

Program 1993

Project Title: IE OTHER 2 Green Street: An Urban Environmental Awareness Project
Program Manager: Patrick L. Hamilton
Geography Department
Science Museum of Minnesota
30 E. 10th St.
St. Paul, MN 55101
(612) 221-4761

A. Legal Citation: M.L. 93 Chpt. 172, Sect. 14, Subd. 7(h)

Total Biennial Budget: \$550,000
Balance Remaining: \$124,714 as of January 1, 1995

Appropriation Language as drafted 7/27/92: This appropriation is from the trust fund to the commissioner of education for a contract with the Science Museum of Minnesota to develop a comprehensive, coordinated urban environmental education project, which will be a core exhibit and outreach program focused on revealing the links between modern lifestyles and major environmental issues.

B. LMIC Compatible Data Language: N/A

C. Status of Match Requirement: N/A

II. NARRATIVE

SMM is committed to developing a comprehensive, coordinated urban environmental education project, which will be a core SMM exhibit and outreach program focused on revealing the links between modern American lifestyles and major environmental issues.

III. STATEMENT OF OBJECTIVES:

- A. Green Street Exhibits
B. Green Street Programming
C. Green Street Student and Teacher Support

IV. OBJECTIVES

A. Title of Objective: Green Street Exhibits

A1. Narrative: Green Street will produce new exhibit components for circulation amongst members of the museum's Environmental Exhibits Collaborative (EEC), a partnership of two dozen environmental education centers around the state.
A2. Procedures: In consultation with EEC members, the museum will replicate some of the exhibit components that will be developed for the Green Street exhibit at SMM for use by the EEC.

A3. Budget: a. Amount budgeted: \$226,000; b. Balance: \$199,800 as of January 1, 1995
A4. Timeline: Exhibit development, New exhibit travels, Existing EEC exhibit mgmt., Exhibit evaluation

A5. Status: With the opening of the Green Street exhibit at SMM on November 13, 1993, attention now turns to replicating some of the Green Street components for circulation around the state. The working title for this project is Green Street in a Box. The plan is to produce several copies of a small, durable exhibit that can travel by UPS and that can be easily set up and taken down by the recipients. The goal is to have Green Street in a Box ready by summer, 1994.

- The Green Street traveling exhibit has been completed. The title is Energy Connections because of the exhibit's emphasis on energy efficiency and energy conservation and the connections between energy consumption and many environmental issues. Its first public venue was Apache Mall in Rochester the weekend of June 25th. Energy Connections was on display in the 4-H building during the entire run of the Minnesota State Fair. The Get Hooked on Water Quality exhibit was on display all summer at the Norway Lake Interpretive Center in the Chippewa National Forest. The exhibit then moved to the Museum Magnet School where it was displayed in association with the school's focus on water during the fall semester.
Sue Anderson and Patricia Ruble have held discussions about the possibility of Pat becoming a distributor for the water trunk products originally produced as part of the Environmental Exhibits Collaborative (EEC) This possible relationship arose because of the role that Pat has served in identifying and lining-up customers to purchase copies of water trunk components. Patrick Hamilton and Betsy Desy, the EEC contact at Southwest State University, have been discussing a possible collaborative project between SMM and SWSU that would combine the exhibit-production capabilities of SMM with the environmental expertise of Dr. Desy to produce new environmental education products for residents of southwestern Minnesota.
NSP purchased from the museum a portable version of the hand-crank generator that shows the difference in energy efficiency between incandescent and compact fluorescent bulbs. This exhibit was on display at the St. Paul Home and Patio Show in February and has been used a couple of times by the city of St. Paul to highlight the city's progress toward lighting efficiency in city-owned buildings. The museum and city of St. Paul have been discussing the construction of another copy for use by the city. In the summer, the city of St. Paul did purchase a copy of the hand-crank generator. SMM currently is talking with the Department of Energy's National Renewable Energy Laboratory in Golden, Colorado about building a copy of the hand-crank generator for use in its visitor center. A decision is expected sometime in early 1995.
A 16-page evaluation report about Green Street has been prepared. This document reports the number of people who have visited Green Street since it opened, contains demographic information on Green Street visitors, assesses visitor satisfaction with the exhibit, and tracks participation of Green Street visitors in projects and activities promoted by the exhibit.
Patrick Hamilton wrote a grant proposal to the regional US Environmental Protection Agency office in Chicago for the Green Museum Tour. This project would allow the museum to train 20 of its front-line staff to conduct environmental tours of the museum. SMM learned on November 25, 1994 that its grant application to the US Department of Energy for the development of exhibits and programs about wind energy in Minnesota had been approved.

A6. Benefits: 1.6 million visitors (including 230,000 school students) will see the new exhibit at SMM over the next biennium. Furthermore, the traveling exhibits circulated statewide over the next biennium through the Environmental Exhibits Collaborative will provide school children, teachers, and families in Greater Minnesota with exposure to high-quality environmental exhibits to which they otherwise would not have access.

B. Title of Objective: Green Street Programming

B1. Narrative: The Green Street project intends not only to inform people, but also to motivate them to take corrective action. To that end, the Our Minnesota visible laboratory will utilize youth interpreters, guest experts, actors, and demonstrators to stimulate people to act and to connect them directly with organizations interested in and committed to urban environmental issues and education. Green Street will provide users with convenient access to additional information and assistance.

B2. Procedures: SMM will continue and strengthen the youth interpreter program that will begin in 1991 through funding from Northern States Power Company. The Our Minnesota visible laboratory will recruit outside experts to use the Green Street exhibit as a space to discuss the connections between urban lifestyles and environmental issues. The Our Minnesota visible laboratory will oversee all museum-based programmatic elements of Green Street.

B3. Budget: a. Amount budgeted: \$234,000; b. Balance: \$79,282 as of January 1, 1995
B4. Timeline: Youth interpreters, Guest environmental experts, Green Street program mgmt., Program evaluation

B5. Status: The formal demonstration Clean Air Action shows people how cars pollute the air we breathe and what people can do to minimize their cars contribution to air pollution. This demonstration has been seen by 3,214 people since it opened on November 13, 1993.

- The formal demonstration *Heat Is On* informs people about the ways in which their homes gain heat in the summer. *Heat Is On* is a professional home energy audits are handed out. This demonstration has been seen by 500 people since it opened on November 13, 1993. This program was discontinued during the summer and returned to the program schedule in the fall. A summer version of the show has been developed and will open next summer, so that this demonstration can be performed year-around.
- The puppet performance, *The People Next Door* is a show about urban ecology that encourages people to think of the potential for cities to provide wildlife habitat and to think of ways in which they might landscape their own yards to support more wildlife. This show has been seen by 12,433 people since it opened on November 13, 1993.
- The theater performance *Is It Really Garbage* encourages people to rethink what they consider to be refuse and to more vigorously pursue the reuse and recycling of materials that once would have discarded. This performance has been seen by 1,395 people since it opened on March 5, 1994.
- The demonstration *Groundwater: Down Under* reveals to people how groundwater flows through the earth, how easy it is to contaminate it, and what people can do to prevent its degradation. This demonstration was made possible by a grant from the Metropolitan Association of Soil and Water Conservation Districts. This show has been seen by 687 people since it opened on Friday, July 29, 1994.
- A new *Green Street* theater performance premiered in November 1994. *Play on Radon* is a performance that emphasizes waste reduction and indoor air quality. It has been seen by 60 people since it opened.
- The Youth Projects Club will open its compost exhibit in *Green Street* on January 28, 1994.
- Twin Cities Tree Trust will be presenting programs in *Green Street* once a week from January 10 through March 31.
- The Metro Volunteer and Staff Training Program is holding its annual training session at SMM on January 10 in order to take advantage of *Green Street*.
- A *Green Street* guide to the mounted animals distributed throughout the exhibit was produced and is now available for use by the museum visitors.
- The St. Paul Neighborhood Energy Consortium (NEC) held its annual volunteer recognition fair at the museum on March 5. The fair also was open to the public and drew hundreds of visitors, including the mayor of St. Paul. The *Waste Reduction Fair* included a consignment clothes fashion show, over a dozen vendors and displays, and tours of the Science Museum's energy efficiency retrofits and photovoltaic power system.

• **Green Street** continuing education classes:

- Backyard Habitats*, December 7 and March 9
- How to Build a Solar Car*, December 16 and February 16
- Putting on a Warm Coat: Energy Design for Midwest Houses*, February 23
- The Healthy Home: Building Materials and the Air We Breathe*, March 2

- *Green Street*, *Our Minnesota*, and the museum's photovoltaic power system were the centers of activity during NSP's Earth Day events that took place on Saturday and Sunday, April 23 and 24.
- SMM has received three awards recognizing *Green Street* and its innovative integration of real energy efficiency improvements with public education:
  - **Special Recognition Award**, 1994 National Awards Program for Energy Efficiency and Renewable Energy, US Department of Energy, April 27, 1994
  - **Certificate of Distinction**, Green Lights Program, US Environmental Protection Agency, January 19, 1994
  - **15th Annual Energy Saver's Award**, First place in the institutional category, State of Minnesota, October 4, 1993
- SMM was invited to submit an application to *Renew America* for a national award recognizing the accomplishments of *Green Street*. SMM submitted an application and will learn the results in the fall. SMM learned on November 21, 1994 that *Green Street* will appear in *Renew America's Environmental Success Index*. SMM is still awaiting word regarding its application for the 5th Annual National Awards for Environmental Sustainability.
- Patrick Hamilton and Sue Anderson gave presentations to a number of audiences wishing to know about the *Green Street* project:

- **Working With Community to Heal the Urban Environment**. Annual Meeting of the National Community Education Association, April 16, 1994. Chaska, Minnesota.
- **Science Museum of Minnesota - Energy Retrofits**. 1994 Education/Energy Seminar, Minnesota Chapter of the American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc. March 22, 1994. Minneapolis
- **Reducing, Reusing, and Recycling: Here's How!** Annual Meeting of the American Association of Environmental Engineers, April 24-26, 1994. Seattle, Washington
- **Challenges/Creative Response for the 21st Century**. Humphrey Institute's Reflective Leadership Center and fellows Summer Workshop. June 21-22, 1994, Science Museum of Minnesota.
- Distributing to its visitors NSP's Energywise Lighting Catalog in August, 1993 in conjunction with a hallway exhibit regarding its lighting retrofit. Following the opening of *Green Street*, the catalog also was made available to the public. Because the catalogs are specially marked, SMM and NSP have been able to determine that nearly 400 light bulbs have been purchased due to visits to *Green Street* resulting in a reduction in electrical demand of

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- The water-saving devices demonstrated in *Green Street* are sold in SMM's Science Explore Store. Since the exhibit opened last November, 30 Select-A-Flush devices, 24 low-flow showerheads, and 24 sink aerators have been sold.
- *Green Street* staff provide space in the exhibit for the distribution of brochures and pamphlets that highlight environmental programs taking place in the Twin Cities and throughout Minnesota.
- Copies of bicycle safety pamphlets that have been distributed through *Green Street* as of July 29, 1994:
  - Be a Bike Expert ..... 1,800
  - 5-minute Short Course ..... 1,800
  - Minnesota Bicycle Laws ..... 1,500
  - You're in the Driver's Seat ..... 1,600
- NSP held a meeting for its major electrical customers at SMM on September 20, 1994 to highlight the museum's comprehensive lighting retrofit and to encourage greater participation in NSP's lighting rebate programs. Also, NSP's Citizen's Advisory Committee took a tour of *Green Street* on September 7, 1994.
- SMM used the back cover of the 1995 Minnesota Weatherguide/Environmental calendar to encourage greater energy efficiency. About 30,000 copies are sold in the Upper Midwest each year.

**B6. Benefits:** 1.6 million SMM visitors (including 230,000 school students) will have access to *Green Street* programming in the next biennium. Youth interpreters will act as peer role models, making environmental issues the concerns of their counterparts. Guest experts will provide first-hand, intimate knowledge of environmental issues. *Green Street* programming will seek to connect visitors with organizations that can further assist them with their environmental queries.

**C. Title of Objective: Green Street Student and Teacher Support**

**C1. Narrative:** The *Green Street* project will develop a 45-minute school assembly program and a Science SLICES in-service teacher training program on an environmental issue with both urban and rural implications for presentation throughout Minnesota. SMM will use Museum Magnet School students and teachers to produce a display or program about an urban environmental topic. Resource guides and workshops will be provided to acquaint educators with the themes and resources of *Green Street*.

**C2. Procedures:** The Museum Magnet School and SMM's Museum on the Move program will work together to produce both a Magnet School-based exhibit or program and new school outreach programs. Teacher workshops and resource guides will be developed by the museum's education resources department.

**C3. Budget:**

- a. Amount budgeted: \$90,000
- b. Balance: \$19,715 as of January 1, 1995

**C4. Timeline:**

|                                      | 7/93  | 1/94  | 6/94  | 1/95  | 6/95  |
|--------------------------------------|-------|-------|-------|-------|-------|
| Museum Magnet School display/program | ..... | ..... | ..... | ..... | ..... |
| School assembly program              | ..... | ..... | ..... | ..... | ..... |
| Science SLICES teacher training      | ..... | ..... | ..... | ..... | ..... |
| Green Street teacher packets         | ..... | ..... | ..... | ..... | ..... |
| Green Street teacher workshops       | ..... | ..... | ..... | ..... | ..... |
| Teacher evaluation survey            | ..... | ..... | ..... | ..... | ..... |

**C5. Status:** SMM's school outreach program, Museum on the Move, is preparing new school programs based on the energy themes of the *Green Street* exhibit. The *Energy Connections* assembly and residency programs and teacher in-service training program (SLICES) will begin traveling to school throughout Minnesota in early 1994. SMM is talking with utilities around the state about ways of coordinating the delivery of its *Energy Connections* school programs with the energy efficiency services of these utilities.

The Museum Magnet School opened the exhibit *Connections* on December 2, 1993. This exhibit focused on several major *Green Street* topics, especially energy and urban ecology. SMM is exploring ways in which pieces of *Connections* can go on display in *Green Street*.

A *Green Street* exhibit opening was held for Twin Cities teachers on November 16, 1993. Several *Green Street* teacher workshops are planned for the next two years. *Green Street* teacher guides for various grade levels have been produced. These guides are mailed to teachers when they make reservations to come to SMM and explore *Green Street*.

- The school assembly program, *Energy Connections*, opened in February. Since then, it has been presented at 25 schools and has been viewed by 11,563 students and teachers.
- In February, NSP informed SMM that it was committing \$81,000 to have Museum on the Move present the *Energy Connections* assembly, residency, and in-service teacher training programs to schools in NSP's service areas during the falls of 1994 and 1995.

**1994 NSP Energy Connections Fall Energy Tour**

Highland Elementary, Columbus Heights  
 Central Minnesota, Prinsberg  
 Villard Elementary, Villard  
 Holdingford, Holdingford  
 Blessed Sacrament, St. Paul  
 Hanover Elementary, Hanover  
 Lincoln Elementary, White Bear Lake  
 St. Joseph's School, Waite Park  
 St. Mary's, St. Cloud  
 St. Joseph Lab School, St. Joseph  
 St. Anthony, St. Cloud  
 Hillside Elementary, Sauk Rapids  
 St. Pius X, White Bear Lake  
 St. Hubert School, Chanhassen  
 Salem Hills Elementary, Inver Grove Heights  
 Edgewood School, Brooklyn Park  
 Parkview Elementary, Rosemount  
 Nicollet School, Nicollet  
 St. Felix School, Wabasha  
 St. Martin's Lutheran, Winona  
 Kasson-Mantorville, Kasson  
 St. John the Baptist, Excelsior  
 St. John's Lutheran, Maple Grove  
 Silver Lake Catholic, Silver Lake  
 Immanuel Lutheran, Gaylord  
 Battle Creek, St. Paul  
 Christ Lutheran School, North St. Paul  
 Cedar Park Elementary, Apple Valley  
 Richardson Elementary, North St. Paul  
 Battle Creek Middle, St. Paul  
 Countryside Elementary, Edina  
 Highland Park Jr., St. Paul  
 Lincoln Center, South St. Paul  
 Putnam Elementary, Minneapolis  
 Franklin Magnet School, St. Paul

- In June, Minnesota Power informed SMM that it was committing \$12,000 to have Museum on the Move present the *Energy Connections* assembly, residency, and in-service teacher training programs to schools in NSP's service areas during the falls of 1994 and 1995.

**1994 Minnesota Power Energy Connections Fall Energy Tour**

St. John's School, Duluth  
 St. Michael's School, Duluth  
 Ordean School, Duluth  
 Falls Elementary, International Falls  
 St. Thomas School, International Falls  
 Sandstone Elementary, Sandstone  
 Lincoln Elementary, Little Falls  
 Pierz Pioneer Elementary, Pierz

- With the support of NSP and Minnesota Power, SMM is preparing a major school outreach initiative that will deliver an intensive package of energy and environmental programs to schools in the service areas of these two utilities in fall, 1994. The intention is to have both SMM and the appropriate utility arrive at a school on a given day, so that while SMM is delivering energy education programs to students and teachers, school administrators and facility managers are receiving information about the utility's energy efficiency programs.
- The bird houses and sun masks made by Museum Magnet School students as part of their *Connections* exhibit are on display in the backyard area of *Green Street*.
- *Green Street* was the site for "Think Earth, '94," NSP's summer Teachers Environmental Workshop. 92 teachers attended the three-hour workshop on the afternoon of Wednesday, June 22.

**C6. Benefits:** 100,000 students and teachers will directly experience *Green Street* curriculum enrichment programs during the next biennium. The *Green Street* project will directly involve Museum Magnet School students and teachers in the development of an exhibit. Students and educators throughout Minnesota will have access to hands-on, participatory assembly programs, residencies, and in-service teacher training on an environmental issue relevant to both urban and rural residents. Educators will be provided with the resources and background to help incorporate the themes of *Green Street* into the classroom.

**V. EVALUATION:** Prior to exhibit development, SMM will survey museum visitors to determine their knowledge of and interest in urban energy and environmental issues. This work will help the museum to create exhibits and programs that best serve the needs of its audiences. A major objective of *Green Street* is to provide visitors with access to organizations that provide environmental services. SMM will utilize surveys and various marketing techniques to determine how effective *Green Street* is in getting museum visitors to make use of these resources. The *Green Street* outreach will be evaluated primarily in how well new EEC exhibit components and SMM school outreach programs reach their audiences. In addition, SMM will examine ways that the *Green Street* project can work to connect EEC members with their local electric utilities to pursue their own energy education projects.

**VI. CONTEXT:** Minnesota has many excellent interpretive facilities devoted to the interpretation and appreciation of the natural environment, but none that focus on the implications of the "artificial" urban landscape. Yet nearly 70% of all Minnesotans live in urban areas. The environmental problems associated with modern American lifestyles are most evident in urban areas but their problems often are pervasive and extend far beyond the borders of our cities. *Green Street* will draw many of its examples from the Twin Cities, but the lessons of *Green Street* will be relevant to both urban and rural citizens. *Green Street* will provide one million adults, children, and educators each year with special learning opportunities that will encourage them to grapple with environmental issues at home, at work, and at school. *Green Street* will be part of an expanded "Our Minnesota: Changing Landscapes" exhibit, which has received LCMR funding in the past. *Green Street* will build upon many of the exhibits and programs developed by *H<sub>2</sub>O Minnesota*, an LCMR-supported project. *Green Street* will create products for members of the Environmental Exhibits Collaborative, a current LCMR project.

**VII. QUALIFICATIONS:****1. Program Manager**

Patrick Hamilton  
 Director of Geography  
 Science Museum of Minnesota

M.A. Geography, University of Minnesota, 1982  
 Adjunct faculty member, Hamline University

Eight years of exhibit and program development and management experience at the museum. Currently is project leader of the EEC, an LCMR-funded project.

**2. Cooperators/Other Investigators*****Green Street* Advisory Committee**

**Janet M. Anderson**, Manager, Atmospheric & Terrestrial Sciences Environmental/Regulatory Affairs Department, Northern States Power Company

**Rebecca Butler**, Electric Marketing, Northern States Power Company

**Jennifer Gasperini**, Director, Center for Global Environmental Education, Hamline University

**R. Scott Getty**, Senior Sales Representative, Metro East Region, Northern States Power Company

**Ed Hessler**, Executive Dir Minnesota Environmental Sciences, Inc.

**Anne Hunt**, Executive Director, St. Paul Neighborhood Energy Consortium

**Elise Marquam-Jahns**, Manager of Planning and Development, KTCI Television

**Dr. David Morris**, Co-director, Institute for Local Self Reliance and member of the Minneapolis Environmental Commission

**Mary Morse**, Natural Resources/Self Reliance Center

**Dr. Lester Shen**, Underground Space Center, University of Minnesota.

**Al Singer**, Environmental Education Coordinator, Minneapolis Park and Recreation Board and member of Urban Environmental Education Coalition

**Valdi Stephanson**, Executive Director, Environment and Energy Resource Center

**Sheldon Strom**, Executive Director, The Center for Energy and the Urban Environment and member of the Minneapolis Environmental Commission)

**Members off the Environmental Exhibits Collaborative**

**Agassiz Environmental Learning Center**  
Fertile, Minnesota

**Audubon Center of the North Woods**  
Sandstone, Minnesota

**Central Minnesota Water Quality Project**  
Princeton, Minnesota

**Deep-Portage Conservation Reserve**  
Hackensack, Minnesota

**Freshwater Foundation**  
Wayzata, Minnesota

**Heritage-Hjemkomst Interpretive Center**  
Moorhead, Minnesota

**The International Coalition**  
Moorhead, Minnesota

**James Ford Bell Museum of Natural History**  
St. Paul, Minnesota

**Lake Superior Center**  
Duluth, Minnesota

**Lake Superior Zoological Garden**  
Duluth, Minnesota

**Long Lake Conservation Center**  
Palisade, Minnesota

**Minnesota Alliance for Geographic Education**  
Macalester College  
St. Paul, Minnesota

**Minnesota Extension Service**  
University of Minnesota  
St. Paul, Minnesota

**Minnesota Valley National Wildlife Refuge**  
Bloomington, Minnesota

**Minnesota Zoological Garden**  
Apple Valley, Minnesota

**Moorhead State University Regional Science Center**  
Moorhead, Minnesota

**Mounds View North Environmental Learning Center**  
Britt, Minnesota

**Museum of Natural History, Southwest State University**  
Marshall, Minnesota

**Office of Environmental Education**  
Minnesota Department of Education  
St. Paul, Minnesota

**The Raptor Center**  
St. Paul, Minnesota

**River Keepers**  
Fargo, North Dakota

**St. Croix National Scenic Riverway**  
St. Croix Falls, Wisconsin

**St. Paul Neighborhood Energy Consortium**  
St. Paul, Minnesota

**Science Museum of Minnesota**  
St. Paul, Minnesota

**Wolf Ridge Environmental Learning Center**  
Finland, Minnesota

**VIII. REPORTING REQUIREMENTS:**

Semiannual status reports will be submitted not later than Jan. 1 1994, July 1, 1995, Jan. 1, 1995, and a final status report by Jun. 30, 1995.