



2005 Governor's MnGREAT Awards

Application Cover Page

1. Name of the project, program, or activity as you would like to see it on the award.
[Glensheen Low Impact Development and Shoreline and Bank Stabilization Projects](#)

2. Award categories

Organization type: (check one)

- State agency
 Institution (such as school or hospitals)
 County
 City

Activity type: (check all that apply)

- Pollution prevention Water conservation
 Toxicity reduction Energy conservation
 Waste reduction Recycling
 Composting

3. Proposed award recipient

Name [Erik Larson, on behalf of the all the project partners](#)
Project/program [Glensheen Low Impact Development and Shoreline and Bank Stabilization Projects](#)
Organization [University of Minnesota Duluth](#)
Address [1049 University Drive](#)
City [Duluth](#) State [MN](#) Zip [55812](#)
Telephone [218-726-6915](#) Fax [218-726-8127](#) E-mail elarson@d.umn.edu
Number of additional people that helped [4](#)
Names of individuals that helped [Wade Lawrence, Peggy Dahlberg, Sheryl Lind, Dan McClelland](#)

4. Joint application or nomination of additional partner organization (if applicable)

This is a joint application (list the other organization below).

Name [R.C. Boheim](#)
Organization [South St. Louis Soil & Water Conservation District](#)
Address [215 N. 1st Ave East, Rm 301](#)
City [Duluth](#) State [MN](#) Zip [55802](#)
Telephone [218-723-4867](#) Fax [218-723-4731](#) E-mail r.boheim@southstlouisswcd.org
Name [Jessica Olson](#)
Organization [CCLNS Joint Powers Board](#)
Address [215 N. 1st Ave East, Rm 301](#)
City [Duluth](#) State [MN](#) Zip [55802](#)
Telephone [218-723-4865](#) Fax [218-723-4731](#) E-mail Jessica.Olson@southstlouisswcd.org
Number of additional people that helped [1](#)
Names of individuals that helped [Ron Hansen](#)

Contact the Minnesota Office of Environmental Assistance with questions about this application or the MnGREAT Awards program: e-mail: < colleen.hetzel@state.mn.us > or call 651-215-0203 or 800-657-3843 toll free.

Online materials:
www.moea.state.mn.us/lc/mngreat.cfm

Application continues >>

Name [Marc Hershfield](#)
Organization [Minnesota Board of Water and Soil Resources](#)
Address [394 S Lake Avenue; Room 403](#)
City [Duluth](#) State [MN](#) Zip [55802](#)
Telephone [218-723-3251](#) Fax [218-723-4794](#) E-mail marc.hershfield@bwsr.state.mn.us
Number of additional people that helped [1](#)

Names of individuals that helped [Al Kean](#)

Name [Gary Overmier](#)
Organization [Great Lakes Commission](#)
Address [2805 South Industrial Highway, Suite 100](#)
City [Ann Arbor](#) State [MI](#) Zip [48104-6791](#)
Telephone [734-971-9135](#) Fax [734-971-9150](#) E-mail glc@glc.org
Number of additional people that helped [1](#)

Names of individuals that helped [Ron Shelito](#)

Name [Gene R. Clark](#)
Organization [University of Wisconsin Sea Grant Institute](#)
Address [246 Hawkes Hall, University of Wisconsin-Superior](#)
City [Superior](#) State [WI](#) Zip [54880-9985](#)
Telephone [715-394-8472](#) Fax [715-394-8454](#) E-mail gclark1@uwsuper.edu

(Note: Gene worked for Minnesota Board of Water and Soil Resources during the Low Impact Development project and during the preliminary design of the Shoreline and Bank Stabilization project. Sea Grant Wisconsin has graciously allowed him to continue helping with the project.)

5. Person submitting application

Name [Erik Larson, Sr Engineer](#)
Organization [University of Minnesota Duluth](#)
Telephone [218-726-6915](#) E-mail elarson@d.umn.edu

6. Project or program activity dates: Beginning [9/1/2003](#) Ending [12/1/2005](#)

7. Describe the project or program. How was the program implemented? Who was involved (including partnerships formed or strengthened)? Where was the program located? What were the environmental goals and objectives? What did the project accomplish?

The site is located at the Glensheen Estate on the shores of Lake Superior in Duluth Minnesota. The goals of the projects were to: a) Improve water quality of storm water from Glensheen's parking lot into Lake Superior b) Stabilize the clay bank in order to reduce wave, rain, and surface flow erosion during large storms and c) To provide a location where the general public can see low impact development practices in place and functioning. All of these goals will be met at project completion.

8. How does the project benefit the environment? Explain how the project eliminated waste, toxicity, and/or pollution. If quantifiable, please list the amount of material reduced as a direct result of your project.

The storm water from the parking lot used to run untreated through a trench over the clay bank directly into Lake Superior. It is now directed through grass swales, rock check dams, and/ or a bio-retention pond before being discharged over the edge of the bank through rock chutes, thus improving the near shore water quality of the lake. The bank stabilization portion is protecting 140' of easily erodible bank with the use of armor stone, geosynthetic turf reinforcement and native plants. It is estimated that over 70 tons of soil erosion will be kept out of Lake Superior per year, thus protecting nearby trout spawning habitats.

- 9. What motivated your organization to initiate the project?** If the program was the direct result of an enforcement action, the government agency must prove that the program goes above and beyond the corrective measures required to solve the issue.

The local soil and water conservation district approached the University of Minnesota Duluth thinking that the Glensheen property would be a perfect location to show the public the benefits of low impact development designs for parking lots. When the Minnesota Board of Water and Soil Resources became involved, they thought that repairing the eroding shoreline beneath the parking lot would be a great demonstration project as well. With the assistance of the partnering agencies and funding assistance from the Great Lakes Commission, the University of Minnesota Duluth was fully behind the project.

- 10. Does the program serve as a model or will it impact other programs?** Describe the effects your program has had on others already, or how it may impact others in the future. Will it promote environmental awareness? Does it provide leadership for other government agencies?

Glensheen Historic Estate is a museum run by the University of Minnesota Duluth. The museum has approximately 70,000 visitors a year. The projects are located near the museum gift shop and adjacent to the area where visitors wait for the tours to start. As part of the project, a permanent informational sign is being developed that visitors can read while they wait. Attached are the temporary informational signs posted during construction. Based on the questions the gift store clerks have received, the public has been very interested in the projects and it has been a great informational tool for storm water pollution prevention. Since most low impact development projects initiated by the local soil and water conservation district are on private property, up until now there has not been a good example for the general public to see. Both projects have taken place outside of or immediately adjacent to the fee area so they are available for public viewing 24/7. The low impact development portion of the project completed last year has been used as a visible example in several local storm water pollution prevention seminars. It is a near certainty that when the bank stabilization is completed this fall it too will be used as a visible example of erosion prevention.

- 11. Is the project innovative?** If so, explain how it is new or goes beyond commonplace in government.

Shoreline conditions are rapidly changing along Lake Superior's North Shore with increased tourism, business, and private development taking place. Innovative methods of treating the runoff from these changed conditions are imperative to maintaining the health of the lake. Additionally, addressing the natural shoreline erosion that creates critical water quality concerns goes hand-in-hand with addressing non-point source pollution that is caused by increased shoreline development. The Glensheen project combines a traditional bank stabilization method of rock riprap revetment with the innovative method of planting native, deep-rooted species to help stabilize the upper bank. Minimizing the riprap toe installation reduced cost, improved aesthetics, saved existing vegetation, and enabled the armorment to tie into an existing historic retaining wall. The use of bio-retention and grassy swales as a retro-fit to treat runoff from an already existing parking lot is a new and seldom-used solution for addressing non-point source pollution in Minnesota, especially in the northern part of our state. As an example project that is highly visible, this could lead to the increased use of vegetative and other "bio"-measures to help reduce non-point source pollution across northern Minnesota.

- 12. Does the project increase efficiency?** If so, explain how. How does the project save time, money and resources? (For example, does it reduce costs? Is there a payback period needed to recover project costs?)

This permanent fix should eliminate annual maintenance activities associated with the previous reoccurring erosion of ditches and shorebank. There will no longer be a need for sediment removal or gully erosion preventative measures.

- 13. How did you hear about the Governor's MnGREAT Awards?**

- E-mail
- MnSCN e-mail listserv
- OEA's Web site
- Previous winner
- Other source: