in Minnesota landscapes.

Project due to be completed by June 30, 1999.

OAK SAVANNA RESTORATION IN ST. PAUL REGIONAL PARKS

19(c) \$200,000.00, TF

Ed Olsen

City of Saint Paul,

Division of Parks and Recreation

1224 N. Lexington Parkway

St. Paul MN 55103

Phone: (612)488-7291

Fax: (612)488-8261

Appropriation added by the 1997 Legislature to the LCMR Recommendations

This project will restore the oak savannah ecosystem to a portion of the river bluff in Indian Mounds Regional Park, a portion of Battle Creek Regional Park and a portion of Phalen Regional Park. Pre-settlement vegetation consisting of the oak savannah ecosystem will be reintroduced to 25 acres of the river bluff line in Mounds Park, 14 acres in Battle Creek Park and to 2 acres in Phalen Park. Non-oak savannah species, such as maple, elm, and cherry trees, and shrubs, such as European Buckthorn, will be removed to reestablish the 10 to 80 percent canopy necessary to an oak savannah. In addition, the landscape turf will be removed and native prairie and woodland grasses and forbs will be reintroduced as ground cover to all three sites. Properly managed, these areas will ultimately produce desirable plant communities, with a greater opportunity for educational use and heightened public awareness of plants and wildlife habitats in a managed landscape.

Project due to be completed by June 30, 1999.

PRAIRIE AND OAK SAVANNA RESTORATION

19(d) \$50,000.00, FRF

Craig Andresen

St. Paul Audubon Society

2013 Walnut Ave. NW

New Brighton MN 55112

Phone: (612)636-3462

Fax: (612)639-8097

E-mail: 71642,30@compuserve.com

Fort Snelling State Park and Miesville Ravine Park Reserve of Dakota County will be the primary sites of

this project. Each park contains approximately 20 acres of remnant prairie and oak savanna along south to west facing bluffs. The intent of the project is to remove the invasive exotic and native woody species that are competing with the historic vegetation. Volunteers and contract crews will be used for the removal effort. Fire will then be re-introduced to re-establish the vitality of these plant communities. In the event the task is completed under budget or other factors prevent completion, a third site at Afton State Park will be substituted to ensure at least forty acres of public lands are impacted.

Project due to be completed by June 30, 1999.

SUBD. 20 EXOTIC SPECIES

BALLAST WATER TECHNOLOGY DEMONSTRATION FOR EXOTIC SPECIES CONTROL

20(a) \$250,000.00, FRF

Jay Rendall

DNR

500 Lafayette Road

St. Paul, MN 55155

Phone: 612/297-1464

Fax: 612/297-7272

E-mail: jay.rendall@dnr.state.mn.us

RESEARCH PROJECT

This demonstration project will test, evaluate, and refine promising, innovative techniques for preventing the introduction and dispersal of exotic species in Lake Superior from ballast water of commercial vessels. An ongoing regional project, this appropriation will assist in completing the freshwater biological study of Phase II of the project and initiate Phase III.

Phase I included problem definition, technology selection, analysis and engineering aspects, as well as peer review to assure project credibility with stakeholders. Phase I will result in the selection of up to three different innovative technologies to test in ships. Phase II is the actual ongoing demonstration of innovative technology selected in Phase I on a commercial vessel under normal operating conditions. Phase III is the evaluation of the ship demonstrations. The desired results will be recommendations of primary and/or secondary technologies that are acceptable for retrofitting or designing into vessels to abate transfers of exotic species in ballast tanks.

The information gained from this project will be summarized into a final report and distributed to the maritime industry, U.S. Coast Guard, Canadian Coast Guard, the Great Lakes Panel on aquatic nuisance species, and the federal Aquatic Nuisance Species Task Force.

The availability of the appropriation is extended until June 30, 2000; pending Legislative approval.

BIOLOGICAL CONTROL OF EURASIAN WATERMILFOIL AND PURPLE LOOSESTRIFE - CONTINUATION

20(b) \$150,000.00, TF

Charles Welling

DNR

Box 25, 500 Lafayette Road

St. Paul, MN 55155

Phone: (612)297-8021

Fax: (612)296-1811

E-mail: chip.welling@dnr.state.mn.us

RESEARCH PROJECT

The purpose of this comprehensive project is to develop and implement biological controls for Eurasian watermilfoil, *Myriophyllum spicatum*, and purple loosestrife, *Lythrum salicaria*, two exotic aquatic plants that are degrading Minnesota's aquatic resources statewide. Research to develop and implement biological controls for Eurasian Watermilfoil will continue to evaluation of the potential of insects, especially the weevil *Euhrychiopsis lecontei*. This work will emphasize studies conducted under field conditions in Minnesota lakes.

The project will also continue to study the impact of insect biocontrol agents on purple loosestrife, improve the effectiveness, and expedite the realization of benefits from the release of these agents in reducing purple loosestrife populations in Minnesota.

Project due to be completed by December 31, 1999.

CONTROL OF NOXIOUS WEEDS IN NATIVE WILD RICE

20(c) \$100,000.00, FRF

Nonstate Match \$100,000.00

Chris Holm

Bois Forte Reservation

5344 Lake Shore Dr., P.O. Box 16

Nett Lake MN 55772

Phone: (218)757-3261

Fax: (218)757-3312

RESEARCH PROJECT

The objective of this study is to define the magnitude of impact of an indigenous aquatic weevil (*Euhrychiopsis lecontei*) on the growth of wild rice (*Zizania aquatica*) and on competing vegetation present in Nett Lake, a 7369-acre wild rice lake. Past research regarding this insect's value as a biological control agent will be expanded through analysis of the insect's effect on wild rice growth in Minnesota lakes. We will observe and statistically assess *E. lecontei*'s propensity to feed and/or oviposit on vegetation maintained under controlled laboratory conditions. Valuation of this weevil as an effective biocontrol agent in rice lakes will be assessed through statistical evaluation of its ability to suppress growth of predominant aquatic vegetation while leaving germinating wild rice unaffected. Data bases and research information will be defined for public use through creation of an Internet web site containing research results. One or more peer-review manuscripts will be developed, and will be submitted to prospective peer-review journals for publication.

Project due to be completed by June 30, 2000.

The following documents are short abstracts for projects funded during the 1995-1997 biennium. The abstracts describe the general accomplishments of each project as well as providing selected specific details, such as amount of land impacted, species studied, number of school children reached, or products produced. Research projects have been marked as such in the description. Full workprograms are available at the LCMR office Room 65, State Office Building. The abstracts are current as of 12/1/98.

Laws 1995, Chapter 220, Section 19, 20 & 21

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- 4(a) Metropolitan Regional Park System
- 4(b) State Park and Recreation Area Acquisition, Development, Betterment and Rehabilitation
- 4(c) State Trail Rehabilitation and Acquisition
- 4(d) Water Access
- 4(e) Local Grants
- 4(f) Minneapolis Park and Trail Connections
- 4(g) Local Share for ISTEPA Federal Projects
- 4(h) Pine Point Park Rest Station
- 4(i) Interactive Multi-Media Computer Information System
- 4(j) Upper Sioux Agency State Park *
- 4(k) Grain Belt Mississippi Riverfront Development *
- 4(l) Wildcat Regional Park *

Subd. 5 MANAGEMENT APPROACHES p.38

- 5(a) Local River Planning - Continuation
- 5(b) Cannon River Watershed Strategic Plan: Integrated Management
- 5(c) Tri-County Leach Lake Watershed Project
- 5(d) Blufflands Landscape
- 5(e) Glacial Lake Agassiz Beach Ridges: Mining and Protection
- 5(f) Atmospheric Mercury Emissions, Deposition, and Environmental Cost Evaluation: Research
- 5(g) Mercury Deposition and Lake Quality Trends: Research
- 5(h) Feedlot and Manure Management Practices Assistance: Research
- 5(i) Water Quality Impacts of Feedlot Pollution Control Systems
- 5(j) Shoreland Septic Inventory and Education : Research
- 5(k) Alternative Individual Sewage Treatment Systems Development and Demonstration : Research
- 5(l) Pathways to Sustainable Development
- 5(m) Upper Mississippi River Protection Project
- 5(n) Forest Management to Maintain Structural and Species Diversity : Research
- 5(o) Accelerated Native Grass and Forbs on Road Rights-of-Way
- 5(p) Accelerate Landscape Management Activities in Whitewater Watershed
- 5(q) Sustainable Grassland Conservation and Utilization

- 5(r) Developing, Evaluating and Promoting Sustainable Farming Systems
- 5(s) Cooperatives to Promote Sustainable Agricultural Practices and Research
- 5(t) Recycled Biosolids Product used to Reclaim Disturbed Areas : Research

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- 6(b) Environmental Education Teacher Training
- 6(c) Sharing Environmental Education Knowledge
- 6(d) Environmental Video Resource Library and Public Television Series
- 6(e) Development, Assimilation and Distribution of Wolf Educational Materials
- 6(f) Environmental Action Grants for Minnesota Schools
- 6(g) Electronic Environmental Education Network
- 6(h) Three Rivers Initiative
- 6(i) Interactive Computer Exhibit on Minnesota Renewable Energy Sources
- 6(j) Trees for Teens: Training, Resources, Education, Employment, Service
- 6(k) Redwood Falls School District #637 Environmental Education Project
- 6(l) Together Outdoors Minnesota
- 6(m) Enhanced Natural Resource Opportunities for Asian-Pacific Minnesotans
- 6(n) Deliver Ecological Information and Technical Assistance to Local Governments
- 6(o) Nonpoint Source Pollution Public Education Demonstration Project
- 6(p) Whitetail Deer Resource Center
- 6(q) Gordon Guillion Chair in Forest Wildlife Research and Education
- 6(r) Ney Environmental Center *
- 6(s) Lawndale Environmental Center *

Subd. 7 NATURAL RESOURCE DATA p.51

- 7(a) Environmental Indicators Initiative
- 7(b) Assessing Wetland Quality With Ecological Indicators : Research
- 7(c) County Biological Survey - Continuation
- 7(d) Forest Bird Diversity Initiative - Continuation : Research
- 7(e) Base Maps for 1990's - Final Phase - Continuation
- 7(f) Completion of Statewide Land Use Update - Continuation
- 7(g) Fillmore County Soil Survey Update
- 7(h) Minnesota River Tile System Research - Continuation
- 7(i) Sugarloaf Site Assessment and Interpretation
- 7(j) Microbial Deterioration of Asphalt Materials and its Prevention
- 7(k) Analysis of Lands Enrolled in the Conservation Reserve Program *

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- 8(a) Urban Wildlife Habitat Program
- 8(b) Gardening Program - Statewide
- 8(c) Releaf: Planting for Energy Conservation in Communities
- 8(d) Maplewood Innovative Storm Water Management Project
- 8(e) Phalen Wetland Restoration
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9(a) Statewide Experimental Fishing Regulations
9(b) RIM - Accelerate Fisheries Acquisition for Angler Access
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10(a) RIM - Accelerate Wildlife Acquisition
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11(a) Inter-city Electric Vehicle Transportation Demonstration
11(b) Sustainable Development of Wind Energy on Family Farms
11(c) 1 Megawatt Hybrid Electrical Generation Simulation Project
11(d) Avian Population Analysis for Wind Power Generation Regions : Research
11(e) Energy Improvements in Public Ice Arenas

Subd. 12 HISTORIC p.62

12(a) Restore Historic Mississippi River Mill Site
12(b) Pond-Dakota Mission Restoration
12(c) Joseph R. Brown Interpretive Center Restoration Project
12(d) Heritage Trails
12(e) Restoration of Historic Elba Fire Tower
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13(a) Biological Control of Eurasian Watermilfoil and Purple Loosestrife - Continuation
13(b) Biological Control of Overland Spread of Oak Wilt : Research
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ADDITIONAL APPROPRIATIONS p.65

20(a) State Park and Recreation Area Acquisition
20(b) Metropolitan Regional Parks and Trails Acquisition

**Appropriation added by the 1995 Legislature to the LCMR Recommendations*

Laws 1995, Chapter 220, Section 19, 20 & 21

Environment and Natural Resources Trust Fund (TF)
Future Resources Fund (FRF)
Oil Over Charge (OOC)
Great Lakes Protection Account (GLP)

Subd. 4: PARKS & TRAILS

METROPOLITAN REGIONAL PARK SYSTEM

4(a) \$3,950,000 TF
ML95 Chap. 220 Sec. 19 Subd. 4(a) - \$3,950,000

ML95 Chap. 220 Sec. 19 Subd. 20(b) - \$1,120,000
ML96 Chap. 407 Sec. 8 Subd. 1(a) and Subd. 3(a) - \$1,000,000

*Arne Stefferud
Metropolitan Council
Mears Park Centre
230 E. Fifth St.
St. Paul, MN 55101
(612) 291-6360*

This program has multiple purposes that generally address the acquisition, upkeep and improvement of Metropolitan Regional Parks. Objectives include: develop or redevelop recreation facilities, acquire residential and vacant lands within parks and reserves from willing sellers, create/restore natural habitats in parks and reserves, retrofit recreational facilities to accommodate persons with disabilities. ML95 Chap. 220 Sec. 19 Subd.4(a): \$3,950,000 This particular allocation from the Minnesota Environment and Natural Resource Trust Fund (TF) was used to fund or help support projects under the following classifications. Park/Trail Development/Redevelopment, Residential Inholding Acquisitions, Emergency Acquisition/ Development Projects, Natural Resource Development Projects, ADA Retrofit Projects.

ML95 Chap. 220 Sec. 19 Subd.20(b): This additional appropriation of \$1,120,000 was made for acquisition only.

This project will continue into the 1997-1999 biennium with an additional appropriation of \$3,500,000 (ML 97, Chap. 216, Sec. 15, Subd. 4(b)).

STATE PARK AND RECREATION AREA ACQUISITION, DEVELOPMENT, BETTERMENT, AND REHABILITATION

4(b) \$3,130,000 TF

*John Strohkirch
DNR, State Park Development and Acquisition Manager
500 Lafayette Road
St. Paul, MN 55155-4039
(612) 296-8289*

This project accomplished some of the goals of the State Park and Recreation Area Development, Acquisition, and Betterment and Rehabilitation Programs. Funds for this project were used to acquire high priority parcels of private lands within the state park boundaries offered for sale by willing sellers. This project also included the major rehabilitation and development of State Park and recreation area buildings and the betterment of non-building facilities. This program is funded not only from the Minnesota Environment and Natural Resource Trust Fund (TF) and the Minnesota Future Resources Fund (FRF) but also from other state allocations. ML95 Chap. 220 Sec. 19 Subd. 4(b): \$1,070,000 The appropriation was used to acquire approximately 320 acres of land within 10 Minnesota State Parks. These parks include, but are not limited to, William O'Brien State Park (80 acres), Split Rock Creek Park (120 acres), and Banning State Park (50 acres). The remaining \$2,080,000 was used for development. This allocation

funded approximately 46 facilities and projects at 41 Minnesota State Parks. Examples of the results from this allocation include, but are not limited to, the following.

1. Fort Snelling State Park - partial funding for a new visitor center .
2. Gooseberry Falls State Park - built a campground registration building .
3. Glendalough State Park - built a bathroom and shower facility in the campground .
4. Forestville Mystery Cave State Park - Constructed a trail and bridge .

ML95 Chap. 220 Sec. 19 Subd.4(j): \$200,000 FRF This funding represents an additional appropriation to ML95 Chap. 220 Sec. 19 Subd. 4(b). and was allocated for the construction of a bathroom and shower facility for a new campground at Upper Sioux Agency State Park.

ML95 Chap. 220 Sec. 19 Subd.20(a): \$1,120,000 This funding represents an additional appropriation to ML95 Chap. 220 Sec. 19 Subd. 4(b). and was allocated strictly for state park and recreation area acquisition. These additional funds enabled the purchase of 1030 acres of land in the following 11 state parks: Blue Mounds, Crow Wing, Glendalough, Great River Bluffs, Itasca, Lake Bemidji, Lake Bronson, Mille Lacs Kathio, Sibley, Split Rock Lighthouse, and Temperance River.

ML96 Chap. 406 Sec. 8 Subd.3(b): An additional appropriation of \$1,000,000 was made to this program in 1996 for the acquisition of land within state park and recreation areas. These funds purchased 457.03 acres of land in the following 7 state parks: Crow Wing, Forestville, Gooseberry, Lac qui Parle, Split Rock Creek, Tettegouche, and William O'Brien .

This project will continue into the 1997-1999 biennium with an additional appropriation of \$3,500,000 (**ML 97, Chap. 216, Sec. 15, Subd. 4(a).**

STATE TRAIL REHABILITATION AND ACQUISITION

4(c) \$250,000 TF

Thomas R. Danger

DNR

Trails and Waterways Unit

500 Lafayette Road

St. Paul, MN 55155-4052

(612) 296-4782

This program contributes to the acquisition and development of state trails as well as rehabilitating trails already in existence to correct safety problems.

Appropriations to this program may come from state bonding and other additional state funds as well as both the Minnesota Environment and Natural Resource Trust Fund (TF) and the Minnesota Future Resources Fund (FRF). For more details about other accomplishments of this program, please contact the program manager.

This appropriation from the TF was used to continue and/or complete the rehabilitation of two existing trails: 1) the Luce Line State Trail; and 2) the Heartland State Trail. Funds were allocated to continue the rehabilitation of bridges and culverts on a 29 mile section of the Luce Line trail between Plymouth and Winstead, and to complete bituminous rehabilitation of 28 miles of the Heartland trail between Park Rapids and Walker.

WATER ACCESS

4(d) \$600,000 TF

Michael T. Markell

DNR

Trails and Waterways Unit

500 Lafayette Road

St. Paul, MN 55155-4052

(612) 296-6413

This appropriation funded the acquisition and development of public water access statewide, including boating access, fishing piers, and shoreline access. Five access sites and three shore fishing sites were constructed, and seven fishing piers were installed. Access sites generally contained a boat launch ramp, parking for car-trailers, an entrance road, and signage. Shore fishing sites contain parking, accessible walkways to the lake and shoreline improvements to make access easier for fishing.

The project will continue into the 1997-1999 biennium with an additional appropriation of \$355,000 (ML 97, Chap. 216, Sec. 15, Subd. 17(o).) And \$350,000 (ML 97, Chap. 216, Sec. 15, Subd. 17(p).)

LOCAL NATURAL RESOURCE GRANTS

4(e) \$1,800,000 FRF

\$895,000 (*ML96 Chap. 407 Sec. 8 Subd. 3(c).*)

Wayne Sames

DNR

Office of Planning

500 Lafayette Road

St. Paul, MN 55155-4010

Phone:(612) 296-1567

Fax:(612) 296-6047

This matching grant program assists local governments and/or private organizations in acquisitions and development of outdoor recreation areas, trails, natural areas, scenic resources, and fish and wildlife habitat and will help private organizations conduct surveys and research on fish and wildlife. The five different grant programs are 1.) Local Park Grants 2.) Natural and Scenic Grants 3.) Conservation Partners Grants 4.) Environmental Partnership Grants and 5.) Cooperative Trail Grants. Emphasis is placed on coordinated efforts and grants will be made to those proposals that further a partnership approach involving both state and local governments and the private sector to help meet both outdoor recreation and natural resource protection needs of the state. This program receives funds from not only the Minnesota Environment and Natural Resource Trust Fund (TF) and the Minnesota Future Resources Fund (FRF), but from state bonding and the general fund as well.

The two appropriations produced the following results:

- 1) Local Park Grants - \$500,000 of the 1995 appropriation funded 19 projects and were matched with at least \$500,000 in local match; \$665,000 of the 1996 appropriation funded 20 projects and were matched with at least \$665,000 in local match; 2) Natural and Scenic Area Grants - \$500,000 of the 1995 appropriation funded 7 projects which helped acquire

over 208 acres of natural and scenic land; 3) Conservation Partners Grants - \$400,000 of the 1995 appropriation and \$100,000 of the 1996 appropriation funded 77 habitat enhancement, research and educational projects throughout the state and were matched by at least \$500,000 in local resources; 4) Cooperative Trail Grants - \$400,000 of the 1995 appropriation and \$130,000 of the 1996 appropriation were spent on grants in this subheading. For more specific information concerning on individual projects funded through the TF or the FRF, please contact the program manager. This project received an extension and was completed by June 30, 1998. The project also continued into the 1997-1999 biennium with an additional appropriation of \$2,900,000 (ML 97, Chap. 216, Sec. 15, Subd. 4(c).)

MINNEAPOLIS PARKS AND TRAIL CONNECTIONS

4(f) \$141,000 FRF

Albert D. Wittman

Minneapolis Parks and Recreation Board

200 Grain Exchange

400 S. 4th Street

Minneapolis, MN 55415-1400

(612) 661-4777

This project proposed to develop trail connections along the Mississippi Riverfront, providing greater access by urban and suburban residents to the Mississippi River and other regional parks. The proposed trail connections included: 1) a bicycle trail from Minnehaha Park to Historic Fort Snelling and the Mendota Bridge; 2) a trail along the West River Parkway from the Stone Arch Bridge to Bridge 9; 3) an East River Road Trail Connection with Anoka County Parks linking Boom Island to St. Anthony Parkway; and 4) a West River Parkway Trail Connection with North Mississippi Regional Park, Phase I, linking the West River Parkway to Shingle Creek Parkway Phase I. None of these proposed trail connections, however, were developed. Proposed trails #1 and #3 were unable to obtain ISTEAs matching dollars. Proposed trails #2 and #4 did receive an ISTEAs match, but these funds were not available until 1999, approximately two years after the scheduled completion date for this project. Therefore, MPRB was unable to start any of the trails identified above, and the project was withdrawn.

LOCAL SHARE FOR ISTEAs FEDERAL PROJECTS

4(g) \$300,000 OOC

This appropriation was for matching funds for two trail projects.

1.) *SUNRISE PRAIRIE TRAIL PROJECT \$150,000*

Laird Mork

Chisago County

38694 Tanger Drive

North Branch, MN 55056

(612) 674-8919

This appropriation provided half of the non-federal match requirement for the ISTEAs project: Sunrise Prairie Trail. The trail constructed was a 15 mile, 10 foot wide paved multiuse trail connecting North Branch and the Chisago/Washington County line. The project included

development of parking and rest areas in North Branch, Stacy, and Wyoming. Completed in the fall of 1997, this trail now provides for a multiple of recreation uses, an opportunity to use bicycles as an alternative mode of transportation along a significant commuter route, and a potential opportunity to connect the Twin Cities and Duluth as part of the Willard Munger Trail.

2.) *MESABI TRAIL \$150,000*

Bob Manzoline

St. Louis and Lake Counties Regional Rail Authority

1st Street South, Room 114

Virginia, MN 55792

Phone: (218) 749-0697

Fax: (218) 749-7160

This appropriation provides for the development of 4 segments of a 132 mile multipurpose recreational trail system connecting 22 Iron Range communities.

Segments to be completed include: Quad City Segment; Hibbing/Chisholm/Buhl Segment; Tower/Ely Segment; East Range Segment.

This project has received an extension and is due to be completed by June 30, 1999. The project will also continue into the 1997-1999 biennium with an additional appropriation of \$600,000 (ML 97, Chap. 216, Sec. 15, Subd. 18(a).)

PINE POINT PARK REST STATION

4(h) \$100,000 FRF

\$30,000 Nonstate Match

James Luger

Washington County

11660 Myeron Road North

Stillwater, MN 55082

Phone: (612) 430-4325

Fax: (612) 430-4350

Washington County Parks, in conjunction with the Minnesota Department of Natural Resources Trail and Waterways Unit, completed construction of a handicap accessible toilet building, drinking fountain, and picnic area adjacent to the existing parking lot in Pine Point Park, a Washington County park. These facilities now provide a major rest stop in the larger metropolitan system by directly serving both the Willard Munger State Trail, which bisects Pine Point Park, and the extensive existing County trail system.

INTERACTIVE MULTI-MEDIA COMPUTER INFORMATION SYSTEM

4(i) \$45,000 FRF

Thomas L. Peterson

Explore Lake County, Inc.

Route 1, Box 287-B

Two Harbors, MN 55616

(218) 834-2643

Web site address: www.lakecnty.com

Funds from this project were used to develop an interactive web page for Lake County which provides individualized information to visitors on facilities and attractions in the area. Funds were also used to purchase a Kiosk for the R.J. Houle Visitor Information Center in Two Harbors, MN. This Kiosk allows the visitor in Two

Harbors to view the web page without actually going on line, thereby extending the audience which is able to access the information gathered for this project. In the future, each of the facilities and attractions whose data is disseminated on the Kiosk and web site will be asked to develop and link their own web sites, providing an even richer base of information for those seeking information about Lake County.

UPPER SIOUX AGENCY STATE PARK

4(j) \$200,000 FRF

John Strohkirch

DNR, State Park and Development and Acquisition Manager

500 Lafayette Road

St. Paul, MN 55155-4039

Phone: (612) 296-8289

Appropriation added by the 1995 Legislature to the LCMR Recommendations

Appropriation funds were used to construct a new bathroom/shower facility in the campground unit at Upper Sioux Agency State Park.

GRAIN BELT MISSISSIPPI RIVERFRONT DEVELOPMENT

4(k) \$500,000 FRF

Bob Mattson

Minneapolis Park and Recreation Board

200 Grain Exchange

Minneapolis, MN 55415-1400

Appropriation added by the 1995 Legislature to the LCMR Recommendations

This appropriation funded the acquisition of 2.32 acres of land, including 1000 feet of shoreline on the Mississippi River, at the Grain Belt site located on the east bank of the Mississippi. After acquisition, the buildings on the property were demolished and the site cleared and restored to an environmentally acceptable condition. Future plans call for the improvement of the site as a riverfront amenity with trails in conjunction with the Grain Belt redevelopment by the Minneapolis Community Development Agency (MCDA.)

WILDCAT REGIONAL PARK BOAT RAMP PROJECT

4(l) \$40,000 FRF

Michael T. Markell

Minnesota Department of Natural Resources,

Trails and Waterways Unit

500 Lafayette Road

St. Paul, MN 55155-4052

Phone: (612)-296-6413

Fax: (612)-297-5475

E-mail: mike.markell@dnr.state.mn.us

Appropriation added by the 1995 Legislature to the LCMR Recommendations

The project represents a cooperative agreement with Houston County to construct an off-channel boat launch ramp, with protection from the main channel, on the Mississippi river. The county constructed launch ramps in 1995, access to the ramps and shoreline protection around the ramp in 1996, and dock facilities

in the summer of 1997. This site is listed on the water access maps published by the DNR.

Subd. 5: MANAGEMENT APPROACHES

LOCAL RIVER PLANNING

5(a) \$140,000 FRF

Steven P. Johnson

DNR Division of Waters

500 Lafayette Road

St. Paul, MN 55155-4032

(612) 296-4802

Web Site address: <http://www.dnr.state.mn.us>

This program was a three-biennium project to assist counties statewide in developing comprehensive plans for the management and protection of rivers by providing grants for up to two-thirds of the cost. Local governments and citizen steering committees identified the individual management needs for each river through a scoping process that involved all stakeholders along the river. These plans addressed locally identified issues to a specific river while maintaining consistency with state floodplain and shoreland laws and local water plans. Management plans have been completed for the Littlefork, Rat Root, Vermilion, Middle, Roseau, Snake, Long Prairie, Zumbro rivers and Minneopa Creek. Plans begun and completed in this biennium included the Long Prairie, Zumbro rivers and Minneopa Creek. Implementation of plan recommendations has already begun on some level for each of these three projects.

CANNON RIVER WATERSHED STRATEGIC PLAN: INTEGRATED MANAGEMENT

5(b) \$80,000 FRF

\$245,000 TF

\$ 81,000 Nonstate Match

Allene Moesler

Cannon River Watershed Partnership

P.O. Box 501

Fairbault, MN 55021

(507) 332-0488

This appropriation to the Cannon River Watershed Partnership (CRWP) was used to implement the strategic plan of the CRWP through community organizing, community learning opportunities, and projects focusing on the protection of water quality and biodiversity in the Cannon River watershed. The expectation was that empowering citizens with information and resources would result in public participation and local leadership of community organizations.

Within the Cannon River watershed, three subwatersheds were selected for initiative development: 1) Little Cannon River; 2) Prairie Creek; and 3) Fox/Circle Lakes and Wolf Creek. This project also supported additional activities which reduced non-point pollution and protected or restored native habitats on these watersheds through matching grants and technical assistance. Objectives focused on included stream corridor stabilization projects, agricultural nutrient management, protection of biologically sensitive areas, and forest stewardship plans.

Accomplishments of this appropriation include, but are not limited to, the following results:

- * Approximately 3,000 people received training or information about resource protection
- * Consistent citizen participation on steering and project selection committees
- * The Circle Lake Association was formed, and already has addressed several priority issues
- * 8 neighboring families on Fox Lake agreed to do shoreline repairs along 1,000 feet of shoreline
- * A 2,000' project to reduce erosion on the Little Cannon River was installed.
- * Stewardship plans were done for 124 sites totaling 9,013 acres.
- * Big Woods, prairie and oak savanna transition sites were established at River Bend Nature Center. Trails, signs and curricula were developed to interpret the site.
- * 480 acres were planted to native trees; 90 acres restored to prairie. In addition, students and volunteers planted 11,500 trees in the Big Woods Project area.

Programs, practices, and projects directed towards the goals of the Cannon River Watershed Strategic Plan are strong and continue to gain support. The most successful elements of the project were extended with the 1997-99 LCMR grant (ML97 Chap. 216 Sec. 15 Subd. 17(b).)

In addition, the project generated several indirect outcomes, including wetland restoration, interest in the watershed by the EPA and USFWS, and the formation of the Cannon River Chapter of the Minnesota Land Trust. For additional information concerning these indirect results, or more details on direct project results, please contact the program manager.

The project continues into the 1997-1999 biennium with an additional appropriation of \$350,000 (ML 97, Chap. 216, Sec. 15, Subd. 17(b).)

TRI-COUNTY LEECH LAKE WATERSHED PROJECT

5(c) \$300,000 FRF

Balance: \$7,000

Wally Christensen

HC74

Box 1675

Hackensack, MN 56452

(218) 682-2578

The Tri-County Leech Lake Watershed Project had three objectives. This project planned to: 1) increase environmental awareness and organize public involvement in order to guide the use and development of natural resources in the watershed; 2) develop and complete cooperative pilot projects demonstrating innovative, cost-effective designs and integrated management approaches; and 3) establish baseline data for sustainable resource management in the midst of a high-growth area. To reach these goals, TCELLWP was directed by a coalition of diverse local committees which created an efficient balance between available, public-sector technical assistance and a practical, private-sector understanding of local needs, politics and

resources. TCELLWP also illustrated conservation practices through pilot projects for public outreach and cumulative implementation of conservation measures. This project-driven approach provided the public with the tangible results it wanted.

Project results, which covered a wide spectrum of activities, include, but are not limited to: 1) completion of a project video, public service announcements and news releases; 2) a co-op erosion control project; 3) education and teacher programs; 4) fenced off 3 miles of critical stream habitat in pasture land; 5) completed 6 co-op urban water runoff plans; 6) began cooperative comprehensive recreation plan; 7) completed TCELLWP strategic plan; and 8) leveraged over \$1 million in grant funds. Projects take time to develop, and the TCELLWP has had a good start and envisions being very effective in protecting the outstanding resources of the watershed.

BLUFFLANDS LANDSCAPE

5(d) \$630,000 TF/FRF

\$50,000 Nonstate Match

Larry Gates

DNR

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There were three major recipients of funding within this project. The project's three complementary components were conducted by the Department of Natural Resources, the Historic Bluff Country in Fillmore and Houston counties, and the Winona County/La Crescent Area Common Vision project. Funding provided for a Blufflands Coordinator position at DNR, which helped provide technical assistance and guidance in workshops. Projects included developers, contractors and realtors workshops, an Oak Savanna Conference, development of conservation overlay districts, bluffland ordinances, open space zoning and a project based on citizens participation in ecological research. The Coordinator participated in the implementation of the complementary project in Fillmore, Houston and Winona Counties.

In Fillmore and Houston Counties, residents participated in the gathering and reviewing of information and problem solving which were incorporated into a written Common Vision for the two county area plus 31 recommendations for detailed actions. The project provided the opportunity for the review of several growth management and development tools to help evaluate actions balancing between development and conservation.

In Winona County, the project is providing information for the update of the comprehensive land use plan and a Bluffland Design Manual. The Manual was developed to guide the understanding of the complexity of various land use issues and will be used to help coordinate city, county and townships land planning concerns. Copies of the Manual are available at state and local government offices and libraries. The LCMR has additional photocopies of the manual available.

GLACIAL LAKE AGASSIZ BEACH RIDGES: MINING AND PROTECTION

5(e) \$85,000 FRF

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The intent of this appropriation was to coordinate a long-term plan for the beach ridges in Clay county that balances protection of native prairies with a sustainable aggregate industry. The project had three objectives. The first was to develop a long-term plan for the beach ridges through a local Forum. This Forum hosted many events over the past two years, and under the local leadership of the Steering Committee, produced a final report containing a comprehensive slate of recommendations. The final report and recommendations, in conjunction with preliminary work on implementing some of the recommendations, constitutes the County's plan for the future.

The second objective was to integrate existing natural resource information for Clay County into a customized geographic information system. Numerous existing digital datasets were collected and put into a format that could be used in combination with other datasets. These datasets together with data documentation, a demo, users' guide and selected maps were then captured on a CD-ROM that was installed on a computer in a regional library, a science center and the courthouse. This is one of the first projects in the state to use GIS technology in a public setting.

The final objective was for the project to have an outreach component to involve and inform the public about the project and the values of the beach ridges of Clay County. These projects were to be summarized in different ways for future use by a full range of the public. Some of the informational products developed by the Forum include: 1) computerized resource information on CD-ROM; 2) map displays; 3) a coloring book distributed on Earth Day; 4) an information handbook; 5) the final report with recommendations; and 6) a video.

ATMOSPHERIC MERCURY EMISSIONS, DEPOSITION, AND ENVIRONMENTAL COST EVALUATION

5(f) \$575,000 FRF

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RESEARCH PROJECT

This appropriation is for a mercury emissions inventory and quantification of mercury atmospheric deposition. The project will examine additional information on sources of mercury in the atmosphere such as taconite

processing and wood combustion which are not being studied nationally, how far mercury is transported away from sources before it is deposited, and the economic benefits of reducing mercury deposition. There will be an emphasis placed on mercury deposition in soil as a secondary source of mercury back to the atmosphere and as a source to lakes. \$50,000 is for an evaluation of the external costs of mercury emissions from Minnesota sources.

This project received an extension and was due to be completed by June 30, 1998. As of November 11, 1998 the final report is pending completion of data analysis.

MERCURY DEPOSITION AND LAKE QUALITY TRENDS

5(g) \$250,000 FRF/GLP

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Archaeometry Laboratory

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RESEARCH PROJECT

Mercury wet deposition was monitored at six Minnesota sites for a period of six years, 1990-1995. The three northernmost sites had significantly less mercury deposition than the more urban southern sites. The overall annual average of wet mercury deposition was 7.4 ug/m², +/- 2.1 s.d., and ranged from 3.4 to 10.9 ug/m² for n = 36. The relationship of mercury wet deposition versus year showed an increase of 0.59 ug/m²yr, +/- 0.18 s.e. (about an 8% increase per year over the 6 yr period), and had a significant positive correlation at 99+% confidence. Methylmercury deposition, measured in 36 weekly samples, averaged about 0.18 ng/L in rain and strongly correlated with depositions of total mercury and major ions, and precipitation depth. Quarterly mercury depositions showed a significant positive correlation with mercury emissions calculated from coal consumption for states in the region.

Water quality and fish sampling were conducted on eighty Minnesota lakes over the two year period, 1995-96. Samples of surface water and northern pike and/or walleye specimens (10 or more fish, over a range of desired sizes) were obtained from each lake. More than 1,400 mercury analyses were performed to make quantitative comparisons with fish data obtained previously from the same lakes up to 20 years earlier.

The results indicate that out of 80 study lakes, 75 had sufficient past residue data for statistical comparisons. Of those, 43 lakes (57%) show lower fish mercury levels for recent data compared to those reported previously, 19 lakes (25%) show greater mercury concentrations, and 13 lakes (17%) show no significant difference.

Lakes having fish with less mercury in the fillet with skin, show average differences for northern pike of 213 ng Hg/g (a 36% difference) and for walleye, 268 ng Hg/g (a 30% difference). For lakes showing more mercury in the fish fillet with skin, the average differences are

165 ng Hg/g (a 53% difference) for northern pike, and 165 ng Hg/g (a 72% difference) for walleye.

Water quality data analyses, comparing past and present measurements, show significant average increases within season (fall or spring) in pH (+0.2, +0.3) and alkalinity (+19, +37 ueq/L) accompanied by a decrease (-1.2, -1.5 mg/L) in sulfate concentrations. These trends are in agreement with observed trends in wet sulfate deposition which have been steadily decreasing for over a decade since state regulatory control measures were enacted in 1985.

Watershed factors influence the differing trends in mercury residue levels. Fish mercury concentrations show positive correlations with water color, methylmercury concentrations, and plankton mercury, and negative correlations with pH and alkalinity. In general, reservoir lakes showed decreases in fish mercury, while small lakes and lakes with high watershed to lake area ratios showed increases in fish mercury. Recommendations are made. As of November 11, 1998 the final report is pending completion of data analysis.

FEEDLOT AND MANURE MANAGEMENT PRACTICES ASSISTANCE

5(h) \$200,000 FRF

Gerald F. Heil

Minnesota Department of Agriculture

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RESEARCH PROJECT

These funds were used to address two objectives. The first objective was to determine the impact of manure integration within a conservation tillage system on water quality since direct entry of surface runoff into tile inlets in Southern Minnesota contributes to the non-point source pollution in the Minnesota River. Snow melt was found to be the major source of runoff, with its associated losses of nutrients (N and P) and oxygen-sink chemicals (COD) entering tile inlets. Sediment loss in the snow melt, however, was found to be negligible with little practical impact. Baseline data for rainfall runoff between watersheds is pending, since rainfall runoff monitoring was continued to the 1997 growing season. The second objective was to evaluate the potential for amelioration of manure effluent utilizing constructed earthen basins since dairy farms in SE Minnesota often have a strong positive nitrogen balance. The occurrence and amounts of gaseous nitrogen losses from a liquid manure management system with recycled flush water were investigated on a dairy farm in Winona County with 150 to 165 cows. N-losses to the atmosphere from manure storages reduce the amount of nitrogen that needs to be land applied, thereby reducing possible excess fertilization, which could lead to water pollution. Such losses are desirable if they occur through denitrification. At this site, the prevailing mode of nitrogen loss was found to be ammonia volatilization. Denitrification losses were negligible.

WATER QUALITY IMPACTS OF FEEDLOT POLLUTION CONTROL SYSTEMS

5(i) \$300,000 FRF

\$267,000 Nonstate Match

David Wall

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RESEARCH PROJECT

Two main components of the project were completed: (1) analysis of the treatment of cattle-feedlot runoff with grass filter strips at two sites in Minnesota, and (2) the monitoring of earthen manure storage system seepage. Final reports for this project, done in cooperation with the U.S. Geological Survey, will be completed in December 1998 with peer review conducted by the Survey in early 1999.

SHORELAND SEPTIC INVENTORY AND EDUCATION

5(j) \$145,000 FRF

Beth Kluthe

Hubbard County Environmental Services

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The Mantrap Watershed consists of 17 lake complexes and is of prime economic and recreational importance to the area. The primary objective of this project was for the Hubbard County Environmental Services Office to inventory all shoreland areas in the watershed to identify failing septic systems. Property owners were required to upgrade failing septic systems within one year of notification. Currently, the entire shoreland area of the Mantrap Watershed has been inventoried. 1062 properties were targeted for an onsite review including 625 septic systems which were determined to be failing. Property owners were notified upgrades were required within 12 months. The end result of the project will be 100% compliance with shoreland septic systems. A second objective involved establishing an education program to inform property owners of the problems associated with failing septic systems, proper maintenance and use of septic systems and recommendations for water conservation. Fact sheets were developed to aid in this effort. Education materials were mailed to the original 1062 properties targeted for onsite review. Additional materials were sent to those properties found to have failing septic systems. The format of this program has been shared with other local units of government and at numerous lake-association meetings. Both Crow Wing County and the Tri-County Leech Lake Project have initiated similar inventory programs.

ALTERNATIVE INDIVIDUAL SEWAGE TREATMENT SYSTEMS DEVELOPMENT AND DEMONSTRATION 5(k) \$425,000 FRF

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RESEARCH PROJECT

Twenty seven percent of Minnesota residents rely on Individual Sewage Treatment Systems (ISTSS). However, conventional ISTSS are not effective in adequately removing nitrogen in geologically sensitive areas. In areas with high water tables, the only ISTS option available is a costly mound system. This project represents a university/multi-industry/local, state, and federal agency effort to design, construct and monitor the performance of alternative and cluster treatment systems in these restrictive site and soil conditions. Two study sites were chosen, located at the NE Correctional Facility near Duluth and adjacent to Lake Washington, approximately 10 miles NE of Mankato. Seven alternative systems were installed at these two sites, including submerged bed constructed wetlands, peat filters, intermittent sand filters, drainfield trenches, an aerobic treatment unit, a drip irrigation system and a recirculating sand filter. In addition, monitoring at five existing ISTSS near Beauford, MN was continued, including soil treatment trenches with artificial drainage and a sewage treatment mound system. The goal was to design these systems to treat septic tank sewage to meet secondary treatment standards for total suspended solids (TSS), biochemical oxygen demand (BOD5), and fecal coliform bacteria.

Initial monitoring results were encouraging with good removal efficiencies for all systems. The gravity peat filter design criteria appeared flawed since there have been two system failures. These systems will be reconstructed and different loading rates evaluated. The other systems will continue to be monitored for the next two years under an additional appropriation from the LCMR to gain information on their long-term ability to treat septic tank sewage.

This project will continue into the 1997-1999 biennium with an additional appropriation of \$500,000 (ML 97, Chap. 216, Sec. 15, Subd. 6(a).)

PATHWAYS TO SUSTAINABLE DEVELOPMENT 5(l) \$200,000 TF

John R. Wells
Environmental Quality Board
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The Pathways to Sustainable Development Project identified and assessed barriers to sustainable development in the areas of energy, manufacturing and settlement. The project explored instances where the current public policies create unintended, negative effects for Minnesota's economy, environment or

communities. Barriers identified include such things as information policy, public incentives and subsidies, state and federal regulation, publicly managed resources, coordination and performance measurement, market incentives. These broad policy findings were drawn from policy research developed in reports, briefing papers and mapping projects.

Briefing papers were prepared in several policy areas including energy, manufacturing, settlement, carbon taxes, and public incentives for businesses in Minnesota. Each briefing paper provides background on trends and issues in these areas as well as summaries of focus group comments on barriers to sustainable development. Briefing papers served as background to the selection of policy research reports.

Reports completed under the project include:

1. Brownfields: An opportunity for Sustainable Development
2. Fiscal Patterns and Population Trends
3. Minnesota Policies Affecting Residential Development
4. Minnesota Directory of Sustainable Development

<http://www.mnplan.state.mn.us/SDI/index.html>

For further project information, or to obtain copies of the reports, contact the Environmental Quality Board at: Minnesota Planning, Sustainable Development Initiative, 685 Cedar St, St. Paul, MN 55155.

This project will continue into the 1997-1999 biennium with an additional appropriation of \$250,000 (ML 97, Chap. 216, Sec. 15, Subd. 12(g).)

UPPER MISSISSIPPI RIVER PROTECTION PROJECT 5(m) \$200,000 FRF

\$100,000 Nonstate Match
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This project was proposed jointly by the Metropolitan Council and the Mississippi Headwaters Board on behalf of the River Defense Network and the Mississippi River Watch Project. The project built on two activities: 1) a cooperative venture to more effectively prevent spills and respond to them when they occur, involving private and public entities and a network of first responders from the Headwaters to the Twin Cities; and 2) the Mississippi Headwaters River Watch Project, an ambient water quality monitoring and protection program, established in 1990 on the first 400 miles of the river.

Funds were used to match funding by the U.S. Army Corps of Engineers' funds and were used to refine the Corps of Engineers' Rivers in Emergency Management Model (REMM), to assess spill hazards on the upper Mississippi River, to study spill response equipment needs, and for cooperative studies to produce a spill prevention and response manual, Mississippi Defense Network Spill Response Manual. The remaining funds were used by River Watch Project participants to produce a river quality education program, an educational curriculum, and a workbook describing activities that educators can use to protect the river. These materials were presented at several workshops and distributed to approximately 225 teachers and participants for evaluation prior to a final printing of these materials in December, 1997. These products and activities generated as a result of this project will help communities implement spill prevention and response programs for the river. Educational materials will help build a body of information about water quality of the river and related tributaries.

FOREST MANAGEMENT TO MAINTAIN STRUCTURAL AND SPECIES DIVERSITY

5(n) \$160,000 TF

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RESEARCH PROJECT

The overall goal of this project was to develop initial, site-based silvicultural guidelines that will maintain the structural and compositional aspect of diversity on commercial forests in eastcentral Minnesota. This goal was achieved by using the LINKAGES forest growth and harvesting model to simulate and evaluate a variety of silvicultural practices on common soil types and under condition of the current climate as compared to conditions predicted for climate change over the next 400 years. A total of 57 LINKAGES simulations were made. Assuming no change in climate over the next 400 years, partial cutting management scenarios which allow a maximum removal of 30% basal area every 10-20 years would maintain a high-quality northern hardwoods cover type and compatible commodity timber production, in the Nemadji State Forest, on the soil types examined. However, under climate change conditions the forest cover type does not persist and therefore, no commodity production is possible. These results demonstrate that guidelines based on average stands on average soils are inadequate for making the best management decisions at the stand level. This is especially true in the face of increased demand on forested lands coupled with potential effects of climate change.

ACCELERATED NATIVE GRASS AND FORBS ON ROADRIGHTS-OF-WAY

5(o) \$150,000 TF

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The goal of this project was to accelerate the acceptance and implementation of integrated roadside resource management techniques which meet transportation needs while protecting and improving local biological diversity. This was accomplished by the establishment and management of native plants in roadsides. A total of 16 projects covering 358 acres in 12 different counties were planted with native grasses and forbs. Approximately \$60,000 was leveraged from other sources to help pay for the native grass plantings.

The project goal was also met by providing specialized equipment and training sessions for road authorities to encourage the use of prescribed burning for managing native roadside plantings. One formal burn school was conducted. Informal training sessions occurred during the burning of 278 acres of roadside prairies on 16 different sites alongside highway 56 in SE Minnesota. As a result, the acreage of sites managed through prescribed burning was increased by 10% from previous years and additional training requests have been received by county and state highway officials.

Equipment purchased by project funds are now located in western, central, eastern, and south-central Minnesota and continue to be used by a variety of State and non-state agencies for the purposes specified in this project.

ACCELERATE LANDSCAPE MANAGEMENT ACTIVITIES IN WHITEWATER WATERSHED

5(p) \$60,000 FRF

Jon Cole

MN DNR

Whitewater Wildlife Management Area

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The objective of this project was to efficiently accelerate landscape management activities in the Whitewater Watershed through an inter-discipline/agency team and applying the Integrated Resource Management (IRM) concept. These funds were used to extend the work season for five seasonal employees. These individuals worked across disciplinary lines completing projects for fisheries, forestry, wildlife and parks. While also reducing unemployment costs, fleet costs, and generating \$42,500 in savings to disciplines outside of Whitewater.

This project demonstrated that interdisciplinary teams, when located in the same geographic area, could dramatically increase the efficiency of each individual work station and cooperative projects within that geographic area.

SUSTAINABLE GRASSLAND CONSERVATION AND UTILIZATION

5(q) \$125,000 FRF

Peter Buessler

MN DNR

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The decline of grass and forage based agriculture, and the upcoming end of the Conservation Reserve Program (CRP) has been a cause of concern for the Glacial Lake Agassiz Beach Ridges area. This project offered an opportunity to let landowners and communities voice their concern, put "sustainable development" into operation and learn how agencies and programs can best assist them in that effort.

The project had three objectives. The first was to organize local landscape workgroups to explore and develop integrated strategies for addressing key issues such as, "the future of CRP lands" and "protection of biodiversity." A 25 member steering group and 4 citizen panels completed the report "Two Futures: Citizens Define Ways to Manage Glacial Lake Agassiz Ecosystems" and a discussion guide and moderator's handbook for use by other communities and organizations involved with addressing similar issues.

The second objective was to implement integrated, cooperative projects targeted to the specific needs of the pilot prairie/farmland landscape. This objective was delivered through a partnership with the Resource Conservation and Development Councils serving the area which enabled the leverage of an additional \$50,000 from USDA/NRCS. Nineteen separate projects were completed, including but not limited to on-farm demonstrations, community education activities, and cooperative resource assessments.

The final objective was to evaluate both individual landowner and lender implications of post-CRP and other grassland management decisions. This study suggests that while there may be farm-specific grass-based systems that are financially superior to current management returns, the expansion of grass-based systems will remain particular to individual farms. A one-size-fits-all system is unlikely to be found.

This project will continue into the 1997-1999 biennium with an additional appropriation of \$125,000 (ML 97, Chap. 216, Sec. 15, Subd. 7(d).)

DEVELOPING, EVALUATING AND PROMOTING SUSTAINABLE FARMING SYSTEMS

5(r) \$225,000 FRF

\$ 50,000 Nonstate Match

Shelly Eckblad

Whitewater Joint Powers Board

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This appropriation provided for the development and

evaluation of farming systems for impacts on ecosystems, profitability, and quality of life through on-farm research, experiment station research, watershed demonstration farms, and education. Objectives included: develop and test indicators that can be used by farmers for monitoring impacts on their farm ecosystem, economics, and social well-being, develop and implement farm management systems that meet farm operators' goals and those set by the Whitewater Watershed for sustaining area ecosystems, and promote sustainable agricultural systems through educational materials and programs.

The Monitoring Team completed three years of research and education designed to test a process of on-farm observation and interaction that brings together farmers and other professionals. The project has focused on farms in transition to Management Intensive Grazing (MIG).

The Team collected analytical data on six team farms and paired farms (nearby farms with similar soils or stream reaches), documented farmer observations, and tested selected on-farm indicators. For example, the Team collected soils data from 54 permanent plots. In addition, in-field comparisons led to identification of five soil monitoring tools to be included in a Monitoring Tool Box. Volunteers and farm families conducted breeding bird and breeding frog and toad counts. Information was collected from streams on four team farms and three paired sites on the same or adjacent streams.

Several findings suggest that MIG has broad ecosystem and socio-economic benefits. Rested paddocks show promise as nesting sites and cover for endangered grassland bird species. MIG stations on two streams improved chemical, physical and biological parameters when compared to continuously grazed stations. A set of four economic indicators of sustainability shows that the advantages of grazing go beyond profitability. In winter 1998 a Monitoring Tool Box will be published of indicators that can be used by farmers to see if they are making progress toward their goals. The Tool Box will contain narrative and visual aids from the research areas and will encourage farmers to use a whole farm planning and monitoring approach.

The Monitoring Project gave approximately 60 presentations reaching in-state and national audiences. In addition they held 10 field days reaching local, state, regional and national audiences totaling more than 450 people. Dick Levin's publication *Monitoring Sustainable Agriculture with Conventional Financial Data* has been distributed to over 700 people. Alison Meares' article on quality of life was published in the Winter 1997 issue of *Rural Sociology*. The Rupprecht farm and the Monitoring Project were covered in the October 1996 issue of *Successful Farming*. The project was also covered in January-February 1996 issue of *The Minnesota Volunteer*, in a story called "The Diversity of Life on the Farm". Additionally, the Project was featured in other news stories.

Two Whitewater Demonstration Farms :

Two demonstration farms were completed in the Whitewater Watershed, which demonstrate a variety of sustainable farming practices. The demonstration farms provide an arena for farmer-to-farmer information sharing and education on the land and through written materials and presentations.

Farm plans were developed for both farms. Some of the activities completed within the plans include: fiberglass fencing to exclude cattle from streambank; bioengineering and native grass planting to stabilize an eroding bank; burning a former CRP field and planting it to native grasses for rotational grazing; realigning contour strips; planting shelterbelts for building protection; tree planting and warm season native grass planting to increase habitat corridors; and planting Switchgrass to widen a waterway. Land surveying for animal waste storage, and waste system designs were completed. Construction has begun on one system, while the other is still in the permitting stage.

A self-guided tour is completed and marked by a roadside pullover, signs, and brochures. It is located near Whitewater State Park and is open to the public. The park is including it in their Whitewater Valley Points of Interest map, which is handed out to park visitors. In addition, Public education via presentations on the Whitewater Watershed, including the LCMR-funded Demonstration Farms, is a continuing process that has reached over 10,000 people.

This project received an extension and was completed June 30, 1998.

COOPERATIVES TO PROMOTE SUSTAINABLE AGRICULTURAL PRACTICES AND RESEARCH

5(s) \$100,000 FRF
\$ 50,000 Nonstate Match

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The key objectives of this project were to promote adoption of farming practices that are environmentally and economically sound by strengthening the education networks of the Sustainable Farming Association (SFA). One hundred and fifteen workshops, field days, pasture walks and annual meetings featuring many aspects of farming practices that are environmentally sound were put on by SFA chapters and the State SFA during the past two years. These programs were delivered to over 6,000 people across Minnesota. The University of Minnesota's Southwest Experimental Station was a co-sponsor of one of the on-farm demonstrations. The event focused on runoff from pastures into waterways. Two new chapters of the SFA were formed in Coteau Ridge and the Princeton area, increasing membership from 800 families to a current level of approximately 1000 families, and the groundwork was established for two additional chapters. Independent research has indicated that SFA members have benefited from improved relationships with major

institutions and are more likely to adapt more environmentally friendly agricultural practices.

A second project objective was to develop a cooperative network and conduct complementary on-farm and Southwest Experiment Station research to advance the development and use of sustainable farming practices. Development of this network of farmers and researchers proved to be a challenge. Researchers have traditionally treated members of communities and organizations as passive subjects. During this project, a more holistic approach called Participatory Action Research (PAR) evolved in which members of the group of interest are actively engaged as important, essential partners in the quest for knowledge. SFA initiated 12 such conversations with farmers in southwest Minnesota on topics concerning their soil management, history and observations. The results of these activities are presented in the report *Participatory Action Research: Redefining the Relationship between Scientist, Farmer, and the Land*. They will also be published in a Master of Science Thesis at the University of Minnesota.

RECYCLED BIOSOLIDS PRODUCT USED TO RECLAIM DISTURBED AREAS

5(t) \$200,000 OOC
Kathryn J. Draeger
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Power Plant Aggregates of Iowa
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RESEARCH PROJECT

This project proposed the development of disturbed landscape reclamation methodology using native plant mixes, nitrogen-fixing bacteria and N-Viro Soil, a treated sewage sludge and recycled biosolids product. Results indicated that N-Viro Soil proved to be more effective than topsoil and fertilizer in reclamation efforts. N-Viro Soil showed increases in valuable plant nutrient (N, P, and K), organic content of the soil, and vegetative establishment, and a reduction in visible signs of erosion. As a result, plant biomass and percent cover were highest in N-Viro Soil treated areas. The study also identified four strains of nitrogen-fixing bacteria, which promote equal, or greater plant growth than those present in recommended commercial inoculates. The University of Minnesota is working with MnDOT to continue studies in this area. Finally, a handbook has been developed which outlines the principles for disturbed landscape reclamation using N-Viro Soil. This publication is available to the public.

Subd. 6: ENVIRONMENTAL EDUCATION

LEOPOLD EDUCATION PROJECT CURRICULUM

6(a) \$100,000 TF
\$50,000 Nonstate Match
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The Leopold Education Project (LEP) is an innovative, interdisciplinary conservation ethics curriculum targeted for grades 6 through 12. It involves the use of three primary areas of reflective and reasonable learning including; content knowledge, creative thinking, and critical thinking and leads to an ecologically literate citizenry. Funding for this project resulted in 232 Minnesota educators being directly trained in the curriculum of the LEP. In addition, educators from all geographic areas of the state received materials and training that not only allow them to use the curriculum within their general educational setting, but to share it with their peers by conducting their own LEP in-service workshop. While the number of students reached with this project has not been quantified, it has the potential to reach each and every student in the state.

ENVIRONMENTAL EDUCATION TEACHER TRAINING

6(b) \$500,000 TF

Pam Landers

Environmental Education Advisory Board

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This project developed and put in place a statewide, coordinated, environmental education training program for both current teachers and students in teacher education programs. Ten universities chose to participate in this project. They are Bemidji State University, Concordia College, Hamline University, Mankato State University, Moorhead State University, St. Cloud State University, University of Minnesota, Duluth, University of Minnesota, Morris, University of Minnesota, Twin Cities, and Winona State University. Individual teams from each of the participating institutions fully developed courses in environmental education teacher training which were approved by the program manager. These courses integrated goals and standards initially agreed upon by higher education representatives, teachers, and other major EE deliverers. Nine of the institutions conducted their courses during the Summer of 1996, reaching 207 Minnesota teachers. Winona State University held its first session in June of 1997 with an expected 25 teachers attending. The LCMR granted the Teacher Preparation Project an extension to allow participating higher education institutions to complete additional teacher preparation classes. The extension allowed an estimated additional 130 teachers to be trained. Seven of the institutions have permanently installed the courses in their offerings. All ten have incorporated the course content into existing courses.

The project was requested to make presentations to the North American Association for Environmental Education, the National Environmental Education Advancement Project, the Pennsylvania Office of Environmental Education, and the Pew Charitable Trusts Education and Environment Roundtable. The National Environmental Education and Training

Foundation was convinced enough of the project's value to support an amendment to the 1999 national K-12 legislation that would provide grants to states to carry out similar projects. Minnesota would be eligible to apply for such a grant.

This project received an extension and was completed by June 30, 1998.

SHARING ENVIRONMENTAL EDUCATION KNOWLEDGE

6(c) \$200,000 TF

Denise M. Stromme

Minnesota Office of Environmental Assistance

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Phone: (612) 215-0265

Fax: (612) 215-0229

Web site address: <http://www.seek.state.mn.us>

The goal of this project was to plan and develop SEEK (Sharing Environmental Education Knowledge), an information exchange and service center that coordinates the collection, evaluation, dissemination and promotion of environmental education (EE) resources and programs. SEEK first debuted in April of 1996 and is considered a first-stop source for those wanting to distribute or find EE resources. As of June 1997, SEEK had 93 Contributors (agencies, organizations, etc.) dedicated to sharing their EE resources and information through the web site, and has had over 362,000 requests for information. The SEEK web site has flourished and will continue to evolve with minor adjustments due to the constant change in technology, in the involvement of a large number of Contributors and SEEKers, and in the needs of educators and environmental education deliverers across the state.

ENVIRONMENTAL VIDEO RESOURCE DIRECTORY AND PUBLIC TELEVISION SERIES

6(d) \$250,000 FRF

Elizabeth Carey

Twin Cities Public Television

172 E. Fourth Street

St. Paul, MN 55101

Phone: (612) 229-1347

Fax: (612)-229-1282

Web Address: <http://www.ktca.org/econnection>

This project funded the production and broadcast of The E Connection, an environmental television series about Minnesota environmental achievements. Five half-hour programs were produced. Each program contained four stories on Minnesota's environment, natural resources and the people involved in the environment. The programs aired on Minnesota Public Television stations in the Twin Cities, Duluth, Fargo/Moorehead, Appleton, and Austin and have been re-run at least once on each of these stations. Fifteen of the stories have also been packaged as individual program fillers made available to Public Television stations nationwide. To accompany the series, teacher's guides for all of the programs were created and workshops offered to alert teachers about the series. A permanent

web site has also been established (<http://www.ktca.org/econnection>). Included in this site is further information about the series and environmental videos, and the E Connection teacher's guide.

In addition to The E Connection, four Newton's Apple segments focusing on ethanol, wetlands, deformed frogs, and kids environmental archaeology were co-produced and were part of the Newton's Apple national PBS broadcast. Five stories were co-produced with, and broadcast on, NewsNight Minnesota (NNM), which is carried on all the Minnesota Public Television stations. Finally, as part of an outreach effort, an 8 minute training tape was produced to teach the viewer some of the basic functions of the SEEK (Sharing Environmental Education Knowledge) database.

DEVELOPMENT, ASSIMILATION, AND DISTRIBUTION OF WOLF EDUCATIONAL MATERIALS

6(e) \$100,000 FRF

\$ 30,000 Nonstate Match

Walter M. Medwid

International Wolf Center

1369 HWY 169

Ely, MN 55731

Phone: (218) 365-4695

Fax (218) 365-3318

Web site address: <http://www.wolf.org>

Funds from this project help the International Wolf Center (IWC) collect and develop state-of-the-art written, electronic, and photographic audiovisual material about wolf ecology, recovery, and management for electronic distribution to Minnesota schools, nature centers, and other interested individuals and organizations. The new Information Resources department was established to respond to an average of over 300 information requests per month. The department also surveyed and catalogued all of the materials currently held by the IWC and made plans for future acquisitions. Funds were also used to print and distribute a bibliography of wolf resources and develop two wolf education packages. The highlight of the project was the development of an on-site public access computer workstation and web page. During its first year of operation, the web site was accessed 1.2 million times. Over 250 pages have been established on the web site, including a catalogue of IWC resource materials, the wolf bibliography, and wolf education packages, to meet the average of 20,000 visits received to the IWC's web site per week.

This project will continue into the 1997-1999 biennium with an additional appropriation of \$100,000 (ML 97, Chap. 216, Sec. 15, Subd. 13(g).)

ENVIRONMENTAL ACTION GRANTS FOR MINNESOTA SCHOOLS

6(f) \$200,000 TF

\$ 50,000 Nonstate Match

Gary B. Deason

School Nature Area Project (SNAP)

St. Olaf College

1520 St. Olaf Avenue

Northfield, MN 55057

(507) 646-3908

Web site address: <http://www.stolaf.edu/other/snap/index.html>

The School Nature Area Project (SNAP) created the Environmental Action Grants program for K-12 schools for projects leading to the establishment of school nature areas within walking distance of school buildings. Thirty project grants, for planting native vegetation and enhancing wildlife habitat, and twelve Partnership Grants, for the development of nature areas and environmental education training for teachers, were awarded to Minnesota schools throughout the state. Over 8,450 students were involved in Project Grants that impacted over 1000 acres of land and leveraged an additional \$48,000. In the Partnership Grant program, 69 teachers participated in environmental education training and developed curriculum units for their nature areas. An additional 125 people and organizations provided consulting services and assistance to the schools. Finally, after an outside evaluator visited six Project Grant schools, he noted in his report "that the Project Grants provided an excellent starting point at nearly all the sites and were used as an impetus for seeking future funding, volunteer help, community involvement, and more long-term planning."

Dissemination of the project results took place through a variety of forums. Project results have been presented at three separate teacher conferences. The *Environmental Action Grants* book, describing projects of all of the schools that have worked with SNAP, was compiled and will be distributed at meetings advertising the grants program. Project descriptions are also being added to the SNAP web site where every school has a web page. Three 5-7 minute video segments about three Project Grant schools were produced for the television program *Environmental Journal*. Forty-five teachers also participated in a Project Grant Recipients Conference that focused on planting native vegetation.

This project will continue into the 1997-1999 biennium with an additional appropriation of \$250,000 (ML 97, Chap. 216, Sec. 15, Subd. 13(a).)

ELECTRONIC ENVIRONMENTAL EDUCATION NETWORK (EEEN)

6(g) \$250,000 FRF

\$ 38,000 Nonstate Match

Mark Martell

The Raptor Center at the University of Minnesota

1920 Fitch Avenue

St. Paul, MN 55108

Web site address: <http://www.raptor.cvm.umn.edu>

This project developed a program for student participation in satellite-tracking research, data collection and dissemination. Satellite telemetry was used to determine the migratory routes, stopover sites, and wintering areas of 12 Minnesota nesting Ospreys, and 2 Swainson's Hawks between 1995 and 1996. An additional nine Osprey and three Swainson's Hawks were fitted with radios in the summer of 1997. Data

collected show that Minnesota's Osprey take two distinct migratory routes south and identify six countries where wintering areas occur. Minnesota's Swainson's Hawks migrated south along the same route, and wintered in the same areas, as other North American Swainson's Hawks. This exposes them to pesticide problems that, in the past, resulted in the deaths of over 5,000 hawks.

A website (<http://www.raptor.cvm.umn.edu>) connects schoolchildren and the general public to the project, allowing them to participate in research as it happens. The data, migration locations, natural history information, and 16 teacher lesson plans were placed on the Web and classroom materials have been distributed to schools around Minnesota and the United States. Twelve teacher workshops and over 20 classroom and public presentations were given to increase the awareness and skills of teachers and others using these materials. In addition, partnerships with Environmental Learning Centers around the state and selected national partnerships have resulted in a broader learning experience for schoolchildren statewide who access this program via the internet. As of December 1997, the site was being used by over 50 schools.

This project will continue into the 1997-1999 biennium with an additional appropriation of \$222,000 (ML 97, Chap. 216, Sec. 15, Subd. 13(i)). Additional private monies have been and will continue to be raised to support and expand the project nationally and possibly internationally.

THREE RIVERS INITIATIVE

6(h) \$750,000 FRF

Patrick L. Hamilton

Science Museum of Minnesota

30 E. 10th Street

St. Paul, MN 55101

Phone: (612) 221-4761

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E-mail: hamilton@sci.mus.mn.us

Using the Mississippi, Minnesota, and St. Croix rivers, Three Rivers Initiative (TRI) produced new exhibits, theater performances, and demonstrations for museum visitors that emphasize the connections between watersheds and river water quality. These include 3,100 square feet of new river-based exhibits for the Our Minnesota hall, a TRI demonstration to acquaint visitors with the issue of bioaccumulation of mercury in fish, and a new program for school groups focusing on the water quality challenges facing the Minnesota river. Project funds also gave some high school students the chance to learn exhibit development and production skills from museum staff and then develop their own exhibits about the three rivers. Collectively called the "River Mall," these exhibits are on long-term display in the Our Minnesota hall. Finally, TRI developed new school outreach programs about rivers that have already reached 34,000 students and teachers.

INTERACTIVE COMPUTER EXHIBIT ON MINNESOTA RENEWABLE ENERGY SOURCES

6(i) \$150,000 OOC

William B. Grant

Midwest Office of the Izaak Walton League of America

5701 Normandale Road

Minneapolis, MN 55424

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Web site address: <http://www.iwla.org>

This appropriation has been used to develop an interactive multimedia computer exhibit on renewable energy resources in Minnesota. In accordance with the Minnesota Environmental Education Plan, users of the CD-ROM will: 1) learn about the environmental impact of energy use and power generation in the state; 2) learn about alternatives presented by renewable energy sources; 3) understand the economic and environmental impact of these alternatives; and 4) gain information to make informed decisions about energy use and power generation. 2,500 CD-ROMS, entitled Power to Spare: Minnesota's Renewable Energy Resources, were produced and will be disseminated to students in elementary and middle schools. The CD-ROM is also now on display in a computer kiosk in the Our Minnesota Hall in the Science Museum of Minnesota.

TREES FOR TEENS: TRAINING, RESOURCES, EDUCATION EMPLOYMENT SERVICE

6(j) \$75,000 FRF

Kirk M. Brown

Twin Cities Tree Trust

6300 Walker Avenue

St. Louis Park, MN 55416

(612) 920-9326

Through a hands-on training program and mentoring program at least 100 youth from 5 pilot schools gained training in urban forestry and carried out community service projects. Pilot schools were selected which have populations at risk, low income, disabled, and/or culturally diverse students interested in participating, as well as schools exhibiting strong PTA commitment. In addition Trees for Teens produced three publications including a Youth Notebook, Teacher's Manual, and Program Guide on the project which will be available for purchase by other schools interested in implementing the program.

REDWOOD FALLS SCHOOL DISTRICT #637 ENVIRONMENTAL EDUCATION

6(k) \$250,000 TF

Jerry Meschke

Redwood Falls School District

100 George Ramseth Drive

Redwood Falls, MN 56283

Phone: (507) 644-3521

Web Site address: <http://redwood.mntm.org/lcmr/>

The primary objectives of this project were to create a K-12 environmental curriculum in the Redwood Falls School District and develop two nature areas, one adjacent to the Reede Gray Elementary School and the other adjacent to the High School/Middle School building. All the teachers in the district attended two inservices facilitated by staff from the School Nature Area Project. The project also funded the development

of a 4000 square foot nature area at Reede Gray, including a walking trail and native species plantings, and established a 22-acre nature area at the High School/Middle School. This area included walking trails, interpretive signage, native species planting, outdoor classroom areas, and three arboretum areas. The results of this project have been disseminated to interested parties using several different methods; including a booth exhibit, pamphlet distribution, an open house, and the development of a web site.

TOGETHER OUTDOORS MINNESOTA

6(l) \$575,000 FRF

\$ 80,000 Nonstate Match

Greg Lais, Executive Director

Wilderness Inquiry

1313 5th Street SE

Box 84

Minneapolis, MN 55414

(612) 379-3858

This project had three primary goals: 1) Establish Minnesota as a model state for inclusion of diverse populations in natural resource programs; 2) Increase quality of life for people of different abilities and cultures through improved access to Minnesota's outdoor resources; and 3) Improve the quality of outdoor program service delivery for all Minnesota citizens.

This was accomplished in three phases. First, over 50 people, all of whom were minorities or people with disabilities, completed Outdoor Diversity Training to become Diversity Specialists. Training materials included ways of recognizing the needs and contributions of cultural groups in Minnesota, including Asian-Pacific Minnesotans, American Indians, African American Minnesotans and Mexican-Chicano-Latino Minnesotans, and Minnesotans with disabilities. In the second phase, these specialists trained over 700 outdoor recreation service providers about working with diverse populations, adapting facilities or programs to meet the needs of these diverse populations, and facilitating inclusion and increasing participation by these diverse users.

The final phase was the establishment of a Diversity Specialist network. This network was responsible for outreach activities which served 2400 people, and public awareness events which served 8800 individuals statewide. Outreach activities included presentations, consultations, and public awareness events to help develop a positive regard for all people, regardless of race, ethnicity, social class or ability level. The network also produced four Together Outdoors Minnesota newsletters, developed an accessibility resource manual that is available to outdoor recreation service providers, and created an accessible facility guidebook highlighting state, county, and municipal parks throughout Minnesota.

ENHANCED NATURAL RESOURCES OPPORTUNITIES FOR ASIAN-PACIFIC MINNESOTANS

6(m) \$150,000 FRF

Josée Cung

Department of Natural Resources

500 Lafayette Road

St. Paul, MN 55155

Phone: (612) 297-4745

Fax: (612) 296-6047

This project has sought to increase Asian, especially Southeast Asian (SEA), participation and understanding of natural resources management issues, including resources protection and conservation through community outreach and education, cultural collaboration and training. These activities are continued from the last biennium. During the first year of this biennium, this project added eleven new SEA community groups in the St. Paul/Minneapolis area as project partners, planned and scheduled educational activities on the topic of game and fish laws with leaders of newly-arrived immigrant groups, held twelve workshops on fishing and hunting rules and regulations, and made 32 field trips to state parks and DNR-managed natural resource facilities. The project also connected with natural resource divisions to modify and simplify relevant existing information and education programs to serve particular Asians communities. Finally, the project sought and was successful in securing general funding from the state legislature to become, beginning July 1996, an on-going minority service program of the DNR.

DELIVER ECOLOGICAL INFORMATION/ TECHNICAL ASSISTANCE TO LOCAL GOVERNMENT

6(n) \$100,000 FRF

Bonita Eliason

Department of Natural Resources

500 Lafayette Road, Box 7

St. Paul, MN 55155

(612) 297-2276

E-mail: bonita.eliason@dnr.state.mn.us

Web Address: http://www.dnr.state.mn.us/fish_and_wildlife/mcbs.html

The goal of the project was to facilitate protection of rare species and significant habitats by local action in counties in the greater Twin Cities area where the Minnesota County Biological Survey (MCBS) is complete or partially complete. An ecologist provided ecological information about the importance of protecting rare species and plant communities to 43 municipalities, including 11 counties, 20 cities, 2 townships, and 10 watersheds. This included county planners in the process of developing comprehensive plans, water plans, or parks and open space plans, and a workshop for landowners and local governments. The project also resulted in two major publications that interpret ecological information. They include an 80 page booklet produced through a cooperative project titled *Land Protection Options: A Handbook for Minnesota Landowners*, and a 150 page book titled *Natural Areas: Protecting a Vital Community Asset; A Sourcebook for Minnesota Local Governments and Citizens* produced to provide information to local governments. Five thousand copies of the booklet were printed and widely distributed to natural resource

professionals and landowners. Four thousand copies of the sourcebook for local governments were printed and distributed to local governments.

In addition, information about 22 high-priority sites was distributed to local governments, citizen groups, and land managers. Natural resource protection plans were prepared through cooperative efforts for two high priority land sites: 1) the Sandhill Crane Natural Area in East Bethel, and 2) the Bluff Creek Watershed in Chanhassen. Protective ordinances are being drafted by the cities of St. Cloud and Chanhassen using information from this project. Finally, two landowners in high-priority sites have received technical information about their lands from this project are working with the Minnesota Land Trust to pursue protection of their lands.

**NONPOINT SOURCE POLLUTION PUBLIC
EDUCATION DEMONSTRATION PROJECT**

6(o) \$100,000 FRF

\$ 12,000 Nonstate Match

Anne Weber

City of St. Paul

Department of Public Works

1000 CHA, 25 West Fourth Street

St. Paul, MN 55102

(612)266-6245

The goal of this project was to demonstrate how cooperative efforts between local government and organizations such as neighborhood, business, and environmental groups, can effectively address nonpoint source pollution. A collaborative effort between the St. Paul and Minneapolis Public Works Departments and Citizens for a Better Environment (CBE), the project focused on five neighborhoods in two watersheds, targeting Minneapolis' Bassett and St Paul's Lower Phalen Creek. A preliminary assessment of the needs for each watershed was completed and published in reports, and draft action plans written which outline specific steps that can be taken at the neighborhood level to reduce nonpoint source pollution. Resources to implement the plans in both watersheds are now being identified. Following neighborhood surveys, fact sheets were developed covering areas in which education was clearly indicated. Resources supplied through LCMR made it possible to leverage distribution of more than 76,000 of these fact sheets, including 61,400 to residents in four Minneapolis and four St. Paul neighborhoods. Additional mailings are planned. Finally, an urban watershed advisory board, recruited from a broad diversity of stakeholders, provided additional input on watershed profiles, draft action plans, surveys, and educational materials, as well as helping this project sponsor the regions first conference on urban nonpoint issues, "Restoring Our Urban Waters." More than 250 people attended the conference.

WHITETAIL DEER RESOURCE CENTER

6(p) \$50,000 FRF

\$50,000 Nonstate Match

Joe Wood

Executive Director

Minnesota Deer Hunters Association

P.O. Box 5123

2820 South Highway 169

Grand Rapids, MN 55744

(218)327-1103

This project provided plans for a multiple use facility with the purpose of educating the public about the whitetail deer and its relationship to the people of Minnesota. Plans for public awareness and educational programs, displays and exhibits have been developed focusing on whitetail deer ecology, management, physiology, history, research, and economic impact. These plans include hands-on, experiential learning and interaction program activities focusing on outdoor and hunter safety, hunting ethics, habitat and wildlife management, responsibility towards shooting sports, and non-hunting activities. The site identified for the location of the Whitetail Deer Resource Center is near Grand Rapids, MN. The site will be approximately 60-80 acres to encompass the building and outdoor demonstration and interpretation area. Funding resources have been identified to start initial construction.

**GORDON GULLION CHAIR IN FOREST WILDLIFE
RESEARCH AND EDUCATION**

6(q) \$350,000 FRF

\$350,000 Nonstate Match

Ira R. Adelman

University of Minnesota

Department of Fisheries and Wildlife

1980 Folwell Avenue

St. Paul, MN 55108-6124

(612)624-4228

Web site address: <http://www.fw.umn.edu/>

This appropriation provided partial funding to establish an endowed chair at the University of Minnesota in the College of Natural Resources. This chair will develop management practices that preserve the quality of the natural environment, protect biodiversity, and allow for a sustainable harvest of wood fiber and game species. The chair will also establish ongoing research and teaching programs relevant to forest ecosystem management, and provide leadership in addressing the needs and problems of hunters, forest landowners, environmental groups, natural resource managers, the forest industry, and government agencies. This endowed chair will continue the legacy of Gordon Gullion's three decades of research and education on forest/wildlife interactions.

NEY ENVIRONMENTAL CENTER

6(r) \$100,000 FRF

Sarah Malchow

Le Sueur County

County Board, 88 South Park,

LeCenter, MN 56057

Web site address: <http://www.isd2397.k12.mn.us>

**Appropriation added by the 1995 Legislature to the
LCMR Recommendations**

This project provided for the completion of the first phase of development of the Ney Residential

Environmental Center and Nature Preserve on a 366 acre parcel of land overlooking the Minnesota river in Le Sueur County. This property includes the "Three Legged Frog Pond" where the first deformed frogs were identified.

LCMR Funds were primarily used to construct the Ney Environmental Center Classroom on this site. The Ney foundation received a \$25,000 grant from other sources to purchase equipment to furnish the new classroom.

The remaining funds were used to develop an education program and complete a market study and promotion. The educational curriculum will be specific to the environment on the site and inclusive of the Minnesota River and the river valley area. This includes hands-on on-site demonstration activities and outdoor experiences. Work continues on curriculum development and modification thanks to a \$3000 Roundup Grant the Ney foundation received. The market study was designed to create a comprehensive profile of potential users of the classroom and to develop materials and brochures to inform the target population of the opportunities available on this site.

The complete developments of all Phase I components of this project were targeted for June 30, 1998. This extension beyond the biennium is a result of additional funding received by the Ney foundation. Work on Phase II of this project, including a residential learning center, will continue into the future as the project continues to evolve and further sources of funding obtained.

LAWNDALE ENVIRONMENTAL CENTER
6(s) \$300,000 FRF
\$100,000 Nonstate Match
Gordon F. Eckberg
Lawndale Environmental Foundation
Rt. 2 Box 50
Herman, MN 56248-9628
(612)677-2687

Appropriation added by the 1995 Legislature to the LCMR Recommendations

This appropriation provided for the purchase of a farm house and the accompanying land which will eventually serve as the Lawndale Environmental Learning Center and a five-year management plan. This project received an extension and was completed by June 30, 1998.

Subd. 7: NATURAL RESOURCES DATA

ENVIRONMENTAL INDICATORS INITIATIVE
7(a) \$350,000 TF
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DNR
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Fax: (612)296-6047
Web Address: <http://www.dnr.state.mn.us/eii/>

Minnesota has lacked a comprehensive strategy for environmental monitoring. Monitoring efforts of the

past have addressed isolated problems and have never been unified to provide overall measures of ecosystem health. This project has begun to create the framework for an integrated, statewide network for selecting and monitoring environmental indicators, measurable features of ecosystems that provide evidence of environmental quality.

During the first biennium, The EII Task Force, representing Environmental Quality Board Agencies, industry, academia and nonprofit conservation efforts, achieved consensus on an approach for a statewide environmental monitoring framework and related indicators. A draft catalog of existing environmental monitoring databases was completed including 160 entries from more than 24 agencies and organizations. As the EII workshop process identifies specific indicators, a more complete evaluation of the quality and quantity of environmental data with respect to comprehensive monitoring in Minnesota will be possible.

In addition, brief summaries of the extent and condition of Minnesota's air, groundwater, and major ecosystems were completed. Each of the summaries contained concise information on important ecological characteristics, benefits, pressures, status and trends, and major policies and programs relevant to the particular system. More refined descriptions were also completed for six selected ecosystems. These were used to identify nearly six hundred candidate indicators for consideration by workshop participants. The first of four proposed indicator selection workshops was held in the Eastern Broadleaf Forest Province in April 1997 and involved 35 participants. The workshop focused on evaluating indicators proposed by EII staff and selecting indicators to measure progress on environmental goals for the Cannon River watershed.

Finally, significant progress was made in establishing a preliminary, albeit informal, EII Network. The project was initiated with the development of an EII Program Coordination Matrix and a formal EII communications Plan to identify and effectively communicated with key audiences and potential EII Network members. An action plan to develop the EII Network has been prepared as part of the progress report for the 1995-97 biennium. Completion of the Network and the remaining 3 workshops will take place in the 1997-99 biennium due to an extension in the funding for this project.

This project continues into the 1997-1999 biennium with an additional appropriation of \$250,000 (ML 97, Chap. 216, Sec. 15, Subd. 14(a).)

ASSESSING WETLAND QUALITY WITH
ECOLOGICAL INDICATORS
7(b) \$275,000 TF
Susan Galatowitsch
University of Minnesota

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(612) 624-3242
Web site address: <http://www.hort.agri.umn.edu/mnwwet>
RESEARCH PROJECT

This project focussed on establishing a system of reference wetlands for comparative monitoring, developing plant and animal indicators of wetland quality, and developing guidelines for wetland assessment and monitoring to guide replacement wetland monitoring. Eight series of fifteen wetlands (120 sites) were used to develop wetland Indices of Biotic Integrity (IBIs). Particular attention was given to wetlands in urban and agricultural areas of the state having the highest activity of wetland conversion and replacement. For each of the wetlands, the environmental features (soil, etc...) were characterized, a land-use assessment was completed, and biological surveys of amphibians, birds, fish, invertebrates and plants completed. For each series, animal and plant indicators were identified based on biological community patterns. Before the indicators developed in this study can be used for assessment, additional statistical tests and land-use relationships need to be conducted. A grant has been obtained to complete this additional analysis. Information obtained from this project has been made into an electronic publication, viewable with commonly available Internet browsers. By February 1998, this publication should be accessible on the Web from a University of Minnesota server.

COUNTY BIOLOGICAL SURVEY - CONTINUATION
7(c) \$900,000 TF
Carmen Converse
DNR
Box 7, 500 Lafayette Road
St. Paul, MN 55155
(612) 296-9782
Web site address: <http://www.dnr.state.mn.us>

The Minnesota County Biological Survey (MCBS) is a systematic inventory of rare biological features that began in 1987 in response to the need to determine the status of biological diversity in Minnesota. The goal of MCBS is to identify significant natural areas and to collect and interpret data on the distribution and ecology of rare plants, rare animals and natural communities. Since July 1995, surveys were completed in Polk, Fillmore, Mahanomen, Wabasha, and Olmsted counties, and were begun in Carver, Hennepin, Le Sueur, Scott and Wright counties. New records of 1741 features were added to the Rare Features Database. MCBS data were also used in the evaluation process that led to the revision of the state list of endangered and threatened species that became effective 1 July, 1996. The most recent publications of MCBS include nine new wall maps displaying Survey results. Published maps are now available for 17 of the 29 counties where the survey is complete. MCBS has also sold 1800 copies of the book, Minnesota's St. Croix River Valley and Anoka Sandplain: a guide to native habitats. Protection of natural areas continues as thirty tracts identified by MCBS became Scientific and Natural Areas (SNA) or

additions to existing SNA's, including Wood Rill SNA in Hennepin County and the acquisition of 4,300 acres of aspen parkland as an addition to the Caribou Wildlife Management Area in northwestern Minnesota. This is just some of what MCBS has accomplished during the 1995 biennium.

This project will continue into the 1997-1999 biennium with an additional appropriation of \$1,200,000 (ML 97, Chap. 216, Sec. 15, Subd. 17(n).)

FOREST BIRD DIVERSITY INITIATIVE - CONTINUATION
7(d) \$400,000 TF
Lee Pfannmuller
MN DNR
Division of Fish and Wildlife
Ecological Services Section
Box 25, 500 Lafayette Road
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Web site address: <http://www.nri.umn.edu>
RESEARCH PROJECT

Designed as a long-term initiative that began in FY92-93, the project's primary goal is to develop landscape management tools to maintain Minnesota's rich diversity of forest birds. Major objectives in the FY96-97 biennium were to: continue and expand the forest bird monitoring program; conduct bird productivity studies; model relationships of forest birds to landscape characteristics; and promote forest bird conservation and management.

During the FY96-97, project staff completed the sixth and seventh years of monitoring forest bird populations in the Chippewa National Forest and Superior National Forest, the fifth and sixth years in the St. Croix Valley study region and the second and third years in southeast Minnesota. Analysis of the data shows that most breeding bird populations in northern and east-central Minnesota have been relatively stable and more species have shown an increasing trend compared with those that are decreasing. Preliminary results in the southeast, however, indicate that several species may be experiencing long-term population declines.

Studies of overall productivity revealed that nest success of forest birds can be highly variable between years. In southeastern Minnesota, study results show that most forest bird species west of the extensively forested region of the Mississippi River experience low reproductive success. Other studies estimate that nest success for migratory songbirds needs to be a minimum of 60% to maintain viable breeding populations. Based on most studies of nest success in forested areas of Minnesota, this minimum is not being attained except in select years when nest success is relatively high. Significant progress was made on the development of many components of the forest landscape simulation model, LANDIS. Eventually the model will allow forest managers to describe how bird populations respond to changes in forest cover types and landscape level vegetation patterns as a consequence of logging, land

use change, and natural disturbances to the forest environment. The first tier of the bird habitat model that relates distribution and abundance to forest stand cover type and age was completed and work continues on the second tier that will relate bird distribution and abundance to vegetation patterns at the landscape level. Five other model components related to the input and utilization of forest cover type data were also developed. A test application of the model was conducted on a square-mile study plot in Pine County.

Continued dissemination of project results included: 1) 33 presentations on forest bird management and conservation, highlighting the results of this project, have been delivered to local, regional, and national audiences this biennium; 2) project staff were integral components of five logger education workshops which reached nearly 600 loggers in 1996; 3) eight papers have been published, including five in peer-reviewed publications; 4) four Masters of Science graduate projects were completed and one is underway; and 5) a new forest stewardship publication on forest birds and a series of five workshops on Birds and Forests are also in progress, with completion scheduled in FY98.

This project will continue into the 1997-1999 biennium with an additional appropriation of \$350,000 (ML 97, Chap. 216, Sec. 15, Subd. 14(b).

BASE MAPS FOR 1990'S - FINAL PHASE - CONTINUATION

7(e) \$600,000 TF

Don Yaeger

330 Centennial Office Building

St. Paul, MN 55155

(612) 297-2490

Web site address: <http://www.lmic.state.mn.us/bmap90/bmap90.htm>

This project received two awards, from Governor Carlson and US Geologic Survey, for Base Maps for the 90's project success.

A major cost of building any Geographic Information System (GIS) is collecting and digitizing data. Having current, accurate, digital base maps for GIS data collectors will greatly enhance data exchange and reduce the need to recompile data on other maps at a later date. This effort is the final phase of an 8-year project that produced five different papers and digital GIS mapping products and fostered another two products developed beyond the original project plan. The original five products include statewide air photos, 138 revised topographic maps, Digital Orthophoto Quads (DQQs), computer-readable air photos that have been processed to minimize distortions found on traditional photos, Digital Orthophotos compressed on county-formatted CD-ROMs, and digital elevation models. Two additional projects started with other sources of funding include Digital Raster Graphics, or scanned full-color images of the published USGS maps, and a 1996-7 National Aerial Photography Program reflight. All seven projects will be complete for the entire state by early 1998. Products from this project will not only be used for GIS application, but can also

be used by the general public with an interest in the state's land resources.

COMPLETION OF STATEWIDE LAND USE UPDATE - CONTINUATION

7(f) \$380,000 FRF

David Weirens

Association of MN Counties

125 Charles Ave.

St. Paul, MN 55103-2108

(612) 224-3344

This appropriation is for the completion of the update of the land use map of Minnesota and completion of the conversion of the data to computer format. Data will be made available to users through the Land Management Information Center (LMIC), local water planning agencies, the Science Museum of Minnesota, and the Association of Minnesota Counties.

This project received an extension and was completed by June 30, 1998.

FILMORE COUNTY SOIL SURVEY UPDATE

7(g) \$65,000 FRF

50% Nonfederal Match Required

Kevin Scheidecker

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Preston, MN 55965-9511

(507) 765-3879

This appropriation is to begin a three biennium project to update the Fillmore county soil survey into a digitized and manuscript format which will be used to plan and manage land for agriculture, water quality concerns, urbanization, recreation, and wildlife. The current soil survey was completed in 1954 and was funded by the U.S. Department of Agriculture. Soil maps and data will be used by resource managers of private, county, state and federal lands, assessors, and planning and zoning officials. Also, there is a need to produce soil surveys maps on an orthophotographic basemap suitable for GIS and other applications.

This project will continue into the 1997-1999 biennium with an additional appropriation of \$65,000 (ML 97, Chap. 216, Sec. 15, Subd. 10(g).)

MINNESOTA RIVER TILE SYSTEM RESEARCH

7(h) \$150,000 FRF

Wayne P. Anderson

Minnesota Pollution Control Agency

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(612) 296-7323

RESEARCH PROJECT

This appropriation is for the continued research on the impacts of best management practices (BMP) for surface tile inlets in the Minnesota River basin. Objectives include the gathering and analysis of experimental data and improvement and use of tile systems with surface tile simulation model.

As of November 11, 1998 the final data analysis is pending.

SUGARLOAF SITE ASSESSMENT AND
INTERPRETATION

7(i) \$70,000 FRF
\$30,000 Nonstate Match

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The objective of this project was to survey and document site characteristics, habitat, species, local and regional cultural history, and to develop interpretive materials to share the findings with the public. This work strengthened knowledge of North Shore ecology and geology and provided a baseline for 1) long-term monitoring; 2) developing interpretive materials; 3) definition of the relationship between natural and human ecology; and 4) data for the demonstration projects. The strength of the project was the integration of unique physical and cultural/historical systems to produce an interpretation of natural and human ecological relationships on the North Shore. The project resulted in 44 products, including nine scientific reports, nine GIS map data layers and a data base, a bibliography, an archival resources catalog, six slide presentations, a 24 page trail guide, two field guide outlines, and a grade 5-7 lesson plan. There is a large audience - general public, tourist, resident, academic - for this project's North Shore information. Dissemination of the results has already begun via the web page for the Natural Resource Research Institute (NRRI) at UMD, university and North Shore school projects, national conferences, public events and meetings, and Duluth Public Access Community Television.

MICROBIAL DETERIORATION OF ASPHALT
MATERIALS AND ITS PREVENTION

7(j) \$60,000 OOC

Fu-Hsian Chang
Bemidji State University
Center for Environmental Studies
Bemidji State University
Bemidji, MN 56601-2699
RESEARCH PROJECT

This research project studied the microbial deterioration of asphalt materials. The goal was to identify a possible connection between the asphalt stripping witnessed on Minnesota highways and hydrocarbon consuming microbes indigenous to various soils around the state of Minnesota. 32 samples of stripped and non-stripped asphalt pavements were collected by MN/DOT's five District Labs (Bemidji, Detroit Lakes, Willmar, Mankato and Rochester) and were tested in the laboratory for presence of hydrocarbon consuming microbes. It was found that asphalt samples (and soils underneath) from the stripped pavements have more asphalt-degrading microbial population than the control non-stripped

samples (and the soils underneath).

This project received an extension and is now complete.

ANALYSIS OF LANDS ENROLLED IN THE
CONSERVATION RESERVE PROGRAM

7(k) \$200,000 FRF

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MN Dept. of Agriculture
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(612) 296-1277

**Appropriation added by the 1995 Legislature to the
LCMR Recommendations**

This appropriation was for the continued analysis of lands enrolled in the conservation reserve program relative to nonpoint source pollution, developing land management options for lands emerging from the program and developing the capability to target future program funds for the greatest environmental benefit. GIS maps were completed for 700,000 acres of CRP land in 58 counties, all CRP land remaining in counties. The relative importance of CRP lands for soil conservation and water quality was assessed through environmental and geographic analysis and as a result environmentally and economically sound land use alternatives for land returning to production was identified and communicated to interested parties.

Over 1,000 conservation professionals in every county were introduced to the *Minnesota CRP GIS Database* and offered free copies of the digital data at more than 20 conference exhibits and presentations. The database will continue to be made available from MDA, BWSR and other state agencies. Lastly a computer-based CRP policy simulation program, Ag Land was developed. The game links GIS, contract holder surveys, and land use alternatives data, it was tested by more than 200 students, farmers and conservation professionals.

Subd. 8: URBAN NATURAL RESOURCES

URBAN WILDLIFE HABITAT PROGRAM

8(a) \$150,000 FRF

\$ 35,000 Nonstate Match

Anne Hunt
Saint Paul Neighborhood Energy Consortium (NEC)
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This project was designed to provide workshops and native planting materials to households in St. Paul for landscaping for wildlife, demonstrating plant diversity, and alternative lawn care practices in the urban environment. Initially, project staff hired a landscape designer to plan five patch (miniature ecosystems) design options based on typical urban habitats to be used by area residents to landscape for wildlife. These include partial shade, full shade from deciduous trees and/or buildings, full shade from evergreens, full sun with well-drained soils, and full sun with poorly drained soil. Project staff used these designs to develop,

promote, conduct and continuously fine-tune urban habitat workshops. The reference materials included where to buy native plants, where to see native plant landscapes, selected reference books, how to attract wildlife and five steps to home landscaping.

Thirty-one workshops were presented to 833 individuals from 715 households. These presentations enjoyed strong word-of-mouth advertising as evaluations revealed that 65% of the workshop participants had recommended the program to someone else. One presentation was videotaped and has aired on a public access cable station numerous times. Three hundred and fifty-seven households purchased reduced cost plant material. Additional dissemination of program information occurred in the form of a one-page, double-sided insert providing information on landscaping with native plants and attracting wildlife that was distributed in the NEC newsletter to 110,000 St. Paul residents, and in collaboration with the DNR, distributed the information at the Minneapolis Home and Garden Show.

As native species often establish themselves more vigorously when planted in the fall, this program would benefit from two complete growing and planting seasons. Therefore, in order to take advantage of the entire 1997 season, an extension to this project was granted until July 1998.

GARDENING PROGRAM, STATEWIDE

8(b) \$300,000 FRF

\$ 3,000 Nonstate Match

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Sustainable Resources Center

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This project was designed to provide technical assistance on community plantings, food gardens, trees, native plants, and environmentally sound horticulture and land use practices. As a result of this appropriation, technical assistance and ongoing support was provided to 73 new community gardens and greening sites, and to 90 existing garden sites. Over 110 workshops on organic gardening, sustainable landscaping and community greening were held, 52 community presentations given and 24 newsletters published and distributed to over 3,100 communities and individuals statewide. An estimated \$650,000 worth of plant donations were distributed to metro and non-metro community sites. The project also supported and maintained sustainable horticulture sites in 7 Minneapolis neighborhoods and 3 new sites were developed, implemented, and maintained in the Frogtown and Highland Park neighborhoods of St. Paul. Dissemination of project materials has reached a wide audience through newsletters, factsheets, workshops, conferences, community meetings, and school presentations. Most of this information is disseminated at no cost to the recipients and participants.

Interest in this project has continued to increase as

Minnesotans deal with issues of the environment, food, and community land use and livability.

Throughout the project the Duluth Community Gardening Program educated the Duluth public on small scale, environmentally sound fruit tree and vegetable production techniques and composting. Education was accomplished through phone consultations, distribution of three newsletters (to 500 addresses), classes, distribution of information and literature at public events. 151 garden plots were in the summer of 1996 and 171 garden plots in the summer of 1997 were leased, with over 75% of the plots being used by low-income people.

Further funding has been obtained for the 1997-99 biennium through the LCMR (Laws 1997 Chapter 216 Sec. 15 Subd. 12(f)). With this additional allocation, the project partners will increase information dissemination on sustainable landscaping, continue providing technical assistance and education, and for urban rural links through connections between sustainable farmers and urban communities.

This project will continue into the 1997-1999 biennium with an additional appropriation of \$400,000 (ML 97, Chap. 216, Sec. 15, Subd. 12(f).)

RELEAF: PLANTING FOR ENERGY CONSERVATION IN COMMUNITIES

8(c) \$400,000 OOC

Peg Sand

DNR, Division of Forestry

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The Minnesota ReLeaf program was established to encourage the planting, maintenance, and improvement of trees in communities throughout the state to help in reducing atmospheric carbon dioxide levels, promote energy conservation and provide multiple aesthetic and environmental benefits. This project, ReLeaf: Planting for Energy Conservation in Communities, built upon this original intent by achieving strategic tree planting of predominately native shade trees for energy conservation in communities throughout the state. As a result, over 15,000 trees (81% native) and about 4600 shrubs (86% native) were planted in 75 projects across the state. Most projects achieved strategic planting of shade trees to reduce air conditioning costs, and creation of community windbreaks to reduce winter fuel costs and snow plowing costs. Local project sponsors contributed over \$624,000 in a 1.9:1 match to the state funding. Hundreds of community volunteers, volunteer Master Gardener and Tree Care Advisors, and over 50 local service groups were directly involved in planting in their local communities.

In addition, the projects resulted in partnerships between local communities and various groups or organizations, such as several Soil and Water Conservation Districts, RC&D's, school districts, and municipal utilities. The project also resulted in the development of nine new publications, traveling

displays and scripted slide show sets, and a series of statewide magazine articles and workshops done in cooperation with the Minnesota State Horticultural Society.

This project continues into the 1997-1999 biennium with an additional appropriation of \$300,000 (ML 97, Chap. 216, Sec. 15, Subd. 19(a).)

MAPLEWOOD INNOVATIVE STORM WATER MANAGEMENT PROJECT

8(d) \$100,000 FRF
\$165,000 Nonstate Match
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The objective of this project was to design and construct a storm water management system in a residential neighborhood that fully utilizes infiltration as an alternative to storm sewers. The project team consisted of representatives from the City of Maplewood, Ramsey-Washington Metro Watershed District, the University of Minnesota Department of Landscape Architecture, and the Wakefield neighborhood residents where the two-block study area was located. The residents were active participants from the beginning of the project and their perceptions, attitudes and ultimately acceptance were design elements considered throughout the process.

The project had to provide solutions for two important elements. The first was to create areas of standing water to stimulate infiltration of storm water runoff, and the second was to provide a landscape that is supported by the neighborhood. Ultimately, several different landscaping treatments were designed from which individual homeowners could choose for their property. Construction of the new designs was completed by January 1997. Since completion, the system performed well during both the fall rains and the spring thaw. There was no standing water on the streets and virtually all of the new plants and bushes were thriving. No discharge has occurred from the site and residents' reactions to the changes have been very positive.

A detail of this project has been presented at three conferences in the Twin Cities area as of July 1997, and is scheduled for a national conference of civil engineers in the fall of 1997. Tours of the neighborhood have been set up for interested groups and individuals. The Landscape Architecture Department at the University has also produced 1000 copies of a book called *Ecological Gardens for Amenity and Infrastructure Guidebook*. The book is available through the University, the City of Maplewood, and Ramsey-Washington Metro Watershed District.

PHALEN WETLAND RESTORATION

8(e) \$115,000 TF
\$50,000 Nonstate Match
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The Phalen Wetland Restoration Project was to restore about four acres of wetlands at the south end of Lake Phalen on St. Paul's East Side. The wetland will be a neighborhood amenity that restores the site's natural stormwater cleaning function, reduces nonpoint source pollution, enhances wildlife habitat and storm water detention, expands our understanding of how to achieve biodiversity in restored wetlands, and provides an environmental education resource. A preliminary plan for the wetland restoration was presented to a neighborhood meeting, attended by 80-100 people. The response was very positive. A grading plan has also been developed and the grading of the site has been completed. However, the grading was behind schedule due to labor issues with the contractor and a potential strike. Therefore, an extension for the project has been granted. This gave the project staff time to rethink their planting plan and schedule. The updated plan is to plant the upland areas of the wetland in mid-September 1997 and the remainder of the wetland in May of 1998. This schedule will allow for a greater variety of plants to be obtained and weather conditions that improve their chances of survival. The project was completed by July 1998.

Monitoring of this site will continue as part of a 1997-1999 appropriation (ML 1997 Chapter 216 Sect. 15 Subd. 14(e).)

WETLAND RESTORATION AND ENHANCEMENT TO CREATE COMMUNITY AMENITY AND FORM

8(f) \$200,000 TF
Joan Nassauer
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Inappropriate use of wetlands often creates water quality and watershed problems, eliminates needed wildlife habitat, and robs the community of a valuable amenity. This project has demonstrated how protected, restored, or constructed wetlands can be designed to realize their function as part of the surface hydrology of the city, maximize their urban habitat value, and be a widely appreciated amenity within the city. Five case studies were selected to demonstrate a range of wetland potentials with each project focused on a different potential for wetlands as community amenities. These are:

- 1) Cambridge - How wetland landscape patterns can guide urban growth;
- 2) Marshall - How development patterns across the watershed can ameliorate downstream flooding;
- 3) Minneapolis - How wetlands can become focal amenities in urban redevelopment;
- 4) Crystal - How wetland patterns can guide redevelopment of industrial areas; and
- 5) North St. Paul - How constructed or restored wetlands can become settings for environmental education. These case studies

involved citizens, elected and appointed officials, local government staff, teachers, and students in the design process. Drawing from ideas of landscape ecology, landscape architecture, and urban design, a final concept was designed for each site. Project reports for each of the five projects are being disseminated through each city, the Ramsey-Washington Metro Watershed District, the Minnesota Extension Service, or the College of Architecture and Landscape Architecture. The reports have been written as cases to help other towns and cities use the ideas developed for the five case sites. However, the city and Ramsey-Washington Metro Watershed District have begun implementing the concept articulated in the North St. Paul project. Teachers in School district 622 are organizing environmental education curricula around this site and a new high school environmental science course visits the site nearly every day in the fall. In each of the other four cities, local governments have enthusiastically received the concepts.

Monitoring of the restored wetland in North St. Paul site will continue as part of a 1997-1999 appropriation (ML 1997 Chapter 216 Sect. 15 Subd. 14(e).)

METROPOLITAN AREA GROUNDWATER MODEL TO PREDICT CONTAMINANT MOVEMENT

8(g) \$250,000 TF

Andrew Streitz

MN PCA

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This appropriation is intended to develop a flexible regional groundwater flow model to improve prediction of contaminant movement in groundwater at contamination sites in the seven-county Twin Cities Metropolitan area. The computer model is based on the analytic element method and simulates three-dimensional groundwater movements between and within aquifers. The complete model will consist of five layers representing the following aquifers listed from the surface downward: glacial drift, St. Peter Sandstone, and the Prairie du Chien-Jordan, Iron-ton-Galesville, and Mt. Simon-Hinkley Aquifers. It will be used as a management tool for groundwater resources by providing the background aquifer parameters for use in more detailed modeling of localized areas of concern. At the present time, layers 3,4 and 5, representing the three lower aquifers, have been modeled. Development of layer 2 is nearing completion. Layer 1 is under development.

The Metro Model will be available to groundwater scientists working in both the public and private sectors. It will provide the context of regional groundwater flow in the Metropolitan Area and can be used to aid in management decisions affecting groundwater. Additionally, users can add local detail to the model to conduct site-specific modeling for groundwater flow analysis.

The model has also been used at two Agency Superfund sites to 1) design and evaluate remedial groundwater actions, 2) predict the movement of contaminate plumes, 3) identify contamination sources, 4) help target regional sampling locations for the MPCA Ground Water Monitoring and Assessment Program, and 5) determine capture zones of pumping wells. Work at the Baytown site in Washington County is essentially complete, while work on a site in Hennepin County is on target to be completed before Spring 1998.

This project continues into the 1997-99 biennium with an appropriation of \$300,000 (ML 1997 Chapter 216 Sec. 15 Subd 10(b).)

ARBORETUM BOUNDARY LAND ACQUISITION

8(h) \$680,000 FRF

\$400,000 Nonstate Match

Peter Olin

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The first objective of this project has been to protect the biological and experimental quality of the Arboretum by purchasing 30 acres of land contiguous with Arboretum boundaries which was slated for light industrial development. The second goal was to create a model research wetland, restored for public display and education. As a result of the past two years work on the newly acquired Arboretum property a wetland restoration has been initiated. Eradication of invasive plant species has occurred, wetland hydrology has been restored, and wetland plants and seeds have been reintroduced to the site. Time is now required for the vegetation and hydrology to reach a sort of equilibrium as the wetland matures. As the restoration slowly progresses, researchers will collect data to answer questions about wetland restoration and the methods used in this project.

The site will also become a center for wetland education. A 570-foot boardwalk and an 80-foot observation pier have been constructed with interpretive signs and outdoor galleries to bring students and visitors into the wetland. Soon, two interpretive shelters will complement the boardwalk and trail system. Interpretive programs and annual symposia will continue to be developed through the Arboretum.

Monitoring of this site will continue as part of a 1997-1999 appropriation (ML 1997 Chapter 216 Sect. 15 Subd. 14(e).)

This project continues into the 1997-1999 biennium with an additional appropriation of \$450,000 (ML 97, Chap. 216, Sec. 15, Subd. 16(b).)

Subd. 9: FISHERIES

STATEWIDE EXPERIMENTAL FISHING REGULATIONS

9(a) \$650,000 FRF

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A decline in overall fish size in many Minnesota waters has been attributed to angler harvest and habitat degradation. The quality of recreational fishing can only be improved by altering fish harvest or the size distribution of the fish harvest. The most reasonable and acceptable way to change angler harvest of fish in through size-based regulations rather than restricting opportunities to fish. The purpose of this project is to collect baseline data to evaluate experimental fishing regulations to increase fish size and to establish experimental fishing regulations based on fish size. Experimental fishing regulations were implemented on 10 study lakes in May 1996. 24 additional study lakes were placed under special management status with experimental fishing regulations in 1997. All regulations will remain in effect for six years, with some regulations, such as those for northern pike, scheduled to remain in effect for 10 years, due to the longevity of this species.

In addition to these new regulations, data has been collected which has served to establish the baseline of current conditions, including size and age structure of target fish populations and characteristics of the fish harvest. These data were documented through creel surveys and intensified fisheries sampling. Managing for quality fisheries with experimental fishing regulations requires quantifying critical fish population parameters before and after the effects of the regulation occur. This project has successfully documented the "before", or baseline conditions prior to the fishing regulation changes as well as establishing the framework for following the results of the changes in regulations through the next 6-10 years.

RIM - ACCELERATE FISHERIES ACQUISITION FOR ANGLER ACCESS

9(b) \$300,000 TF
Dirk Peterson
MN DNR Fisheries
500 Lafayette Road
St. Paul, MN 55155
(612) 296-3325

The goal of this project was to increase angler access (including non boat owners and urban users) by accelerating easement and fee title acquisition of land adjacent to streams and lakes. Two parcels were purchased and eight additional parcels were processed for acquisition. The two parcels that were purchased were 1.) .92 Acres at Stoney Brook FMA in Cass County and 2.) 4.0 Acres at Little Jordan Creek FMA in Fillmore County. The project continues into the 1997-1999 biennium with an additional appropriation of \$567,000 (ML 97, Chap. 216, Sec. 15, Subd. 17(m).)

RIM - ACCELERATE FISHERIES HABITAT DEV.
HATCHERY REHAB. AND STREAMFLOW
PROTECTION
9(c)1 \$1,000,000 TF/FRF
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The first part of the appropriation provides for the implementation of projects for the acquisition, improvement, and development of fisheries habitat and hatchery rehabilitation. Activities may include lake aeration, improvement of spawning areas, bank stabilization, fish barriers, and warm water stream improvement.

Minnesota Environment and Natural Resources Trust Fund

1. Bulrush Reestablishment in Cass, Crow Wing, Itasca, and Todd counties
 2. Rebecca Lake Barrier construction, Hennepin County
 3. Como Lake Aeration, Ramsey County
- #### Minnesota Future Resources Fund
1. Snelling Lake Barrier construction, Hennepin County
 2. Mountain Lake Aeration, Pope County
 3. Mink-Somers lakes Aeration, Wright County
 4. Wirth Lake Aeration, Hennepin County
 5. Crooked Lake Aeration, Anoka County
 6. Winnibigoshish erosion control, Cass County
 7. Owasso Lake Aeration, Ramsey County

This portion of the project will continue into the 1997-1999 biennium with an additional appropriation of \$400,000 (ML 97, Chap. 216, Sec. 15, Subd. 17(q).) The second portion of the appropriation exists to improve and maintain statewide facilities for fish culture, rearing, and holding. The three main projects to be accomplished are:
Access at Peterson hatchery. Will provide a needed upgrade for ingress and egress of large fish transportation vehicles.

Linear clarifier (pond 1) at the Lanesboro Hatchery: To improve the fish waste management capabilities at Lanesboro fish hatchery for future compliance with the conditions set forth in the existing National Pollution Discharge Elimination System permit.
Pond and water supply restoration at the Waterville Hatchery. Redesign and replace the water supply drainage lines for eleven ponds at the Waterville hatchery. The new lines would allow for filling and draining any combination of rearing ponds at any time. This portion of project will continue into the 1997-1999 biennium with an additional appropriation of \$225,000 (ML 97, Chap. 216, Sec. 15, Subd. 14(d).)

The third part of the appropriation is available to continue the stream flow protection program for the second biennium of a proposed eight biennium effort to establish a watershed level stream habitat database and develop the tools to set protected flows for ecosystem diversity. The project manager is Ian Chisholm of

Minnesota Department of Natural Resources Division of Fish and Wildlife.

The funding is being used to provide streamline data that is integral to our overall stream protection efforts. The program will collect stream habitat data, and combine this with fish, macroinvertebrate and amphibian habitat requirements to develop protected flow recommendations that account for the biological values in our streams.

Flow recommendations and watershed reports for Yellow Medicine, Red Lake, Wild Rice, Buffalo and Otter Tail watersheds have been completed. In the upcoming months sites on the Cottonwood, Rock, and Pomme de Terre River watershed will be selected, and as much data as possible will be collected.

Subd. 10 WILDLIFE

RIM - ACCELERATE WILDLIFE ACQUISITION

10(a) \$650,000 TF/FRF

Kim Hennings

DNR

Division of Fish and Wildlife

500 Lafayette Road

St. Paul, MN 55155

(612) 297-2823

This project continued the protection of critical ecosystems by accelerating state programs to acquire wildlife habitat and wetlands in North American Waterfowl Management Plan (NAWMP) project areas. A total of 634.71 acres were purchased during this biennium supporting two projects: 1) the Minnesota River; and 2) Heron Lake.

Appropriations to this program may come from state bonding and other additional state funds as well as both the Minnesota Environment and Natural Resource Trust Fund (TF) and the Minnesota Future Resources Fund (FRF). For further questions about this program, please contact the program manager.

This project continues into the 1997-1999 biennium with an additional appropriation of \$500,000 (ML 97, Chap. 216, Sec. 15, Subd. 17(i).)

RIM - ACCELERATE CRITICAL HABITAT MATCH PROGRAM

10(b) \$250,000 TF

Kim Hennings

DNR Division of Fish and Wildlife

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(612) 297-2823

This project provides an ongoing opportunity for private individuals, groups, and businesses to help fund the cost of acquiring or improving critical fish, wildlife, and native plant habitats. State funds in the Minnesota Critical Habitat Private Sector Matching account (CHM) are matched dollar-for-dollar by restricted and unrestricted contributions of land easements, or cash to the program. Land purchases have been primarily for wildlife management areas (WMA), with other projects

involving acquisitions in scientific and natural areas (SNA), state parks, aquatic management areas (AMA), and state forests. Appropriations to this program may come from state bonding and other additional state funds as well as both the Minnesota Environment and Natural Resource Trust Fund (TF) and the Minnesota Future Resources Fund (FRF).

Currently, matching contributions of \$250,000 have been obtained. The results obtained by the 1995 appropriation to this program include: 1) Uncas Dunes SNA, Sherburne County – 24.93 acres were obtained; 2) 37 nongame wildlife management projects were funded, covering statewide issues as well as local issues in all six state regions.

In addition, \$750,000 was appropriated to this program by the Legislature in 1996 (ML96, Chap.), \$630,000 from the TF and \$120,000 from the FRF. Matching contributions of \$750,000 have been obtained for this appropriation. The following results were obtained as a result of the appropriation from the TF.

For more specific project results, including results from the 1996 appropriation from the FRF, please contact the program manager.

This project continues into the 1997-1999 biennium with an additional appropriation of \$630,000 (ML 97, Chap. 216, Sec. 15, Subd. 17(i).)

RIM - ACCELERATE WILDLIFE HABITAT STEWARDSHIP

10(c) \$450,000 FRF

Dick Carlson

DNR Division of Fish and Wildlife

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The stewardship program provided opportunities to accelerate the development, improvement, and enhancement of wildlife lands, wildlife habitat, natural communities and natural ecosystems on State Wildlife Management Areas (WMA) and other state land that was not available through normal appropriations. Emphasis is placed management of prairies, brushland, forest sites, nongame habitat and the planting and management of native grasses and the stewardship of these sites.

The project will also continue into the 1997-1999 biennium with an additional appropriation of \$400,000 (ML 97, Chap. 216, Sec. 15, Subd. 17(j).)

BIOMASS PRODUCTION, MANAGEMENT, AND RESTORATION OF BRUSHLAND HABITATS

10(d) \$200,000 FRF

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RESEARCH PROJECT

Continuing loss of early-succession brushlands has resulted in declining populations of sharp-tailed grouse and other wildlife species dependent on young, open brushlands. At the same time, there currently are serious initiatives to increase use of biomass as a renewable nonfossil energy source. This approach would be used as a site-specific alternative to, or along with, prescribed burning of mature brushlands. Therefore, the goals of this project are to 1) enhance understanding of biological resources and develop management approaches for brushland ecosystems in Minnesota, 2) investigate the feasibility of harvesting brush as a biomass energy source, and 3) to increase awareness of brushland management issues and opportunities.

Significant progress towards these goals has been made. Work on biomass availability was completed, including several demonstration brush removal projects, and analyses and crude economic projections suggest that biomass on some but not all brush sites may be sufficient to offset estimated harvesting and transportation costs, if fiber and energy markets can be developed. At an estimated cost of \$16 per oven-dry ton, this is a relatively low cost compared to other biomass options. Preliminary assessments also suggest that nutrient loss due to brushland harvesting should not be a significant issue for long-term site sustainability.

Analyses of bearing-tree maps to assess the prevalence of openlands habitat prior to European settlement were completed. Results have shown considerable complexity in the pre-European landscape vegetation in sharptail areas. This approach should be useful in delineating areas of the state that should receive priority for management as openlands habitats, and in educating the public and land managers about managing for openlands habitats within the forested part of the state.

Field studies have also been conducted on sharp-tailed grouse and songbirds to develop strategies for managing brushlands. An analysis of brushland landscape composition and songbird surveys both confirm the view that landscape scale considerations are critical in management of brushland ecosystems. Habitat analyses indicated that active sharptailed grouse dancing grounds occur in landscapes that have lower coverage of various brush and tree cover types and more native grass than either former (abandoned) dancing grounds and random points in the landscape. Vegetation profiles around dancing grounds are lower, and contain less planted conifer, with these differences in landscape composition recognizable at distances ranging from 200m to 3000m from the dancing ground center. Regarding songbirds, the data suggested that songbird communities differ between managed and unmanaged brushlands, as a function both of local habitat and the surrounding landscape.

These project results were described in several formal presentations and workshops, were discussed with numerous landowners, and are being written for submission to several scientific journals.

TURN IN POACHERS YOUTH ACTIVITY BOOK
10(e) \$50,000 FRF

\$12,500 Nonstate Match
Mark Wm. Johnson
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Phone: (612)519-0333
Fax: (612)519-0430

This appropriation enabled TIP, Inc. to develop, print, and disseminate an activity book for children 11-13 years of age. The 32 page activity book provides information on animal identification, hunting safety, poaching, and the positive role of conservation officers. It seeks to instill an understanding of the fragility of the environment, and to educate children about poaching, its impact on natural resources, and the need to respect our game and fish resource.

An initial printing of 39,000 books was followed by a second printing of 142,000 books in late 1996. The second printing added several additional educational articles and tools to the existing pages. Distribution is ongoing with copies of books going to the Minnesota DNR Firearms Safety Classes, many 5th and 6th grade classes, Adopt-a-School programs via Conservation Officers, State Parks and others. Inquiries and requests for books have increased in 1996 and future publication through private donations appears possible.

Subd. 11: ENERGY

INTER-CITY ELECTRIC VEHICLE
TRANSPORTATION DEMONSTRATION: *WITHDRAWN*
11(a) \$150,000 OOC
\$ 30,000 Nonstate Match
David A. Johnson
Minnesota Power
30 W. Superior Street
Duluth, MN 55802
(218) 722-0264

The goal of this project was to develop and evaluate an electric vehicle infrastructure for use between Duluth and St. Paul, including installation of a charging station in Duluth, Hinkley, and St. Paul. A long-term demonstration was to be conducted to illustrate the feasibility and practicality of using electric vehicles for inter-city travel. Results of the demonstration were to be used in educating the public on the technology and the environmental benefits associated with this mode of transportation.

This project was withdrawn by the proposer in the summer of 1996.

SUSTAINABLE DEVELOPMENT OF WIND ENERGY
ON FAMILY FARMS
11(b) \$200,000 OOC
Sue Gunderson
Sustainable Resources Center
1916 Second Avenue South
Minneapolis, MN 55403
Phone: (612) 872-3282
Fax: (612) 870-0729

The goal of this project is to provide technical assistance and technology transfer to family farmers for the development of wind energy harvesting. A curriculum of customer oriented learning materials will be developed using a variety of media. It will cover issues which family farmers have identified as barriers to harvesting wind on their property.

The curriculum, Harvest the Wind, is an extensive document composed primarily of material created for this project as well as documents previously published. A learning guide is included in the materials as an outline for trainers to present the materials. There is also a lending library of slides, and a spreadsheet for economic evaluation of various scenarios.

The train-the-trainer event, Windustry Minnesota, was held on January 7-10, 1997 in Alexandria, Minnesota. The event brought together educators from the MN Extension Service, the Farmers Union, college and university farm management programs, and interested rural community adult educators for three days of expert instruction about wind energy for electricity generation. This project will continue into the 1997-1999 biennium with an additional appropriation of \$200,000 (ML 97, Chap. 216, Sec. 15, Subd. 12(d).)

1 MEGAWATT HYBRID ELECTRICAL GENERATION SIMULATION PROJECT

11(c) \$50,000 OOC

Daniel Juhl

DanMar & Associates

191 W. 5th Street

Cottonwood, MN 56229

Phone:(507) 423-5127

Fax: (507)423-5532

The project objective was to gather wind data and utility load patterns and use this information to model the combined use of biofuel (ethanol or soybeans) and wind energy technologies to supply electricity. A total of 20 months of municipal load data from Luverne, MN and wind speed (from a monitoring site just outside of Luverne) was correlated to see the economics of this type of generation technologies. The results showed that the cost of using these renewable technologies were slightly higher than the conventional methods of importing fossil fuel energy to meet the demand. More data was expected to be collected, but was not, due to a loss of a tower from storm weather damage.

The results of the project are being shared with and disseminated to the Minnesota Municipal Utilities Association.

AVIAN POPULATION ANALYSIS FOR WIND POWER GENERATION REGIONS

11(d) \$75,000 OOC

\$75,000 Nonstate Match

John R. Dunlop

American Wind Energy Association

448 Morgan Ave. So., Suite 300

Minneapolis, MN 55405-2030

Phone:(612) 377-3270

Fax: (612)374-2181

RESEARCH PROJECT

The goal of this project was to identify and assess significant areas of avian activity within identified wind farm corridors in Minnesota. This goal was accomplished through a series of four project objectives. First, background information on previous research conducted on birds in regard to wind power facilities was compiled into an annotated bibliography. The bibliography is available from the Natural Resources Research Institute (NRRI).

Second, information on avian population data in this region was gathered from 10 sources for 43 counties within the three wind regions identified within the state. Background information indicated that migratory birds were likely to be most at risk from potential wind power development in the western portion of Minnesota. Breeding birds were not likely to be directly affected, however, because most breeding activity is completed at low elevations. This information is also available from the NRRI.

Third, field surveys were used to collect migratory bird data from the three wind regions within Minnesota. Information gathered across four seasons indicated that migratory activity was quite variable, was inconsistent across sites, and only a few differences were detected in number of migrants across the three regions. This inconsistency makes it difficult or impossible to rank areas for potential wind development that integrates concerns for migrating birds. However, results indicate it is safe to recommend that tower construction in areas that bisect daily movement be avoided because these flights are generally done at lower altitudes than long-range migrations and occur at an elevation that would be consistent with tower height.

Finally, the fourth objective was to summarize the information collected into one document that may be used to assist in the siting and development of wind energy facilities in Minnesota. This document will be distributed to interested state and national agencies, such as Northern States Power (NSP), and will be submitted to a peer-reviewed journal for publication. In addition, project results were presented at the 1997 Midwest Wildlife Conference in December, and the methods and techniques used to collect radar data in this study were applied to another study near Buffalo Ridge where additional wind towers are being constructed.

ENERGY IMPROVEMENTS IN PUBLIC ICE ARENAS

11(e) \$470,000 OOC

David Bohac

Center for Energy and Environment

100 North 6th Street, Suite 412A

Minneapolis, MN 55403-1520

Phone:(612) 335-4830

Fax:(612)335-5888

E-mail:dbohac@mncee.org

There are approximately 270 indoor ice arenas in the state of Minnesota which spend a total of \$13.5 million annually on energy costs. This project's technology assessment and on-site engineering analysis have

demonstrated the potential to cost effectively reduce ice arena energy costs by an average of 30 percent. After completing a technology assessment and survey of publicly owned arenas, the project worked with 28 arenas in Minnesota to implement \$575,000 worth of energy efficiency and air quality improvements in 16 arenas. The improvements provide an energy cost savings of \$106,500 annually. Educational promotion of energy efficiency and air quality improvements was also carried out.

This project received an extension and was completed June 30, 1998.

Subd. 12: HISTORIC

RESTORE HISTORIC MISSISSIPPI RIVER MILL SITE

12(a) \$120,000 FRF

\$120,000 Nonstate Match

Thomas R. Griffin

Crown Hydro

5436 Columbus Avenue South

Minneapolis, MN 55417

(612) 8251043

This appropriation provides for the restoration for public use of the historic West Bank Mills District on the Mississippi River in Minneapolis: in particular to reopen an area of the historic First Street tunnel from the Crown Roller Building to the end of the historic First Street Tunnel (150 yards) for public tours, unearth and restore the historic gatehouse foundation, construct catwalks and lighting through the tailrace tunnels, and restore and display the historic turbine at the historic Crown Roller Mill. This appropriation is contingent on the receipt of all applicable hydropower and other public agency approval. Crown Hydro has been notified by Federal Energy Regulatory Commission that the final Environmental Assessment will be completed and published by the end of June, 1997. Crown Hydro will then be issued a license to produce hydroelectric power.

This project has received an extension and is due to be completed by June 30, 1999.

POND-DAKOTA MISSION RESTORATION

12(b) \$270,000 FRF

\$80,000 Nonstate Match

Vonda Kelly

City of Bloomington

2215 W. Old Shakopee Road

Bloomington, MN 55431

(612) 948-8877

Web site address: <http://ci.bloomington.mn.us>

The Pond-Dakota Mission Restoration Project provided for the restoration of the 1852 "pre-emption" house and the renovation/restoration of the 1856 brick house addition of the Gideon H. Pond and Farm site which is listed on the National Register of Historic Places. The 1852 "pre-emption" house has been reconstructed with the exterior restored to the appearance of the original house and the interior now serves as an interpretive learning center/museum. The 1856 brick house has been restored to its 1878 appearance both exterior and

interior, including the first floor and a chamber on the second story and is open for public interpretation. The remainder of the second story has been adapted for a caretaker's residence with care being taken to retain the basic historic structural elements.

The preservation and restoration of the site assures that it will be available for present and future generations to learn through historic educational interpretive programming, including the importance of the site's location on the Minnesota River and the early contact between Euro-Americans and Native Americans which occurred at the Farm site. Over the past three years, more than 16,600 students, teachers, and parents have attended River Rendezvous Education Days, a living history event set in the 1800's depicting life on the frontier. Additional educational activities include weekend visits, regularly scheduled open houses, prearranged tour groups, and winter sleigh rides. A video is also being prepared that will depict extensive footage shot of the house before, during, and after construction, as well as activities which occur at the site.

JOSEPH R. BROWN INTERPRETIVE CENTER RESTORATION PROJECT

12(c) \$75,000 FRF

\$5,000 Nonstate Match

Earl Renneke

Sibley County Historical Society

RR 2, P.O. Box 45

LeSueur, MN 56058

Phone: (507) 237-2613

Fax: (507) 248-3253

E-Mail: cithend@ic.le-sueur.mn.us

The objective of the project was to restore the 1879 Sibley County Courthouse so that it could be used as the Joseph R Brown Interpretive Center. The building was stabilized by making repairs to the basement, foundation, columns and roof trusses, allowing the second floor to be used and open to the public as the Joseph R Brown Interpretive Center by January 1, 1999.

HERITAGE TRAILS

12(d) \$200,000 FRF

Rachel Tooker

MN Historical Society

345 Kellogg Blvd. West

St. Paul, MN 55102-1906

(612) 297-7451

E-mail: rachel.tooker@mnhs.org

This appropriation enabled the Minnesota Historical Society to build four new trails, including:

- 1) Jeffers Petroglyphs Prairie Interpretive Trail;
 - 2) North West Company Fur Post Historic Site Interpretive Trail;
 - 3) Natural History Environment Trail at the Oliver Kelley Farm; and
 - 4) Lower Sioux Agency Trail Development.
- Five miles of trails were built at North West Company Fur Post and the Oliver Kelley Farm. More are planned at Jeffers Petroglyphs and Lower Sioux Agency. Each trail has its own markers and signs to provide

orientation and to allow visitors to explore the natural history of the site. Markers identify not only glyphs and prairie vegetation, but also provide visitors with the opportunity to explore the interaction of diverse cultures with the natural environment. In addition, each of the trails has a flexible ongoing component in their interpretation program to allow for change over seasons and time.

These sites are visited by more than 50,000 people each year, and nearly every visitor will benefit from the new expansions as each site.

RESTORATION OF HISTORIC ELBA FIRE TOWER

12(e) \$73,000 FRF

*Nancy Roberts
Elba Booster Club
Rt. 1, Box 243 A
Altura, MN 55910
(507) 932-4538*

This appropriation provided for restoration of the historic Elba Fire Tower at Whitewater State Park, complete with interpretive signage, media, brochures, trails, steps and parking lot. A hiking trail was completed to the tower. The tower in its restored condition will be used by many area visitors.

MANAGING MINNESOTA SHIPWRECKS

12(f) \$100,000 FRF

*Scott Anfinson
MN Historical Society
345 Kellogg Blvd. W.
St. Paul, MN 5102
(612) 296-5434
Web site address: <http://www.mnhs.org/prepast/mnshpo/ship/ship.html>*

The project continued the effort to find, evaluate, preserve, and interpret underwater and shoreline historical resources. In this project, vessels from Lake Superior, non-shipwreck harbor features and inland waters were surveyed. A major effort was made to gain public support and to make findings easily accessible. Of the 31 properties surveyed along the North Shore for shipwrecks, docks, and navigation aids 16 were deemed significant. Evidence of 110 wreck sites in Minnesota's inland lakes produced 12 locations as having potential for material remains.

A conference on underwater cultural resources was held in Duluth on October 10-12, 1996. It was attended by almost 200 sport divers, archaeologists, historians, and members of the general public.

A management plan was established to provide guidance for agencies and the public on how to protect and preserve underwater cultural resources.

LAC QUI PARLE MISSION HISTORIC TRAIL

12(g) \$181,000 FRF

*Rachel Tooker
MN Historical Society
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St. Paul, MN 55102-1906
Phone: (612) 297-7451*

Fax: (612)-297-3343

E-mail: rachel.tooker@mnhs.org

Appropriation added by the 1995 Legislature to the LCMR Recommendations

One mile of trail and a wooden deck overlook were built at the site above the lake and Fort Renville. The trail has four signs to provide orientation and to allow visitors to explore the natural history of the site, including the Lac qui Parle Mission and the Fort Renville fur post. Signs also interpret the natural resources of the Minnesota river and Lac qui Parle Lake reservoir, including its importance to migratory waterfowl.

Subd. 13: BIOLOGICAL CONTROL

BIOLOGICAL CONTROL OF EURASIAN WATERMILFOIL AND PURPLE LOOSESTRIFE - CONTINUATION

13(a) \$300,000 TF/FRF

*Chip Welling
MN DNR
Ecological Services Section
Box 25, 500 Lafayette Road
St. Paul, MN 55155-4025
(612) 297-8021
E-mail: chip.welling@dnr.state.mn.us*

RESEARCH PROJECT

This project was designed to continue the development of biological controls for Eurasian watermilfoil (EWM) and purple loosestrife, including native or naturalized insects, pathogens, and native or naturalized fungi. Evaluation of potential biological control agents for EWM by researchers at the University of Minnesota is primarily focused on a weevil (*Euhrychiopsis lecontei*), a native insect. Researchers sampled nine sites known to have weevils and documented apparent declines of varying degrees in EWM in six sites with three of these declines associated with weevils. Increases in abundance of native plants following declines in EWM appear to be important in preventing exotics from returning to high levels of abundance.

Research of weevils into study plots in lakes neither produced high densities of weevils nor did it reduce the density of milfoil. Researchers completed additional studies of factors that may limit populations of weevils, and hence limit their potential to control milfoil. Additional research will continue in 1997-1999 as part of an additional appropriation (ML97 Chap. 216 Sec. 15 Subd. 20(b).)

As a part of the purple loosestrife study, implementation of biological control was expanded through rearing and distribution efforts at the University of Minnesota. New rearing protocols were successfully tested and implemented. In 1996, 168,000 leaf-eating beetles, *Galerucella* spp., were released in 34 loosestrife infestations statewide, and in 1997, over 800,000 were released in 150 sites statewide. Beetles established at approximately 80% of the release sites and certain areas showed extensive populations of leaf-eating beetles two to three years after release. What impact this has on loosestrife mortality is not known, however *Galerucella*

feeding on loosestrife shoot tips does appear to reduce the number of seed capsules produced on a loosestrife plant. Additional exploratory work has also been conducted in the development of a mycoherbicide to control loosestrife. Several fungi have been identified as being pathogenic to loosestrife and progress has been made to develop a carrier in which to incorporate the fungi and apply to plants. However, field tests of the fungal pathogens were not successful at this time.

The primary means for dissemination of project results are publications in peer-reviewed scientific journals and presentations at conferences. Researchers at the University of Minnesota have also created a web page where information on the potential for biocontrol of milfoil is presented (<http://www.fw.umn.edu/research/milfoil/milfoilbc.html>). An extension publication on rearing and releasing *Galerucella* for management of purple loosestrife is under production at the University of Minnesota and will be ready for dissemination in January, 1998. This publication will teach resource managers how to raise and release leaf-eating beetles for the control of loosestrife.

This project has received an additional appropriation of \$150,000 for the 1997-99 biennium (ML1997 Chapter 216 Sect. 15 Subd. 20(b).)

BIOLOGICAL CONTROL OF OVERLAND SPREAD OF OAK WILT

13(b) \$90,000 FRF

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Plant Protection Division
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Phone: (612)-296-8578
Fax: (612)-296-7386
E-Mail: dwight.robinson@mda.state.mn.us*

RESEARCH PROJECT

This appropriation addressed the problem of the spread of oak wilt fungus. Its goal was to enhance a natural biological control of the fungus to reduce production of infectious spores and overland spread of the disease. To achieve this goal, the project addressed three objectives. First, natural population levels of the competitor fungus *Ophiostoma piceae* were determined in a location with a long standing oak wilt control program and a second location with active oak wilt and no control program. This baseline data was required to help determine whether *O. piceae* augmentation sprays would benefit all oak wilt areas. Results showed natural populations of the biocontrol fungus (*O. piceae*) colonized and covered more of the oak wilt spore mats as the mats aged. A final report on this objective was written and published in the scientific journal *Plant Disease*.

The second objective was the development of cost-effective, environmental methods for enhancing natural biological control of the overland spread of oak wilt. This included development of the best application protocol, including timing of applications, equipment, best application sites and handling of a natural

biological control agent that can eliminate oak wilt fungus. Project data found that although the extent of *O. piceae* colonization and density can be increased using augmentation sprays, biological control of oak wilt by *O. piceae* was not as effective as would be desired for a biocontrol agent. However, the project was able to develop an effective delivery system using a high-pressure sprayer that may be used for other potential antagonistic fungi for the control of oak wilt. USDA Forest Service cooperators are currently pursuing development of other fungal antagonists that will utilize this delivery system.

The third objective was to conduct a cost-benefit analysis on *O. piceae* for oak wilt control and compare it with other current approaches to oak wilt control. Surveys were conducted in communities with oak wilt control programs. An analysis of the survey results indicated that a biological control fungus that stopped overland spread of oak wilt would be a great addition to the oak wilt control toolbox. Currently, the only effective measure for controlling this spread is through removal of infected trees. Managers indicated it would be beneficial to property owners as it would delay the cost of tree removal while also preventing future costs from future infections.

BENEFICIAL FUNGAL INOCULUM FOR PRAIRIE AND WETLAND RECLAMATION

13(c) \$100,000 TF

Iris Charvat

*University of MN
220 Biological Sciences Center
St. Paul, MN 55108-1095
Phone: (612) 625-3199
Fax: (612) 625-5754*

RESEARCH PROJECT

The success of the reclamation of native communities requires extensive knowledge not only of the appropriate plant community, but also of the symbiotic fungi which colonize the roots of most plants and supplement the host plant's nutrition. Many species of native plants are unable to survive without these arbuscular mycorrhizal fungi (AMF). Thus, inoculating reclamation sites with AMF may significantly enhance the re-establishment of desirable native species. However, little is known about the AMF populations of this state. Therefore, this research project had three objectives. AMF from several native and restored prairies and wetlands were characterized to establish baseline data about these populations. Soil was collected from 10 different native, disturbed, and reclaimed sites, tested for physical and chemical character and most of the AMF isolated from these samples identified to species.

As commercial production of AMF is currently expensive, and many of the species produced may not be appropriate for use in Minnesota, the second objective was to screen and adapt known fungal spore production processes to generate native Minnesota AMF inoculum. The selection of an appropriate host was found to significantly affect spore production, as native fungi were found to reproduce much more successfully when a native plant was used as the host.

After using the collected soil in extensive tests, a refined version of a dual in vitro culturing system was successfully established which has potential commercial application.

The project also examined long-term storage effects on AMF propagules. Tests on the effects of storage found that over a period of two years, storage at 4 degrees C had no effect on spore viability. Results also indicate that germination is highly species specific, and that very different conditions may be required by different species.

Much of this work is being prepared for publication in scientific and professional journals, as well as being supplied to Mn/DOT for dissemination in their technical publications. Through these venues, it will be available to professionals in landscape careers, ecologists, and anyone interested in restoring and preserving Minnesota native landscapes. Work on this project continues through financial support from Mn/DOT.

Subd. 20: ADDITIONAL APPROPRIATIONS

STATE PARK AND RECREATION AREA ACQUISITION

20(a) \$1,120,000 TF

John Strohkirch
DNR

500 Lafayette Road
St. Paul, MN 55155-4039
Phone: (612) 296-8289
Fax: (612)-297-1157

This funding represents an additional appropriation to ML95 Chap. 220 Sec. 19 Subd. 4(b) and was allocated strictly for state park and recreation area acquisition. These additional funds enabled the purchase of 1030.51 acres of land in the following 11 state parks: Blue Mounds, Crow Wing, Glendalough, Great River Bluffs, Itasca, Lake Bemidji, Lake Bronson, Mille Lacs Kathio, Sibley, Split Rock Lighthouse, and Temperance River.

METROPOLITAN REGIONAL PARK ACQUISITION, ADDITIONAL FISCAL YEAR 1995 APPROPRIATION

20(b) \$1,120,000 TF

Arne Stefferud
Metropolitan Council
Mears Park Centre
230 E. Fifth Street
St. Paul, MN 55101
(612) 291-6360

This appropriation is for payment to the metropolitan council for subgrants to acquire parks and trails consistent with the metropolitan council regional recreation open space capital improvement plan. An original appropriation of \$3,950,000 was made to this program (ML95 Chap. 220 Sec. 19 Subd. 4(a).) This project represents an additional appropriation for the fiscal year 1995 from the Minnesota Environment and Natural Resource Trust Fund (ML95 Chap. 220 Sec. 19 Subd. 20(b).) This appropriation was used to acquire approximately 175 acres of land within Washington, Dakota, and Anoka Counties.

Laws 1995, First Special Session, Chapter 2, Art. 1, Sec. 5, Subd. 2

CANNON VALLEY TRAIL REPAIR

\$175,000 TF

Bruce Blair
City Hall
306 West Mill Street
Cannon Falls, MN 55009
(507) 263-3954

Appropriation added by the 1995 Legislature to the LCMR Recommendations

This project funded repairs to the Cannon Valley Trail in Cannon Falls, MN. Construction of a gabion basket retaining wall at the base of a slope failure zone has provided protection from erosion sufficient to keep the trail attached to the side of a hill. Safety railing along the path and a vehicle guardrail along the township road were also constructed to offer protection from the wall to path users and drivers. Finally, appropriate native vegetation was planted in disturbed areas and on the retaining wall. As the wall weathers and the vegetation matures, the whole project should blend nicely into this visually sensitive area.

Laws 1996 Chapter 407 Section 8

Subd. 3 Parks and Trails p.66

- 3(a) Metropolitan Regional Park System
- 3(b) State Park and Recreational Area Acquisition
- 3(c) Local Grants
- 3(d) Chippewa County Regional Trail *

Subd. 4 Urban Natural Resources p.67

- 4 Greenway Corridors and Natural Areas Project

Subd. 5 Management Approaches p.67

- 5 Upper Mississippi River Assessment

Subd. 6 Natural Resource Data p.67

- 6(a) Public Internet Access to Data and Information
- 6(b) Assessment of Wetland Regulations *

Subd. 7 Wildlife p.68

- 7(a) RIM- Accelerate Critical Habitat Match Program
- 7(b) Investigation of Deformed Frogs in Minnesota *
- 7(c) Niemackl Watershed Improvement

**Appropriation added by the 1996 Legislature to the LCMR Recommendations*

SUBD. 3 PARKS AND TRAILS

METROPOLITAN REGIONAL PARK SYSTEM

Subd. 3(a), \$1,000,000 FRF

Arne Stefferud

Metropolitan Council

Mears Parl Centre, 230 East Fifth Street

St. Paul, MN 55101-1634

Telephone: (612)291-6360

Fax:(612)291-6550

This program has multiple purposes that generally address the upkeep and improvement of Metropolitan Regional Parks. Objectives include: developing or redeveloping recreation facilities, acquire residential and vacant lands within parks and reserves from willing sellers, create/restore natural habitats in parks and reserves, retrofit recreational facilities to accommodate persons with disabilities.

For specifics results of the 1996 appropriation, see ML95 Chap. 220 Sec. 19 Subd. 4(a).

STATE PARK AND RECREATION AREA ACQUISITION

Subd. 3(b), \$1,000,000 FRF

John Strohkirch

State Park Development and Acquisition Manager

Box 39, 500 Lafayette Road

St. Paul, MN 55155

Phone: (612)296-8289

Fax: (612)297-1157

This project accomplished some of the goals of the State Park and Recreation Area Development, Acquisition, and Betterment and Rehabilitation Programs. Funds for this project were used to acquire high priority parcels of private lands

within the state park boundaries offered for sale by willing sellers. This project also included the major rehabilitation and development of state park and recreation area buildings and the betterment of non-building facilities For specifics results of the 1996 appropriation, see ML95 Chap. 220 Sec. 19 Subd. 4(b).

LOCAL NATURAL RESOURCE GRANTS

Subd. 3(c), \$895,000 FRF

Wayne Sames

Minnesota Department of Natural Resources

Address: 500 Lafayette Road, St. Paul, MN 55155-4010

Phone: (612) 296-1567

Fax: (612) 296-6047

This matching grant program assists local governments and/or private organizations in acquisitions and development of outdoor recreation areas, trails, natural areas, scenic resources, and fish and wildlife habitat and will help private organizations conduct surveys and research on fish and wildlife. The five different grant programs are 1.) Local Park Grants 2.) Natural and Scenic Grants 3.) Conservation Partners Grants 4.) Environmental Partnership Grants and 5.) Cooperative Trail Grants. Emphasis is placed on coordinated efforts and grants will be made to those proposals that further a partnership approach involving both state and local governments and the private sector to help meet both outdoor recreation and natural resource protection needs of the state. For specifics results of the 1996 appropriation, see ML95 Chap. 220 Sec. 19 Subd. 4(e).

CHIPPEWA COUNTY REGIONAL TRAIL

Subd. 3(d), \$410,000 FRF

James E. Norman, City Manager

City of Montevideo

103 Canton Avenue, Montevideo, MN 56265

Phone: (320)-269-6575

Fax: (320)-269-9340

Appropriation added by the 1996 Legislature to the LCMR Recommendations

The appropriation was intended to complete the northerly segment of the Chippewa County regional trail and to add linkages to the middle segment of the Chippewa County Regional Trail System. Project objectives for the Trail System include the following results.

1. Approximately 51.7 acres of land and 1.8 miles of permanent easement have been secured for the Trail System through donations, initiation of eminent domain proceedings, and/or direct negotiation and acquisition of fee title and permanent easements.
2. 2.75 miles of trail linkages will be added to the middle segment of the Trail System. This is scheduled for completion in the Spring of 1998 with federal ISTEAs and local, non-state funds.
3. 1.75 miles of trail along the system's northerly segment will be graded, constructed, and paved (10" wide and 3.5" thick.)
4. One new trail wayside will be developed on the northerly segment at the County wetland. Costs

will include design assistance, pavement of parking area and installation of bike racks at County wetland site and landscaping and related construction costs.

For results #2,3 and 4, all work is complete except construction. The entire appropriation was not spent, however, and the remaining funds cancelled. Additional money to complete these construction costs will be obtained from other sources.

SUBD. 4 URBAN NATURAL RESOURCES

GREENWAYS AND CORRIDORS AND NATURAL AREAS PROJECT

Subd. 4 \$50,000 FRF

Sharon Pfeifer

DNR Metro Region, Minnesota Department of Natural Resources

1200 Warner Road, St. Paul, MN 55106

Phone: (612)-772-7982

Fax: (612)-772-7977

This project will investigate and suggest an approach with strategies for developing a connected network of natural lands for the metropolitan region. Expected project results include 1) the formation of a collaborative group to investigate the value of developing a 7-county network of natural areas linked by green corridors, and 2) one or more GIS maps based on refinement of the existing GIS map which will depict a potential network of interconnected natural areas in the metropolitan area.

Significant progress has been made toward meeting these goals. Since last March, the Collaborative has met monthly to work in subgroups on selected topics. Through this process, the Collaborative Group has developed 6 goals to be included in the final report and continues to work on the development of more specific strategies and recommended next steps. By drawing on the group discussions of the Collaborative, a draft outline was prepared by the project coordinator and project consultant.

Significant strides have also been made in GIS map production for this project. The project has gone from one cognitive map that illustrates the look of a greenways network to county-specific GIS mapping of a variety of data layers. Close work between the Collaborative's county planners and the DNR's GIS and TAG staff have produced some very useful maps showing existing resources that can be used in combination with criteria developed by the Collaborative to improve county-level planning and to plan for a regionwide greenways and natural areas system. Final GIS maps depicting a potential greenways network will be completed before the end of the project.

SUBD. 5 MANAGEMENT APPROACHES

UPPER MISSISSIPPI RIVER ASSESSMENT

Subd. 5 \$57,000 FRF

Steve Light

Minnesota Department of Natural Resources

The Adaptive Environmental Assessment (AEA) project for the Upper Mississippi River has two objectives: Phase I – develop an integrated, science-based understanding of the river as a natural system; and Phase II - explore alternative ways of reconciling the competing demands for the river resource. Phase I of the project successfully established a regional forum to search for more sustainable futures for the Upper Mississippi River. A computer model that utilizes existing data about the river and its uses to predict alternative river futures if different management approaches were undertaken was developed to engage stakeholders, scientists, and managers in a science-based dialogue. A second workshop was conducted for the purpose of evaluating and refining this model and a report on this workshop prepared. What resulted was a dynamic description of the river in the form of a user friendly computer package. In addition, the computer modeling team report and future modeling needs were incorporated into a comprehensive Phase I report. The results from Phase I of this workprogram form the basis for Phase II in the process, which will occur after July 1, 1997 and will be funded from sources other than LCMR.

SUBD. 6 NATURAL RESOURCE DATA

PUBLIC INTERNET ACCESS TO DATA AND INFORMATION

Subd. 6(a), \$360,000 FRF

Colleen Mlecoch

Minnesota Department of Natural Resources

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Fax: (612)-296-4946

E-mail: colleen.mlecoch@dnr.state.mn.us

Web site address: <http://www.dnr.state.mn.us>

<http://www.pca.state.mn.us>

This was a collaborative project of the Department of Natural Resources and the Pollution Control Agency to provide public access via the Internet to natural resource, environmental and ecosystem information. The objective was to create and maintain informative, educational, entertaining, intuitive, and easy to navigate web sites, that facilitate citizen involvement and encourage public participation, provide quick access to information needed by diverse customers and promote ecosystem sustainability.

The web sites are a single point of electronic access to natural resource and environmental information, and they are continuing to grow in their breadth and depth. Some broad categories of information available via the web sites include: aquatic resources (e.g. lake ecology and habitat, lake maps, fish population status reports, water quality and lake model summaries, Clean Water Partnership reports, Best Management Practices summary sheets); hunting and fishing seasons and regulations; State Parks and outdoor recreation; wildlife, mineral and vegetation resources; landscapes, watersheds, ecosystems, geologic features, and climatology; air and water quality; environmental fact sheets; and environmental education resources.

This appropriation was for FY97 and the first 6 months of FY98. This period was planned as Phase I of a three-year design and development process. Both DNR and PCA management affirmed their commitment to the project in the FY98/99 biennium by securing continued funding for the web development staff positions in each agency. Phase II of the project is now focusing on more tightly integrating the web sites, and reaching out to other environmental agencies.

ASSESSMENT OF WETLAND REGULATIONS

Subd. 6(b), \$15,000 FRF

Greg Larson

Board of Water and Soil Resources

1 West Water Street, St. Paul, MN 55107

Phone: (612)-296-0882

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Appropriation added by the 1996 Legislature to the LCMR Recommendations

This project assessed the economic impact of wetland regulations on property values resulting from regulation under state law of draining and filling of wetlands. The project generated a report consisting of:

1) an analysis of the relationship between wetland regulations and property values; 2) the issue of compensation to landowners for costs resulting from regulation under state law of draining and filling of wetlands; and 3) recommendations for legislation to address weaknesses identified.

The report also included eight case studies in which wetland regulation is said to have affected development decisions. This final report was distributed to the chairs of the senate committees on agriculture and rural development and environment and natural resources, the finance division of the senate committee on environment and natural resources, and the house committees on environment and natural resources, agriculture, and environment and natural resources finance.

SUBD. 7 WILDLIFE

RIM-ACCELERATE CRITICAL HABITAT MATCH PROGRAM

Subd. 7(a), \$750,000 FRF

Kim Hennings

Minnesota Department of Natural Resources,

Division of Fish and Wildlife

500 Lafayette Road, St. Paul, MN 55423

Phone: (612)-297-2823

Fax: (612)-297-4961

This project provides an ongoing opportunity for private individuals, groups, and businesses to help fund the cost of acquiring or improving critical fish, wildlife, and native plant habitats. State funds in the Minnesota Critical Habitat Private Sector Matching account (CHM) are matched dollar-for-dollar by restricted and unrestricted contributions of land easements, or cash to the program. Land purchases have been primarily for wildlife management areas (WMA), with other projects involving acquisitions in scientific and natural areas

(SNA), state parks, aquatic management areas (AMA), and state forests.

Appropriations to this program may come from state bonding and other additional state funds as well as both the Minnesota Environment and Natural Resource Trust Fund (ETF) and the Minnesota Future Resources Fund (FRF). This represents an additional appropriation to this ongoing program. More specific details about project results for the 1995-1997, you can refer to the 1995 appropriation (ML95 Chap. 220 Sec. 19 Subd. 10(b)).

INVESTIGATION OF DEFORMED FROGS IN MINNESOTA

Subd. 7(b), \$123,000 FRF

Dr. Judy Helgen

Minnesota Pollution Control Agency (MPCA), Water Quality Division

520 Lafayette Road, St. Paul, MN 55155-4194

Phone: (612)-296-7240

Fax: (612)-297-8683

E-mail: Judy.Helgen@pca.state.mn.us

Appropriation added by the 1996 Legislature to the LCMR Recommendations

In 1995, the MPCA received a number of reports of deformed frogs in several locations in Minnesota. Initial collections and necropsies confirmed the serious nature of these deformities. This project began an investigation of sites that had deformed frogs, including reconnaissance of reported sites and chemical analysis of sediments, water and frog tissue. During the summer and fall of 1996, MPCA established four focal areas in the state for research. The focal areas are in Polk and Becker Counties, Crow Wing County, Meeker County, and LeSueur County. At each site, frog populations were surveyed, abnormalities recorded, and frogs measured. Both normal and abnormal frogs were collected as well as water and sediment core samples. Some sites were measured three or more times through the season. The field component was completed in 1996. Analysis of the data collected is in progress. This includes chemical analysis of sediment, water, and frog tissue samples, necropsies, DNA and chromosome studies, histopathology, parasitology, and in situ reproduction caging experiments. The extent of frog deformities found in 1996 was much greater and more widespread than expected at the time of the proposal in the spring of 1996. Reports of deformed frogs in Minnesota have been received from approximately 54 of the state's 87 counties. Twenty-one sites in 14 counties have been confirmed to contain deformed frogs. The distribution of abnormal frogs appears to be statewide, with the exception of the far northwest and far southwestern areas. Deformed frogs were observed in six species, primarily the Leopard Frog, but also in the Mink Frog, the Wood Frog, the American Toad, the Spring Peeper, and one of the Grey Tree Frogs. There were also seasonal differences in the frequencies of abnormalities confirming that one site visit is not enough to confirm the presence or absence of abnormal frogs.

Preliminary findings have been presented to a variety of

sources by MPCA. These sources include a conference on the frog problem, several state agencies and partnerships, and national and international news media. Upon completion of data analysis, further dissemination will occur with the distribution of a final report by December 31st, 1997. This data will be very important in directing future analysis in the next round of work for 1997. A separate appropriation of \$200,000 was made to the MPCA by the legislature.

A THOUSAND FRIENDS OF FROGS

\$28,000

Tracy Fredin, Director

Hamlin University, Center for Global Environmental Education (CGEE)

1536 Hewitt Avenue, St. Paul, MN 55104

Web Site: <http://cgee.hamline.edu/frogs>

This project focused on an investigation of the health of frog populations in the state of Minnesota and development of a prototype environmental education project looking at frogs as indicators of environmental health. Frogs have proven themselves to be key in engaging the public, educators, and youth in environmental education and awareness. Results of the project include, but are not limited to, the following examples. 1) The Ney Frog Project successfully monitored the Le Sueur County site in coordination with researchers from the Minnesota Pollution Control Agency (MPCA.) 2) 10,000 newsletters and frog monitoring surveys were distributed through schools and organizations to youth statewide. 3) The CGEE acted as a data gathering area when over 5,000 people called in response to a citizen survey and related media outreach. 4) 1,000 copies of an eight-page study guide were developed and distributed throughout the state. This information affected 25,000 students statewide. 5) The project conducted Frog Week, an on-line education experience from October 21-25, 1996 and continued the project for several weeks due to popular demand.

Educators in Minnesota and beyond have used dissemination of project results to reach groups ranging from first graders to environmental law students. Due to its success and the extensive interest generated in the deformed frog problem, this project received a continuation of funding by the LCMR for the 1997-99 biennium in the amount of \$300,000 (Laws 1997 Chapter 216 Sect. 15 Subd. 13(c).)

NIEMACKL WATERSHED IMPROVEMENT

Subd. 7(c), \$200,000 FRF

Jim Breyen

Minnesota Department of Natural Resources

2115 Birchmont Beach Road NE, Bemidji, MN 56601

Phone: (218)-755-3958

Fax: (218)-755-4024

This project represents an appropriation to replace monies unspent from the original appropriation funding the Niemackl Watershed Restoration project (ML93 Chap. 172, Sec. 14 Subd. 12(f).) This funding source was necessary for the completion of the original project.

IV. Implementation

“recommendations to implement successful projects and programs into a state agency’s standard operations...”

The following recommendations are made with several caveats, which are of distinct importance:

- (1) The dollar amount of the past appropriation is not part of the LCMR recommendation. Funding amounts should be reviewed against current needs and potential efficiencies and reallocations.
- (2) The specific program structure may need to change.
- (3) This recommendation does not necessarily mean the project should be a budget line item.
- (4) This recommendation does not include an increase in permanent agency staff. In most cases, reallocations should accommodate a changed focus.
- (5) The projects as experienced and reviewed by LCMR are well conceived and the results appear very useful.
- (6) The focus of these recommendations is the project outcomes, not the specific means or mechanisms. Various appropriation sources might be appropriate, not just the general fund.

FUTURE RECOMMENDATIONS: The LCMR will be revising the Strategic Plan for expenditures in the Fall of 1999. At that time, this recommendation will be reviewed and adjusted to reflect the completion of projects, which began in the 98-99 biennium. Incorporation into the strategic planning process and overview of Minnesota’s natural resources and environmental needs at this time will also enable a more timely review by the state agencies for possible submission of these recommendation into the executive budget process.

A description of the projects is located in the appendix of the 1999 Biennial Report.

Projects recommended include:

(A) Projects appropriated and completed for the FY 96-97 biennium including several previously recommended in the 1997 Biennial report for inclusion for regular budget funding; and (B) Projects appropriated in the 98-99 biennium which will be completed during the current biennium.

A. 1995 Projects: ML 95 Chp. 220 Section 19

The following projects were recommended for regular budget inclusions in the January 1997 Biennial Report.

- Subd. 5(a) Local River Planning - Continuation, \$140,000, MN DNR
- Subd. 5(b) Cannon River Watershed Strategic Plan: Integrated Management, \$325,000, Cannon River Watershed Partnership
- Subd. 5(c) Tri-County Leech Lake Watershed Project, \$300,000, Cass County/Tri-County Leech Lake Watershed Partnership
- Subd. 5(d) Blufflands Landscape, \$630,000, MN DNR
- Subd. 5(q) Sustainable Grassland Conservation and Utilization, \$125,000, MN DNR

These projects represent ways to conduct management on an ecosystem basis, where government provides some technical assistance and possibly some financial assistance. They represent an opportunity for DNR to change its institutional approach.

· Subd. 5(p) Accelerate Landscape Management Activities in Whitewater Watershed, \$60,000, MN DNR

This presents an opportunity for a real evolution in DNR budget and management. It is an example of reallocation to get the job done, free of the institutional blinders created by divisional and section lines of control. It also raises the question of budgetary motivation factors or lack thereof. Are savings that are created by efficiency in one area rewarded, or do savings from one area reallocate to other less efficient areas?

· Subd. 6(b) Environmental Education Teacher Training, \$500,000, Office of Environmental Assistance/ Environmental Education Advisory Board

Teachers in school and teachers in service can benefit by learning how to integrate environmental education (EE) into regular curricula. EE is not a separate subject area, but represents an opportunity to raise awareness among students about how their decisions affect the natural world around them. The department of Children Families and Learning should encourage and actively support in-service teachers to achieve the integration needed. The state and private schools that prepare teachers should incorporate versions of the new college curriculum developed in this program and institutionalize the integrative approach. Many generations of teachers and students could benefit if the techniques are employed regularly.

In addition to projects recommended in the January 1997 Report, the following projects have recently been completed and are recommended for regular budget inclusion.

· Subd. 7(f) Completion of the Statewide Land Use Update, \$380,000, Association of Minnesota Counties. The update began in 1991 and was recently completed.

While the Association of Minnesota Counties spearheaded this massive update of land use, serious multi agency budget attention is needed to ensure updates to the new database on closer to a real time basis. Local governments can be the source of a wealth of this information and state agencies can be of tremendous assistance, through a coordinated effort.

· Subd. 7(e) Base Maps for the 1990's, \$600,000, MN Land Management Information Center. A three-biennium project recently completed.

A coordinated initiative is developing to ensure more regular information updates. Some state agency support will be needed.

· Subd. 7 (k) Analysis of Lands Enrolled in

Conservation Reserve Program \$200,000, Department of Agriculture. This project was completed in July 1998.

The Department of Agriculture should establish an ongoing effort to update the work started by this pilot project. The status of land in production versus retired for various reasons seems particularly applicable to the department.

· Subd. 11(e) Energy Improvements in Public Ice Arenas \$470,000

This project was completed in July 1998. An additional project is being recommended for funding in the 2000-2001 biennium.

The Amateur Sports Facilities Commission should incorporate the models and analytical techniques demonstrated in this project into their regular business, whether building new arenas or rehabilitating older ones. Energy and air quality savings will save local governments money permanently and protect the health of thousands of skaters.

B. ML 1997, Chp. 216, Sec. 15

The following projects are active in the current biennium and preliminary results make them candidates for recommendation for regular budget inclusion.

· Subd. 10 (b) Metropolitan Area Groundwater Model, \$300,000, MPCA. The second of a two biennium project.

While this project produced an improved database and analytical tools, a version of this effort should be continued, probably in the PCA. Maintaining the initiative gained would help the PCA and local governments predict and thereby prevent the spread of pollution in groundwater.

· Subd. 6(a) On-Site Sewage Treatment Alternatives and Technology Transfer, \$500,000, MPCA/Uof M. This project was the second of a three biennium project, which is being recommended for continuation in the 2000-2001 biennium.

PCA should establish a small ongoing effort to study new techniques for onsite septic and educate the public through maintenance of the demonstration projects.

· Subd. 7(a) Biological Control of Agricultural Pests \$200,000, UofM/Dept. of Agriculture. This project is currently underway and is the fourth biennium of funding for research on various crops and pests.

In 1997, LCMR recommended that the University establish a base funding level for this work. That has been done. With \$200,000 allocated in 96-97 and

\$308,000 allocated in 98-99, plus a new position in Entomology at \$100,000 per year. In addition to that base support, University scientists attracted over \$750,000 of outside research funding to continue this effort in 97-98. In addition, the Department of Agriculture now has a level of funding in the base budget. The LCMR and others could then add special emphasis projects onto that base effort from time to time.

· Subd. 7(c), Sustainable Farming Systems \$560,000, U of M This project is also being recommended for continued funding by the LCMR in the 2000-2001 biennium.

It is now timely for the University to establish base efforts for Sustainable farming similar to the recent accomplishments for Bio Control. Once established, the LCMR or others could add special emphasis projects onto that base effort from time to time.

· Subd. 6(b) Nitrate Education and Testing, \$150,000, Department of Agriculture.

This project provided water-testing clinics so people could understand their exposure to elevated nitrate in well water. The department of Agriculture should maintain a version of this service as part of the base budget.

· Subd. 4(d) Border to Border Trail Study, \$100,000, MNDNR

This effort was a onetime attempt to gather all the relevant information about trails whether state or locally sponsored into a data base and map form. The DNR should continue to maintain the database and improve its ability to inform the Legislature and the public about the dynamic trail system across the whole state.

· Subd. 6(f) Sustainable Lake Plans, \$270,000, U of M

This pilot effort will demonstrate an inexpensive, locally driven process for assuring lake watershed quality. The DNR has initiated a lake initiative that could be modeled on the simpler locally driven approaches that are possible by fully engaging the local communities, with state agencies as data and resource advisors.

· Subd. 13(e) Partners in Accessible Recreation and Environmental Responsibility, \$550,000, Wilderness Inquiry/ DNR.

The second of a three-biennium project which is being recommended for funding by the LCMR in the 2000-2001 biennium.

The DNR, as owner and operator of a major portion of

developed space should establish full compliance within DNR and within sister agencies with the state accessibility policies. This project will demonstrate areas needing attention, but a regular budget effort is necessary to ensure ongoing attention.

5(h)	Pickwick Mill Machine Restoration	100,000	7(m)	Sustainable Farming Systems-Continuation	350,000
		Total			950,000
Subd. 6 Water Quality					
6(a)	On-site Sewage Treatment Alternatives-Performance, Outreach and Demonstration-Continuation: Research	550,000	7(n)	Economic Analysis of Agriculture for Multiple Benefits: Research	250,000
6(b)	Identification of Sediment Sources in Agricultural Watersheds: Research	350,000	7(o)	Non-Wood Agricultural Fibers and Industrial Hemp for Pulp and Paper Manufacture: Research	200,000
6(c)	Accelerated State-Wide Local Water Plan Implementation	1,000,000	7(p)	Sustainable Livestock Systems: Research	350,000
6(d)	Tracking Sources of Fecal Pollution Using DNA Techniques: Research	300,000	7(q)	Forest Wildlife Biologist for Ruffed Grouse	1,000,000
6(e)	Groundwater Flow in the Prairie du Chien Aquifer	110,000	7(r)	Organic Farming Training Project	350,000
6(f)	Lake Minnetonka Citizens Monitoring and Education Network	40,000	7(s)	Construction and Demolition Waste Abatement Demonstration Project	250,000
6(g)	Erosion Impacts on the Cannon Valley Big Woods: Research	150,000	7(t)	Minnesota River Valley Scenic Byway Interpretive Signage	100,000
6(h)	Lake Calhoun and Lake Harriet Gravity Flow Stream System	250,000			
		Total			6,850,000
Subd. 7 Agriculture and Natural resource Based					
7(a)	Green Forest Certification Project	150,000	Subd. 8 Urbanization Impacts		
7(b)	Accelerated Transfer of New Forest-Research Findings	115,000	8(a)	Resources for Redevelopment: A Community Property Investigation Program	100,000
7(c)	Minnesota Wildlife Tourism Initiative	250,000	8(b)	Tools and Training for Community-Based Planning	450,000
7(d)	Integrated Prairie Management: Research	350,000	8(c)	Protecting Dakota County Farmland and Natural Areas	200,000
7(e)	Improved Agricultural Systems Overlying Sensitive Aquifers in Southwestern Minnesota: Research	200,000	8(d)	Urban Corridor Design: Research	600,000
7(f)	Diversifying Agriculture for Environmental, Economic, and Social Benefits: Research	600,000	8(e)	Conservation-Based Development Program	150,000
7(g)	Minnesota River Basin Initiative: Local Leadership	700,000	8(f)	Sustainable Stormwater Management and Erosion Control for Athletic Fields and Parking Lot Retrofit	200,000
7(h)	Commercial Fertilizer Plant of Livestock Solid Waste Processing: Research	400,000	8(g)	Community -Based Initiatives: Land Use for Sustainable Agriculture-Continuation: Research	400,000
7(i)	Preservation of Native Wild Rice Resource : Research	200,000	8(h)	Chisago Lakes Outlet Channel Project	40,000
7(j)	Wild Rice Management Planning: Research	200,000	8(i)	Virginia Storm Sewer Project	225,000
7(k)	Mesabi Iron Range, Water and Mineral Resource Planning	650,000	8(j)	Blufflands Implementation	33,000
7(l)	Sustainable Aquaculture Development in Minnesota: Research	185,000			
				Total	2,398,000
Subd. 9 Innovations in Energy and Transportation					
			9(a)	Ice Arena Design for Efficiency and Air Quality-Continuation	100,000
			9(b)	Promoting High Efficiency Cogeneration	100,000
			9(c)	Evaluate Biodiesel Made from Waste Fats and Oils: Research	125,000
			9(d)	Wind Power for Rural	250,000

Development-Continuation		11(m) Twin Cities Environmental Service Learning-Continuation	40,000
	Total		575,000
Subd. 10 Decisionmaking Tools			
10(a) Goodhue County Natural Resources Inventory and Management Plan	75,000	11(n) Minnesota Whitetail Deer Resource Center Exhibits	400,000
10(b) Public Access to Mineral Knowledge	100,000	11(o) Sustainability Forums	200,000
10(c) Updating Outmoded Soil Surveys-Continuation	500,000	11(p) Minnesota River Watershed Ecology and History Exhibit	90,000
10(d) Climate Variability and Change Impacts on Minnesota Resources: Research	350,000	11(q) Hyland Lake Environmental Center	220,000
10(e) Minnesota Environmentally Preferable Chemicals Project	150,000	11(r) Aquaculture, Hydroponics, and Greenhouse Research Lab	100,000
		Total	3,505,000
Subd. 11 Environmental Education			
10(f) GIS Utilization of Historic Timberland Survey Records	120,000	Subd. 12 Benchmarks and Indicators	
10(g) By-Products Application to Agricultural, Mineland and Forest Soils: Research	350,000	12(a) Measuring Children's Exposures to Environmental Health Hazards: Research	500,000
10(h) Winter Severity Index for Deer: Research	60,000	12(b) Minnesota County Biological Survey-Continuation	1,600,000
	Total	12(c) Environmental Indicators Initiative - Continuation	400,000
	1,705,000	12(d) Dakota County Wetland Health Monitoring Program	160,000
Subd. 11 Environmental Education			
11(a) Uncommon Ground: An Educational Television Series	400,000	12(e) Predicting Water and Forest Resources Health and Sustainability: Research	300,000
11(b) Ecology Bus Environmental Education	200,000	12(f) Potential for Infant Risk from Nitrate Contamination: Research	200,000
11(c) Renovation of Open Spaces: Twin Cities Neighborhoods	200,000	12(g) Assessing Lake Superior Waters Off the North Shore: Research	400,000
11(d) Karst Education for Southeastern Minnesota	120,000	12(h) Minnesota's Forest Bird Diversity Initiative-Continuation: Research	450,000
11(e) Minnesota Wolf Public Education	120,000	12(i) Farm Ponds as Critical Habitats for Native Amphibians: Research	250,000
11(f) North American Bear Center	80,000	12(j) Improved Minnesota Fungus Collection and Database	70,000
11(g) Accessible Outdoor Recreation	400,000		
11(h) Science Outreach and Integrated Learning on Soil	250,000	Total	4,330,000
Subd. 13 Critical Lands or Habitats			
11(i) Southeast Minnesota Streams and Watershed Signage	150,000	13(a) Sustainable Woodlands and Prairies on Private Lands-Continuation	450,000
11(j) Teacher Training in Interdisciplinary Environmental Education	60,000	13(b) National Prairie Passage-Linking Isolated Prairie Preserves	150,000
11(k) Development and Rehabilitation of Recreational Shooting Ranges	350,000	13(c) Greening the Metro Mississippi-Minnesota River Valleys	800,000
11(l) Youth Outdoor Environmental Education Program	125,000	13(d) Restoring the Greater Prairie Chicken to Southwestern Minnesota	60,000

13(e)	The Prairie Heritage Fund -Continuation	500,000
13(f)	Public Boat Access and Fishing Piers	1,299,000
13(g)	Arboretum Land Acquisition and Wetlands Restoration-Continuation	700,000
13(h)	Implement the Chisago and Washington Counties Green Corridor Project-Continuation	450,000
13(i)	RIM Shoreland Stabilization	350,000
13(j)	Enhancing Canada Goose Hunting Opportunities for Recreation and Management Purposes	340,000
	Total	5,099,000

Subd. 14 Native Species Planting

14(a)	Minnesota ReLeaf Matching Grant Program-Continuation	850,000
14(b)	Landscaping for Wildlife and Nonpoint Source Pollution Prevention	150,000
14(c)	Lakescaping for Wildlife and Water Quality Initiative	140,000
14(d)	Development and Assessment of Oak Wilt Biological Control Technologies-Continuation: Research	200,000
14(e)	Saint Paul-Minneapolis Native Plant Habitat Interpretive Program	130,000
14(f)	Restoring Ecological Health to St. Paul's Mississippi River Bluffs	200,000
	Total	1,670,000

Subd. 15 Native Fish

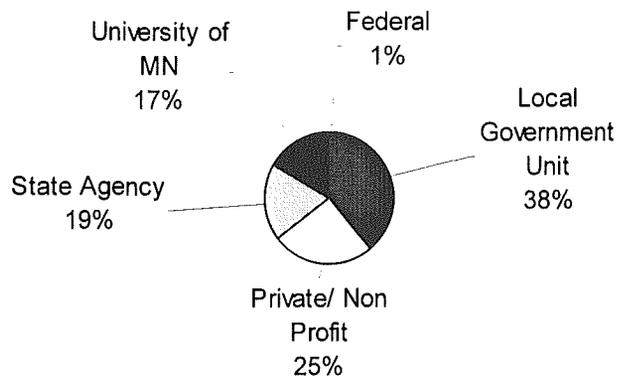
15(a)	Mussel Resource Survey	400,000
15(b)	Freshwater Mussel Resources in the St. Croix River: Research	58,000
	Total	458,000

Subd. 16 Exotic Species

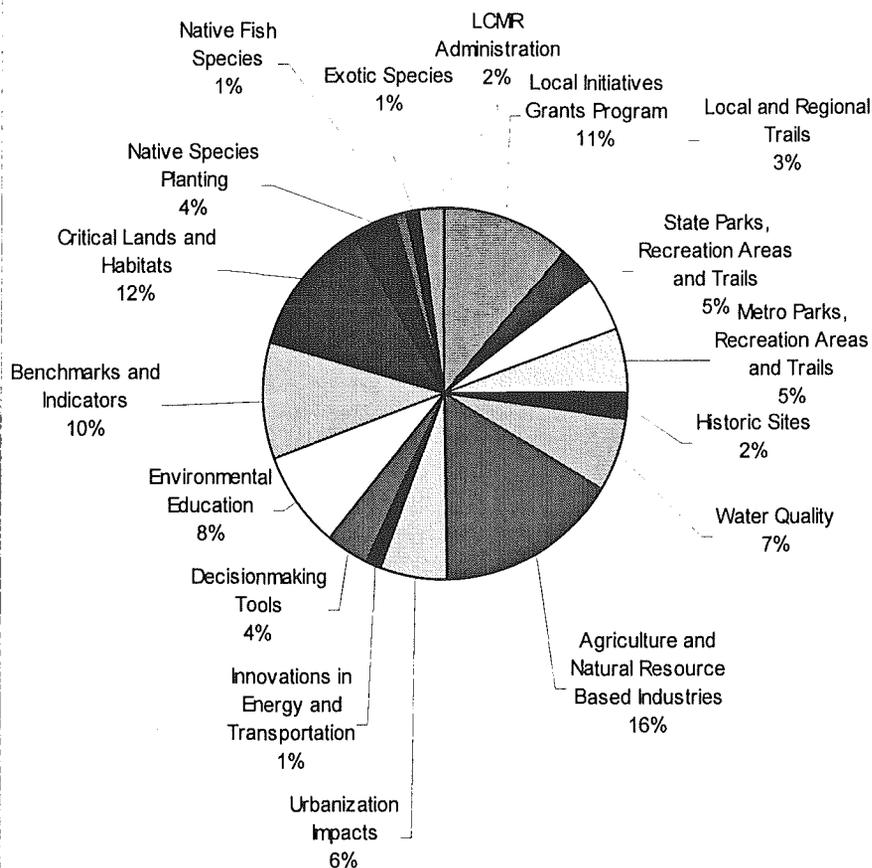
16(a)	Biological Control of Eurasian Watermilfoil and Purple Loosestrife-Continuation: Research	150,000
16(b)	Evaluate establishment, impact of leafy spurge biocontrol agents: Research	140,000
16(c)	Restoring Native Vegetation in Parks and Nature Centers	260,000
	Total	550,000

Grand Total 42,250,000

**FY 2000-2001 LCMR Recommendations by Category
as Percent of Total Dollars**



**FY 2000- 2001 Projects by Strategy
Total: \$42.25 Million**



LCMR Appropriation Language for
1999 Recommendations, adopted
12/3/98.

1 A bill for an act
 2 relating to appropriations; appropriating money for
 3 environmental and natural resources purposes from the
 4 Minnesota future resources fund, the environment and
 5 natural resources trust fund, and the Great Lakes
 6 protection account; amending Minnesota Statutes 1998,
 7 section 85.019, subdivision 2, and by adding
 8 subdivisions.

9 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MINNESOTA:

10 Section 1. [ENVIRONMENT AND NATURAL RESOURCES APPROPRIATIONS.]

11 The sums shown in the columns marked "APPROPRIATIONS" are
 12 appropriated from the named fund to the agencies and for the
 13 purposes specified in this act, to be available for the fiscal
 14 years indicated for each purpose.

15		APPROPRIATIONS	
16		Available for the Year	
17		Ending June 30	
18		2000	2001

19 Sec. 2. MINNESOTA RESOURCES

20	Subdivision 1. Total		
21	Appropriation	29,245,000	13,005,000

22 Summary by Fund

23	Minnesota Future		
24	Resources Fund	16,040,000	
25	Environment and		
26	Natural Resources		
27	Trust Fund	13,005,000	13,005,000
28	Great Lakes		
29	Protection Account	200,000	

30 Appropriations from the Minnesota
 31 future resources fund and the Great
 32 Lakes protection account are available

1 for either year of the biennium.

2 For appropriations from the environment
3 and natural resources trust fund, any
4 unencumbered balance remaining in the
5 first year does not cancel and is
6 available for the second year of the
7 biennium.

8 Unless otherwise provided, the amounts
9 in this section are available until
10 June 30, 2001, when projects must be
11 completed and final products delivered.

12 Subd. 2. Definitions

13 (a) "Future resources fund" means the
14 Minnesota future resources fund
15 referred to in Minnesota Statutes,
16 section 116P.13.

17 (b) "Trust fund" means the Minnesota
18 environment and natural resources trust
19 fund referred to in Minnesota Statutes,
20 section 116P.02, subdivision 6.

21 (c) "Great Lakes protection account"
22 means the account referred to in
23 Minnesota Statutes, section 116Q.02.

24 Subd. 3. Legislative Commission
25 on Minnesota Resources 900,000

26 \$333,000 is from the future resources
27 fund and \$283,000 the first year and
28 \$284,000 the second year are from the
29 trust fund, pursuant to Minnesota
30 Statutes, section 116P.09, subdivision
31 5.

32 Subd. 4. Recreation

33 (a) Local Initiatives Grants
34 Program 4,850,000

35 This appropriation is to the
36 commissioner of natural resources to
37 provide matching grants, as follows:

38 (1) \$1,950,000 is from the future
39 resources fund to local units of
40 government for local park and
41 recreation areas of up to \$250,000
42 notwithstanding Minnesota Statutes,
43 section 85.019. \$50,000 is to complete
44 the Larue Pit Recreation Development.
45 \$460,000 is available immediately upon
46 enactment.

47 (2) \$435,000 the first year and
48 \$435,000 the second year are from the
49 trust fund to local units of government
50 for natural and scenic areas pursuant
51 to Minnesota Statutes, section 85.019.

52 (3) \$1,220,000 is from the future
53 resources fund for trail grants to
54 local units of government on land to be
55 maintained for at least 20 years for
56 the purposes of the grant. \$500,000 is
57 for grants of up to \$50,000 per project

1 for trail linkages between communities,
2 trails, and parks, and \$720,000 is for
3 grants of up to \$250,000 for locally
4 funded trails of regional significance
5 outside the metropolitan area.

6 (4) \$305,000 the first year and
7 \$305,000 the second year are from the
8 trust fund for a statewide conservation
9 partners program, to encourage private
10 organizations and local governments to
11 cost share improvement of fish,
12 wildlife, and native plant habitats and
13 research and surveys of fish and
14 wildlife. Conservation partners grants
15 may be up to \$20,000 each. \$10,000 is
16 for an agreement with the Canby
17 Sportsman's Club for shelterbelts for
18 habitat and erosion control.

19 (5) \$100,000 the first year and
20 \$100,000 the second year are from the
21 trust fund for environmental
22 partnerships program grants of up to
23 \$20,000 each for environmental service
24 projects and related education
25 activities through public and private
26 partnerships.

27 In addition to the required work
28 program, grants may not be approved
29 until grant proposals to be funded have
30 been submitted to the legislative
31 commission on Minnesota resources and
32 the commission has approved the grants
33 or allowed 60 days to pass. The
34 commission shall monitor the grants for
35 approximate balance over extended
36 periods of time between the
37 metropolitan area as defined in
38 Minnesota Statutes, section 473.121,
39 subdivision 2, and the nonmetropolitan
40 area through work program oversight and
41 periodic allocation decisions. For the
42 purpose of this paragraph, the match
43 must be nonstate contributions, but may
44 be either cash or in-kind. Recipients
45 may receive funding for more than one
46 project in any given grant period.
47 This appropriation is available until
48 June 30, 2002, at which time the
49 project must be completed and final
50 products delivered, unless an earlier
51 date is specified in the work program.
52 If a project financed under this
53 program receives a federal grant, the
54 availability of the financing from this
55 subdivision for that project is
56 extended to equal the period of the
57 federal grant.

58 (b) Mesabi Trail Land
59 Acquisition and
60 Development - Continuation 1,000,000

61 This appropriation is from the future
62 resources fund to the commissioner of
63 natural resources for an agreement with
64 St. Louis and Lake Counties Regional
65 Rail Authority for the fourth biennium
66 to develop and acquire segments of the

1 Mesabi trail and procure design and
 2 engineering for trail heads and
 3 enhancements. This appropriation must
 4 be matched by at least \$1,000,000 of
 5 nonstate money. This appropriation is
 6 available until June 30, 2002, at which
 7 time the project must be completed and
 8 final products delivered, unless an
 9 earlier date is specified in the work
 10 program.

11 (c) Kabetogama to Ash River
 12 Community Trail System 100,000

13 This appropriation is from the future
 14 resources fund to the commissioner of
 15 natural resources for an agreement with
 16 Kabetogama Lake Association in
 17 cooperation with the National Park
 18 Service for trail construction linking
 19 Lake Kabetogama, Ash River, and
 20 Voyagers National Park. This
 21 appropriation must be matched by at
 22 least \$100,000 of nonstate money.

23 This appropriation is available until
 24 June 30, 2002, at which time the
 25 project must be completed and final
 26 products delivered, unless an earlier
 27 date is specified in the work program.

28 (d) Mesabi Trail
 29 Connection 80,000

30 This appropriation is from the future
 31 resources fund to the commissioner of
 32 natural resources for an agreement with
 33 the East Range Joint Powers Board to
 34 develop trail connections to the Mesabi
 35 Trail with the communities of Aurora,
 36 Hoyt Lakes, and White. This
 37 appropriation must be matched by at
 38 least \$80,000 of nonstate money. This
 39 appropriation is available until June
 40 30, 2002, at which time the project
 41 must be completed and final products
 42 delivered, unless an earlier date is
 43 specified in the work program.

44 (e) Dakota County
 45 Bikeway Mapping 15,000

46 This appropriation is from the future
 47 resources fund to the commissioner of
 48 natural resources for an agreement with
 49 Dakota county to cost share the
 50 integration of digital elevation
 51 information in the Dakota county
 52 geographic information system database
 53 with trail and bikeway routes and
 54 develop maps for trail and bikeway
 55 users.

56 (f) Mississippi Riverfront
 57 Trail and Access 155,000

58 This appropriation is from the future
 59 resources fund to the commissioner of
 60 natural resources for an agreement with
 61 the city of Hastings to acquire and
 62 restore the public access area and to

1 complete the connecting riverfront
2 trail from the public access to lock
3 and dam number two adjacent to Lake
4 Rebecca. This appropriation must be
5 matched by at least \$155,000 of
6 nonstate money.

7 (g) Management and Restoration
8 of Natural Plant Communities
9 on State Trails 150,000

10 \$75,000 the first year and \$75,000 the
11 second year are from the trust fund to
12 the commissioner of natural resources
13 to manage and restore natural plant
14 communities along state trails under
15 Minnesota Statutes, section 85.015

16 (h) North Shore Touring Trail 550,000

17 \$275,000 the first year and \$275,000
18 the second year are from the trust fund
19 to the commissioner of natural
20 resources in cooperation with the North
21 Shore Touring Trail Association for
22 construction of the north shore touring
23 trail connection through Split Rock
24 State Park. The commissioner must
25 submit grant requests for supplemental
26 funding for federal TEA-21 money in
27 eligible categories and report the
28 results to the legislative commission
29 on Minnesota resources. This
30 appropriation is available until June
31 30, 2002, at which time the project
32 must be completed and final products
33 delivered, unless an earlier date is
34 specified in the work program.

35 (i) State Park and Recreation
36 Area Acquisition, Development,
37 Betterment, and Rehabilitation 1,000,000

38 \$500,000 the first year and \$500,000
39 the second year are from the trust fund
40 to the commissioner of natural
41 resources as follows: (1) for state
42 park and recreation area acquisition,
43 \$500,000; and (2) for state park and
44 recreation area development,
45 rehabilitation, and resource
46 management, \$500,000, unless otherwise
47 specified in the approved work
48 program. The use of the Minnesota
49 conservation corps is encouraged. The
50 commissioner must submit grant requests
51 for supplemental funding for federal
52 TEA-21 money in eligible categories and
53 report the results to the legislative
54 commission on Minnesota resources.
55 This appropriation is available until
56 June 30, 2002, at which time the
57 project must be completed and final
58 products delivered, unless an earlier
59 date is specified in the work program.

60 (j) Fort Snelling State Park;
61 Upper Bluff Implementation -
62 Continuation 250,000

63 \$125,000 the first year and \$125,000

1 the second year are from the trust fund
 2 to the commissioner of natural
 3 resources to implement the utilization
 4 plan for the Upper Bluff area of Fort
 5 Snelling Park.

6 (k) Interpretive Boat
 7 Tours of Hill Annex
 8 Mine State Park 60,000

9 \$30,000 the first year and \$30,000 the
 10 second year are from the trust fund to
 11 the commissioner of natural resources
 12 to add interpretive boat excursion
 13 tours of the mine. The project will
 14 include purchase and equipping of a
 15 craft and development of a landing area.

16 (l) Metropolitan Regional Parks
 17 Acquisition, Rehabilitation,
 18 and Development 2,000,000

19 \$1,000,000 the first year and
 20 \$1,000,000 the second year are from the
 21 trust fund to the metropolitan council
 22 for subgrants for acquisition,
 23 development, and rehabilitation in the
 24 metropolitan regional park system,
 25 consistent with the metropolitan
 26 council regional recreation open space
 27 capital improvement plan. This
 28 appropriation may be used for the
 29 purchase of homes only if the purchases
 30 are expressly included in the work
 31 program approved by the legislative
 32 commission on Minnesota resources. The
 33 metropolitan council shall collect and
 34 digitize all local, regional, state,
 35 and federal parks and all off-road
 36 trails with connecting on-road routes
 37 for the metropolitan area and produce a
 38 printed map that is available to the
 39 public. This appropriation is
 40 available until June 30, 2002, at which
 41 time the project must be completed and
 42 final products delivered, unless an
 43 earlier date is specified in the work
 44 program.

45 (m) Luce Line Trail
 46 Connection Through
 47 Wirth Park 300,000

48 This appropriation is from the future
 49 resources fund to the commissioner of
 50 natural resources for an agreement with
 51 the Minneapolis Park and Recreation
 52 Board to complete the construction of a
 53 bicycle and pedestrian trail link
 54 through Wirth Park to connect the
 55 Minneapolis Regional Trail System with
 56 the Luce Line State Trail. This
 57 appropriation must be matched by at
 58 least \$300,000 of nonstate money. This
 59 appropriation is available until June
 60 30, 2002, at which time the project
 61 must be completed and final products
 62 delivered, unless an earlier date is
 63 specified in the work program.

64 Subd. 5. Historic

1 (a) Documenting Traditional
2 Cultural Properties
3 in Minnesota 50,000

4 This appropriation is from the future
5 resources fund to the Minnesota
6 Historical Society to identify and
7 protect traditional cultural places of
8 Minnesota Indian people. The society
9 must request matching funds from
10 nonstate sources and report the results
11 to the legislative commission on
12 Minnesota resources.

13 (b) Using National Register
14 Properties to Interpret
15 Minnesota History 90,000

16 This appropriation is from the future
17 resources fund to the Minnesota
18 Historical Society to create
19 interactive, mini-documentaries in
20 Internet format using the National
21 Register properties to interpret
22 selected themes in Minnesota history.

23 (c) Historic Site Land
24 Acquisition 175,000

25 \$87,000 the first year and \$88,000 the
26 second year are from the trust fund to
27 the Minnesota Historical Society to
28 purchase land adjacent to the Lower
29 Sioux Agency, Jeffers Petroglyphs, and
30 Oliver Kelley Farm sites to protect the
31 historic resources. Allocation of
32 dollars between the three sites shall
33 be determined based on the willingness
34 of sellers and reasonable purchase
35 prices at the respective sites. This
36 appropriation is available until June
37 30, 2002, at which time the project
38 must be completed and final products
39 delivered, unless an earlier date is
40 specified in the work program.

41 (d) Murphy's Landing
42 Improvements to Prairie,
43 Accessible Trail, and
44 Ferry Landing 110,000

45 This appropriation is from the future
46 resources fund to the Minnesota
47 Historical Society for an agreement
48 with Murphy's Landing for prairie
49 restoration, and construction of boat
50 and ferry landings and a lookout at
51 Historic Murphy's Landing on the
52 Minnesota River. This appropriation
53 must be matched by at least \$75,000 of
54 nonstate money.

55 (e) Gibbs Farm Museum
56 Interpretation 150,000

57 This appropriation is from the future
58 resources fund to the Minnesota
59 Historical Society for an agreement
60 with Ramsey County Historical Society
61 to build and furnish replica structures
62 of historic lifestyles and land use of

1 the Dakota and pioneers.

2 (f) Traverse des Sioux
3 Site Development 250,000

4 \$126,000 the first year and 124,000 the
5 second year are from the trust fund to
6 the Minnesota Historical Society to
7 improve public access to state historic
8 site Traverse des Sioux including
9 trails, interpretive markers, and basic
10 visitor amenities.

11 (g) Old Wadena Historic
12 Site Development 25,000

13 This appropriation is from the future
14 resources fund to the Minnesota
15 Historical Society for an agreement
16 with Wah De Nah Historic and
17 Environmental Learning Project to
18 develop a footbridge, archaeological
19 survey, and educational programs. This
20 appropriation must be matched by at
21 least \$6,000 of nonstate money.

22 (h) Pickwick Mill
23 Machine Restoration 100,000

24 This appropriation is from the future
25 resources fund to the Minnesota
26 Historical Society for an agreement
27 with Pickwick Mill Inc. for the second
28 biennium to continue the restoration of
29 the machinery of Pickwick Mill. This
30 appropriation must be matched by at
31 least \$25,000 of nonstate money.

32 Subd. 6. Water Quality

33 (a) On-Site Sewage Treatment
34 Alternatives; Performance,
35 Outreach and
36 Demonstration - Continuation 550,000

37 \$275,000 the first year and \$275,000
38 the second year are from the trust fund
39 to the commissioner of the pollution
40 control agency for the third biennium
41 to monitor previously built test sites
42 for pathogen removal and other
43 parameters for indicators of treatment
44 efficiency, to determine maintenance
45 needs and system longevity, and to
46 pursue the establishment of cooperative
47 demonstration projects.

48 (b) Identification of Sediment
49 Sources in Agricultural
50 Watersheds 350,000

51 \$175,000 the first year and \$175,000
52 the second year are from the trust fund
53 to the Science Museum of Minnesota to
54 quantify the contribution of streambank
55 erosion versus overland erosion sources
56 to riverine suspended sediment
57 concentrations. This appropriation
58 must be matched by at least \$90,000 of
59 nonstate money.

1 (c) Accelerated Statewide
2 Local Water Plan
3 Implementation 1,000,000

4 This appropriation is from the future
5 resources fund to the board of water
6 and soil resources to accelerate the
7 local water planning challenge grant
8 program under Minnesota Statutes,
9 section 103B.3361, to assist in the
10 implementation of high priority
11 activities in comprehensive water
12 management plans on a cost-share
13 basis. \$140,000 is to St. Louis county
14 to inventory and evaluate existing
15 sewage treatment systems. \$75,000 is
16 to the Whitefish Area Property Owners
17 Association in cooperation with Crow
18 Wing county to inspect all lakeshore
19 properties on the Whitefish chain of
20 lakes for conformance with septic
21 system requirements. \$50,000 is to
22 Chisago county to develop sustainable
23 wastewater treatment alternatives which
24 must be matched by at least \$30,000 of
25 nonstate money.

26 (d) Tracking Sources of Fecal
27 Pollution Using DNA Techniques 300,000

28 \$150,000 the first year and \$150,000
29 the second year are from the trust fund
30 to the University of Minnesota to
31 define sources of fecal pollution in
32 waters.

33 (e) Groundwater Flow in the
34 Prairie du Chien Aquifer 110,000

35 \$55,000 the first year and \$55,000 the
36 second year are from the trust fund to
37 the University of Minnesota to
38 characterize groundwater flow within
39 the Prairie du Chien Formation.

40 (f) Lake Minnetonka Citizens'
41 Monitoring and Education
42 Network 40,000

43 This appropriation is from the future
44 resources fund to the commissioner of
45 natural resources for an agreement with
46 the Lake Minnetonka Association to
47 begin volunteer network training and
48 education for a comprehensive
49 monitoring program. This appropriation
50 must be matched by at least \$20,000 of
51 nonstate money.

52 (g) Erosion Impacts on the
53 Cannon Valley Big Woods 150,000

54 \$75,000 the first year and \$75,000 the
55 second year are from the trust fund to
56 the University of Minnesota in
57 cooperation with the Big Woods Project
58 to determine historical and future
59 effects of land practices on soil
60 erosion levels and develop land
61 management tools in the big woods
62 ecosystem in Rice county.

1 (h) Lake Calhoun and Lake
2 Harriet Gravity Flow Stream System 250,000

3 This appropriation is from the future
4 resources fund to the commissioner of
5 natural resources for an agreement with
6 the Minneapolis Park and Recreation
7 Board to complete construction of the
8 gravity flow stream connection between
9 Lake Calhoun and Lake Harriet to
10 improve lakewater quality and equalize
11 water levels in the chain of lakes.
12 This appropriation must be matched by
13 sufficient nonstate money to complete
14 the project.

15 Subd. 7. Agriculture and Natural
16 Resource Based Industries

17 (a) Green Forest
18 Certification Project 150,000

19 \$75,000 the first year and \$75,000 the
20 second year are from the trust fund to
21 the commissioner of natural resources
22 for an agreement with the Institute for
23 Agriculture and Trade Policy to certify
24 foresters and to evaluate private
25 forest lands for green certification.

26 (b) Accelerated Transfer of New
27 Forest - Research Findings 115,000

28 \$58,000 the first year and \$57,000 the
29 second year are from the trust fund to
30 the University of Minnesota to
31 accelerate educational programming by
32 the sustainable forest education
33 cooperative on the practical
34 application of landscape-level analysis
35 in site-level forest management.

36 (c) Minnesota Wildlife
37 Tourism Initiative 250,000

38 \$125,000 the first year and \$125,000
39 the second year are from the trust fund
40 to the commissioner of natural
41 resources to develop, implement, and
42 evaluate a project focusing on wildlife
43 tourism as a sustainable industry in
44 Minnesota in cooperation with the
45 office of tourism.

46 (d) Integrated Prairie
47 Management 350,000

48 \$175,000 the first year and \$175,000
49 the second year are from the trust fund
50 to the commissioner of natural
51 resources for an agreement with the
52 University of Minnesota and Clay county
53 in a cooperative project for an
54 aggregate resource inventory on public
55 lands, prairie restoration and
56 research, and stewardship plans for
57 management options. This appropriation
58 is available until June 30, 2002, at
59 which time the project must be
60 completed and final products delivered,
61 unless an earlier date is specified in

1 the work program.

2 (e) Improved Agricultural Systems
3 Overlying Sensitive Aquifers
4 in Southwestern Minnesota 200,000

5 This appropriation is from the future
6 resources fund to the commissioner of
7 agriculture for an agreement with the
8 University of Minnesota, Southwest
9 Experiment Station, to provide
10 technical support, research, systems
11 evaluation, and advisory teams to
12 protect sensitive alluvial aquifers
13 threatened by nitrate contamination in
14 southwest Minnesota.

15 (f) Diversifying Agriculture
16 for Environmental, Economic,
17 and Social Benefits 600,000

18 \$300,000 the first year and \$300,000
19 the second year are from the trust fund
20 to the University of Minnesota to
21 research new plant materials and crop
22 management systems for diversification.

23 (g) Minnesota River Basin
24 Initiative; Local Leadership 700,000

25 \$350,000 the first year and \$350,000
26 the second year are from the trust fund
27 to the board of water and soil
28 resources for a cost share agreement
29 with the Minnesota River Basin Joint
30 Powers Board for landscape planning and
31 demonstration, and restoration and
32 management projects for the Minnesota
33 River on a cost-share basis.

34 (h) Commercial Fertilizer Plant
35 for Livestock Solid Waste
36 Processing 400,000

37 This appropriation is from the future
38 resources fund to the agricultural
39 utilization research institute for an
40 agreement with AquaCare International,
41 Inc. to establish a commercial grade
42 fertilizer plant that will enhance and
43 process animal wastewater solids
44 through micronization technology. This
45 appropriation must be matched by at
46 least \$425,000 of nonstate money. As a
47 condition of receiving this
48 appropriation, AquaCare International,
49 Inc. must agree to pay to the state a
50 royalty. Notwithstanding Minnesota
51 Statutes, section 116P.10, the royalty
52 must be two percent of gross revenues
53 accruing to AquaCare International,
54 Inc. from this application of
55 micronization technology. Receipts
56 from the royalty must be credited to
57 the fund.

58 (i) Preservation of Native
59 Wild Rice Resource 200,000

60 This appropriation is from the future
61 resources fund to the commissioner of

1 natural resources for an agreement with
 2 Leech Lake Reservation to analyze
 3 critical factors in different northern
 4 rice habitats and determine methods to
 5 preserve the natural diversity of wild
 6 rice. This appropriation must be
 7 matched by at least \$45,000 of nonstate
 8 money.

9 (j) Wild Rice Management
 10 Planning 200,000

11 This appropriation is from the future
 12 resources fund to the commissioner of
 13 natural resources for an agreement with
 14 the Boise Forte Band of Chippewa to
 15 develop databases and management plans
 16 for northern wild rice lakes. This
 17 appropriation must be matched by at
 18 least \$20,000 of nonstate money.

19 (k) Mesabi Iron Range,
 20 Water and Mineral Resource
 21 Planning 650,000

22 \$200,000 the first year and \$200,000
 23 the second year are from the trust fund
 24 to the commissioner of natural
 25 resources. \$125,000 the first year and
 26 \$125,000 the second year are from the
 27 trust fund to the University of
 28 Minnesota to develop and assemble
 29 essential data on stockpile composition
 30 and ownership, complete hydrogeologic
 31 base maps, site and design an overflow
 32 outlet, and distribute results to local
 33 government and industry. This project
 34 is to be coordinated by the Range
 35 Association of Municipalities and
 36 Schools. This appropriation is
 37 available until June 30, 2002, at which
 38 time the project must be completed and
 39 final products delivered, unless an
 40 earlier date is specified in the work
 41 program.

42 (l) Sustainable Aquaculture
 43 Development in Minnesota 185,000

44 \$130,000 is from the future resources
 45 fund to the commissioner of agriculture
 46 in cooperation with the University of
 47 Minnesota to develop, demonstrate, and
 48 evaluate prototypes of aquaponic
 49 systems that operate in an urban
 50 environment and use a combination of
 51 aquacultural and hydroponic techniques
 52 to produce fish and plants for human
 53 consumption. \$55,000 is from the
 54 future resources fund to the
 55 commissioner of agriculture in
 56 cooperation with the MinAqua Fisheries
 57 Cooperative, with assistance from the
 58 University of Minnesota, for the
 59 purchase, operation, and demonstration
 60 of ozonation equipment for water
 61 treatment and conditioning in large
 62 recirculating aquaculture systems.
 63 These appropriations are available
 64 until June 30, 2002, at which time the
 65 project must be completed and final

1 products delivered, unless an earlier
 2 date is specified in the work program.
 3 As a condition of receiving this
 4 appropriation, MinAqua Fisheries
 5 Cooperative must agree to pay to the
 6 state a royalty. Notwithstanding
 7 Minnesota Statutes, section 116P.10,
 8 the royalty must be two percent of the
 9 gross revenues accruing to MinAqua
 10 Fisheries Cooperative from this
 11 application of ozonation technology.
 12 Receipts from the royalty must be
 13 credited to the fund.

14 (m) Sustainable Farming
 15 Systems - Continuation 350,000

16 This appropriation is from the future
 17 resources fund to the University of
 18 Minnesota, Minnesota Institute for
 19 Sustainable Agriculture, for on-farm
 20 and experiment station research,
 21 documentation and dissemination of
 22 information on alternative farm
 23 practices in order to integrate recent
 24 scientific advances, improve farm
 25 efficiencies, promote profitability,
 26 and to enhance environmental quality.

27 (n) Economic Analysis of
 28 Agriculture for Multiple
 29 Benefits 250,000

30 This appropriation is from the future
 31 resources fund to the commissioner of
 32 agriculture for an agreement with the
 33 Land Stewardship Project to evaluate
 34 economic and environmental benefits
 35 from current and future agricultural
 36 production.

37 (o) Nonwood Agricultural Fibers
 38 and Industrial Hemp for Pulp
 39 and Paper Manufacture 200,000

40 This appropriation is from the future
 41 resources fund to the University of
 42 Minnesota to investigate the
 43 feasibility of various agricultural
 44 pulp markets in the development of
 45 small scale pulp mills in the
 46 agricultural regions of the state.

47 (p) Sustainable Livestock
 48 Systems 350,000

49 This appropriation is from the future
 50 resources fund to the commissioner of
 51 agriculture for an agreement with the
 52 University of Minnesota, West Central
 53 Experiment Station, for on-farm
 54 research and education programs to
 55 support small- to moderate-scale farms
 56 through whole farm planning and
 57 monitoring of forage-based livestock
 58 systems.

59 (q) Forest Wildlife Biologist
 60 for Ruffed Grouse 1,000,000

61 This appropriation is from the future

1 resources fund to the commissioner of
 2 natural resources for an agreement with
 3 the Ruffed Grouse Society, Inc. to fund
 4 a position and related costs for a
 5 forest wildlife biologist employed by
 6 the society that will provide technical
 7 assistance to public and private
 8 landowners for improved ruffed grouse
 9 habitat and related forest wildlife
 10 conservation. The activity funded by
 11 this appropriation must be done in
 12 collaboration with institutes of higher
 13 learning and state agencies. The
 14 amounts of this appropriation made
 15 available in each fiscal year must not
 16 exceed those stated in the work
 17 program. As a condition of receiving
 18 this appropriation, the society must
 19 demonstrate that it has created a
 20 private endowment to fund this position
 21 and related costs with nonstate money
 22 after this appropriation has been
 23 spent. The society must demonstrate
 24 that it has a sound financial plan to
 25 increase the principal of the endowment
 26 to at least \$1,000,000 of nonstate
 27 money by January 1, 2000, and to
 28 \$2,000,000 of nonstate money by June
 29 30, 2007. The work program must
 30 provide that failure of the society to
 31 meet the goals of the financial plan on
 32 time will cause further payments from
 33 this appropriation to be withheld until
 34 the goals are met. This appropriation
 35 is available until June 30, 2007, at
 36 which time the project must be
 37 completed and final products delivered,
 38 unless an earlier date is specified in
 39 the work program.

40 (r) Organic Farming
 41 Training Project 350,000

42 \$175,000 the first year and \$175,000
 43 the second year are from the trust fund
 44 to the commissioner of agriculture for
 45 an agreement with the Minnesota Food
 46 Association in cooperation with the
 47 Midwest Organic Alliance to recruit and
 48 train new immigrant and conventional
 49 farmers in sustainable and organic
 50 methods utilizing a mentoring approach.

51 (s) Construction and Demolition
 52 Waste Abatement
 53 Demonstration Project 250,000

54 This appropriation is from the future
 55 resources fund to the director of the
 56 office of environmental assistance for
 57 an agreement with the Green Institute
 58 to field test building salvage
 59 strategies, expanding markets for
 60 salvaged materials, and creating a
 61 community-based enterprise model.

62 (t) Minnesota River Valley
 63 Scenic Byway Interpretive
 64 Signage 100,000

65 This appropriation is from the future

1 resources fund to the commissioner of
 2 transportation for an agreement with
 3 the Upper Minnesota Valley Regional
 4 Development Commission to design and
 5 construct interpretive kiosks and
 6 entrance signs along the Minnesota
 7 River Valley scenic byway.
 8 Construction and installation are
 9 contingent on receiving 80 percent
 10 TEA-21 or other nonstate match money.

11 Subd. 8. Urbanization Impacts

12 (a) Resources for Redevelopment:

13 A Community Property
 14 Investigation Program 100,000

15 This appropriation is from the future
 16 resources fund to the pollution control
 17 agency for an agreement with the
 18 Minnesota Environmental Initiative to
 19 assess environmental contamination in
 20 up to sixteen brownfield sites
 21 statewide on a cost-share basis for
 22 each site in order to promote property
 23 redevelopment by community nonprofit
 24 organizations.

25 (b) Tools and Training for
 26 Community-Based Planning 450,000

27 \$225,000 the first year and \$225,000
 28 the second year are from the trust fund
 29 to the office of strategic and
 30 long-range planning to develop
 31 software, data, and training for local
 32 government planning for delivery of
 33 state geographic information systems
 34 data and models for social and
 35 environmental decision making.

36 (c) Protecting Dakota County
 37 Farmland and Natural Areas 200,000

38 \$100,000 the first year and \$100,000
 39 the second year are from the trust fund
 40 to the commissioner of natural
 41 resources for an agreement with Dakota
 42 county to inventory and identify unique
 43 farmland and natural areas and to
 44 protect land through conservation
 45 easements.

46 (d) Urban Corridor Design 600,000

47 This appropriation is from the future
 48 resources fund to the University of
 49 Minnesota to develop sustainability
 50 designs for selected urban corridors.

51 (e) Conservation-Based Development
 52 Program 150,000

53 \$75,000 the first year and \$75,000 the
 54 second year are from the trust fund to
 55 the commissioner of natural resources
 56 for an agreement with the Minnesota
 57 Land Trust to design four model
 58 developments and acquire conservation
 59 easements within new developments that
 60 enhance the natural, rural landscape.

1 This appropriation must be matched by
2 at least \$65,000 of nonstate money.

3 (f) Sustainable Stormwater Management
4 and Erosion Control for Athletic
5 Fields and Parking Lot Retrofit 200,000

6 This appropriation is from the future
7 resources fund to the commissioner of
8 natural resources for an agreement with
9 the Minneapolis Park and Recreation
10 Board to design and construct
11 bioretention areas at athletic fields
12 and existing parking lots in order to
13 manage erosion, soil compaction, and
14 stormwater runoff. Design results must
15 be made available in readily useable
16 formats. This appropriation must be
17 matched by at least \$200,000 of
18 nonstate money.

19 (g) Community-Based Initiatives:
20 Land Use for Sustainable
21 Agriculture - Continuation 400,000

22 This appropriation is from the future
23 resources fund to the commissioner of
24 agriculture for an agreement with the
25 Sustainable Resources Center to develop
26 and preserve urban and suburban
27 agriculture sites through sustainable
28 landscaping, to promote producer and
29 consumer participation in sustainable
30 agriculture, and to train urban
31 gardening experts.

32 (h) Chisago Lakes Outlet
33 Channel Project 40,000

34 This appropriation is from the future
35 resources fund to the commissioner of
36 natural resources for an agreement with
37 Chisago county to complete the final
38 construction phase of the outlet
39 channel at Chisago Lakes. This
40 appropriation must be matched by at
41 least \$50,000 of nonstate money.

42 (i) Virginia Storm Sewer Project 225,000

43 This appropriation is from the future
44 resources fund to the department of
45 trade and economic development for an
46 agreement with the city of Virginia for
47 relocation of the Silver Lake storm
48 sewer outlet, construction of
49 sedimentation ponds, and renovation of
50 the Saurtry Creek diversion structure.
51 Native plantings must be used in buffer
52 strips. This appropriation must be
53 matched by at least \$225,000 of
54 nonstate money.

55 (j) Blufflands Implementation 33,000

56 This appropriation is from the future
57 resources fund to the commissioner of
58 natural resources for an agreement with
59 Winona county to implement land
60 protection recommendations in the
61 blufflands design manual.

1 Subd. 9. Innovations in Energy
2 and Transportation

3 (a) Ice Arena Design for Efficiency
4 and Air Quality - Continuation 100,000

5 This appropriation is from the future
6 resources fund to the amateur sports
7 commission for an agreement with the
8 Center for Energy and Environment in
9 cooperation with the department of
10 health to enhance energy efficiency and
11 assure indoor air quality in new and
12 existing ice arenas in Minnesota
13 technical assistance and energy audits.

14 (b) Promoting High Efficiency
15 Cogeneration 100,000

16 This appropriation is from the future
17 resources fund to the office of
18 strategic and long-range planning and
19 the Minnesota environmental quality
20 board to develop a statewide inventory
21 of potential cogeneration sites and a
22 regulatory guidance manual.

23 (c) Evaluate Biodiesel Made From
24 Waste Fats and Oils 125,000

25 \$63,000 the first year and \$62,000 the
26 second year are from the trust fund to
27 the commissioner of agriculture in
28 cooperation with the Minnesota Soybean
29 Growers Association to produce a diesel
30 fuel from soybeans and waste cooking
31 oils and greases, for laboratory
32 evaluation of the fuel for particulates
33 and engine power, and for trial in
34 light-duty vehicles. The appropriation
35 must be matched by at least \$50,000 of
36 nonstate money.

37 (d) Wind Power for Rural
38 Development - Continuation 250,000

39 This appropriation is from the future
40 resources fund to the commissioner of
41 natural resources for an agreement with
42 the Sustainable Resources Center to
43 provide an outreach program including
44 technical assistance, site-specific
45 resource analysis, training for local
46 officials on wind energy rights and
47 economics, and the design and
48 construction of a wind energy traveling
49 exhibit.

50 Subd. 10. Decision-Making Tools

51 (a) Goodhue County Natural Resources
52 Inventory and Management Plan 75,000

53 This appropriation is from the future
54 resources fund to the board of water
55 and soil resources for an agreement
56 with Goodhue county to inventory,
57 evaluate, and describe natural
58 resources and create a geographic
59 information system-based map and
60 database. The appropriation must be

1 matched by at least \$50,000 of nonstate
2 money.

3 (b) Public Access to Mineral
4 Knowledge 100,000

5 This appropriation is from the future
6 resources fund to the department of
7 natural resources to accelerate the
8 automation of historic mineral
9 exploration information and to make the
10 database accessible and searchable.

11 (c) Updating Outmoded Soil
12 Surveys - Continuation 500,000

13 \$250,000 the first year and \$250,000
14 the second year are from the trust fund
15 to the board of water and soil
16 resources for the first biennium of a
17 four biennia project to accelerate a
18 statewide program to begin to update
19 and digitize soil surveys in up to 25
20 counties, including Fillmore county.
21 Participating counties must provide a
22 cost share.

23 (d) Climate Variability and Change
24 Impacts on Minnesota Resources 350,000

25 \$175,000 the first year and \$175,000
26 the second year are from the trust fund
27 for an agreement with the University of
28 Minnesota to develop a database of
29 climate measures relevant to
30 recreation, tourism, agriculture, and
31 forestry, and to construct climate
32 scenarios for Minnesota over the next
33 50 years.

34 (e) Minnesota Environmentally
35 Preferable Chemicals Project 150,000

36 \$75,000 the first year and \$75,000 the
37 second year are from the trust fund to
38 the office of environmental assistance
39 for an agreement with the Institute for
40 Local Self-Reliance to build an
41 industry network of users and producers
42 of petrochemicals and biochemicals, and
43 to promote a shift to environmentally
44 preferable chemicals. This
45 appropriation must be matched by at
46 least \$40,000 of nonstate money.

47 (f) GIS Utilization of Historic
48 Timberland Survey Records 120,000

49 This appropriation is from the future
50 resources fund to the Minnesota
51 Historical Society to digitize and
52 distribute historic timberland survey
53 records in a geographic information
54 system format.

55 (g) By-Products Application
56 to Agricultural, Mineland, and
57 Forest Soils 350,000

58 \$175,000 the first year and \$175,000
59 the second year are from the trust fund

1 to the pollution control agency for an
 2 agreement with Western Lake Superior
 3 Sanitary District to create a northeast
 4 Minnesota consortium of public
 5 utilities, wood-products, and mining
 6 industries to research environmentally
 7 sound coapplications of industrial and
 8 municipal by-products for agriculture,
 9 forestry, and mineland reclamation.
 10 This appropriation must be matched by
 11 at least \$21,000 of nonstate money.

12 (h) Winter Severity Index
 13 for Deer 60,000

14 \$30,000 the first year and \$30,000 the
 15 second year are from the trust fund to
 16 the commissioner of natural resources
 17 for an agreement with the Minnesota
 18 Deer Hunters Association to determine
 19 the relationship between the winter
 20 severity index, deer condition, and
 21 deer mortality. This appropriation
 22 must be matched by at least \$5,000 in
 23 nonstate money and at least \$30,000 in-
 24 kind match. This appropriation is
 25 available until June 30, 2002, at which
 26 time the project must be completed and
 27 final products delivered, unless an
 28 earlier date is specified in the work
 29 program.

30 Subd. 11. Environmental Education

31 (a) Uncommon Ground: An Educational
 32 Television Series 400,000

33 \$200,000 the first year and \$200,000
 34 the second year are from the trust fund
 35 to the University of Minnesota for
 36 matching funding to produce a televised
 37 series of natural landscapes
 38 chronicling two centuries of change in
 39 Minnesota.

40 (b) Ecology Bus Environmental
 41 Education 200,000

42 This appropriation is from the future
 43 resources fund to the commissioner of
 44 natural resources for an agreement with
 45 the Prairie Ecology Bus Center to
 46 expand programs conducted with the
 47 ecology bus. This appropriation may
 48 not be used for depreciation costs on
 49 equipment.

50 (c) Renovation of Open Spaces:
 51 Twin Cities Neighborhoods 200,000

52 This appropriation is from the future
 53 resources fund to the commissioner of
 54 natural resources for an agreement with
 55 the Crown Jewel Foundation to
 56 coordinate and implement neighborhood
 57 planting activities through youth and
 58 citizen training, and education. This
 59 appropriation must be matched by at
 60 least \$170,000 of nonstate money.

61 (d) Karst Education for

1	Southeastern Minnesota	120,000
2	\$60,000 the first year and \$60,000 the	
3	second year are from the trust fund to	
4	the board of water and soil resources	
5	for an agreement with the Southeast	
6	Minnesota Water Resources Board to	
7	develop teacher training workshops,	
8	educational materials, and exhibits	
9	demonstrating the connections between	
10	land use and ground water contamination	
11	in southeastern Minnesota.	
12	(e) Minnesota Wolf Public	
13	Education	120,000
14	\$60,000 the first year and \$60,000 the	
15	second year are from the trust fund to	
16	the commissioner of natural resources	
17	for an agreement with the International	
18	Wolf Center to develop educational	
19	curriculum, conduct teacher training	
20	workshops, and develop a traveling	
21	exhibit on wolves to address the	
22	current Minnesota wolf management	
23	debate. This appropriation must be	
24	matched by at least \$15,000 of nonstate	
25	money.	
26	(f) North American Bear Center,	
27	Ely, Minnesota	80,000
28	This appropriation is from the future	
29	resources fund to the commissioner of	
30	natural resources for an agreement with	
31	the North American Bear Center to	
32	develop a business plan, marketing	
33	study, facility predesign, and exhibit	
34	design for a North American Bear	
35	Center. This appropriation must be	
36	matched by at least \$21,000 of nonstate	
37	money.	
38	(g) Accessible Outdoor	
39	Recreation	400,000
40	\$200,000 the first year and \$200,000	
41	the second year are from the trust fund	
42	to the commissioner of natural	
43	resources for an agreement with	
44	wilderness inquiry to survey facilities	
45	in at least 50 state recreation units	
46	for the Minnesota guide to universal	
47	access, develop assessments of	
48	inclusion in recreation and	
49	environmental education activities, and	
50	provide opportunities for	
51	participation. This appropriation is	
52	available until June 30, 2002, at which	
53	time the project must be completed and	
54	final products delivered, unless an	
55	earlier date is specified in the work	
56	program.	
57	(h) Science Outreach and	
58	Integrated Learning on Soil	250,000
59	\$125,000 the first year and \$125,000	
60	the second year are from the trust fund	
61	to the Science Museum of Minnesota to	
62	develop a soils experiment center and	

1 demonstration plots to increase the
2 awareness of soil science and soil
3 health. This appropriation must be
4 matched by at least \$100,000 of
5 nonstate money. This appropriation is
6 available until June 30, 2002, at which
7 time the project must be completed and
8 final products delivered, unless an
9 earlier date is specified in the work
10 program.

11 (i) Southeast Minnesota Streams
12 and Watershed Signage 150,000

13 \$75,000 the first year and \$75,000 the
14 second year are from the trust fund to
15 the commissioner of natural resources
16 for an agreement with the Minnesota
17 Trout Association to design,
18 manufacture, and install road signs to
19 identify southeast Minnesota streams
20 and watersheds.

21 (j) Teacher Training in
22 Interdisciplinary Environmental
23 Education 60,000

24 \$30,000 the first year and \$30,000 the
25 second year are from the trust fund to
26 the commissioner of natural resources
27 for an agreement with the Audubon
28 Center of the North Woods to train K-12
29 teachers in environmental education
30 techniques.

31 (k) Development and Rehabilitation
32 of Recreational Shooting Ranges 350,000

33 This appropriation is from the future
34 resources fund to the commissioner of
35 natural resources to provide cost-share
36 grants to local recreational shooting
37 clubs for the purpose of developing or
38 rehabilitating shooting sports
39 facilities for public use. In addition
40 to the required work program, grants
41 may not be approved until grant
42 proposals to be funded have been
43 submitted to the legislative commission
44 on Minnesota resources and the
45 commission has approved the grants or
46 allowed 60 days to pass.

47 (l) Youth Outdoor Environmental
48 Education Program 125,000

49 This appropriation is from the future
50 resources fund to the commissioner of
51 natural resources for an agreement with
52 Dakota county to develop a youth
53 naturalist program and youth-at-risk
54 environmental education programs.

55 (m) Twin Cities Environmental
56 Service Learning - Continuation 40,000

57 \$20,000 the first year and \$20,000 the
58 second year are from the trust fund to
59 the commissioner of natural resources
60 for an agreement with Eco Education to
61 provide training and matching grants

1 for student service environmental
 2 learning projects. This appropriation
 3 must be matched by at least \$40,000 of
 4 nonstate money.

5 (n) Minnesota Whitetail Deer
 6 Resource Center Exhibits 400,000

7 This appropriation is from the future
 8 resources fund to the commissioner of
 9 natural resources for an agreement with
 10 the Minnesota Deer Hunters Association
 11 to construct exhibits on whitetail deer
 12 in Minnesota. This appropriation is
 13 available to the extent matched by
 14 expenditure of nonstate money on
 15 exhibits.

16 (o) Sustainability Forums 200,000

17 \$100,000 the first year and \$100,000
 18 the second year are from the trust fund
 19 to the office of environmental
 20 assistance for an agreement with the
 21 Minnesota Division of the Izaak Walton
 22 League of America to conduct forums for
 23 the public and local units of
 24 government on sustainability and
 25 community-based planning objectives.

26 (p) Minnesota River Watershed
 27 Ecology and History Exhibit 90,000

28 This appropriation is from the future
 29 resources fund to the Minnesota
 30 Historical Society for an agreement
 31 with Joseph R. Brown Heritage Society
 32 to design and construct exhibits at the
 33 Joseph R. Brown Minnesota River Center.

34 (q) Hyland Lake Environmental
 35 Center 220,000

36 \$110,000 the first year and \$110,000
 37 the second year are from the trust fund
 38 to the commissioner of natural
 39 resources for an agreement with
 40 Suburban Hennepin Regional Park
 41 District for predesign and design of an
 42 environmental education center in
 43 Hyland-Bush-Anderson Lakes Regional
 44 Park Reserve.

45 (r) Aquaculture, Hydroponics, and
 46 Greenhouse Research Lab 100,000

47 This appropriation is from the future
 48 resources fund to the commissioner of
 49 agriculture for an agreement with
 50 Chisago Lakes High School to design and
 51 construct a greenhouse, hydroponics,
 52 and aquaculture facility to support an
 53 outdoor living classroom.

54 Subd. 12. Benchmarks and Indicators

55 (a) Measuring Children's Exposures
 56 to Environmental Health Hazards 500,000

57 \$250,000 the first year and \$250,000
 58 the second year are from the trust fund

1 to the University of Minnesota in
2 cooperation with the department of
3 health to augment a federal study of
4 exposure of children to multiple
5 environmental hazards, to evaluate
6 comparative health risks, and to design
7 intervention strategies.

8 (b) Minnesota County Biological
9 Survey - Continuation 1,600,000

10 \$800,000 the first year and \$800,000
11 the second year are from the trust fund
12 to the commissioner of natural
13 resources for the seventh biennium of a
14 12-biennia project to accelerate the
15 survey that identifies significant
16 natural areas and systematically
17 collects and interprets data on the
18 distribution and ecology of natural
19 communities, rare plants, and animals.

20 (c) Environmental Indicators
21 Initiative - Continuation 400,000

22 \$200,000 the first year and \$200,000
23 the second year are from the trust fund
24 to the commissioner of natural
25 resources for the third and final
26 biennium to complete a set of statewide
27 environmental indicators that will
28 assist public understanding of
29 Minnesota environmental health and the
30 effectiveness of sustainable
31 development efforts.

32 (d) Dakota County Wetland Health
33 Monitoring Program 160,000

34 \$80,000 the first year and \$80,000 the
35 second year are from the trust fund to
36 the commissioner of the pollution
37 control agency for an agreement with
38 Dakota county to evaluate wetland
39 health through citizen volunteers,
40 develop wetland biodiversity projects
41 in urban areas, and conduct public
42 education.

43 (e) Predicting Water and Forest
44 Resources Health and Sustainability 300,000

45 \$150,000 the first year and \$150,000
46 the second year are from the trust fund
47 to the University of Minnesota, Natural
48 Resources Research Institute, to assess
49 ecosystem health using indicators and
50 to develop models that incorporate
51 landscape composition change.

52 (f) Potential for Infant Risk
53 from Nitrate Contamination 200,000

54 This appropriation is from the future
55 resources fund to the commissioner of
56 health to study nitrate and
57 bacteria-contaminated drinking water of
58 infants and families at risk.

59 (g) Assessing Lake Superior Waters
60 Off the North Shore 400,000

1 \$100,000 the first year and \$100,000
 2 the second year of this appropriation
 3 are from the trust fund, and \$200,000
 4 is from the Great Lakes protection
 5 account to the University of Minnesota
 6 Duluth for a pilot program to establish
 7 benchmark data for Lake Superior.
 8 Expenses may not include capital cost
 9 for a research vessel. This
 10 appropriation is available until June
 11 30, 2002, at which time the project
 12 must be completed and final products
 13 delivered, unless an earlier date is
 14 specified in the work program.

15 (h) Minnesota's Forest Bird
 16 Diversity Initiative - Continuation 450,000

17 \$225,000 the first year and \$225,000
 18 the second year are from the trust fund
 19 to the commissioner of natural
 20 resources for the fifth biennium of a
 21 six-biennium project to establish
 22 benchmarks for using birds as
 23 ecological indicators of forest
 24 health. This appropriation must be
 25 matched by at least \$80,000 of nonstate
 26 contributions. This appropriation is
 27 available until June 30, 2002, at which
 28 time the project must be completed and
 29 final products delivered, unless an
 30 earlier date is specified in the work
 31 program.

32 (i) Farm Ponds as Critical
 33 Habitats for Native Amphibians 250,000

34 \$125,000 the first year and \$125,000
 35 the second year are from the trust fund
 36 to the commissioner of natural
 37 resources for an agreement with the
 38 Upper Mississippi Science Center to
 39 study management practices that sustain
 40 healthy populations of amphibians in
 41 southeastern Minnesota farm ponds and
 42 to recommend monitoring methods
 43 suitable for testing amphibian habitat
 44 quality. This appropriation must be
 45 matched by at least \$200,000 of
 46 nonstate contributions. This
 47 appropriation is available until June
 48 30, 2002, at which time the project
 49 must be completed and final products
 50 delivered, unless an earlier date is
 51 specified in the work program.

52 (j) Improved Minnesota Fungus
 53 Collection and Database 70,000

54 \$35,000 the first year and \$35,000 the
 55 second year are from the trust fund to
 56 the University of Minnesota to
 57 consolidate and preserve fungus
 58 specimen collections and computerize
 59 the data for use in agriculture,
 60 forestry, and recreation management.

61 Subd. 13. Critical Lands or Habitats

62 (a) Sustainable Woodlands and

1 Prairies on Private Lands -
2 Continuation 450,000

3 \$225,000 the first year and \$225,000
4 the second year are from the trust fund
5 to the commissioner of natural
6 resources, in cooperation with the
7 Minnesota Forestry Association and the
8 Nature Conservancy, to develop
9 stewardship plans for private
10 landowners and to implement natural
11 resource projects by providing matching
12 money to private landowners. This
13 appropriation is available until June
14 30, 2002, at which time the project
15 must be completed and final products
16 delivered, unless an earlier date is
17 specified in the work program.

18 (b) National Prairie Passage; Linking
19 Isolated Prairie Preserves 150,000

20 \$75,000 the first year and \$75,000 the
21 second year are from the trust fund to
22 the commissioner of transportation to
23 link isolated tallgrass prairie
24 preserves with corridors of prairie.
25 This appropriation must be matched by
26 at least \$600,000 of nonstate money.

27 (c) Greening the Metro
28 Mississippi-Minnesota River
29 Valleys 800,000

30 \$400,000 the first year and \$400,000
31 the second year are from the trust fund
32 to the commissioner of natural
33 resources for an agreement with
34 Greening the Great River Park to
35 implement private and public habitat
36 projects in the Mississippi and
37 Minnesota River Valleys. This
38 appropriation must be matched by at
39 least \$374,000 of nonstate money and
40 cost sharing is required for projects
41 on private lands. This appropriation is
42 available until June 30, 2002, at which
43 time the project must be completed and
44 final products delivered, unless an
45 earlier date is specified in the work
46 program.

47 (d) Restoring the Greater Prairie
48 Chicken to Southwestern Minnesota 60,000

49 \$30,000 the first year and \$30,000 the
50 second year are from the trust fund to
51 the commissioner of natural resources
52 for an agreement with the Minnesota
53 Prairie Chicken Society to restore the
54 greater prairie chicken to appropriate
55 habitat.

56 (e) Prairie Heritage Fund -
57 Continuation 500,000

58 \$250,000 the first year and \$250,000
59 the second year are from the trust fund
60 to the commissioner of natural
61 resources for an agreement with
62 Pheasants Forever, Inc. to acquire and

1 develop land for prairie grasslands and
 2 wetlands to be donated to the public.
 3 The land must be open and accessible to
 4 the public. This appropriation must be
 5 matched by at least \$500,000 of money.
 6 In addition to the required work
 7 program, parcels may not be acquired
 8 until parcel lists have been submitted
 9 to the legislative commission on
 10 Minnesota resources and the commission
 11 has approved the parcel list or allowed
 12 60 days to pass.

13 (f) Public Boat Access and
 14 Fishing Piers 1,299,000

15 \$500,000 the first year and \$500,000
 16 the second year are from the trust
 17 fund, and \$299,000 is from the future
 18 resources fund to the commissioner of
 19 natural resources for increased access
 20 to lakes and rivers statewide through
 21 the provision of public boat access,
 22 fishing piers, and shoreline access,
 23 with approximately equal allocations
 24 for the Twin Cities metropolitan area
 25 and the remainder of the state. These
 26 appropriations are available until June
 27 30, 2002, at which time the project
 28 must be completed and final products
 29 delivered, unless an earlier date is
 30 specified in the work program.
 31 \$212,000 of the appropriation from the
 32 future resources fund is available
 33 immediately upon enactment.

34 (g) Arboretum Land Acquisition and
 35 Wetlands Restoration - Continuation 700,000

36 \$350,000 the first year and \$350,000
 37 the second year are from the trust fund
 38 to the University of Minnesota for an
 39 agreement with the University of
 40 Minnesota Landscape Arboretum
 41 Foundation for the third biennium for
 42 land acquisition. The priority is to
 43 acquire approximately 40 acres of land
 44 within the Arboretum boundary before
 45 completing the Spring Peeper Meadow
 46 wetland restoration. This
 47 appropriation must be matched by at
 48 least \$700,000 of nonstate money.

49 (h) Implement the Chisago and
 50 Washington Counties Green
 51 Corridor Project - Continuation 450,000

52 \$225,000 the first year and \$225,000
 53 the second year are from the trust fund
 54 to the commissioner of natural
 55 resources for an agreement with 1000
 56 Friends of Minnesota for land
 57 protection activities, including at
 58 least \$300,000 for cost-share grants to
 59 local governments for fee or less than
 60 fee acquisition.

61 (i) RIM Shoreland Stabilization 350,000

62 \$175,000 the first year and \$175,000
 63 the second year are from the trust fund

1 to the commissioner of natural
 2 resources to complete the high priority
 3 bank stabilization on Lake
 4 Winnibigoshish and, if additional match
 5 money becomes available, to begin
 6 similar work on Lac Qui Parle Lake.
 7 This appropriation must be matched by
 8 at least \$56,000 of nonstate money.

9 (j) Enhancing Canada Goose
 10 Hunting Opportunities for
 11 Recreation and Management Purposes 340,000

12 This appropriation is from the future
 13 resources fund to the commissioner of
 14 natural resources for an agreement with
 15 Geese Unlimited to purchase leases and
 16 provide observational and hunting
 17 blinds for the public using volunteer
 18 labor.

19 Subd. 14. Native Species Planting

20 (a) Minnesota Releaf Matching
 21 Grant Program - Continuation 850,000

22 \$290,000 the first year and \$290,000
 23 the second year of this appropriation
 24 are from the trust fund, and \$270,000
 25 is from the future resources fund to
 26 the commissioner of natural resources
 27 for the fourth biennium, with at least
 28 \$210,000 for matching grants to local
 29 communities to protect native oak
 30 forests from oak wilt and to provide
 31 technical assistance and cost sharing
 32 with communities for tree planting and
 33 community forestry assessments. The
 34 appropriation from the future resources
 35 fund is available immediately upon
 36 enactment.

37 (b) Landscaping for Wildlife and
 38 Nonpoint Source Pollution Prevention 150,000

39 \$75,000 the first year and \$75,000 the
 40 second year are from the trust fund to
 41 the commissioner of natural resources
 42 for an agreement with St. Paul
 43 Neighborhood Energy Consortium to work
 44 with urban and suburban communities to
 45 expand native species planting through
 46 residential landscaping and cooperative
 47 neighborhood projects. The activities
 48 must include participant cost sharing.
 49 This appropriation must be matched by
 50 at least \$24,000 of nonstate money.

51 (c) Lakescaping for Wildlife and
 52 Water Quality Initiative 140,000

53 \$70,000 the first year and \$70,000 the
 54 second year are from the trust fund to
 55 the commissioner of natural resources
 56 in cooperation with the Minnesota Lakes
 57 Association to promote lakescaping for
 58 wildlife and water quality through
 59 workshops, demonstration sites, and a
 60 registry program for lakeshore owners.
 61 The activities must include participant
 62 cost sharing.

1 (d) Development and Assessment of
2 Oak Wilt Biological Control
3 Technologies - Continuation 200,000

4 \$100,000 the first year and \$100,000
5 the second year are from the trust fund
6 to the University of Minnesota to
7 evaluate biocontrol efficacy, spore mat
8 production, and root graft barrier
9 guidelines for oak wilt, in cooperation
10 with the department of agriculture.

11 (e) Saint Paul-Minneapolis Native
12 Plant Habitat Interpretive Program 130,000

13 This appropriation is from the future
14 resources fund to the commissioner of
15 natural resources for an agreement with
16 the city of St. Paul to restore native
17 plants to selected St. Paul parks and
18 to develop native plant interpretive
19 sites in Minneapolis and St. Paul and
20 related educational material. This
21 appropriation must be matched by at
22 least \$86,000 of nonstate money.

23 (f) Restoring Ecological Health to
24 St. Paul's Mississippi River Bluffs 200,000

25 \$100,000 the first year and \$100,000
26 the second year are from the trust fund
27 to the commissioner of natural
28 resources for an agreement with Friends
29 of the Parks and Trails of St. Paul and
30 Ramsey County to inventory and restore
31 native species, and to plan for
32 critical greenways and natural area
33 habitat. This appropriation is
34 available until June 30, 2002, at which
35 time the project must be completed and
36 final products delivered, unless an
37 earlier date is specified in the work
38 program.

39 Subd. 15. Native Fish

40 (a) Mussel Resource Survey 400,000

41 \$200,000 the first year and \$200,000
42 the second year are from the trust fund
43 to the commissioner of natural
44 resources for the first biennium of a
45 three-biennium project to survey
46 mussels statewide for resource
47 management.

48 (b) Freshwater Mussel Resources in
49 the St. Croix River 58,000

50 \$29,000 the first year and \$29,000 the
51 second year are from the trust fund to
52 the commissioner of natural resources
53 for an agreement with Macalester
54 College to continue refugia studies and
55 assess populations for freshwater
56 mussels.

57 Subd. 16. Exotic Species

58 (a) Biological Control of Eurasian
59 Water Milfoil and Purple

- 1 Loosestrife - Continuation 150,000
- 2 \$75,000 the first year and \$75,000 the
3 second year are from the trust fund to
4 the commissioner of natural resources
5 for the fourth biennium of a
6 five-biennium project to develop and
7 implement biological controls for
8 Eurasian water milfoil and purple
9 loosestrife. This appropriation is
10 available until June 30, 2002, at which
11 time the project must be completed and
12 final products delivered, unless an
13 earlier date is specified in the work
14 program.
- 15 (b) Evaluate Establishment, Impact of
16 Leafy Spurge Biocontrol Agents 140,000
- 17 \$70,000 the first year and \$70,000 the
18 second year are from the trust fund to
19 the commissioner of agriculture to
20 study flea beetles introduced to
21 control leafy spurge by site
22 characterization and assessment for
23 biological control. This appropriation
24 is available until June 30, 2002, at
25 which time the project must be
26 completed and final products delivered,
27 unless an earlier date is specified in
28 the work program.
- 29 (c) Restoring Native Vegetation in
30 Parks and Nature Centers 260,000
- 31 This appropriation is from the future
32 resources fund to the commissioner of
33 natural resources for an agreement with
34 the St. Paul Audubon Society to restore
35 native vegetation at community nature
36 centers and parks.
- 37 Subd. 17. Data Availability Requirements
- 38 (a) During the biennium ending June 30,
39 2001, the data collected by the
40 projects funded under this section that
41 have common value for natural resource
42 planning and management must conform to
43 information architecture as defined in
44 guidelines and standards adopted by the
45 office of technology. Spatial data
46 must conform with guidelines and
47 standards described in the geographic
48 data compatibility guidelines available
49 from the land management information
50 center. These data must be made
51 available under the provisions of the
52 Data Practices Act in chapter 13.
- 53 (b) For the purposes of information
54 dissemination to the extent
55 practicable, summary data and results
56 of projects funded under this section
57 should be readily accessible on the
58 Internet. To the extent practicable,
59 spatial data and their documentation
60 must be made available through the
61 Minnesota Geographic Data Clearinghouse.
- 62 (c) As part of project expenditures,

1 recipients of land acquisition
2 appropriations must provide the
3 information necessary to update public
4 recreation information maps to the
5 department of natural resources in the
6 specified form.

7 Subd. 18. Project Requirements

8 It is a condition of acceptance of the
9 appropriations in this section that any
10 agency or entity receiving the
11 appropriation must comply with
12 Minnesota Statutes, chapter 116P.

13 Subd. 19. Match Requirements

14 Unless specifically authorized,
15 appropriations in this section that
16 must be matched and for which the match
17 has not been committed by December 31,
18 1999, are canceled, and in-kind
19 contributions may not be counted as
20 match.

21 Subd. 20. Payment Conditions and
22 Capital Equipment Expenditures

23 All agreements, grants, or contracts
24 referred to in this section must be
25 administered on a reimbursement basis.
26 Notwithstanding Minnesota Statutes,
27 section 16A.41, expenditures made on or
28 after July 1, 1999, or the date the
29 work program is approved, whichever is
30 later, are eligible for reimbursement.
31 Payment must be made upon receiving
32 documentation that project-eligible
33 reimbursable amounts have been
34 expended, except that reasonable
35 amounts may be advanced to projects in
36 order to accommodate cash flow needs.
37 The advances must be approved as part
38 of the work program. No expenditures
39 for capital equipment are allowed
40 unless expressly authorized in the
41 project work program.

42 Subd. 21. Purchase of Recycled and
43 Recyclable Materials

44 A political subdivision, public or
45 private corporation, or other entity
46 that receives an appropriation in this
47 section must use the appropriation in
48 compliance with Minnesota Statutes,
49 sections 16B.121 to 16B.123, requiring
50 the purchase of recycled, repairable,
51 and durable materials, the purchase of
52 uncoated paper stock, and the use of
53 soy-based ink, the same as if it were a
54 state agency.

55 Subd. 22. Energy Conservation

56 A recipient to whom an appropriation is
57 made in this section for a capital
58 improvement project shall ensure that
59 the project complies with the
60 applicable energy conservation
61 standards contained in law, including

1 Minnesota Statutes, sections 216C.19 to
2 216C.21, and rules adopted thereunder.
3 The recipient may use the energy
4 planning and intervention and energy
5 technologies units of the commissioner
6 of public service to obtain information
7 and technical assistance on energy
8 conservation and alternative energy
9 development relating to the planning
10 and construction of the capital
11 improvement project.

12 Subd. 23. Accessibility

13 New structures must be shown to meet
14 the design standards in the Americans
15 with Disability Act Accessibility
16 Guidelines. Nonstructural facilities
17 such as trails, campgrounds, picnic
18 areas, parking, play areas, water
19 sources, and the access routes to these
20 features should be shown to be designed
21 using guidelines in the Recommendations
22 for Accessibility Guidelines:
23 Recreational Facilities and Outdoor
24 Developed Areas.

25 Subd. 24. Year 2000 Compatible

26 A recipient to whom an appropriation is
27 made in this section for computer
28 equipment and software must ensure that
29 the project expenditures comply with
30 year 2000 compatible database and
31 software.

32 Subd. 25. Carryforward

33 (a) The availability of the
34 appropriations for the following
35 projects is extended to June 30, 2000:
36 Laws 1997, chapter 216, section 15,
37 subdivision 5, paragraph (a), Ft.
38 Snelling State Park-upper bluff
39 utilization and AYH hostel; paragraph
40 (c), Jeffers petroglyphs environmental
41 assessment and prairie restoration;
42 paragraph (g), Native American
43 perspective of the historic north
44 shore; subdivision 6, paragraph (g),
45 lakeshore restoration - Minneapolis
46 chain of lakes; subdivision 9,
47 paragraph (a), grants to local
48 governments to assist natural resource
49 decision making; paragraph (e), North
50 Minneapolis upper river master plan;
51 paragraph (g), Miller Creek management;
52 and paragraph (h), trout habitat
53 preservation using alternative
54 watershed management practices;
55 subdivision 10, paragraph (g), Fillmore
56 county soil survey update; subdivision
57 11, paragraph (a), foundations to
58 integrated access to environmental
59 information; subdivision 12, paragraph
60 (a), sustainable development assistance
61 for municipalities through electric
62 utilities; paragraph (h), soy-based
63 diesel fuel study; subdivision 13,
64 paragraph (g), state wolf management;
65 electronically moderating the

1 discussion; subdivision 17, paragraph
 2 (a), sustainable woodlands on private
 3 lands; subdivision 20, paragraph (a),
 4 ballast water technology demonstration
 5 for exotic species control; Laws 1995,
 6 chapter 220, section 19, subdivision
 7 12, paragraph (a), restore historic
 8 Mississippi river mill site, as amended
 9 by Laws 1997, chapter 216, section 15,
 10 subdivision 26, paragraph (b).

11 (b) The availability of the
 12 appropriations for the following
 13 projects is extended to June 30, 2001:
 14 Laws 1997, chapter 216, section 15,
 15 subdivision 5, paragraph (f),
 16 historical and cultural museum on
 17 Vermilion Lake Indian Reservation;
 18 subdivision 16, paragraph (b),
 19 Arboretum Land Acquisition.

20 Sec. 3. ADDITIONAL APPROPRIATIONS

21 The following amounts are appropriated
 22 in fiscal year 1999 from the Minnesota
 23 environment and natural resources trust
 24 fund referred to in Minnesota Statutes,
 25 section 116P.02, subdivision 6.

26 \$496,000 in fiscal year 1999 is added
 27 to the appropriation in Laws 1997,
 28 chapter 216, section 15, subdivision 4,
 29 paragraph (a), clause (1), for state
 30 park and recreation area acquisition.

31 \$495,000 in fiscal year 1999 is added
 32 to the appropriation in Laws 1997,
 33 chapter 216, section 15, subdivision 4,
 34 paragraph (b), metropolitan regional
 35 park system.

36 Sec. 4. Minnesota Statutes 1998, section 85.019,
 37 subdivision 2, is amended to read:

38 Subd. 2. [PARKS AND OUTDOOR RECREATION AREAS.] The
 39 commissioner shall administer a program to provide grants to
 40 units of government for up to 50 percent of the costs or
 41 ~~\$507,000~~~~7-whichever-is-less~~7 of acquisition and betterment of
 42 public land and improvements needed for parks and other outdoor
 43 recreation areas and facilities.

44 Sec. 5. Minnesota Statutes 1998, section 85.019, is
 45 amended by adding a subdivision to read:

46 Subd. 4b. [REGIONAL TRAILS.] The commissioner shall
 47 administer a program to provide grants to units of government
 48 for up to 50 percent of the costs of acquisition and betterment
 49 of public land and improvements needed for trails deemed to be
 50 of regional significance according to criteria published by the

1 commissioner. If land used for the trails is not in full public
2 ownership, then the recipients must prove it is dedicated to the
3 purposes of the grants for at least 20 years.

4 Sec. 6. Minnesota Statutes 1998, section 85.019, is
5 amended by adding a subdivision to read:

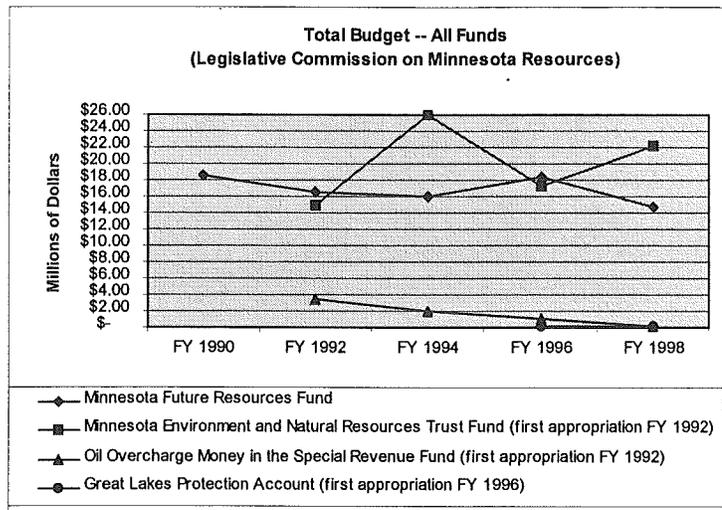
6 Subd. 4c. [LOCAL TRAIL CONNECTIONS.] The commissioner
7 shall administer a program to provide grants to units of
8 government for up to 50 percent of the costs of acquisition and
9 betterment of public land and improvements needed for trails
10 that connect communities, trails, and parks and thereby increase
11 the effective length of trail experiences. If land used for the
12 trails is not in full public ownership, then the recipients must
13 prove it is dedicated to the purposes of the grants for at least
14 20 years.

VI. Revenues and Distributions

“the source and amount of all revenues collected and distributed by the commission, including all administrative and other expenses...”

Funding Source Statutory Reference:

Environment and Natural Resources Trust Fund	MS 116P.08
Minnesota Future Resources Fund	MS 116P.13
Oil Overcharge Money	MS 4.071
Great Lakes Protection Account	MS 116Q.02



Appropriations from Revenue Sources available to the LCMR for Funding Recommendations

Appropriation Year	Environment and Natural Resources Trust Fund	Future Resources Fund	Oil Overcharge Money	Great Lakes Protection Account	Totals
1991 Ch 254 Art. 1 Sec.14	14,960,000	16,534,000	3,500,000		34,994,000
1993 Ch 174 Sec. 14	24,600,000	14,662,000	2,012,000		41,274,000
1994 Ch 632 Art. 2 Sec. 6	1,346,000	1,404,000			2,750,000
1995 Ch 229 Sec. 19, 20, 21	18,019,000	15,083,000	2,055,000	130,000	35,287,000
1996 Ch 407 Sec. 8	1,630,000	3,258,000			4,888,000
1997 Ch 216 Sec. 15	22,270,000	14,668,000	150,000	120,000	37,208,000
1999	26,010,000	16,040,000		200,000	42,250,000
Total	108,835,000	81,649,000	7,717,000	450,000	198,651,000

Appropriations for LCMR Administrative Expenses

Statutory reference MS 116P.09

(The amounts shown here are part of the total appropriation above)

Appropriations for administrative expenses of LCMR for the appropriation period above total 1.9%

Appropriation Year	Environment and Natural Resources Trust Fund	Future Resources Fund	Total
1991		850,000	850,000
1993	270,000	425,000	695,000
1995	394,000	308,000	702,000
1997	472,000	304,000	776,000
1999	567,000	333,000	900,000
Total	1,703,000	2,220,000	3,923,000

VII. Assets and Liabilities

“ a description of the assets and liabilities of the trust fund and the Minnesota future resources fund...”

The following documents were supplied by the State Board of Investment, and the Department of Finance.

Environmental Trust Fund

The Environmental Trust Fund was established in 1988 by the Minnesota Legislature to provide a long-term, consistent and stable source of funding for activities that protect and enhance the environment. On June 30, 1998, the market value of the Fund was \$236 million.

In 1990, a constitutional amendment was approved which mandates that 40 percent of the net proceeds from the state lottery be credited to the Fund until the year 2001. The Legislature may fund projects from a portion of revenue deposited in the Fund through 1997 and, thereafter, from earnings on the principal of the Fund. By statute, the State Board of Investment (SBI) invests the assets of the Environmental Trust Fund.

Investment Objective

The Environmental Trust Fund's investment objective is to produce a growing level of spendable income, within the constraints of maintaining adequate portfolio quality and liquidity.

Investment Constraints

The Fund's investment objectives are influenced by the legal provisions under which its investments must be managed. As with the Permanent School Fund, these provisions require that the Fund's principal remain inviolate. Any net realized capital gains from stock or bond investments must be added to principal. Moreover, if the Fund realizes net capital losses, these losses must be offset against interest and dividend income before such income can be distributed. Finally, all interest and dividend income must be distributed in the year in which it is earned.

Asset Allocation

By 1993, the Fund had received sufficient contributions to warrant an investment policy that incorporated allocations to longer-term assets such as stocks and bonds. SBI staff worked with the Legislative Commission on Minnesota Resources to establish an asset allocation policy that is consistent with the Commission's goals for spendable income and growth of the Fund.

Over the long-term, the principal of the Fund will be invested in a balanced portfolio of 50% common stocks and 50% bonds.

During fiscal year 1994, the SBI introduced equities into the portfolio and moved to the targeted 50% allocation to domestic common stocks. This allocation has been

maintained since then.

Figure 37 presents the actual asset mix of the Environmental Trust Fund at the end of fiscal year 1998. The current long term asset allocation targets for the Fund are:

Domestic Stocks	50%
Domestic Bonds	48
Cash	2

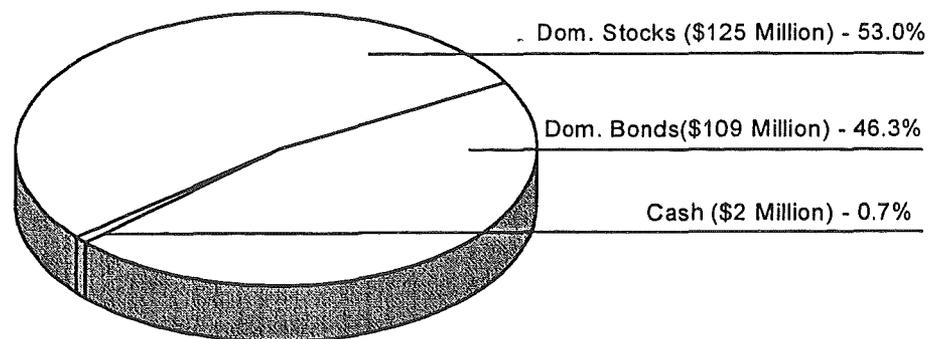
Investment Management

SBI staff manage all assets of the Environmental Trust Fund (ETF). Given the unique constraints of the Fund, along with its relatively small size, management by SBI staff is considered to be the most cost effective at this time.

Stock Segment

The *stock* segment of the Fund is passively managed to track the

Figure 37. EFT Asset Mix as of June 30, 1998



Note: Percentages may differ slightly due to rounding of values.

Environmental Trust Fund

performance of the S&P 500.

Bond Segment

The bond segment is actively managed to add incremental value through sector, security and yield curve decisions and its performance is measured against the Lehman Brothers Aggregate Bond Index.

Investment Performance

The *stock* segment accomplished its objective of closely tracking the return of the S&P500 benchmark, returning 0.1 percentage point more than the S&P 500. By investing all of the stocks in the benchmark at their index weighting, the segment was able to track the benchmark return on a monthly and annual basis. The portfolio was periodically rebalanced to minimize trading costs while still maintaining an acceptable tracking error relative to the benchmark.

The *bond* segment outperformed its benchmark during the fiscal year by 1.6 percentage points due to the sector weightings held in the portfolio versus the Lehman Aggregate.

Overall, the Environmental Trust Fund provided a return of 21.2% for fiscal year 1998, outperforming its composite index by 1.0 percentage point. The bond segment's outperformance accounted for the total fund's outperformance for the fiscal year. The fund experienced modest outperformance over the last three and five years due to the incremental value added by the bond segment.

Performance results are presented in Figure 38.

Spendable Income

Spendable income generated by the Fund is shown below:

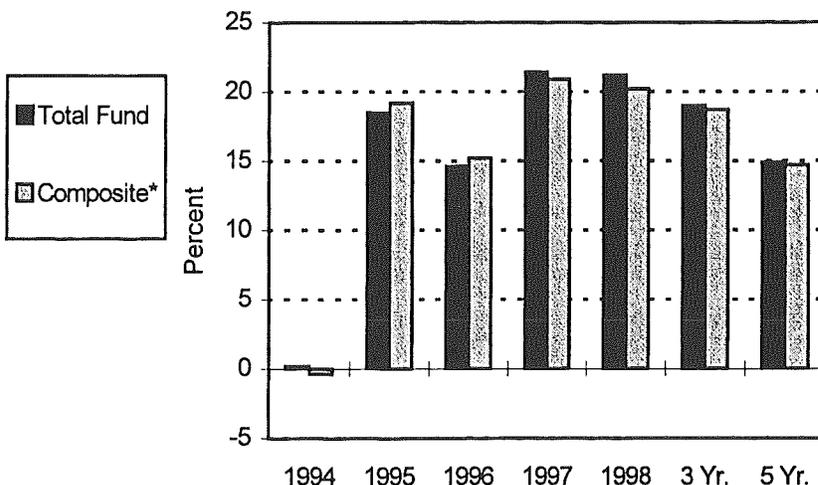
Fiscal Year	Millions
1994	\$3.9
1995	\$5.2
1996	\$6.0
1997	\$6.8
1998	\$8.8

Constitutional Amendment

In November 1998, the voters of Minnesota passed a constitutional amendment that continues through 2025 the mandate that 40 percent of the net proceeds from the state lottery be credited to the Fund.

The amendment also eliminates the accounting restrictions on capital gains and losses. The amendment provides for spending 5.5 percent of the Fund's market value annually, beginning fiscal year 2000.

Figure 38. Environmental Trust Fund Performance FY1994-1998



	1994	1995	1996	1997	1998	Annualized 3 Yr.	Annualized 5 Yr.
Total Fund	0.2%	18.5%	14.6%	21.4%	21.2%	19.0%	14.9%
Composite*	-0.4	19.2	15.2	20.9	20.2	18.7	14.7
Stock Segment	1.5	26.0	26.0	34.7	30.4	30.3	23.1
S&P500	1.5	26.1	26.2	34.7	30.3	30.3	23.1
Bond Segment	0.4	12.7	4.8	8.6	12.1	8.5	7.6
Lehman Aggregate	-1.2	12.5	5.0	8.2	10.5	7.9	6.9

* Weighted 50% S&P500, 48% Lehman Aggregate, 2% 90 Day T-Bills.

State of Minnesota
 Department of Finance
 November 1998 Forecast
 (in thousands)

Environment and Natural Resources Expendable Trust Fund (Fund 030)

	Feb 1998 <u>Forecast</u>	Nov 1998 <u>Forecast</u>	Net <u>Change</u>
<u>1998 - 1999 Biennium</u>			
Balance Forward In	4,079	4,079	0
Prior Year Adjustment	0	134	134
Current Resources			
Interest Income	862	688	(174)
Cancellations	0	(63)	(63)
Trust Fund Earnings	<u>17,320</u>	<u>19,013</u>	<u>1,693</u>
Total Resources Available	22,261	23,851	1,590
Actual & Estimated Expenditures			
Appropriations	22,270	22,270	0
Appropriations Carried Forward	<u>477</u>	<u>590</u>	<u>113</u>
Total Actual & Estimated Expenditures	22,747	22,860	113
Balance Forward Out	<u>(486)</u>	<u>991</u>	

2000 - 2001 Biennium Planning Estimates

Beginning in FY2000, the annual appropriation amount in the 030 fund is capped at a maximum of 5.5% of the fund balance on June 30th of the even-numbered year immediately preceding the biennium in which the spending will occur.

For the 2000-2001 biennium, the calculation of the maximum amount is shown below:

June 30, 1998 balance of the Trust Fund (in thousands)	236,463
FY 2000 available balance (5.5% of 6/30/98 fund balance)	13,005
FY 2001 available balance (5.5% of 6/30/98 fund balance)	<u>13,005</u>
Total Biennial Resources Available	<u>26,011</u>

Interest earned on balances in the Expendable Trust Fund are dedicated to the fund. Given the 5.5% spending cap in current law, DOF believes that in the future, all interest earnings and miscellaneous receipts must be transferred to the permanent trust fund to become part of the fund corpus.

**State of Minnesota
Department of Finance
November 1998 Forecast
(in thousands)**

Minnesota Future Resources Fund (Fund 130)

	<u>Feb 1998 Forecast</u>	<u>Nov 1998 Forecast</u>	<u>Net Change</u>
1998 - 1999 Biennium			
Balance Forward In	2,742	2,742	0
Prior Period Adjustment	0	954	954
Current Resources			
Cigarette Tax Receipts	14,907	14,967	60
Interest Income	587	477	(110)
Current period Cancellations	0	597	597
All Other Receipts	<u>0</u>	<u>1</u>	<u>1</u>
Total Resources Available	18,236	19,739	1,503
Actual & Estimated Expenditures			
Appropriations	14,668	14,818 ¹	150
Metro Regional Parks	1,000	850 ²	(150)
Appropriations Carried Forward	<u>2,381</u>	<u>3,129</u>	<u>749</u>
Total Actual & Estimated Expenditures	18,049	18,797	749
Balance Forward Out	<u>187</u>	<u>942</u>	
<u>2000 - 2001 Biennium Planning Estimates</u>			
Balance Forward In	187	942	755
Current Resources			
Cigarette Tax Receipts	14,641	14,669	28
Interest Income	496	429	(67)
All Other Receipts	<u>0</u>	<u>0</u>	<u>0</u>
Total Resources Available	15,324	16,040	716
Estimated Expenditures			
Estimated Expenditures	<u>14,668</u>	<u>14,668</u>	
Balance Forward Out	<u>656</u>	<u>1,372</u>	

¹ Pickwick Mill Project funding was shifted in ML97, Chap. 246, Sec 32.

² Metro Regional Park funding was reduced by \$150 in ML97, Chap. 246, Sec 26.

85.019 Local recreation grants.

VIII. Findings

“any findings or recommendations that are deemed proper to assist the legislature in formulating legislation..”

Subdivision 1. Definition. For purposes of this section, “unit of government” means a county, statutory or home rule charter city, or town.

Subd. 2. Parks and outdoor recreation areas. The commissioner shall administer a program to provide grants to units of government for up to 50 percent of the costs of ~~or \$50,000, whichever is less,~~ of acquisition and betterment of public land and improvements needed for parks and other outdoor recreation areas and facilities.

Subd. 3. Repealed by amendment, 1995 c 220 s 68

Subd. 4. Repealed by amendment, 1995 c 220 s 68

Subd. 4a. Natural and scenic areas. The commissioner shall administer a program to provide grants to units of government and school districts for the acquisition and betterment of natural and scenic areas such as blufflands, prairies, shorelands, wetlands, and wooded areas. A grant may not exceed 50 percent or \$500,000, whichever is less, of the costs of acquisition and betterment of land acquired under this subdivision.

Subd.5 Regional trails .The commissioner shall administer a program to provide grants to units of government for up to 50 percent of the costs of acquisition and betterment of public land and improvements needed for trails deemed to be of regional significance according to criteria published by the commissioner. If land used for the trails is not in full public ownership, then the recipients must prove it is dedicated to the purposes of the grants for at least 20 years.

Subd. 6 Local trail connections. The commissioner shall administer a program to provide grants to units of government for up to 50 percent of the costs of acquisition and betterment of public land and improvements needed for trails that connect communities, trails and parks and thereby increase the effective length of trail experiences. If land used for the trails is not in full public ownership, then the recipients must prove it is dedicated to the purposes of the grants for at least 20 years.

Subd. 7 Powers; rules. The commissioner has all powers necessary and convenient to implement this section, including the authority to adopt rules for the program under chapter 14.

HIST: 1993 c 172 s 35; 1994 c 643 s 48; 1995 c 220 s 68; 1996 c 407 s 35; 1998 c 404 s 35

IX. Gifts and Donations

“a list of all gifts and donations with a value over \$1,000...”

No donations with a value over \$1,000 were received by the Environment and Natural Resources Trust Fund or the Minnesota Future Resources Fund during the past two years.

X. Environmental Spending Comparisons

*“ a comparison of
the amounts spent
by the state for
environment and
natural resources
activities through
the most recent
fiscal year...”*

Source: MN Department of Finance 11/98
 BILL: Environment & Natural Resources- ENR
 FUND: ALL FUNDS

BASE BUDGET SPENDING by AGENCY

<u>Agency</u>	<u>FY 98</u>	<u>FY 99</u>	<u>FY 98-99</u>
POLLUTION CONTROL AGENCY	84,026	111,448	195,474
ENVIRONMENTAL ASSISTANCE	21,403	24,944	46,347
MINN-WISCONSIN BOUNDARY COM	171	178	349
ZOOLOGICAL BOARD	16,152	16,538	32,690
NATURAL RESOURCES DEPT	235,868	258,838	494,706
NATURAL RESOURCES REVOLVING	18,226	25,927	44,153
WATER & SOIL RESOURCES BOARD	17,401	19,344	36,745
AGRICULTURE DEPT	67,950	85,370	153,320
ANIMAL HEALTH BOARD	2,708	3,081	5,789
VOYAGEURS NATIONAL PARK	52	75	127
SCIENCE MUSEUM	1,386	1,914	3,300
ACADEMY OF SCIENCE	41	41	82
HORTICULTURE SOCIETY	82	82	164
MINN RESOURCES LEG COMM	380	396	776
AGRICULTURE UTILIZATION RESEARCH	4,420	4,330	8,750
TOTAL:	470,266	552,506	1,022,772

BASE BUDGET EXPENDITURES by TYPE

<u>Type</u>	(dollars) <u>FY 98</u>	<u>FY 99</u>	<u>FY 98-99</u>
AGENCY OPERATIONS	328,997	407,847	736,844
CAPITAL EXPENSES	13,515	24,466	37,981
GRANTS	17,069	11,302	228,371
OTHER	10,685	8,891	19,576
TOTAL:	470,266	452,506	1,022,772

BASE BUDGET EXPENDITURES by TYPE

<u>Type</u>	(percentage) <u>FY 98</u>	<u>FY 99</u>	<u>FY 98-99</u>
AGENCY OPERATIONS	70.0%	73.8%	72.0%
CAPITAL EXPENSES	2.9%	4.4%	3.7%
GRANTS	24.9%	0.1%	22.3%
OTHER	2.3%	1.6%	1.9%
TOTAL:	100.0%	100.0%	100.0%

* FY 98-99 TRUST FUND APPROPRIATION: \$22.2 Million

XI. Compliance Audit

*“a copy of the most
recent compliance
audit.”*



STATE OF MINNESOTA
OFFICE OF THE LEGISLATIVE AUDITOR
JAMES R. NOBLES, LEGISLATIVE AUDITOR

JRV _____
SAT _____
LBB _____
YF _____
MLK _____
INTERN _____

November 17, 1998

Representative Loren Solberg, Chair
Legislative Commission on Minnesota Resources
65 State Office Building
St. Paul, Minnesota 55155

Dear Representative Solberg:

As you are aware, Minn. Stat. Section 116P.04, Subd. 5, provides that the Legislative Auditor shall audit trust fund expenditures to ensure that the money is spent for the purposes provided in the commission's budget plan.

In September 1997, the Office of the Legislative Auditor issued a report on an audit of selected trust fund appropriations. We also issued audit reports in November 1993 and September 1994. We do not have any other audits of the Trust Fund currently scheduled. We do not have sufficient staff to audit all entities on an annual or biennial schedule. Each year, we do a risk assessment of the entities under our audit jurisdiction as a basis for allocating staff resources and establishing our audit schedule. We will make our next scheduling decisions in January 1999.

If you have any questions on our audits, you may contact me at 296-4718.

Sincerely,

A handwritten signature in cursive script that reads "Claudia Gudvangen".

Claudia Gudvangen, CPA
Deputy Legislative Auditor

Environment and Natural Resources Trust Fund

Selected Scope Financial Audit

For the Period July 1, 1993, through February 28, 1997

September 1997

*This document can be made available in
alternative formats, such as large print,
Braille, or audio tape, by calling 296-1727.*

Financial Audit Division
Office of the Legislative Auditor
State of Minnesota

97-49



STATE OF MINNESOTA

OFFICE OF THE LEGISLATIVE AUDITOR

CENTENNIAL BUILDING, 658 CEDAR STREET • ST. PAUL, MN 55155 • 612/296-4708 • TDD RELAY 612/297-5353

JAMES R. NOBLES, LEGISLATIVE AUDITOR

Senator Deanna Wiener, Chair
Legislative Audit Commission

Members of the Legislative Audit Commission

Senator Steven Morse, Chair
Legislative Commission on Minnesota Resources

Members of the Legislative Commission on Minnesota Resources

Mr. John Velin, Director
Legislative Commission on Minnesota Resources

Mr. Rodney Sando, Commissioner
Department of Natural Resources

Mr. Robert Wedl, Commissioner
Department of Children, Families and Learning

Mr. Art Dunn, Acting Director
Office of Environmental Assistance

Mr. Peder Larson, Commissioner
Pollution Control Agency

We have audited selected projects of the Environment and Natural Resources Trust Fund for the period July 1, 1993 through February 28, 1997. Chapter 1 provides a description of the Environment and Natural Resources Trust Fund and our audit scope and objectives. Chapters 2 through 5 discuss the results of our audit.

We conducted our audit in accordance with generally accepted auditing standards and *Government Auditing Standards*, as issued by the Comptroller General of the United States. Those standards require that we obtain an understanding of internal controls relevant to the audit. The standards also require that we design the audit to provide reasonable assurance that the state agencies complied with provisions of laws, regulations, and contracts that are significant to the audit. State agency management is responsible for establishing and maintaining the internal control structure and complying with applicable laws, regulations, and contracts.

This report is intended for the information of the Legislative Audit Commission, the Legislative Commission on Minnesota Resources, and management of the Department of Natural Resources, the Department of Children, Families & Learning, the Office of Environmental Assistance, and the Pollution Control Agency. This restriction is not intended to limit the distribution of this report, which was released as a public document on September 5, 1997.

James R. Nobles
Legislative Auditor

John Asmussen, CPA
Deputy Legislative Auditor

End of Fieldwork: April 30, 1997
Report Signed On: August 28, 1997

SUMMARY

State of Minnesota
Office of the Legislative Auditor
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Environment and Natural Resources Trust Fund

Selected Scope Financial Audit For the Period July 1, 1993, through February 28, 1997

Public Release Date: September 5, 1997

No. 97-49

Agency Background

The Environment and Natural Resources Trust Fund was established by constitutional amendment in November 1988. It provides a long-term permanent and stable source of funding for natural resources. The Legislature appropriates funds to state agencies for two-year projects based on the Legislative Commission on Minnesota Resources (LCMR) recommendations. For the 1994-1995 and 1996-1997 bienniums, appropriations that total \$45,595,000 were made to eleven different agencies.

Conclusions

As provided in Minn. Stat. Section 116P.04, Subd. 5, the objective of our audit was to determine if trust fund expenditures were made in accordance with legislative restrictions and for the purposes provided in the Legislative Commission on Minnesota Resources (LCMR) budget plan. We selected a sample of agencies and individual projects for review. We performed tests of project activity at the Departments of Natural Resources and Children, Families & Learning, the Office of Environmental Assistance, and the Pollution Control Agency, and selected project subgrantees.

◆ *Department of Natural Resources*

The Department of Natural Resources received 45 trust fund appropriations totaling \$38,226,000 during the 1994-1995 and 1996-1997 bienniums. We reviewed six projects funded from seven appropriations and found that, for the items tested, costs were in compliance with the budget plans, grant agreements, and applicable laws.

◆ *Department of Children, Families & Learning*

The Department of Children, Families & Learning received two trust fund appropriations totaling \$810,000 during the 1994-1995 biennium. Funds were subgranted to the Science Museum of Minnesota. We reviewed the two projects and found that, for the items tested, costs were in compliance with the budget plans, grant agreements, and applicable laws, except that subgrantee project expenditures included allocations for indirect costs. Program guidelines at the time the projects were funded did not address the allowability of indirect costs. Guidelines for the subsequent biennium disallowed the allocation of indirect costs.

◆ *Minnesota Office of Environmental Assistance*

The Minnesota Office of Environmental Assistance received three trust fund appropriations totaling \$800,000 for trust fund projects during the 1996-1997 biennium. We reviewed two projects and found that, for the items tested, costs were in compliance with the budget plans, grant agreements, and applicable laws.

◆ *Pollution Control Agency*

The Pollution Control Agency received three trust fund appropriations totaling \$1,550,000 for trust fund projects during the 1994-1995 and 1996-1997 bienniums. We reviewed the three projects and found that, for the items tested, costs were in compliance with the budget plans, grant agreements, and applicable laws, except for \$6,000 in rental charges to one of the projects.

Environment and Natural Resources Trust Fund

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Audit Participation

The following members of the Office of the Legislative Auditor prepared this report:

John Asmussen, CPA	Deputy Legislative Auditor
Claudia Gudvangen, CPA	Audit Manager
Rhonda Regnier, CPA	Auditor-In-Charge
Sonya Hill, CPA	Auditor-In-Charge
Scott Tjomslund	Auditor
Richard Weinmeyer	Auditor

Exit Conference

We discussed the results of the audit with the staff of the following agencies/entities:

- Department of Natural Resources
- Department of Children, Families & Learning
- Science Museum of Minnesota
- Minnesota Office of Environmental Assistance
- Pollution Control Agency

Environment and Natural Resources Trust Fund

Chapter 1. Background

The Environment and Natural Resources Trust Fund was established by constitutional amendment in 1988. Article XI, Sec. 14 of the Constitution of the State of Minnesota, as amended in November 1990, provides, in part:

The principal of the environment and natural resources trust fund must be perpetual and inviolate forever, except appropriations may be made from up to 25 percent of the annual revenues deposited in the fund until fiscal year 1997 and loans may be made of up to five percent of the principal of the fund for water system improvements as provided by law.....The net earnings from the fund shall be appropriated in a manner prescribed by law for the public purpose of protection, conservation, preservation, and enhancement of the state's air, water, land, fish, wildlife, and other natural resources. Not less than 40 percent of the net proceeds from any state-operated lottery must be credited to the fund until the year 2001.

Net proceeds from the Minnesota State Lottery are deposited to the trust fund each month. The State Board of Investment invests trust fund moneys pursuant to Minn. Stat. Section 11A.24. Investment income is available for expenditure. In addition, for each biennium through 1997, the Legislature has authorized expenditure of varying percentages of additional revenue within the constitutional limitation.

Table 1-1 shows the trust fund corpus financial activity for fiscal years 1994 through 1996.

Table 1-1
Environment and Natural Resources Trust Fund
Nonexpendable Trust Fund
Summary of Financial Activity
Three Years Ended June 30, 1996

	Year Ended June 30		
	1994	1995	1996
Beginning Fund Balance	\$59,720,231	\$78,009,468	\$ 97,165,716
Lottery Proceeds	23,747,699	24,511,148	25,876,388
Investment Income	3,957,588	5,179,085	8,570,000
Net Transfers Out - Note	<u>(9,416,050)</u>	<u>(10,533,985)</u>	<u>(11,984,126)</u>
Ending Fund Balance	<u>\$78,009,468</u>	<u>\$97,165,716</u>	<u>\$119,627,978</u>

Note: Pursuant to constitutional and statutory provisions, transfers were made to an Expendable Trust Fund for expenditure in accordance with appropriation restrictions. Any appropriated funds not encumbered in the biennium for which they were appropriated canceled and were transferred back to the trust fund corpus.

Source: State of Minnesota Comprehensive Annual Financial Reports and supporting accounting records.

Environment and Natural Resources Trust Fund

During our annual statewide audits, we verified the propriety of revenue deposited to the trust fund. We performed tests of investment income at the State Board of Investment. We also verified the proper distribution of lottery proceeds to the trust fund and the appropriate allocation of revenues between fund corpus and expendable balance.

The Legislative Commission on Minnesota Resources (LCMR), consisting of 16 members of the Legislature, recommends a biennial budget plan for trust fund expenditures. In addition, it adopts a six year strategic plan identifying priority areas for funding. LCMR employs staff to assist in its responsibilities. Mr. John Velin currently serves as LCMR director.

As provided in Minn. Stat. Section 116P.03, the trust fund is intended to supplement traditional sources of funding for environmental and natural resource activities. Biennially, state agencies and other entities submit proposed projects to LCMR for review and approval. The Legislature appropriates funds to state agencies for two-year projects based on LCMR recommendations. Table 1-2 shows the level of trust fund appropriations by agency for the 1994-1995 and 1996-1997 bienniums.

Table 1-2
Environment and Natural Resources Trust Fund
Fiscal Year 1994-1997 Appropriations

<u>Department</u>	<u>1994 - 1995 Biennium</u>		<u>1996 - 1997 Biennium</u>	
	<u>No. of Projects</u>	<u>Appropriation Amount</u>	<u>No. of Projects</u>	<u>Appropriation Amount</u>
Natural Resources	26	\$23,996,000	19	\$14,230,000
Pollution Control Agency	2	1,300,000	1	250,000
Strategic and Long Range Planning			3	1,000,000
Children, Families and Learning	2	810,000		
Environmental Assistance			3	800,000
Board of Water and Soil Resources	1	500,000	3	635,000
Administration	1	710,000		
University of Minnesota	1	425,000		
Agriculture	1	175,000		
Transportation			1	100,000
LCMR Administration	<u>1</u>	<u>270,000</u>	<u>1</u>	<u>394,000</u>
Total	<u>35</u>	<u>\$28,186,000</u>	<u>31</u>	<u>\$17,409,000</u>

Source: Laws of Minnesota 1993-1996.

State agencies receiving trust fund appropriations are responsible for administering approved projects and, if applicable, monitoring flow-through grants to other entities. As a condition of acceptance of trust fund appropriations, agencies must submit a work program and semiannual progress reports to LCMR. As provided in Minn. Stat. Section 116P.05, LCMR must approve the work program before an agency can spend trust fund appropriations.

Environment and Natural Resources Trust Fund

Table 1-3 shows financial activity for the expendable portion of the trust fund for fiscal years 1994 through 1996.

	Year Ended June 30		
	1994	1995	1996
Beginning Fund Balance	\$ 9,931,505	\$11,790,340	\$10,272,886
Revenue and Other Sources:			
Net Transfers-In - Note	\$ 9,416,050	\$10,533,985	\$11,984,126
Investment Income	379,831	525,429	279,242
Other Revenues	75,667	322,605	177,320
Total Revenue and Other Sources	<u>\$ 9,871,548</u>	<u>\$11,382,019</u>	<u>\$12,440,688</u>
Expenditures:			
Current Expenditures	\$ 4,836,929	\$ 6,625,477	\$ 5,280,596
Capital Outlay	875,878	3,701,358	3,107,060
Grants	2,299,906	2,572,638	3,320,271
Total Expenditures	<u>\$ 8,012,713</u>	<u>\$12,899,473</u>	<u>\$11,707,927</u>
Ending Fund Balance	<u>\$11,790,340</u>	<u>\$10,272,886</u>	<u>\$11,005,647</u>

Note: Pursuant to constitutional and statutory provisions, transfers were made from the trust fund corpus for expenditure in accordance with appropriation restrictions. Any appropriated funds not encumbered in the biennium for which they were appropriated canceled and were returned to the Nonexpendable Trust Fund.

Source: State of Minnesota Comprehensive Annual Financial Reports and supporting accounting records.

As provided in Minn. Stat. Section 116P.04, Subd. 5, the objective of our audit was to determine if trust fund expenditures were made in accordance with legislative restrictions and for the purposes provided in the Legislative Commission on Minnesota Resources (LCMR) budget plan. To accomplish this objective, we interviewed LCMR staff to gain an understanding of the budget plan and the policies and procedures established to control expenditures. We then selected a sample of departments and individual projects for further review. We selected projects to review based on materiality and the number of projects in a department. We also focused on departments that had not been reviewed in our previous audits of trust fund projects.

We performed tests of project activity at the Department of Natural Resources, the Department of Children, Families & Learning, the Office of Environmental Assistance, and the Pollution Control Agency. We also reviewed supporting documentation for certain expenditures incurred by project subgrantees. We tested compliance with provisions of laws, contracts, and grant agreements related to the Environment and Natural Resources Trust Fund. Our review covered projects funded for the 1994-1995 and 1996-1997 bienniums with financial activity from July 1, 1993, through February 28, 1997. We discuss our specific conclusions on the projects reviewed in Chapters 2 through 5.

Environment and Natural Resources Trust Fund

As discussed in the individual chapters, for some projects, the Legislature appropriates funds to a state agency for subsequent grants to or contracts with other entities. Funds for some of the projects flowed through several layers of government before reaching the entity ultimately responsible for administering the activity. The role of state agencies and other levels of government in monitoring subgrantee financial activities is unclear. The issue is further complicated because LCMR plays a strong role in reviewing and monitoring project activities. We observed varying levels of monitoring activities by the state agencies. These ranged from processing a subgrantee's reimbursement request to reviewing complete supporting expenditure documentation. The current legal provisions and program guidelines do not address a state agency's level of responsibility for these pass-through grants. LCMR should consider defining the state agencies' role for these projects. Also, when recommending future appropriations, LCMR should consider the need to have funds pass through several levels of government.

Environment and Natural Resources Trust Fund

Chapter 2. Department of Natural Resources

Chapter Conclusions

We reviewed six Department of Natural Resources projects funded from the Environment and Natural Resources Trust Fund during the 1994-1995 and 1996-1997 bienniums. For the items tested, project expenditures complied with applicable legal provisions and the purposes outlined in the work plan submitted to the Legislative Commission on Minnesota Resources. In instances where there were unexpended appropriations at the end of the biennium, funds were appropriately canceled.

The Department of Natural Resources received 45 trust fund appropriations totaling \$38,226,000 for trust fund projects during the 1994-1995 and 1996-1997 bienniums. These projects encompassed various priorities including management approaches, recreation, parks and trails, water, and fisheries. As of February 28, 1997, expenditures for these projects totaled \$30,405,513. We reviewed six projects, funded from seven appropriations, with expenditures totaling \$9,036,183.

Lilydale/Harriet Island Regional Park Trail (1994-1995)

The purpose of this project was to plan and construct a pedestrian bicycle trail in the Lilydale/Harriet Island Regional Park. Pursuant to the appropriation law, the Department of Natural Resources contracted with the Metropolitan Council, which contracted with the City of St. Paul, to conduct the project. The Lilydale/Harriet Island Regional Park project expenditures exceeded the appropriation amount. However, the city could only claim reimbursement for expenditures up to a maximum of \$246,000.

Table 2-1
Lilydale/Harriet Regional Island Park Trail
Financial Status as of February 28, 1997

Appropriation	\$246,000
Grant expenditures reimbursing for:	
Construction	\$218,343
Design and engineering	26,000
Other	<u>1,657</u>
Total Expenditures	<u>\$246,000</u>
Appropriation Balance	<u>\$ 0</u>

Source: Statewide Accounting System accounting reports and detailed transactions as of October 1995.

Environment and Natural Resources Trust Fund

We reviewed supporting documentation for expenditures incurred by the City of St. Paul. Our review of activity through February 28, 1997, showed that, for the items tested, costs were in compliance with the budget plan, grant agreements, and applicable laws.

Birch Lake Regional Bikeway/Walkway (1994-1995)

The purpose of this project was to develop a bikeway/walkway linking trunk highway 96 regional bikeway in White Bear Lake with the Tamarack Nature Center and business centers and a trailside interpretive program. This project was contingent upon the facility being designated part of the metropolitan regional park and open space system. Pursuant to the appropriation law, the Department of Natural Resources contracted with the Metropolitan Council for a subgrant to Ramsey County, which cooperated with the city of White Bear Lake to develop the bikeway/walkway.

Table 2-2
Birch Lake Regional Bikeway/Walkway
Financial Status as of February 28, 1997

Appropriation	\$450,000
Grant expenditures reimbursing for:	
Construction	\$438,618
Other	<u>5,185</u>
Total Expenditures	<u>\$443,803</u>
Canceled Appropriation Balance	<u>\$ 6,197</u>

Source: Statewide Accounting System accounting reports and detailed transactions as of October 1995.

We reviewed supporting documentation for expenditures incurred by the city of White Bear Lake. Our review of activity through February 28, 1997, showed that, for the items tested, costs were in compliance with the budget plan, grant agreements, and applicable laws.

State Trail Development (1994-1995)

The purposes of this project included development of the Paul Bunyan Trail, development of an abandoned railroad grade between Barnum and Carlton, and acquisition and development of a trail connection from Harmony to the Root River State Trail.

Environment and Natural Resources Trust Fund

Table 2-3
State Trail Development
Financial Status as of February 28, 1997

Appropriation	\$2,327,000
Expenditures:	
Land and land improvements	\$1,979,664
Architecture, engineering and other services	208,109
Supplies and materials	26,306
Other	<u>51,306</u>
Total Expenditures	<u>\$2,265,385</u>
Canceled Appropriation Balance	<u>\$ 61,615</u>

Source: Statewide Accounting System and Minnesota Accounting and Procurement System accounting reports and detailed transactions as of February 28, 1997.

Our review of activity through February 28, 1997, showed that, for the items tested, costs were in compliance with the budget plan and applicable laws.

State Park Betterment (1994-1995)

The purpose of this project was to develop, improve, and rehabilitate state park facilities to meet growing user demand as well as to prevent further deterioration of historically significant structures. This project was funded from two appropriations in the 1994-1995 biennium.

Table 2-4
State Park Betterment
Financial Status as of February 28, 1997

Appropriations:	
Laws of 1993	\$3,000,000
Laws of 1994	<u>650,000</u>
Total Appropriations	<u>\$3,650,000</u>
Expenditures:	
Personnel services	\$ 159,905
Professional and purchased services	425,094
Supplies and materials	215,999
Land improvements	436,059
Buildings and building repairs	2,388,904
Other	<u>22,567</u>
Total Expenditures	<u>\$3,648,528</u>
Canceled Appropriation Balance	<u>\$ 1,472</u>

Source: Statewide Accounting System and Minnesota Accounting and Procurement System accounting reports and detailed transactions as of February 28, 1997.

Environment and Natural Resources Trust Fund

Our review of activity through February 28, 1997, showed that, for the items tested, costs were in compliance with the budget plan and applicable laws.

Reinvest In Minnesota (RIM) Statewide Fisheries Habitat Development (1994-1995)

The purpose of this project was to develop trout, walleye, and small mouth bass habitat in streams, to remove the Flandrau Dam to allow migration of fish, and to install aeration systems on winterkill-prone lakes.

Table 2-5
RIM Fisheries Habitat Development
Financial Status as of February 28, 1997

Appropriation	\$687,000
Expenditures:	
Personnel services	\$131,124
Professional and purchased services	238,641
Supplies and materials	231,342
Travel	5,483
Other	<u>71,522</u>
Total Expenditures	<u>\$678,112</u>
Canceled Appropriation Balance	<u>\$ 8,888</u>

Source: Statewide Accounting System and Minnesota Accounting and Procurement System accounting reports and detailed transactions as of February 28, 1997.

Our review of activity through February 28, 1997, showed that, for the items tested, costs were in compliance with the authorized work plan and applicable laws.

State Park and Recreation Area Acquisition, Development, Betterment, and Rehabilitation (1996-1997)

The purpose of this project was to acquire privately owned land within state parks and recreation areas, to construct an interpretive center at Fort Snelling state park, and to implement projects for the betterment and rehabilitation of state parks and recreation areas.

Environment and Natural Resources Trust Fund

Table-2-6
State Park and Recreation Area Acquisition, Development, Betterment and Rehabilitation
Financial Status as of February 28, 1997

	<u>Acquisition</u>	<u>Development</u>	<u>Betterment & Rehabilitation</u>
Appropriation	\$1,070,000	\$680,000	\$1,400,000
Expenditures:			
Land and buildings	\$ 873,208	\$110,550	\$ 97,812
Purchased services	161,739	15,000	236,672
Repairs	0	0	71,765
Supplies and equipment	0	0	67,149
Personnel services	0	0	47,473
Other	<u>35,053</u>	<u>27,000</u>	<u>10,934</u>
Total Expenditures	<u>\$1,070,000</u>	<u>\$ 152,550</u>	<u>\$ 531,805</u>
Remaining Appropriation Balance	<u>\$ 0</u>	<u>\$ 527,450</u>	<u>\$ 868,195</u>

Source: Minnesota Accounting and Procurement System accounting reports and detailed transactions as of February 28, 1997.

Our review of activity through February 28, 1997 showed that, for the items tested, costs were in compliance with the authorized work plan and applicable laws.

Environment and Natural Resources Trust Fund

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Chapter 3. Department of Children, Families & Learning Subgrants to the Science Museum of Minnesota

Chapter Conclusions

We reviewed two appropriations to the Department of Children, Families & Learning. The department contracted with the Science Museum of Minnesota to conduct the projects. For the items tested, the Science Museum of Minnesota's expenditures for these two projects complied with applicable LCMR work plans and appropriation laws. Any unexpended appropriation balance for the completed projects was appropriately canceled. Project expenditures included allocations for indirect costs. Program guidelines for the 1994-1995 biennium, during which these projects were funded, did not specifically address the allowability of indirect costs. Guidelines for the subsequent biennium disallowed the allocation of indirect costs based on an established rate.

The Department of Children, Families & Learning (CFL) received trust fund appropriations of \$810,000 for two environmental education projects during the 1994-1995 biennium. As of February 28, 1997, both projects were complete and project expenditures totaled \$805,569. As provided in the appropriation law, CFL contracted with the Science Museum of Minnesota to complete work for both of the projects. We reviewed the CFL and Science Museum's supporting documentation for project expenditures.

The On-Line Museum: Computer and Interactive Video (1994-1995)

The purpose of this project was to create a touch-screen interactive video database for selected Minnesota cultural and natural history collections. The project also provided a prototype for a unique learning experience in environmental education for Science Museum visitors and school children.

**Table 3-1
On-Line Museum Project
Financial Status as of February 28, 1997**

Appropriation Amount	\$260,000
Grant expenditures reimbursing for:	
Designing image system	\$ 76,239
Creating database	74,559
Indirect Costs	56,591
Producing public information consoles	<u>48,180</u>
Total Expenditures	<u>\$255,569</u>
Canceled Appropriation Balance	<u>\$ 4,431</u>

Source: Statewide Accounting System accounting reports and detailed transactions as of October 1995.

Environment and Natural Resources Trust Fund

We reviewed supporting documentation for project expenditures at the Science Museum of Minnesota. Our review of activity through February 28, 1997, indicates that, except for the issue discussed in Finding 1, for the items tested, expenditures were in compliance with the LCMR work plan, grant agreements, and applicable laws.

1. The Science Museum of Minnesota charged indirect costs to the on-line museum project.

The Science Museum of Minnesota project expenditures included indirect costs of \$56,591, calculated at 40.9 percent of direct costs, which was the Science Museum's federally approved indirect cost rate. LCMR guidelines for the 1994-1995 biennium, during which this project was funded, did not address the allowability of indirect costs. In addition, the contracts and work plans identified costs by project objectives and tasks rather than by type of expenditure. The Department of Children, Families & Learning did not question the inclusion of indirect costs in project expenditures. The guidelines and contract language for the subsequent biennium disallow the allocation of indirect costs to projects. However, certain administrative or operating costs traditionally included in indirect cost rates can be directly charged, if related to the project.

Recommendation

- *The Science Museum of Minnesota should work with LCMR to determine the propriety of indirect costs charged to the project.*

Green Street: An Urban Environmental Awareness Project (1994-1995)

The purpose of this project was to develop a comprehensive, coordinated urban environmental education project. The project established an exhibit and outreach program focused on revealing the links between modern lifestyles and major environmental issues. As provided in the appropriation, CFL contracted with the Science Museum of Minnesota to complete this project. The Science Museum of Minnesota also received funding from Northern States Power and the U.S. Department of Education for this project.

Table 3-2
Green Street Project
Financial Status as of February 28, 1997

Appropriation Amount	\$550,000
Grant expenditures reimbursing for:	
Producing exhibits	\$199,947
Public programming/demonstration	152,838
Indirect costs	139,552
Student/teacher training	<u>57,663</u>
Total Expenditures	<u>\$550,000</u>
Appropriation Balance	<u>\$ 0</u>

Source: Statewide Accounting System accounting reports and detailed transactions as of October 1995.

We reviewed supporting documentation for project expenditures at the Science Museum of Minnesota. Our review of activity through February 28, 1997, indicates that, for the items tested,

Environment and Natural Resources Trust Fund

expenditures were in compliance with the LCMR work plan, grant agreements, and applicable laws.

2. The Science Museum of Minnesota charged indirect costs to the Green Street project.

Project expenditures included indirect costs of \$139,552, calculated at 34 percent of direct costs. The amount charged was less than the federally approved indirect cost rate because of the contract limit on total project costs. As discussed in Finding 1, LCMR guidelines for the 1994-1995 biennium did not address the allowability of indirect costs. The guidelines and contract language for the subsequent biennium disallow the allocation of indirect costs to projects based on an established rate.

Recommendation

- *The Science Museum of Minnesota should work with LCMR to determine the propriety of indirect costs charged to the project.*

Environment and Natural Resources Trust Fund

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Environment and Natural Resources Trust Fund

Chapter 4. Minnesota Office of Environmental Assistance

Chapter Conclusions

We reviewed two of the three LCMR projects at the Office of Environmental Assistance and found that, for the items tested, expenditures were in compliance with LCMR work plans, grant agreements, and applicable laws.

The Office of Environmental Assistance received project appropriations of \$800,000 for three environmental education projects in the 1996-1997 biennium. As of February 28, 1997, project expenditures totaled \$445,714. We reviewed two of the projects administered by the agency with expenditures of \$294,005 as of February 28, 1997.

Leopold Education Project Curriculum (1996-1997)

The purpose of this project was to provide teacher training in the use of the Leopold education project conservation ethics curriculum. In accordance with the appropriation law, the agency subgranted project funds to Pheasants Forever, Inc. The appropriation required Pheasants Forever, Inc. to match trust fund moneys with \$50,000 of non-state money. The Office of Environmental Assistance required the subgrantee to submit detailed documentation for project expenditures.

**Table 4-1
Leopold Education Project
Financial Status as of February 28, 1997**

Appropriation amount	\$100,000
Grant expenditures reimbursing for: Teacher training	<u>32,701</u>
Remaining appropriation balance: Grant agreement	<u>\$ 67,299</u>

Source: Minnesota Accounting and Procurement System accounting reports and detailed transactions as of February 28, 1997.

We tested support for expenditures reported by Pheasants Forever, Inc. Our review of activity through February 28, 1997, indicates that, for the items tested, expenditures were in compliance with the LCMR work plan, grant agreements, and applicable laws. Pheasants Forever, Inc. provided documentation for the required match.

Environment and Natural Resources Trust Fund

Environmental Education Teacher Training Project (1996-1997)

The purpose of this project was to develop and deliver statewide environmental education training for preservice and inservice teachers. The Office of Environmental Assistance, in conjunction with ten colleges and universities, created environmental education courses that were relevant and accessible to teachers. The ten colleges and universities involved were Bemidji State University, Concordia College, Hamline University, Mankato State University, Moorhead State University, St. Cloud State University, University of Minnesota - Duluth, University of Minnesota - Morris, University of Minnesota - Twin Cities, and Winona State University. Teachers completing the courses would receive certification as environmental education teachers.

Table 4-2
Environmental Education Teacher Training Project
Financial Status as of February 28, 1997

Appropriation Amount	\$500,000
Expenditures:	
Educational institution grants	\$140,046
Personnel services	61,801
Educational and instructional services	19,908
Travel	16,658
Purchased services	11,388
Other	<u>11,503</u>
Total Expenditures	<u>\$261,304</u>
Remaining Appropriation Balance:	
Educational institution grants	\$127,424
Other	<u>111,272</u>
Total Remaining Appropriation Balance	<u>\$238,696</u>

Source: Minnesota Accounting and Procurement System accounting reports and detailed transactions as of February 28, 1997.

Our review of activity through February 28, 1997, showed that, for the items tested, expenditures were in compliance with the LCMR work plan, grant agreements, and applicable laws.

Environment and Natural Resources Trust Fund

Chapter 5. Pollution Control Agency

Chapter Conclusions

We reviewed three trust fund projects at the Pollution Control Agency and found that, except for \$6,000 for rent charged to one project, for the items tested, expenditures were in compliance with LCMR work plans, grant agreements, and applicable laws. Any unexpended appropriation balance for completed projects was appropriately canceled.

The Pollution Control Agency received trust fund appropriations of \$1,300,000 for two water projects in the 1994-1995 biennium and \$250,000 for one urban natural resources project in the 1996-1997 biennium. As of February 28, 1997, the Pollution Control Agency had expended \$1,455,412 on these three projects. We reviewed expenditures for all three projects.

Minnesota River Implementation - Continuation (1994-1995)

The Pollution Control Agency received an appropriation of \$1,100,000 for a continuation of the Minnesota River Implementation project. The purpose of this project was to accelerate the adoption of the best management practices and to accelerate related state and local implementation activities for the Minnesota river basin.

Table 5-1
Minnesota River Implementation - Continuation
Financial Status as of February 28, 1997

Appropriation Amount	\$1,100,000
Expenditures:	
Grants to other governmental units	\$ 599,585
Grants to counties	348,358
Personnel services	118,166
Rent	6,000
Consultant and professional services	9,507
Travel, meals, and registration fees	2,381
Supplies, materials, and equipment	6,452
Other	1,129
Total Expenditures	<u>\$ 1,091,578</u>
Canceled Appropriation Balance	<u>\$ 8,422</u>

Source: Statewide Accounting System and Minnesota Accounting and Procurement System accounting reports and detailed transactions as of February 28, 1997.

Environment and Natural Resources Trust Fund

Our review of activity through February 28, 1997, showed that, except for the issue discussed in Finding 3, for the items tested, expenditures were in compliance with applicable laws and the LCMR work plan.

3. The basis for \$6,000 in rental charges to the project is questionable.

The Pollution Control Agency charged \$6,000 for rental of office and parking space to the project. Documentation of the basis and rationale for this expenditure was limited. The department treated its space costs similar to an indirect cost pool and allocated a portion of its total annual rent charges to this project based on the number of employees working on the project. LCMR guidelines for the 1994-1995 biennium, during which this project was funded, did not address the allowability of indirect costs. The guidelines and contract language for the subsequent biennium disallow the allocation of indirect costs to projects.

Recommendation

- *The Pollution Control Agency should work with LCMR to resolve the \$6,000 in questioned rental charges.*

Mercury Reduction in Fish - Continuation (Phase II) (1994-1995)

The purpose of this project was to investigate mechanisms of mercury bioavailability and develop methods for reducing fish mercury contamination in lakes and rivers. The Pollution Control Agency subgranted funds to the University of Minnesota to complete the pilot studies testing mercury reduction in fish. The purpose of these studies was to enhance the quality of Minnesota's fish resources and reduce mercury usage and emissions. The University of Minnesota also received funding for the project from the U.S. Environmental Protection Agency.

Table 5-2
Mercury Reduction in Fish - Continuation (Phase II)
Financial Status as of February 28, 1997

Appropriation Amount	\$200,000
Grant expenditures reimbursing for:	
Surveys and sampling	\$ 10,000
Field testing	30,000
Testing after applied treatments	160,000
Total Expenditures	<u>\$200,000</u>
Appropriation Balance	<u>\$ 0</u>

Source: Statewide Accounting System accounting reports and detailed transactions as of October 1995.

Our review of activity through February 28, 1997, showed that, for the items tested, expenditures were in compliance with the LCMR work plan, the grant agreement, and applicable laws.

Environment and Natural Resources Trust Fund

Metropolitan Area Groundwater Model to Predict Contaminant Movement (1996-1997)

The purpose of this project was to develop and apply a tool to improve prediction of contaminant movement in groundwater at contamination sites in the metropolitan area using a flexible regional groundwater model. The Pollution Control Agency contracted with the University of Minnesota to complete a portion of the project.

Table 5-3
Metropolitan Area Groundwater Model
Financial Status as of February 28, 1997

Appropriation Amount	\$250,000
Expenditures:	
Personnel services	\$ 77,991
Contracted services - University of Minnesota	80,000
Tuition and fees	1,942
Supplies and equipment	3,245
Other	<u>601</u>
Total Expenditures	<u>\$163,779</u>
Remaining Appropriation Balance:	
University of Minnesota Contract	\$ 46,000
Other	<u>40,166</u>
Total Remaining Appropriation Balance	<u>\$ 86,221</u>

Source: Minnesota Accounting and Procurement System accounting reports and detailed transactions as of February 28, 1997.

Our review of activity through February 28, 1997, indicated that, for the items tested, costs were in compliance with the LCMR work plan, contract agreements, and applicable laws.

Environment and Natural Resources Trust Fund

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Discovery begins here

August 18, 1997

Office of Legislature Auditor
James Nobles, Legislature Auditor
Centennial Building
658 Cedar Street
St. Paul, MN 55155

Dear Mr. Nobles:

I am writing in response to the letter from Claudia Gudvangen, dated July 23, 1997, regarding the audit recommendation by your staff for grants received for the 1994-95 biennium from LCMR. Thank you for providing the opportunity to comment.

As suggested, the Science Museum has contacted LCMR's John Velin to discuss the audit findings regarding indirect costs for the On-Line Museum and Green Street projects. He confirmed that, in as much as LCMR guidelines during that biennium did not prohibit charges for indirect costs, the Science Museum's request to be reimbursed for them was indeed appropriate. As a result of my conversation with Mr. Velin, it would be appreciated if you would amend the draft audit report to reflect this confirmation.

If you have any questions or concerns, please call me at 221-4713.

Sincerely

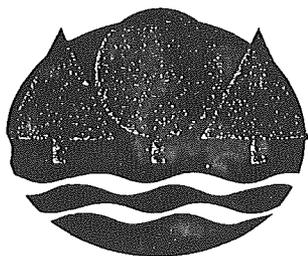
James L. Peterson
President

JLP/tjm



Environment and Natural Resources Trust Fund

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Minnesota Pollution Control Agency

August 18, 1997

Mr. James R. Nobles
Legislative Auditor
Centennial Building
658 Cedar Street
St. Paul, Minnesota 55155

Dear Mr. Nobles:

I would like to thank you and your staff for the work just completed on an audit of the Minnesota Pollution Control Agency for selected projects of the Environmental and Natural Resources Trust Fund for the period July 1, 1993 through February 28, 1997. We are always looking for ways to improve our operations and feel that audits can assist in this endeavor.

Your audit had one recommendation: "The Pollution Control Agency should work with LCMR to resolve the \$6,000 in questioned rental charges". We have acted on this recommendation and have met with John Velin and Dave Flipp of the Legislative Commission of Minnesota Resources to discuss costs of managing these projects and the issue of indirect.

We explained our practice of charging a rent cost to LCMR projects based on Full-Time Equivalent positions in lieu of an indirect rate. John Velin and Dave Flipp concurred that the rent was a reasonable cost and felt comfortable with the charge. They also recognized that, even though agencies are not allowed to charge an indirect rate to the projects, they are able to request costs included in an indirect rate that, like the rent charge, could be reasonably allocated to the project. They recommended that we review our costs of managing LCMR projects and include these costs in addition to the rent in our LCMR projects. Our agency will be reviewing this from a cost-benefit perspective.

Sincerely,

Kristin Applegate
for Peder A. Larson
Commissioner

PAD:dmh

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