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

Project Title: **ENRTF ID:** **064-C**

MNwatch: A Major New Exhibit About Minnesotas Environment

Category: C. Environmental Education

Total Project Budget: $ 1,085,000

Proposed Project Time Period for the Funding Requested: 2 years, July 2015 - June 2017

Summary:

MNwatch will be a major new exhibit that informs 400,000 people annually about Minnesota's environmental trends and encourages citizens to assist with environmental monitoring. $449,000 in match has been raised.

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Sponsoring Organization: Science Museum of Minnesota

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Location

Region: Statewide

County Name: Statewide

City / Township:

Alternate Text for Visual:

A one-page handout that highlights the goals of MNwatch to inform 400,000 people annually about Minnesotas environmental trends and encourages citizens to assist with environmental monitoring

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

I. PROJECT STATEMENT

The Science Museum of Minnesota (SMM) seeks to produce a major new 4,000 square-foot exhibit that will inform and engage over 400,000 people annually about Minnesota's changing environmental conditions. MNwatch will be located in the most prominent location in the museum – just beyond the main doors leading from SMM's lobby into the exhibit halls – and thus will be the first exhibit visitors encounter. Museum visitors will use the museum's rich scientific collections and the latest scientific visualization tools to enable their exploration of environmental trends. SMM has already raised $449,000 in funds for this project and will seek to raise in total a 1-to-1 match to LCCMR funding. MNwatch will stay on display for at least five years following the completion of this project in June 2017.

Through connections with a wide range of agencies and organizations, the goals of MNwatch are to 1) inform citizens about environmental trends shaping Minnesota and 2) engage and motivate more citizens to assist with environmental monitoring. Citizen engagement will enhance the detection of emerging environmental issues quickly and improve our collective understanding of longer term environmental trends. We can maintain and enhance our state's natural resources through increased citizen involvement in the monitoring of our air, water and ecosystems.

In addition to informing citizens about environmental trends in Minnesota, MNwatch will:

- aid the acquisition of natural resource data collection;
- help with the monitoring of the state's water resources;
- assist with the fight against the spread of invasive species;
- encourage the more detailed data collection necessary to assess the nature of climate change and;
- support Minnesota Academic Standards in Science.

II. DESCRIPTION OF PROJECT ACTIVITIES

Activity 1: Create new exhibits about Environmental Trends and Monitoring in Minnesota **Budget: $1,020,000**

With the assistance of the advisory committee (see Project Team/Partners), SMM will develop, evaluate and fabricate exhibits to achieve two goals:

Goal 1: Inform citizens about new and emerging environmental trends affecting the air, water and biodiversity of Minnesota, for example:

- ✓ Are temperature and precipitation patterns changing?
- ✓ Is the state experiencing more extreme weather events?
- ✓ What is the status of water quality in our lakes and streams?
- ✓ What parts of the state are being impacted by too much water, too little?
- ✓ Where and when were invasive species (e.g. emerald ash borer, zebra mussels, and others) most recently sighted?

Goal 2: Engage citizens in opportunities to help in the acquisition of data vital to the effective monitoring and management of the state's air, water and biodiversity, for example:

- ✓ Citizen Lake Monitoring Program, Minnesota Pollution Control Agency
- ✓ Citizen Stream Monitoring Program, Minnesota Pollution Control Agency
- ✓ Cooperative Weather Observers, National Weather Service

- ✓ Minnesota Phenology Network, University of Minnesota
- ✓ Community Collaborative Rain, Hail and Snow Network, Colorado State University

Outcome	Completion Date
1. Develop, prototype, and evaluate exhibits	*4/1/2016*
2. Fabricate and install final iterations of exhibit components	*10/1/2016*
3. Over 400,000 people annually interact with the exhibit components	*6/30/2017*

Activity 2: Evaluation of New Environmental Exhibits **Budget: $65,000**

The Museum's Department of Evaluation and Research in Learning will evaluate how the MNwatch exhibits and programs are achieving their goals through visitor engagement and feedback throughout the development process. Ideally, visitors show an increase in their awareness of and concern about Minnesota air, water and biodiversity issues. Data on new citizen environmental monitoring volunteers will help SMM to assess the impact of visiting the MNwatch exhibit.

Outcome	Completion Date
1. Front-end evaluation of museum visitors	*11/1/2015*
2. Formative evaluation of prototype exhibit components	*6/1/2016*
3. Remedial evaluation of the overall exhibit and follow-up modifications	*11/1/2016*
4. Volunteer participation evaluation with MNwatch partners	*1/31/2017*
5. Summative evaluation to learn how the exhibit impacts museum visitors	*6/30/2017*

III. PROJECT STRATEGY

A. Project Team/Partners

Patrick Hamilton will lead the SMM team that will oversee all aspects of MNwatch. SMM's advisory committee members for MNwatch will be making in-kind contributions of their time to the project:

- Greg Spoden, State Climatologist, University of Minnesota
- Laurie Sovell, Citizen Stream Monitoring Program, Minnesota Pollution Control Agency
- Louise Hotka, Citizen Lake Monitoring Program, Minnesota Pollution Control Agency
- Rebecca Montgomery, Minnesota Phenology Network, University of Minnesota
- Michelle Margraf, Cooperative Observer Network, National Weather Service
- Dan Engstrom, St. Croix Watershed Research Station

B. Timeline Requirements

The timeline for the project is 2 years, from July 2015 through June 2017.

C. Long-Term Strategy and Future Funding Needs

The long-term strategy is that MNwatch will increase both the public awareness of and concern about Minnesota air, water and biodiversity issues as well as the numbers of citizens willing to participate in volunteer environmental monitoring programs. MNwatch will be the latest expression of SMM's ongoing commitment to realizing measureable improvements in citizen understanding of Minnesota environmental issues, as well as a nationwide model for museums to engage citizens in environmental monitoring. SMM is committed to MNwatch as a long-range strategic initiative.

2014 Detailed Project Budget

Project Title: The Observatory: Engaging Minnesotans in Environmental Trends/Monitoring

IV. TOTAL ENRTF REQUEST BUDGET 2 years

BUDGET ITEM	AMOUNT
Personnel:	**$ 665,000**
Activity 1: Create new exhibits about Environmental Trends and Monitoring in Minnesota	
Patrick Hamilton, The Observatory Program Manager, 20% FTE over 24 mos., 70% salary, 30%	$ 44,000
Liza Pryor, Exhibit Project Leader, 60% FTE over 24 mos., 70% salary, 30% benefits	$ 95,000
Bette Schmitt, Exhibit Project Lead, 50% over 24 mos., 70% salary, 30% benefits	$ 99,000
TBD, Graphic Designer, 60% over 24 mos., 70% salary, 30% benefits	$ 74,000
TBD, 1 Graphic Fabricator, 20% each over 24 mos., 70% salary, 30% benefits	$ 36,000
TBD, Prototyper, 30% over 24 mos., 70% salary, 30% benefits	$ 41,000
TBD, 2 Media Designers, 30% over 24 mos., 70% salary, 30% benefits	$ 63,000
TBD, 2 Exhibit Fabricators, 30% over 24 mos., 70% salary, 30% benefits	$ 86,000
TBD, Project Production Mgr., 30% over 24 months, 70% salary, 30% benefits	$ 47,000
TBD, Exhibit Designer, 20% over 12 mos., 70% salary, 30% benefits	$ 15,000
Personnel Subtotal for Activity 1	***$ 600,000***
Activity 2: Evaluation of New Environmental Exhibits	
Zdanna Tranby, Senior Evaluator, 20% over 24 mos., 70% salary, 30% benefits	$ 34,000
TBD, 2 Evaluation Data Collectors, 20% over 24 mos., 73% salary, 27% benefits	$ 31,000
Personnel Subtotal for Activity 4	***$ 65,000***
Equipment/Tools/Supplies:	**$ 420,000**
Activity 1: Create new exhibits about Environmental Trends and Monitoring in Minnesota	
Exhibit design and production materials (e.g. lumber, metal, Plexiglass)	$ 190,000
Exhibit graphic design and production materials (e.g. substrates, films, laminates)	$ 60,000
Multimedia equipment (e.g. computers, monitors, multi-touch tables)	$ 170,000
Equipment/Tools/Supplies Subtotal for Activity 1	***$ 420,000***
TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND $ REQUEST =	$ 1,085,000

V. OTHER FUNDS

SOURCE OF FUNDS	AMOUNT	Status
Other Non-State $ Being Applied to Project During Project Period: Funds from the National Science Foundation through successful grants with the University of Minnesota	$ 449,000	*Secured*
Other State $ Being Applied to Project During Project Period:	0	
In-kind Services To Be Applied During Project Period:	0	
Funding History:	0	
Remaining $ From Current ENRTF Appropriation:	N/A	

MNwatch: A Major New Exhibit about Minnesota's Environment

MNwatch will inform and engage over 400,000 people annually about changing environmental conditions in Minnesota.

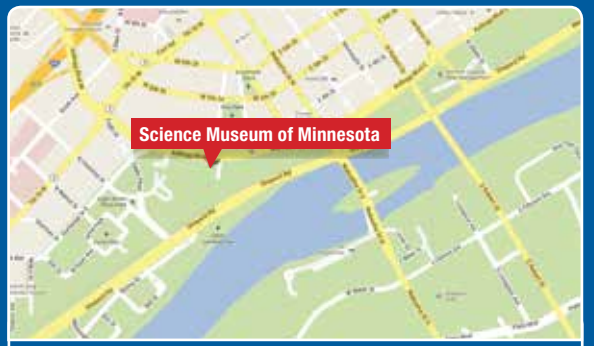
Museum visitors will interact with the latest scientific visualization tools to enable their exploration of environmental trends.

The Museum already has raised $449,000 from the National Science Foundation for this project and will seek to raise in total a 1-to-1 match to LCCMR funding.

MNwatch will encourage more citizens to assist with environmental monitoring to enhance the detection of emerging issues and to improve our understanding of long-term trends.

04/21/2014

About the **Science Museum of Minnesota:**



The Science Museum of Minnesota overlooks the Mississippi River in downtown St. Paul.

The Museum served more than 840,000 people during its 2013 fiscal year and 111,499 students and teachers in 84 out of 87 counties were reached by field trips or outreach.

Science Museum of Minnesota®

120 kellogg boulevard west • saint paul, minnesota • 55102

Program Manager Qualifications

Patrick Hamilton is the Director of Global Change Initiatives at the Science Museum of Minnesota. He also is a Fellow of the University of Minnesota's Institute on the Environment and a Board Director of District Energy St. Paul. Patrick has been producing exhibits and programs about environmental issues for the Museum for 29 years. Patrick led the teams that in 1999 created the **MISSISSIPPI RIVER GALLERY** and in 2004 opened the **BIG BACK YARD**, the museum's outdoor water and environmental science park. Patrick added the hands-on, interactive **GROUND WATER PLAZA** to the Big Back Yard in 2006 with the support and assistance of the Minnesota Ground Water Association. In 2007, Patrick co-curated with the American Museum of Natural History an international traveling exhibit about water. Patrick's current project is **FUTURE EARTH** – exhibits and programs that explore the implications of humans as the dominant agents of global change.

Organization Description

The Science Museum of Minnesota, founded in 1907, is a large regional science museum located on the banks of the Mississippi River in downtown St. Paul. The Science Museum's programs combine research and collection facilities, a public science education center, extensive teacher education and school outreach programs, and an Imax Convertible Dome Omnitheater to provide science education to our audience of more than a million people per year.

St. Croix Watershed Research Station (SCWRS) is the field research station of the Science Museum of Minnesota. Founded in 1989, the SCWRS is located on the St. Croix River just south of Marine on St. Croix, Minnesota, approximately 35 miles from St. Paul. Staff research at the SCWRS focuses on scientifically and environmentally important questions on regional, national, and global scales. The research program emphasizes aquatic-based studies involving land-water interactions, biogeochemistry, hydrology, restoration ecology, and aquatic biology. Relevant issues include eutrophication, toxic pollutants, climate change, erosion and sedimentation, and biodiversity.

The Science Museum's building in downtown St. Paul is 370,000 square feet, built into the bluffs overlooking the Mississippi River. The museum's 70,000 square feet of exhibition space includes a 10,000-square-foot temporary exhibit gallery and five permanent galleries covering the topics of paleontology, physical science and technology, the human body, peoples and cultures of the Mississippi River, and the museum's collections. The Mississippi River flows just outside the windows of the museum and past the museum's ten acres of outdoor exhibits and programming space. The Science Museum of Minnesota employs over 600 full and part time staff and is supported by more than 1,000 dedicated volunteers.

The Science Museum of Minnesota is known worldwide for its interactive exhibits, dynamic traveling exhibitions, and internationally distributed large format films. The museum was an early innovator in the use of live theater as a humanizing interpretive tool and continues to be a training ground for other museums wishing to include live programming in their exhibit halls. The museum provides innovative staff development programs for teachers throughout the region and science education outreach programs for K-12 classrooms.