

# FINAL REPORT

## 2003 Project Abstract

For the Period Ending June 30, 2005

**TITLE:** Linking Community, Design, Technology & DNR Trail Resources

**PROJECT MANAGER:** Mary Vogel

**ORGANIZATION:** Center for Changing Landscapes, University of Minnesota

**ADDRESS:** 151 Rapson Hall, 89 Church St. S.E. Minneapolis, MN 55455

**WEB SITE ADDRESS:** www.cala.umn.edu

**FUND:** Environmental Trust Fund

**LEGAL CITATION:** ML 2003, Ch. 128, Art. 1, Sec. 9, Subd 6(i)

SEP 27 2005

**APPROPRIATION AMOUNT:** \$184,000

### Overall Project Outcome and Results

Recreation, natural and cultural resource protection, tourism, and community livability are promoted by designs for The Gitchi Gami and Minnesota River State Trails produced by a University-Department of Natural Resources-community partnership using design, computer technology, and community participation. This project augmented the DNR's state trail master planning and work with communities to create a whole systems approach to integrating state trails in communities and their landscapes.

Goals: The study widened the effectiveness of the Gitchi Gami and Minnesota River State Trails as regional amenities by creating designs and graphic information that address recreation, tourism, preservation and development in trail corridors and the larger trail landscapes. The designs preserve, enhance, and interpret the natural and cultural features of the trail's larger landscape by:

- Creating designs that protect and restore plant communities, wildlife, soil, and water resources and increase people's appreciation of and respect for trail landscapes,
- Connecting state and local recreation lands and facilities,
- Enhancing trail community character,
- Increasing natural resource stewardship awareness,
- Creating trail identities through site designs, themes, and design details, and
- Reflecting and impacting community and agency implementation strategies for trail landscapes.

### Objectives:

- Document existing trail landscapes,
- Project future land use patterns,
- Identify issues and areas of opportunity,
- Create environmentally-sensitive designs and design frameworks, and
- Make community decision-making and implementation tools.

### Products:

- Gitchi Gami and Minnesota River Trail reports,
- Increased the connections to the trail, the value of the trail to their communities, and the environmental sensitivity of other community public works projects,
- Created synergies between the trail and other amenities,
- Enhanced Minnesota River Trail master planning,
- Increased local knowledge of the larger trail environment and its potentials, and
- Generated interest in and enthusiasm for the trails through two-dozen meetings.

### Project Results Use and Dissemination

The work has created heightened interest in the trails, an appreciation of the larger trail landscape and its environmental systems, an understanding of the value and the vulnerabilities of the natural and cultural assets in the larger trail landscape, a vision for the potential of the trail environment in the study areas, and good working relationships between the Center for Changing Landscapes (CCL), and the DNR and MNDOT centered on

effective environmental strategies. Citizens, trail groups, communities, and agencies are currently using the work; it is expected that the work will be used for some time to come.

On the North Shore county road and state highway projects in Beaver Bay, private development patterns in Taconite Harbor, and private development and public works plans in Lutsen have been impacted by the design and analysis work. A presentation of the work has been made the group MNDOT staffers who are working on State Highway 61 and the Gitchi Gami Trail. CCL has been asked for feedback on some MNDOT projects. Lutsen and other North Shore communities are seeking funding to continue the design work.

The Minnesota River State Trail work is being incorporated into the DNR's master planning for the trail. The work has been coordinated with the planning for flood protection, downtown revitalization, and future public works projects in Granite Falls. The project worked Upper Sioux Tribe and the Upper Sioux Agency Park leaders to incorporate and enhance their future plans. The design work helped to inspire a confederation of interest groups in the Upper Minnesota River Valley to come together to celebrate the Minnesota River and address its environmental issues.

**Date of Report:** June 30, 2005

**LCMR 2003 Final Work Program Report**

**I. Project Title:** Linking Communities, Design, Technology & DNR Trail Resources

**Project Manager:** Mary Vogel

**Affiliation:** Center for Changing Landscapes, College of Natural Resources and College of Architecture & Landscape Architecture, University of Minnesota

**Mailing Address:** 151 Ralph Rapson Hall, 89 Church St, Minneapolis, MN 55455

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**Total Biennial LCMR Project Budget: LCMR Appropriation:** \$184,000

**Balance:** 0

**Legal Citation:** ML 2003, [Chap. 231], Sec. [9], Subd 6i.

**Appropriation Language:**

6(i) Linking Communities Design, Technology, and DNR Trail Resources

\$92,000 the first year and \$92,000 the second year are from the trust fund to the commissioner of natural resources for an agreement with the University of Minnesota to provide designs for up to three state trails incorporating recreation, natural, and cultural features.

**II. & III. FINAL PROJECT SUMMARY**

Overall Project Outcome and Results

Recreation, natural and cultural resource protection, tourism, and community livability are promoted by designs for The Gitchi Gami and Minnesota River State Trails produced by a University-Department of Natural Resources-community partnership using design, computer technology, and community participation. This project augmented the DNR's state trail master planning and work with communities to create a whole systems approach to integrating state trails in communities and their landscapes.

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Products:

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The work has created heightened interest in the trails, an appreciation of the larger trail landscape and its environmental systems, an understanding of the value and the vulnerabilities of the natural and cultural assets in the larger trail landscape, a vision for the potential of the trail environment in the study areas, and good working relationships between the Center for Changing Landscapes (CCL), and the DNR and MNDOT centered on effective environmental strategies. Citizens, trail groups, communities, and agencies are currently using the work; it is expected that the work will be used for some time to come.

On the North Shore county road and state highway projects in Beaver Bay, private development patterns in Taconite Harbor, and private development and public works plans in Lutsen have been impacted by the design and analysis work. A presentation of the work has been made the group MNDOT staffers who are working on State Highway 61 and the Gitchi Gami Trail. CCL has been asked for feedback on some MNDOT projects. Lutsen and other North Shore communities are seeking funding to continue the design work.

The Minnesota River State Trail work is being incorporated into the DNR's master planning for the trail. The work has been coordinated with the planning for flood protection, downtown revitalization, and future public works projects in Granite Falls. The project worked Upper Sioux Tribe and the Upper Sioux Agency Park leaders to incorporate and enhance their future plans. The design work helped to inspire a confederation of interest groups in the Upper Minnesota River Valley to come together to celebrate the Minnesota River and address its environmental issues.

#### IV. OUTLINE OF PROJECT RESULTS:

|   |                     |                   |
|---|---------------------|-------------------|
| <b>Result 1: Gitchi Gami Trail Work</b> | <b>Budget</b>       | <b>\$92,000</b>   |
|   | <b>Amount Spent</b> | <b>\$92,000</b>   |
|   | <b>Balance</b>      | <b>\$<u>0</u></b> |

General Comments on Result One: The cooperation with the DNR state and regional staff and the MNDOT regional staff was excellent on this project as was the interest and participation by communities' local residents and members of the Gitchi Gami Trail Association. An additional grant expanded the work done in Beaver Bay and this work was able to inform additional community public works projects that will strengthen the presence of the trail in the community. The project was successful in suggesting connections with other recreational amenities on the North Shore such as the Superior Hiking Trail, the North Shore Scenic Byway, etc. Communities on the North Shore not included in the project are pursuing funding from a variety of sources to continue the design work in their communities.

##### Select Trail Segments and Trail Communities on Trails for Study.

Description: The selection of the trail segments and trail communities along the two trails were based on the following criteria:

- Timeliness,
- Community interest,
- Opportunities to enhance and create amenities, and
- The need to remove trail development challenges.

Meetings were held with regional DNR staff and regional MNDOT staff to discuss their construction schedules and their priorities for the selection of trail sections and communities to be studied. This input informed the selection of Beaver Bay, Lutsen and Taconite Harbor.

##### Collect & Analyze Data, Identify Issues for the Trails

Description: Existing data describing the physical environment from both the natural systems and cultural perspectives was gathered. The DNR helped collect and analyze the data. The DNR also led work with communities and trail groups to ensure local and user input on recreational, tourism, and community issues. Successful meetings have been held with the Gitchi Gami Trail Association, representatives from Taconite Harbor, the Beaver Bay Community, and other interested citizens.

##### Project Development Patterns for the Selected Trails Segments & Study Areas

Description: College of Natural Resources project team members used satellite imaging and sophisticated computer technology including neural network modeling methodology to project current land use trends and model land transformations that predict future land use scenarios. Maps were created that provide information about the ecology of the trail environment and project future development and land use trends in the trail corridor and trail communities.

##### Develop Alternative Designs for Study Areas in the Trails

Description: Using the data and the development projections, College of Architecture and Landscape Architecture project team members created design scenarios for the state trail, local trails that connect to the state trail, and amenities that can be visited from the trail and the trail communities. Designs

were created that will be used by communities to implement work that informs future development patterns and makes connections to the state trail by enhancing local landscapes and community form.

#### Present Findings and Designs for Gitchi Gami for Feedback

Description: Preliminary analyses and design work were presented in a series of meetings for discussion and feedback in Beaver Bay, Lutsen and Taconite Harbor. Elected officials trail associations, tourism organizations, local chambers of commerce, and other citizens and citizen organizations participated. The feedback informed the final designs.

#### Refine Designs and Publish Results in Written & Electronic Form for Gitchi Gami Trail and Create New Tools for Subsequent Trails and Sites.

Description: In *Linking Communities along the Gitchi-Gami Trail: Beaver Bay, Lutsen, Taconite Harbor*, a document produced for result one, satellite image maps, existing conditions maps, maps of projected future development patterns, a design framework for each trail landscape, and designs for specific trail-related areas depicting interpretative, development, and land use scenarios that include 3-dimensional visualizations are included. Produced in a digitized graphic format, the document is understandable, accessible, and useful to citizens and governmental units.

**Result 1: TOTAL BUDGET:** See Attachment A

## Result 2: Minnesota River Trail Work

|                     |                        |
|---------------------|------------------------|
| <b>Budget</b>       | <b>\$92,000</b>        |
| <b>Amount Spent</b> | <b><u>\$92,000</u></b> |
| <b>Balance</b>      | <b><u>\$0</u></b>      |

General Comments on Result Two: This project had many participants and is connected to many efforts in the region. Cooperation with the state trail staff and the local director of the Upper Sioux Agency State Park was excellent. A connection was made with the master planning effort under way for the park. Project work is being used in the trails master planning effort by the state trails staff. The participation of a graduate landscape architecture regional design studio in the project aided gathering data and community input. The mayor of Granite Falls was particularly interested in coordinating planning efforts for the downtown and the flood control project with the project's trail work in Granite Falls. Several meetings were held with the leadership of the Upper Sioux Tribe, and one community meeting was held. In June tribal leadership changed, so connections with the new leadership are being pursued. The project work helped to focus the potential in the Upper Minnesota River and was a catalyst for the formation of an umbrella group to promote the Minnesota River to local residents and visitors.

### Select Trail Segments and Trail Communities on Trails for Study

Description: The selection of the trail segments and trail communities along the two trails were based on the following criteria:

- Timeliness,
- Community interest,
- Opportunities to enhance and create amenities, and
- The need to remove trail development challenges.

A ten-mile trail segment from Granite Falls to the Upper Sioux Community, the Upper Sioux State Park to the Renville County Park was selected.

### Collect & Analyze Data, Identify Issues for the Trails

Description: Existing data describing the physical environment from both the natural systems and cultural perspectives was gathered. The Regional Design Studio in Landscape Architecture, University of Minnesota and the DNR helped to collect the data. The DNR also led work with communities and trail groups that ensured local and user input on recreational, tourism, and community issues. The Upper Sioux Agency State Park master planning effort was coordinated with the project work. Several meetings were held at the Upper Sioux Reservation.

### Project Development Patterns for the Selected Trails Segments & Study Areas

Description: CNR project team members used satellite imaging and sophisticated computer technology including neural network modeling methodology to project current land use trends and model land transformations that predict future land use scenarios. Maps were created that provide information about the ecology of the trail environment and projects future development and land use trends in the trail corridor and trail communities.

### Develop Alternative Designs for Study Areas in the Trails

Description: Using the data and the development projections, CALA project team members created design scenarios for the state trail, local trails that connect to the state trail, amenities that can be visited from the trail, and the trail communities. The designs can be used by communities to implement work that informs future development patterns and makes connections to the state trail by enhancing local landscapes and community form.

**Present Findings and Designs Minnesota Trails for Feedback**

Description: The preliminary work was presented in public meetings for discussion and feedback in Granite Falls, the Upper Sioux Community and at the Upper Sioux Agency State Park. Elected officials, interest groups such as trail associations, tourism organizations, local chambers of commerce, other citizen organizations, and DNR regional staff participated. The feedback informed the final designs which were presented at community meetings.

**Refine Designs and Publish Results in Written & Electronic Form for Minnesota River State Trail and Create New Tools for Subsequent Trails and Sites.**

Description: In *Linking Communities along the Minnesota River Trail: Granite Falls, Minnesota Falls, Skalbakken Park, Upper Sioux Agency State Park & the Upper Sioux Community*, the document produced for Result Two, satellite image maps, existing conditions maps, maps of projected future development patterns, a design framework for each trail landscape, and designs for specific trail-related areas depicting interpretative, development, and land use scenarios with 3-dimensional visualizations are included. Produced in digitized graphic formats, the document is understandable, accessible, and useful to citizens and governmental units.

**Result 2: TOTAL BUDGET: See Attachment A**

|                                      |                     |                     |
|--------------------------------------|---------------------|---------------------|
| <b>V. TOTAL LCMR PROJECT BUDGET:</b> |                     | <b><u>Spent</u></b> |
| <b>All Results Personnel:</b>        | <b>\$181,170</b>    | <b>\$181,224</b>    |
| <b>All Results Equipment:</b>        | <b>\$0</b>          | <b>0</b>            |
| <b>All Results Travel:</b>           | <b>1,419</b>        | <b>1,419</b>        |
| <b>All Results Supplies</b>          | <b><u>1,411</u></b> | <b><u>1,357</u></b> |
| <b>TOTAL LCMR PROJECT:</b>           | <b>\$184,000</b>    | <b>\$184,000</b>    |

**Explanation of Capital Expenditures Greater than \$3,500: NA**

**VI. Past, Present, and Future Spending:**

- A. Past Spending:** None has been spent on this project, but there has been a huge investment in the expertise that will be used on the project. Past studies done of the North Shore and the Minnesota River was used. The Minnesota River Trail work was informed by the Minnesota River Watershed Comprehensive Recreational Guidance Document and Trail Corridor Concept Plan, Minnesota Department of Natural Resources, Minnesota River Basin Joint Powers Board, Barton-Aschman Associates, Inc, Bolton & Menk, Inc.
- B. Concurrent Spending for the Project Period:** See in-kind below: The state money for this project was used to leverage other funding. The Lake Superior Coastal Program funded \$15,000



for additional Gitchi Gami Trail work in Beaver Bay. The Trust Fund money was used as a match for this grant.

**C. Required Match: NA**

**D. Future Spending:**

**VII. Project Partners**

**A. Partners Receiving LCMR Funds:**

Design and Technology Center for Changing Landscapes, the College of Architecture and Landscape Architecture and College of Natural Resources

College of Architecture and Landscape Architecture: Research staff support and in-kind use of collegiate resources. (M. Vogel, C. Fernandez, R. Martin, J. Patina)

Forest Resources Dept: Research staff support and in-kind use of departmental and Environmental Resources Spatial Analysis Center remote-sensing and GIS facilities and databases, and including the several years of NASA support in development of the Regional Earth Sciences Application Center (RESAC): see [www.gis.umn.edu](http://www.gis.umn.edu) and its projects on land use change modeling, forest cover mapping methods, and water quality estimation (A. Ek, M. Bauer), and experience in the area of resource based tourism development (I. Schneider);

**B. Partners not receiving LCMR Funds:**

DNR Division of Trails and Waterways: Laurie Young and field staff; FTE to be determined. The DNR made in-kind contributions to the project (staff time and other resources).

**C. Project Cooperators:**

- Stakeholders in communities along the trails
- Parks and Trails Council of Minnesota and other interest groups
- MnDOT: Rod Graver, Highway 61 Corridor Manager, District Office Duluth

**VIII. Dissemination:** The work results have been disseminated in public meetings, on the web site, and in local media. Future presentations at conferences are anticipated.

**IX. Location:** Gitchi Gami State Trail and the Minnesota River State Trail: see map below.

**X. Reprting Requirements:** Periodic work program progress reports were submitted. A final report was submitted August 1, 2005.

**XI. Research Projects:** NA

**XII. Map of Project Areas:** See attached

ATTACHMENT A Budget detail.

6/30/05: ATTACHMENT A: FINAL

Project Title: Linking Communities, Design, Technology & DNR

Project Number: 06i

LCMR Recommended Funding: \$184,000

| Attachment A Deliverable Products and Related Budget  |                               |                       |                  |                              |                       |                  |                    |                       |          |
|---|-------------------------------|-----------------------|------------------|------------------------------|-----------------------|------------------|--------------------|-----------------------|----------|
| 2003 LCMR Project Biennial Budget   |                               |                       |                  |                              |                       |                  |                    |                       |          |
|   | Result 1 Budget:              |                       |                  | Result 2 Budget:             |                       |                  | Result 1+2 Budget: |                       |          |
| Budget Item (Title of Result)   | Title: Gitchi-Gami Trail Work | Amount Spent 05/31/05 | Result 1 Balance | Title: Minnesota River Trail | Amount Spent 05/31/05 | Result 2 Balance |                    | Amount Spent 05/15/05 | Balance  |
| Wages, salaries & benefits – Project Manager, Co-investigators, and Research Fellows; M. Vogel, A. Ek, M. Bauer   | 90,493                        | 90,493                | 0                | 90,677                       | 90,731                | -54              | 181,170            | 181,224               | -54      |
| M. Vogel @10%   | 12,868                        | 12,868                | 0                | 7,461                        | 5,514                 | 1,947            | 20,329             | 18,383                | 1,946    |
| A. Ek @ 3%  | 3,837                         | 3,837                 | 0                | 0                            | 0                     | 0                | 3,837              | 3,837                 | 0        |
| M. Bauer @ 3%   | 2,634                         | 2,634                 | 0                | 1,717                        | 1,697                 | 20               | 4,351              | 4,331                 | 20       |
| Fringe for above at 31.8%   | 6,211                         | 6,211                 | 0                | 2,997                        | 2,353                 | 644              | 9,208              | 8,565                 | 643      |
| Senior Fellows @ \$75 per hr, no fringe   | 3,346                         | 3,345                 | 1                | 4,443                        | 4,443                 | 0                | 7,789              | 7,788                 | 1        |
| Research Fellows @75%   | 42,244                        | 42,244                | 0                | 53,386                       | 55,532                | -2,146           | 95,630             | 97,776                | -2,146   |
| Fringe for above at 31.8%   | 7,442                         | 7,442                 | 0                | 9,947                        | 10,465                | -518             | 17,389             | 17,907                | -518     |
| Research Assistants @ 50%   | 6,555                         | 6,555                 | 0                | 5,817                        | 5,817                 | 0                | 12,372             | 12,372                | 0        |
| Fringe for above at 81%   | 5,356                         | 5,356                 | 0                | 4,909                        | 4,909                 | 0                | 10,265             | 10,265                | 0        |
| Other Supplies - materials the collection and analysis of data, modeling, design, and dissemination of results, e.g., ink, paper, computer disks, drawing materials, maps, presentation boards. Also, digital image data. | 520                           | 520                   | 0                | 891                          | 837                   | 54               | 1,411              | 1,357                 | 54       |
| Other travel expenses in Minnesota - mileage, meals, lodging to trail sites   | 987                           | 987                   | 0                | 432                          | 432                   | 0                | 1,419              | 1,419                 | 0        |
| <b>COLUMN TOTAL</b>   | <b>92,000</b>                 | <b>92,000</b>         | <b>0</b>         | <b>92,000</b>                | <b>92,000</b>         | <b>0</b>         | <b>184,000</b>     | <b>184,000</b>        | <b>0</b> |