

LCMR WORK PROGRAM 1991

I. Environmental Exhibits Collaborative -- Education 1

Program Manager: Dr. Louis B. Casagrande
Senior Vice President
Science Museum of Minnesota
30 E. 10th St.
St. Paul, MN 55101
612-221-9432

A. M.L. 91, Ch. 254 Sec.14, Subd. 5(f) Appropriation: \$400,000
Balance: \$0

Environmental Exhibits Collaborative: This appropriation is from the Minnesota environment and natural resources trust fund to the Science Museum of Minnesota to establish a statewide collaborative to share and create traveling water-related exhibits and programs for schools and family groups at different sites.

B. Not applicable

C. Not applicable

II. NARRATIVE

Minnesota's museums, environmental learning centers, governmental agencies, and private organizations have created many excellent environmental exhibits and programs. But no state-wide network exists to coordinate the sharing of these materials or the planning and production of new ones. The **Environmental Exhibits Collaborative** will combine the exhibit and touring expertise of the Science Museum and Bell Museum with the program development and delivery skills of the Freshwater Foundation, Environmental Learning Centers Coalition, Minnesota Extension, and others. The Collaborative will become a long-term, cost-effective partnership.

III. OBJECTIVES

A. **Regional Tour of Existing Water Exhibits, Programs, & Curricula**

A.1. Narrative: Over an 18-month period, selected existing Minnesota water resource exhibits and programs will tour selected venues in Greater Minnesota.

A.2. Procedures: The Science Museum, Bell Museum, and regional Collaborative partners, such as the Lake Superior Zoological Garden in Duluth, the Heritage-Hjemkomst Center in Moorhead, and the Museum of Natural History at Southwest State University in Marshall will organize a tour. To ensure a high-impact program in each location, the regional exhibitions will involve local schools through special assembly programs, teacher workshops, and environmental science fairs coordinated by ELCs, MAGE, and other Collaborative partners.

A.3a. Amount Budgeted: \$260,000
A.3b. Balance: \$17,408 Financial cutoff date - June 30, 1993
A.4. Product Timeline: July91 Jan92 June92 Jan93 June30,93
planning *****
regional tour *****
A.5. Status: Since July 1, 1991 the "Down the Drain" exhibit has traveled to:
Minnesota Valley Wildlife Refuge Interpretive Center, Bloomington
Eastman Nature Center, Osseo
Wood Lake Nature Center, Richfield
Westwood Hills Nature Center, St. Louis Park
Springbrook Nature Center, Fridley
St. Croix Valley Interpretive Center, Stillwater
Tamarack Nature Center, Maplewood
Minnesota State Fair, St. Paul
Soil and Water Conservation Convention, Duluth
Como Elementary School, St. Paul
Phalen Lake Elementary School, St. Paul
River Trails Girl Scout Council, Rochester
Highland Elementary School, St. Paul
Minnesota Women of Today, Owatonna
Fort Snelling State Park
Steele County Fair, Owatonna
Olmstead County Fair, Rochester
River Trails Girl Scout Expo, Rochester
Minnesota State Fair
Montevideo Soil & Water Conservation District
Champlin Senior High School, Champlin
Battle Creek Elementary School, St. Paul
Manitou Days, White Bear Lake
Police Explorers, St. Louis Park

A replica of the "Down the Drain" stormwater exhibit has been constructed for use by EEC partners in the Red River Valley (Heritage-Hjemkomst Interpretive Center, River Keepers, Inc, Moorhead State University Science Center, Agassiz Environmental Learning Center) and was delivered in February, 1993. Other organizations have expressed interest in obtaining copies of the stormwater exhibit, and the museum is exploring the possibilities of building replicas of the exhibit for sale to interested organizations.

The museum and Twin Cities Public Television are developing a proposal called "Science Minnesota" for submission to the National Science Foundation. The purpose of this proposal is to utilize the respective strengths of the museum and KTCA to increase public awareness about topics of importance to this region through the integration of public television programming, traveling exhibits, and school outreach programs. One of the topics being seriously considered for "Science Minnesota" is water, which would further build upon the water education resources developed by the museum through HQ Minnesota and the Environmental Exhibits Collaborative.

Between July 1, 1991 and June 30,1993, 20,572 students experienced the Water! assembly program, 23,389 SMM visitors watched the theater performance of "Splish & Splash," 4,658 SMM visitors watched the theater performance of "The Waters We Touch", 25,554 SMM visitors viewed "The Water Show" demonstration, 1,025 teachers participated in Water Works Science SLICES in-service teacher training, and 7,377 students participated in water residencies in their schools. The water programs continue to be some of the most popular school outreach programs offered by the museum.

A.6. Benefits: The first regional tour will provide a minimum of 400,000 school children, teachers, and families in Greater Minnesota with exposure to high-quality environmental exhibits and programs to which they otherwise would not have access. The regional tour also will establish a foundation for further cooperation between Science Museum and its Collaborative partners.

B. Joint Planning & Replication of RIVERS, LAKES, AND WETLANDS Exhibits

B.1. Narrative: With its Collaborative partners, the Science Museum will develop new hands-on exhibits and programs about Minnesota's **RIVERS, LAKES, AND WETLANDS**. These new components and programs will be replicated for short-term loan to Collaborative partners. Smaller, portable versions of these exhibits along with assembly programs, demonstrations, table-top activities, and associated curricula will be made available to schools state wide through the Science Museum's school outreach program, ELCs, MAGE, and other Collaborative partners.

B.2. Amount Budgeted: \$140,000

B.3. Balance: \$(17,408) Financial cutoff date - June 30, 1993

B.4. Product Timeline: July91 Jan92 June92 Jan93 June30,93
planning/prototyping *****
fabrication/replication *****
evaluation *****

B.5. Status: The Science and Bell museum's EEC exhibits, "Get Hooked on Water Quality" and "Exotic Aquatics," were finished in June, 1992 and began their year-long tour of EEC venues starting July 4, 1992. A press release was sent out announcing the completion of these exhibits. Posters were printed for distribution to EEC members for use in promoting "Get Hooked on Water Quality" while it was on display at their institutions. To complement the "Get Hooked on Water Quality" exhibit, the following materials were obtained for inclusion in a resource center that accompanied the exhibit:

- Water Safety Coloring & Activity Book* - 5,000 copies from DNR
- Recommended Minimum Ice Thickness Pocket Guide* - 15,000 copies from DNR
- Minnesota Fish Consumption Advisory, May, 1992* - 500 copies from MDH
- Eating Minnesota Fish: A Guide to Your Health* - 500 copies from MDH
- Watch Your Waste: A Toxic Trash Disposal Guide* - 5,000 copies from SMM

Since July 1, 1992, the EEC exhibits have been on display at the following sites:

<u>Get Hooked on Water Quality</u>	<u>Exotic Aquatics</u>
Science Museum of Minnesota	Bell Museum of Natural History
Lake Superior Center	Audubon Center of the North Woods
Audubon Center of the North Woods	Lake Superior Zoo
Minnesota Valley Wildlife Refuge	Minnesota State Fair
Museum of Natural History, SWSU	Lake Superior Center
Freshwater Foundation	MSU Regional Science Center
Wolf Ridge ELC	Wolf Ridge ELC
Warner Nature Center	Raptor Center
Bell Museum of Natural History	Freshwater Foundation
Minnesota Zoo	Hennepin Parks
Deep-Portage Conservation Reserve	Minnesota Zoo
Long Lake Conservation Center	Science Museum of Minnesota
Moorhead S.U. Regional Science Ctr.	Minnesota Valley NWR
	Natural History Museum, SWSU
	Deep-Portage Conservation Reserve
	Long Lake Conservation Center

The Minnesota Department of Natural Resources purchased copies of both exhibits for use in the state park system. Since July 1, 1992, the MDNR's copies of the exhibits have been on display at the following sites:

<u>Get Hooked on Water Quality</u>	<u>Exotic Aquatics</u>
Fort Snelling State Park	MDNR Building, St. Paul
Afton State Park	Myre Big Island State Park
Lake Bemidji State Park	Old Mill State Park
Lake Carlos State Park	Lake Bemidji State Park
Old Mill State Park	Lake Carlos State Park
Itasca State Park	

The Science Museum finished assembling 14 copies of its Water Trunks in June, 1992. The five residential environmental learning centers that are members of the EEC were each given a copy of the trunk. All other members of the EEC were able to reserve the remaining nine trunks free of charge for periods up to two weeks in length.

<u>Residential Environmental Learning Centers</u>	<u>Water Trunk Use</u>
Audubon Center of the North Woods	600 people
Deep Portage Conservation Reserve	3,441
Long Lake Conservation Center	6,000
Mounds View North Environmental Learning Center	265
Wolf Ridge Environmental Learning Center	0
Total	10,306

Water Trunks also were used by other EEC members as well as by schools and other organizations throughout Minnesota:

<u>School and City</u>	<u>Water Trunk Use</u>
Oakwood Elementary, Plymouth	1,000 people
Shakopee Area Catholic, Shakopee	100
Nobles Soil & Water, Worthington	not available
Blackduck Elementary, Blackduck	not available
Minnesota Zoo, Apple Valley	not available
Minnetonka Home, Shorewood	70
Peterson Drilling, Parkville	not available
Anoka City Hall, Anoka	100
Castle Elementary, Oakdale	100
Nevis Elementary, Nevis	100
Bamber Valley, Rochester	865
Paynesville Elementary	230
Freshwater Education, Staples	3,156
Hopkins North Junior High, Hopkins	280
Chanhassen Elementary, Chanhassen	120
Shingle Creek, Minneapolis	412
Murray Soil & Water, Slayton	500
Fulton Elementary, Minneapolis	25
World Cultures, St. Paul	250
Brewster Elementary, Brewster	145
Big Lake Elementary, Big Lake	100
Museum Magnet School, St. Paul	30
Cedar Elementary, Cedar	600
St. Francis Elementary, St. Francis	600
East Bethel Elementary, East Bethel	600
Cherry School, Iron	560
Brown County Courthouse, New Ulm	not available
Longville Elementary, Longville	25
Pine Bend Elementary, Inver Grove Heights	500
Orchard Lake Elementary, Lakeville	600
Burroughs Elementary, Minneapolis	43
Sandberg Middle School, Robbinsdale	150
Susan Lindgren, St. Louis Park	60
St. Paul's Lutheran School, Fairmont	156
Grove City Elementary, Grove City	211
Norman County West, Halsted	40
Rochester Public Utilities, Rochester	200
Hillcrest Elementary, Ellsworth	380
Alice Olson, St. Paul	9
Expo Elementary, St. Paul	125
Frost Lake Elementary, St. Paul	60
Morton Elementary, Morton	70
Camp St. Croix, Hudson	200
Morgan Park Middle School, Duluth	300
Marquette School, Virginia	90
Total	13,162

The Science and Bell museums put on two exhibit development workshops during the biennium, one for 12 EEC members on April 1 & 2, 1992 and one for 10 EEC members on March 23 & 24, 1993. Workshop participants went through all the steps of exhibit development, culminating in the development of several prototype exhibits.

B.6. Benefits: These new exhibits and programs will reach nearly 1,200,000 Minnesotans a year through exhibition at the Science Museum in St. Paul and at other Collaborative member locations throughout the state. Smaller classroom versions of these hands-on exhibits will provide educators with economical, yet valuable tools for motivating young people to think about environmental issues. Both adults and school children throughout Greater Minnesota will have access to high-quality environmental exhibits and programs that otherwise would not be available.

IV. EVALUATION

For the 1991-1993 biennium, the program will be evaluated primarily according to its ability to attain the audience figures listed above. Collaborative partners will be required to submit reports to the museum detailing the numbers and types of audiences exposed to the exhibits and programs created and distributed by the Environmental Exhibits Collaborative.

The success of the Collaborative ultimately will be evaluated according to whether it succeeds in creating a long-term, cost-effective, statewide partnership that has the ability to leverage additional dollars from the private sector for further strengthening the Collaborative. The Collaborative is a unique enterprise that has the potential to be a major asset in the State's plans to make its citizens environmentally conscious.

V. CONTEXT

- A.** The State of Minnesota has an interest in making its citizenry as environmentally conscious as possible. This laudable goal is hindered by the fact that existing avenues of environmental education generally lack coordination, sustainability, and high visibility.
- B.** The Environmental Exhibits Collaborative intends to establish a state-wide network to coordinate the sharing of existing environmental exhibits and programs and the planning and production of new ones. The ultimate goal is to create a long-term, cost-effective partnership that will give environmental issues high visibility and public impact.
- C.** Many of the Science Museum and Freshwater Foundation's exhibits, programs, and curricula materials currently being developed with LCMR funding will be incorporated into the Collaborative project. The museum will contribute nearly \$400,000 in restricted funds from its successful capital campaign to the Collaborative during the next biennium. It is anticipated that funding beyond FY92-93 will be sought from LCMR. However, it is expected that the creation of the Environmental Exhibits Collaborative and the in-kind contributions of its members will leverage additional dollars from the private sector.

- D. Water Education for Minnesota -- Today and for the Future: \$300,000 for FY90-91
- E. Environmental Exhibits Collaborative: \$400,000 for FY91-92

VI. QUALIFICATIONS

1. Program Manager:

Dr. Louis B. Casagrande
Senior Vice President
Science Museum of Minnesota

Ph.D. Anthropology, University of Minnesota, 1977
Thirteen years of museum and related educational experience. Has directed numerous grants in program development and science education.

2. Program Coordinator:

Mr. Patrick Hamilton
Director of Geography
Science Museum of Minnesota

M.A. Geography, University of Minnesota, 1982
Six years of exhibit and program development experience at the museum. Currently is the project leader of HQ Minnesota, an LCMR-funded project.

3. Major Cooperators:

A) Museums

Bell Museum of Natural History
Mr. Kevin Williams
Curator of Exhibitions

Lake Superior Center
Mr. Robert Bruce
Executive Vice President

Heritage-Hjemkomst Interpretive Center
Ms. Claudia Pratt
Exhibits Coordinator

Museum of Natural History
Dr. Elizabeth Dezy
Professor of Biology, SSU

B) Environmental Learning Centers

Agassiz ELC
Mr. Wayne Geoken

International Wolf Center
Mr. Mike Link

Audubon Center of the North Woods
Mr. Mike Link
Executive Director

Deep-Portage Cons. Reserve
Mr. Mike Naylor
Executive Director

Kettle River ELC
Mr. Mike Link

Long Lake Conservation Center
Mr. Tom Tiemens
Director

Mounds View North ELC
Mr. Robert Schwaderer
Director

Wolf Ridge ELC
Mr. Jack Pichotta
Director

C) Zoological Gardens

Lake Superior Zoo
Ms. Julene Boe
Public Information Coordinator

Minnesota State Zoo
Ms. Pamela O'Brian

D) Other Environmental Education Organizations

Central Minnesota Water Quality Project
Ms. Patricia Ruble
Project Director

Freshwater Foundation
Mr. H. Martin Jessen
President & CEO

Minnesota Extension Service
Dr. Steve Laursen
Natural Resources Program Leader

Office for Environmental Ed.
Ms. Shirley Dougherty
Director

Minnesota Alliance for Geographic Ed.
Dr. David Lanegran
Co-Coordinator

St. Croix Nat. Scenic Riverway
Mr. Tony Andersen
Superintendent

VII. REPORTING REQUIREMENTS

Semiannual status reports will be submitted no later than January 1, 1992, July 1, 1992, January 1, 1993, and a final status report by June 30, 1993.

1991 EDUCATION PROJECT ABSTRACT FOR THE PERIOD ENDING JUNE 30, 1993

This project was supported by the Environment and Natural Resources Trust Fund.

TITLE:	Environmental Exhibits Collaborative
PROGRAM MANAGER:	Dr. Louis B. Casagrande
ORGANIZATION:	Science Museum of Minnesota
LEGAL CITATION:	M.L. 91, Ch. 254 Sec.14, Subd. 5(f)
APPROPRIATION AMOUNT:	\$400,000

STATEMENT OF OBJECTIVES

The purpose of the Environmental Exhibits Collaborative (EEC) is to create a statewide partnership of Minnesota museums, environmental learning centers, governmental agencies, and private organizations for the purpose of creating and sharing environmental exhibits and programs throughout Minnesota. Through these activities, the museum intends to develop a cost-effective, long-term environmental education partnership.

RESULTS

The Science Museum and the Bell Museum each produced an exhibit on a water-related topic. The Science Museum's exhibit, "Get Hooked on Water Quality," uses the themes of fish and fishing to explore the issues of non-point source water pollution. The Bell Museum's exhibit, "Exotic Aquatics," examines the problems associated with the introduction of non-native plant and animal species into Minnesota's waterways. These exhibits traveled free of charge to EEC members across Minnesota. The Minnesota Department of Natural Resources purchased copies of both exhibits for use in the state park system.

The Science Museum produced a replica of its stormwater exhibit for circulation amongst several EEC members in the Red River Valley. This small and very portable exhibit has sparked the interest of other organizations that would like to have copies for their educational purposes, and the museum is exploring ways in which it might construct additional copies.

The Science Museum produced 14 Water Trunks for use by EEC members. Because of their large school audiences, the museum gave each residential environmental learning center a Water Trunk that would always be available for on-site water education.

The Science and Bell museums jointly organized and ran two exhibit development workshops in order to provide EEC members with the knowledge and confidence to develop their own small-scale exhibits through the use of inexpensive and readily available materials. The need for such workshops arose from one-on-one conversations in which many EEC members expressed a strong desire for exhibits but a frustration in having no exhibit development experience.

PROJECT RESULTS, USE, AND DISSEMINATION

Both the Science and Bell museums intend to continue working closely with EEC partners. The Bell Museum is developing a relationship with the U.S. Fish & Wildlife Service that it intends will result in the creation of several new traveling exhibits for use by the EEC. The Science Museum's urban energy and environmental awareness project, "Green Street™," will create new exhibit components for circulation amongst EEC members. Both existing EEC exhibits will continue to travel around the state.

The Science Museum and Twin Cities Public Television are developing "Science Minnesota," a proposal to the National Science Foundation. This project is intended to greatly increase public awareness about topics of importance to this region through the close integration of public television programming, traveling exhibits, and school outreach. One of the topics being developed for "Science Minnesota" is water, which will result in the further utilization and strengthening of the water education resources developed by the museum through both H₂O Minnesota and the Environmental Exhibits Collaborative.