

2010 Project Abstract

For the Period Ending June 30, 2013

PROJECT TITLE: **Integrating Environmental and Outdoor Education in Grades 7-12**

PROJECT MANAGER: Jeff Ledermann,
Environmental and Outdoor Education Coordinator

AFFILIATION: Minnesota Department of Education

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FUNDING SOURCE: Environment and Natural Resources Trust Fund

LEGAL CITATION: **M.L. 2010, Chap. 362, Sec. 2, Subd. 8g;**
M.L. 2011, 1st Special Session, Chapter 2, Article 3, Subd. 18. Carryforward (b)

APPROPRIATION AMOUNT: \$300,000

Overall Project Outcome and Results

With research indicating that students are increasingly disconnected from nature, the Minnesota Department of Education (MDE) in cooperation with the Department of Natural Resources was funded to hire a full-time coordinator to lead a project to train and support grade 7-12 teachers to integrate environmental and outdoor education (EOE) into the instruction of academic standards. Professional development and grants of up to \$8,500 were provided to six pilot schools to support 50 teachers and administrators in their use of the environment and outdoors as a context for student learning, which resulted in engaging over 1,000 students in EOE on a regular basis. A full report of the project, including evaluation of the training and student learning and model lessons, will be submitted to LCCMR.

Beyond the original goals of the project, the project coordinator also developed partnerships with several EOE providers to coordinate and offer five, additional, day-long regional workshops at minimal cost that were attended by 108 additional educators not from the pilot schools.

The project coordinator also developed and implemented Minnesota's participation in the first two years of the U.S. Department of Education's Green Ribbon Schools Program that recognizes schools for efforts to reduce their environmental impact and implement EOE throughout their curriculum. Minnesota led the nation with the most applicants in 2013 and seven Minnesota schools and districts were among 156 schools that received the national award to date. Workshops led by the coordinator at the sites of Minnesota's three 2012 national honorees were attended by over 100 people.

A position at MDE to integrate EOE has provided credibility and prioritization of EOE at Minnesota schools and within the department. It has resulted in better coordination among Minnesota's many EOE providers and plans exist for future coordination with MDE standards and health program staff.

Project Results Use and Dissemination

Information about the project, including the final report and model lessons, will be posted on the SEEK (Sharing Environmental Education Knowledge) website at www.seek.state.mn.us, hosted by the Minnesota Pollution Control Agency.

In addition to the numerous EOE workshops and training led by the coordinator, the coordinator has directly reached over 2,300 other educators through technical assistance and teaching, including participating in several workshops, programs and events. The coordinator also made regular efforts to promote activities related to the project and the benefits of environmental and outdoor education whenever possible throughout the duration of the project. EOE information, resources and achievements, such as the Green Ribbon Schools honorees, were regularly shared through MDE's Superintendents mailings and department listserves, and newsletters and listserves by SEEK, Minnesota Association for Environmental Education, Minnesota Science Teachers Association, Green Schools Coalition, Children and Nature Connection, Minnesota Sustainable Communities Network and many others.

The coordinator had occasional opportunities to do some media activities, including a 20 minute interview about the value of EOE on the April 1, 2013 show of the podcast, Mom Enough, which has a national following of several thousand listeners. The interview can be found at <http://momenough.com/2013/04/lets-get-outside-tips-for-parents-and-teachers-from-an-environmental-educator-and-creative-dad>. Local media from the communities of the pilot schools and Green Ribbon School honorees also developed news stories covering the value of EOE activities.

The introductory EOE regional workshops developed with the DNR, Jeffers Foundation and other local partners have led to additional opportunities for coordinated workshops. In particular, the Jeffers Foundation has expressed interest in continuing to work with MDE on future workshops patterned after those developed during the project.

The evaluation of the project, which was conducted by Dr. Julie Ernst, University of Minnesota – Duluth, was a great opportunity for her to expand on her nationally-recognized environmental education research. She is hoping to publish a research paper at some point summarizing the evaluation of the project, which will hopefully help inform and guide future research in the field.

Environment and Natural Resources Trust Fund (ENRTF) 2010 Work Program Final Report

Date of Report: June 28, 2013
Final Report: June 28, 2013
Date of Work Program Approval: June 9, 2010
Project Completion Date: June 28, 2013

I. PROJECT TITLE: Integrating Environmental and Outdoor Education in Grades 7-12

Project Manager: Jeff Ledermann, Environmental and Outdoor Education Coordinator, After June 30, 2013 – Beth Aune, Director, Academic Standards and Instructional Effectiveness
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Location: A work station for the project coordinator will be established at the Minnesota Department of Education, 1500 Highway 36 West, Roseville, Minnesota. Project activities will be implemented statewide.

Total ENRTF Project Budget:	ENRTF Appropriation	\$ 300,000
	Minus Amount Spent:	\$ 300,000
	(through 6/28/13)	
	Equal Balance:	\$ 0

**Legal Citation: M.L. 2010, Chap. 362, Sec. 2, Subd. 8g
M.L. 2011, 1st Special Session, Chapter 2, Article 3, Subd. 18. Carryforward (b)**

Appropriation Language:

\$300,000 is from the trust fund to the commissioner of education in cooperation with the commissioner of natural resources to train and support grade 7-12 teachers to integrate environmental and outdoor education into the instruction of academic standards.

The availability of the appropriation for the following project is extended to June 30, 2013: (2) Laws 2010, chapter 362, section 2, subdivision 8, paragraph (g), Integrating Environmental and Outdoor Education in Grades 7-12.

II. FINAL PROJECT SUMMARY AND RESULTS:

This project uses environmental and outdoor education (EOE) strategies to develop academic knowledge and skills. Professional development and program incentive grants will be provided to help teachers use the environment and outdoors as a context for student learning in science,

mathematics, social studies and physical education. Activities of this project align with the state goals for environmental education (Minn. Statute § 115A.073), strategies outlined in *A Greenprint for Minnesota*; and recommendations of the *Outdoor Education Legislative Report-2009* submitted by the Outdoor Education Advisory Committee.

Goals:

1. Students will master state academic standards through environmental and outdoor education approaches.
2. Students will develop environmental and outdoor knowledge and skills.

Results:

1. Project coordination and professional development for secondary teachers will be delivered regionally through a “train-the-trainer” model.
2. Incentives for innovative environmental and outdoor education models will be provided through mini-grants.

Outcomes:

1. At least 30 middle and high school teachers from five regions will gain knowledge, skills and resources to help students meet the project goals.
2. Five to ten proposals from secondary schools will receive funding to implement model environmental and outdoor education programs that implement the project goals. These programs will reach at least 750 students, 200 or more of whom are considered to be underachieving or at risk of underachieving.

Overall Project Outcome and Results

With research indicating that students are increasingly disconnected from nature, the Minnesota Department of Education (MDE) in cooperation with the Department of Natural Resources was funded to hire a full-time coordinator to lead a project to train and support grade 7-12 teachers to integrate environmental and outdoor education (EOE) into the instruction of academic standards. Professional development and grants of up to \$8,500 were provided to six pilot schools to support 50 teachers and administrators in their use of the environment and outdoors as a context for student learning, which resulted in engaging over 1,000 students in EOE on a regular basis. A full report of the project, including evaluation of the training and student learning and model lessons, will be submitted to LCCMR.

Beyond the original goals of the project, the project coordinator also developed partnerships with several EOE providers to coordinate and offer five, additional, day-long regional workshops at minimal cost that were attended by 108 additional educators not from the pilot schools.

The project coordinator also developed and implemented Minnesota’s participation in the first two years of the U.S. Department of Education’s Green Ribbon Schools Program that recognizes schools for efforts to reduce their environmental impact and implement EOE throughout their curriculum. Minnesota led the nation with the most applicants in 2013 and seven Minnesota

schools and districts were among 156 schools that received the national award to date. Workshops led by the coordinator at the sites of Minnesota's three 2012 national honorees were attended by over 100 people.

A position at MDE to integrate EOE has provided credibility and prioritization of EOE at Minnesota schools and within the department. It has resulted in better coordination among Minnesota's many EOE providers and plans exist for future coordination with MDE standards and health program staff.

Project Results Use and Dissemination

Information about the project, including the final report and model lessons, will be posted on the SEEK (Sharing Environmental Education Knowledge) website at www.seek.state.mn.us, hosted by the Minnesota Pollution Control Agency.

In addition to the numerous EOE workshops and training led by the coordinator, the coordinator has directly reached over 2,300 other educators through technical assistance and teaching, including participating in several workshops, programs and events. The coordinator also made regular efforts to promote activities related to the project and the benefits of environmental and outdoor education whenever possible throughout the duration of the project. EOE information, resources and achievements, such as the Green Ribbon Schools honorees, were regularly shared through MDE's Superintendents mailings and department listserves, and newsletters and listserves by SEEK, Minnesota Association for Environmental Education, Minnesota Science Teachers Association, Green Schools Coalition, Children and Nature Connection, Minnesota Sustainable Communities Network and many others.

The coordinator had occasional opportunities to do some media activities, including a 20 minute interview about the value of EOE on the April 1, 2013 show of the podcast, Mom Enough, which has a national following of several thousand listeners. The interview can be found at <http://momenough.com/2013/04/lets-get-outside-tips-for-parents-and-teachers-from-an-environmental-educator-and-creative-dad>. Local media from the communities of the pilot schools and Green Ribbon School honorees also developed new stories covering the value of EOE activities.

The introductory EOE regional workshops developed with the DNR, Jeffers Foundation and other local partners have led to additional opportunities for coordinated workshops. In particular, the Jeffers Foundation has expressed interest in continuing to work with MDE on future workshops patterned after those developed during the project.

The evaluation of the project, which was conducted by Dr. Julie Ernst, University of Minnesota – Duluth, was a great opportunity for her to expand on her nationally-recognized environmental education research. She is hoping to publish a research paper at some point summarizing the evaluation of the project, which will hopefully help inform and guide future research in the field.

III. PROGRESS SUMMARY AS of January 30, 2013

Progress Report – January 30, 2013

Implementation of environmental and outdoor education activities continue at the six pilot schools that received mini-grants as part of the project. All six of the pilot schools have been contacted numerous times by project staff in the last few months and have submitted interim reports to MDE. They appear to be on track with spending the mini-grant funds and implementing their projects. Staff are planning to visit each of the sites over the next few months.

The coordinator continued with the work mentioned previously regarding regional environmental and outdoor education day-long workshops to other teachers and administrators not in the pilot schools. In addition to the first workshop in Rochester, workshops were held at Collegeville, St. Paul, Sandstone and North Mankato. The workshops have been attended by a total of 106 teachers.

The project coordinator has also successfully led the second year of Minnesota's participation in the U.S. Department of Education's Green Ribbon Schools Program that recognizes schools for efforts to reduce their environmental impact, increase energy efficiency, provide safe and healthy environments for students and staff, and implement sustainable education throughout their curriculum. Fourteen applications were received this year and MDE is in the process of determining finalists for this year's award.

Since the start of the project, the coordinator has now shared EOE information and resources to over 2000 educators through technical assistance and teaching, including participating in several workshops, programs and events.

Amendment Approved - As approved by LCCMR staff on August 8, 2012

We have reviewed and approve your amendment request for M.L. 2010, Chap. 362, Sec. 2, Subd. 8g to more accurately reflect areas where the funds are being spent. The approval is according to the attached revised Attachment-A that:

1. Shifts \$20,363 of "Personnel" funds from Result-2 to Result-1 and reduces overall "Personnel" by \$10,000 and shifts those funds to "Travel, "Supplies" and "Substitute" teachers
2. Reduces the amounts for "Contracts" by \$348 and shifts those funds to "Travel, "Supplies" and "Substitute" teachers
3. Increases "Supplies" by \$2,000 up to \$3,000
4. Increases "Travel" \$3,648 up to \$5,776
5. Increases "Substitutes -for teachers participants" by \$4,700 up to \$7,000

Progress Report – July 30, 2012

The project coordinator has continued to work closely with the administrators and 30 teachers at the six pilot schools that received mini-grants as part of the project. Since the May 8, 2012 project amendment, five of the six schools have taken advantage of the opportunity to receive the additional allocation (up to \$3500 per school) for additional teacher training and curriculum development. All six of the pilot schools have been visited by project staff in the last few months and appear to be on track and demonstrating valuable results from their participation in the project.

Tapping into existing networks, the coordinator also developed partnerships with several EOE providers over the past few months to coordinate and offer a series of regional environmental and outdoor education day-long workshops at very minimal cost to other teachers and administrators not in the pilot schools. The first workshop was held July 11 in Rochester and was attended by 17 teachers. Three others are also scheduled for later this summer and fall with over 60 additional teachers already registered to participate.

The project coordinator also successfully developed and implemented Minnesota's participation in the pilot year of the U.S. Department of Education's Green Ribbon Schools Program that recognizes schools for efforts to reduce their environmental impact, increase energy efficiency, provide safe and healthy environments for students and staff, and implement sustainable education throughout their curriculum. Three Minnesota schools were among 78 schools that received the national award.

Since the start of the project, in addition to the previously mentioned teachers that have participated through the pilot and summer trainings, the coordinator has reached over 1300 other educators and 170 students through technical assistance and teaching, including participating in several workshops, programs and events.

Amendment Request – July 30, 2012:

An amendment to the agreement is necessary to adjust the budget to align with actual expenditures by pilot schools to attend the December 2011 training and more accurately reflect distribution of funds between Result 1 and Result 2. Most of the substitute reimbursements by the pilot schools were not submitted at the time of the amendment on May 8, 2012 and not accurately estimated for that budget revision. There is no change to the overall budget of the project, and the revised budget now more accurately reflects actual and expected costs to date. These changes only result in small shifts between some of the funding categories and more closely reflect that approximately 80% percent of project coordination of the project has been occurring in Result 1 and 20% in Result 2.

Amendment Approved - As approved by LCCMR staff on May 8, 2012

We have reviewed and approve your amendment request for M.L. 2010, Chap. 362, Sec. 2, Subd. 8g as follows:

Use the funds for the originally proposed second round of group training for the teachers to instead provide one or both of these teachers training or curriculum updating options:

1. Individual/customized training for teachers including funds to pay for workshops or training sessions and related travel expenses. Potentially could also pay for substitute teachers but not for teacher stipends.
2. Funds for teacher's time to adapt and revise their curriculum to integrate environmental and outdoor education in to it. This could potentially include a stipend for teacher's time to produce the updated curriculum products.

These options will be accomplished by making up to \$3,500 available on a reimbursement basis to each of the following six schools that originally received grants – up to a total of \$21,000:

- Concordia Creative Learning Academy, St. Paul
- Kennedy Community School, St. Cloud Public Schools
- Rockford Middle School Center for Environmental Studies
- River's Edge Academy, St. Paul
- Simley High School, Inver Grove Heights
- Waconia High School

The Attachment-A spreadsheet will be revised to move the funds totally \$21,000 originally to be used for the second round of training to the new category "Round 2 teacher development and/or curriculum updating grants." This will be done as follows:

- Reduce the "Supplies" category to \$1,000, down from \$4,000.
- Reduce the "Travel expenses in Minnesota" category to \$2,128, down from \$14,428.
- Reduce the "Substitutes" category to \$2,300, down from \$8,000.
- Add a new contracts category of \$21,000 for "Teacher training and/or curriculum updating."

Any funds not needed for these activities are to be returned to the ENRTF at the end of the grant period.

Amendment Request – May 8, 2012

An amendment to the agreement is necessary to reflect an adjustment to the workplans and budgets to align with a newly- identified need related to teacher training. Upon consultation with the project advisory committee, it was determined that the schools selected through the mini-grant RFP would be the recipients of the training to maximize the impact of the project, provide additional incentive for schools to apply and get the best results at the selected schools. As noted in Result/Activity 1, Outcome 4, the intention was to provide teachers with two rounds of training delivered by the Minnesota Department of Education (MDE). The following six schools were selected project pilot schools and awarded mini-grants in the amount of up to \$5,000 in late November 2011 and thirty-two teachers and administrators participated in the first group training on Dec. 8-9 at Camp Courage near Maple Lake, MN:

- Concordia Creative Learning Academy, St. Paul
- Kennedy Community School, St. Cloud Public Schools
- Rockford Middle School Center for Environmental Studies
- River's Edge Academy, St. Paul
- Simley High School, Inver Grove Heights
- Waconia High School

It became clear at the training from discussions with the attendees and further consultation with the advisory group, trainers and evaluators that another large group training wouldn't as efficiently and effectively serve the needs of the schools as well as specialized or customized trainings. The participating schools and teachers all have diverse needs that includes different natural resources on or near campus (water, woods, prairie), different student groups (middle, high, charter, alternative) and different project focus (water sampling, trail development, outdoor recreation, gardening, etc.). While the initial training was effective at laying the ground work and

preparing them to launch their projects and programs, additional professional development needed to be customized.

The proposed amendment would be to use existing training funds from Result/Activity 1 to amend the existing school mini-grant agreements to provide each of the pilot schools with an additional \$3500 for professional development activities that will allow them to most effectively integrate environmental and outdoor education into their projects and programs. MDE contract and grant staff have determined that because of the new information and needs to revise the agreements, an amendment to the original awards would be appropriate.

The specific activities that we would like to include in the additional amendment of the mini-grants to the schools are the same activities that were going to be provided as part of the group training or compatible with their original mini-grant award. The focus is of the additional award is professional development that improves their capacity to integrate environmental and outdoor education. Professional development activities would need to be submitted to MDE and approved by the project coordinator. Activities may include:

- Hiring EOE consultants to deliver environmental and outdoor education programming to staff – examples would include the DNR delivering on-site Project Learning Tree trainings or Eco Education training teachers to assist students with community-based projects.
- Sending staff to relevant environmental and outdoor education training – examples would workshop fees for Hamline University’s River Institute or training by Outward Bound on leading students on extended experiential field trips
- Providing substitutes for teachers to develop and/or adapt school curriculum to integrate environmental and outdoor education – examples would include substitutes made available for teachers during the school year to adapt or revise their standards-based curriculum to include lessons that are moved outside or include teaching a unit with an environmental context. Revised and adapted lessons would become part of their standard curriculum moving forward.

Funding would be used to cover fees for consultants, workshop fees to attend trainings, substitute teachers, travel associated with attending training (mileage, meals and lodging). All funding for the mini-grants and amendments are distributed as reimbursements, and twenty percent of the award funds will be held until final reports are submitted at the end of the project.

Progress Report – January 25, 2012

With the previously mentioned delays now behind us, substantial progress has been made on the project in the last several months. An agreement with an evaluator that is a nationally-known environmental education researcher was completed. Three highly-qualified and experienced regional trainers were hired and are on the job. The request for proposals to schools for the mini-grants was released in late August and 21 proposals were submitted by the end of September. With the input of the advisory committee, a diverse group of six schools were selected to participate in the project and grants agreements were completed in November. In early December 32 teachers and administrators from the project schools participated in a two-day training and completed pre and post surveys related to the training. Project coordinator, the evaluator and

teachers are currently working to finalize student evaluation. Teachers are finalizing project plans and will begin implementation soon.

Amendment Approved - As approved by LCCMR staff on August 10, 2011

Progress Report – August 3, 2011

The project has been delayed once again by the State shutdown, but in the previous quarter a request for proposals for the project evaluator was released. 15 potential contractors requested the full solicitation, and MDE has selected a vendor. We are in the process of negotiating and completing an agreement. Evaluator should be in place within the next month.

The advisory committee met for the first time on April 27, 2011. A wide range of environmental and outdoor education (EOE) professionals and organizations are represented on the committee and have agreed to serve on various sub-committees to provide input and guidance to the project.

Notice of the trainer positions were posted in June 2011 and widely promoted throughout the state environmental and outdoor education networks. Eighteen potential candidates submitted letters of interest in the positions, including several that appear to be highly-qualified. Once the amended workplan is approved, trainers will be selected and work will begin in earnest to recruit and select schools for the targeted professional development and mini-grants.

Since the start of the project, the coordinator has been busy promoting the project, coordinating with other MDE staff to integrate EOE into their work, providing resources, technical assistance and teaching, including participating in several workshops and programs that directly reached over 200 teachers and 100 students.

Amendment Request – July 26, 2011:

An amendment to the agreement is necessary to adjust the workplans and budgets to align with the delayed start of the project (see extension request) and subsequent extension. The additional project time required a corresponding change to the coordinator's wages and benefits and several of the other project budget items.

Extension Approved: July 20, 2011

Progress Report – March 18, 2011

Due to circumstances stated below, the start of the project was delayed and a one-year extension of the project was requested on December 22, 2010.

Due to a hiring freeze, the posting for the coordinator position was delayed until December. Initially the posting specified that only current state employees were eligible. When it was determined that there were insufficient applicants, the eligibility requirements were expanded by removing the limitation of being a state employee. Sixty applicants were screened for eligibility, and interviews were held in January.

Jeff Ledermann was selected as the project coordinator and started work at MDE on March 16, 2011. As a result there have been no other activities and expenditures from the grant previous to Jeff's start date.

Extension Request - December 22, 2010

IV. OUTLINE OF PROJECT RESULTS:

RESULT/ACTIVITY 1: Professional development for secondary education teachers delivered regionally through a "train-the-trainer" model

Description: The purpose of the professional development component is to equip teachers with the knowledge, skills and resources necessary to help students:

1. Master state and local academic standards through an environmental and outdoor education approach.
2. Develop their environmental and outdoor skills and knowledge.

The professional development content will include the following objectives for teachers:

1. Understand and use environmental concepts to inform decisions about maintaining a sustainable lifestyle and taking actions on environmental issues.
2. Improve outdoor skills to foster appreciation of the outdoors and lifelong recreational habits that contribute to emotional and physical well-being.
3. Identify possible environmental and outdoor applications of Minnesota's K-12 academic standards in one or more of the following subjects: science, mathematics, social studies and physical education.
4. Learn about instructional strategies that utilize the outdoors and environment as an integrating context.
5. Develop action plans that demonstrate understanding and application of the professional development program objectives.

The objectives and content of the professional development will be further refined by the leaders of the professional development program as described in the next section. The following are some examples of content that could be included in the teacher training. Teacher could learn how to help students:

- Apply knowledge of the ways that species adapt to their environment by exploring the shelters that various animals use in the forest and learning how to build shelters for human survival in the wilderness.
- Learn about food chains in a lake ecosystem and how to apply that knowledge to determine locations and fishing strategies for catching a particular species.

- Map a small plot of land for identification of plants and animals that live there using mapping, data collection and geometry skills.
- Develop a personal fitness plan through a comparison of outdoor activities in terms of caloric expenditure, environmental impact, and contribution to mental and emotional well-being.
- Design projects to study a natural area and create management plans toward achieving student-developed goals (e.g., improving a stream for trout habitat or developing a trail for bird observation and cross-country skiing).

The Minnesota Department of Education will hire one full-time unclassified staff to coordinate the efficient use of regional and state resources in the design and implementation of professional development and program grants that use an environmental and outdoor education approach. Under the coordinator's leadership, a statewide system of professional development will be created using a "train-the trainer" model. An *advisory committee* will be formed consisting of: 1) Licensed teachers from multiple disciplines including, but not limited to, science, physical education, social studies and mathematics who possess interest and/or knowledge in environmental and outdoor education; 2) Providers of outdoor education and environmental education such as environmental learning centers, outdoor industry partners, and members of conservation and sporting organizations with expertise in certain facets of outdoor recreation.

In collaboration with the project coordinator and advisory committee representatives, a set of *regional trainers*, selected by the project coordinator, will plan professional development activities (training modules) and develop resources that can be used in various regions of the state. The trainers will be educators who have knowledge and skills of best practices in professional development, especially in the areas of environmental and outdoor education. Under the direction of the project coordinator, the *trainers* will provide professional development to middle school and high school teachers in their respective regions with preference given to interdisciplinary school teams of teachers. The regional trainers will continue to provide follow-up and ongoing technical assistance for teachers in their region for the duration of the grant period. The coordinator will select educators with secondary classroom knowledge and experience, especially in the areas of environmental and outdoor education, to be regional trainers.

Summary Budget Information for Result/Activity 1:

ENRTF Budget: \$ 221,241
Amount Spent: \$ 217,293
Balance: \$ 3,948

Deliverable/Outcome	Completion Date	Budget
<p>1. Coordinator and advisory committee develop the program plans including:</p> <ul style="list-style-type: none"> A. The structure, content, scope and delivery of professional development; B. Names of possible regional trainers; C. Strategies for the recruitment of teachers; and D. Resources for use in teacher training. <p>This outcome will involve the project coordinator and the advisory committee of approximately 12 people.</p>	<p>September 31, 2011</p>	<p>\$ 42,359</p>
<p>2. Regional trainers participate in planning meetings with project coordinator, select advisory committee members and project partners to accomplish the following:</p> <ul style="list-style-type: none"> A. Create a template and structure for the regional professional development plans (i.e., training modules); B. Develop the evaluation plan for the professional development to be provided to teachers; and C. Plan a two-day workshop for teachers. <p>This outcome will involve the project coordinator and 5 state trainers and the evaluator.</p>	<p>November 31, 2011</p>	<p>\$ 27,301</p>
<p>3. Regional trainers with project coordinator, select advisory committee members and project partners provide two-day training to a minimum of 30 middle and high school teachers who collectively serve 750 or more students in the Fall of 2011. In the Summer and Fall of 2012, through additional grant funding of \$3,500 per school, the selected pilot schools will</p>	<p>January 20, 2011 and November 4, 2012</p>	<p>\$ 77,213</p>

<p>support additional, customized teacher training and professional opportunities to the teachers based on the needs of the participants to best address the goals of the project. All professional development plans will require prior approval by project coordinator. Participants commit to implement environmental and outdoor education with their students and attend follow-up sessions during the school year.</p> <p>This outcome will involve at least 30 teachers plus 3 regional trainers, the coordinator and evaluator.</p>		
<p>4. Teachers implement environmental and outdoor education experiences and regional trainers provide group follow-up sessions and ongoing teacher support during the 2011-2012 and 2012-2013 school year. Teachers will submit their lessons to the regional trainers for possible inclusion on the SEEK (Sharing Environmental Knowledge) website.</p> <p>This outcome will involve at least 750 students, 6 regional trainers, the coordinator and evaluator.</p>	May 15, 2013	\$ 52,004
<p>5. Conduct an evaluation of the professional development program component. Write a report of the professional development program activities, including results and recommendations for teacher training and student learning experiences that should continue beyond the LCCMR grant period. Identify model lessons that could be posted on the SEEK (Sharing Environmental Knowledge) website.</p> <p>This outcome will involve the evaluator and the coordinator, the 12 advisory board members and 3 regional trainers.</p>	May 31, 2013	\$ 22,364
TOTAL for two years (Result 1)		\$221,241

Result Completion Date: June 30, 2013. Work Program progress reports will be submitted not later than August 2011, January 2012, July 2012 and January 2013.

Final Report Summary:

The final Advisory Committee meeting was held May 22, 2013 at Rockford Middle School, one of the project's pilot schools. The committee toured Rockford Middle School's newly restored outdoor learning area, visited a classroom preparing for an outdoor education trip and listened to a presentation by Rockford staff on their participation in the pilot and the benefits it provided to

their students. Most significantly, since becoming an environmentally-focused school, Rockford went from dwindling enrollment a couple of years ago to significantly increasing enrollment. While their STEM approach has also been popular, they attribute much of the interest to their focus on the environmental and outdoor education. The Advisory Committee also heard a summary of the project coordinator's recent activities and summaries of each of the pilot schools' outcomes during the project. They also provided input on the primary promising activities that will be highlighted in the final report

Five of the six pilot schools took advantage of the additional resources for training offered through amendments to the original grant awards so they could be tailored to their individual and school needs. Using the state's academic standards as starting point, the trainers and coordinator worked with the regional trainers to find opportunities and resources to help support their revision and adaptation of their school's curriculum in multiple content areas. Identifying resources and outdoor locations on or near their campus was also a focus. Many schools noted the benefits of working with local partners to enhance their EOE efforts.

The schools have pledged to continue to work on expanding the integration of the environmental and outdoor education throughout their curriculum by revising and adapting lessons that were started during the project. Every school has implemented many EOE lessons that integrate multiple content areas and are highlighted in the final report. While the project coordinator was able to collect ten model lessons from the participating teachers that are also posted on SEEK (www.seek.state.mn.us), it was a challenge to get samples of model lessons from the teachers that could be shared with others. Many teachers reported they were overwhelmed with other teaching demands over the last few months of the school year and had difficulty finding time to compile the lessons in a consistent format, which was supplied by the project coordinator.

With some prodding, all of the schools also completed the necessary student and teacher surveys so the evaluator could complete her work to fully assess the impact of the project. The evaluator found the professional development support during the project did have a significant impact. Many educators entered the project with a relatively high knowledge of the environment, but the evaluation found that the training provided significantly increased teachers' pedagogical knowledge and skills, as well as their self-efficacy beliefs, relating to integrating environmental and outdoor education into the academic curriculum. The teachers also provided many specific suggestions relating to desired outcomes, format, and resources that are highlighted in the evaluation report and can be used to guide future professional development efforts.

The project coordinator also led Minnesota's involvement in the second year of the national Green Ribbon Schools (GRS) recognition program. Fourteen applications were submitted in December 2012 and three schools and one district were submitted by MDE for consideration for the national honor. Jeffers Pond Elementary in Prior Lake, Heritage Middle School in West. St. Paul, School of Environmental Studies in Apple Valley and the Prior Lake – Savage Area School District were among the 78 schools to receive the national designation as a Green Ribbon School. The U.S. Department of Education and several other federal officials are planning to visit Minnesota's honorees in July of 2013.

Regarding the budget, total personnel costs for the project ended up slightly higher than the amended budget estimates due to state employee contract settlements resulting in wage and benefit increases over the last several months. However, these expenses were primarily offset by

schools not using all of their grant awards and slight reductions in the total project expenses for supplies, travel and substitute teachers. MDE covered the additional \$853 that the project was over the project budget appropriation of \$300,000.

Many organizations provided in-kind support to the project by donating staff time, meeting space and support to the project, especially for the teacher training. MDE contributed office space and use of an agency vehicle for the project coordinator throughout the project, which amounted to approximately \$20,000.

Result Status as of January 30, 2013:

The fourth Advisory Committee meeting was held October 2, 2012 at Garlough Environmental Magnet School in West St. Paul, one of Minnesota's first Green Ribbon Schools. The committee provided input on how to capture model EOE lesson plans or some other sort of documentation from the teachers in the pilot projects that could be shared with other educators (likely posted on SEEK). Advisory Committee members also supported promotion of the regional workshops and continue to help with promotion and evaluation of the Green Ribbon Schools Program.

The six pilot schools have all submitted interim reports, which indicated they completed progress on training and curriculum development associated with their projects. They have also continued to cooperate with the evaluator to assess outcomes of the student and teacher involvement in the project.

The project coordinator has also led Minnesota's involvement in the second year of the national Green Ribbon Schools (GRS) recognition program. Applications were due for the 2012-13 awards in late December, and 12 schools and two districts applied for the recognition. To create more awareness of the program, highlight last year's Minnesota GRS winners and to provide the opportunity for educators to see first-hand the benefits of GRS schools, the coordinator worked with many green school providers and the host schools to pull together free, three-hour workshops at each of the 2012 GRS winners. Over 100 educators attended the workshops in West St. Paul, St. Joseph and Duluth last October and November. MDE Assistant Commissioner Rose Chu also participated and recognized the efforts of the 2012 winners. MDE is in the process of evaluating this year's applications and will be forwarding finalists to the U.S. Department of Education in February.

The project coordinator, regional specialists and several EOE partners continue to offer day-long workshops at minimal cost for educators at several locations throughout Minnesota. Since the last report, workshops have been held at St. John's University Arboretum in Collegeville, Como Park in St. Paul, Audubon Center of the Northwoods in Sandstone and South Central Service Cooperative in North Mankato. They have been attended by 102 educators. Evaluations from the workshop have been extremely positive. All of the attendees have felt that the workshops were "effective" or "very effective" in helping them integrate EOE into their classroom. Comments from participants:

- Fabulous orchestration of presenters and info!
- Excellent workshop! Worth my time!
- Thank you for a wonderfully organized and informative workshop. Hats off to Jeff and his team. Job well done.

- It was great to practice what we preach – re-use water bottles, bulk food, getting outside!
- The resources were excellent.
- Thank you – super interesting – loved the fact that we saw the neatest resources and met the tops in the field of EOE.
- Lots of great resources and ideas. Very worthwhile and a beautiful location.
- This was absolutely wonderful and so affordable. I hope you do more these classes during all seasons. Thank you so much for such an inspirational day and for treating us like professionals.
- Wonderful workshop with lots of information, resources and ideas to get kids outdoors.
- It was nice to see examples of activities/ideas that can be integrated immediately.

Result Status as of July 30, 2012:

The third Advisory Committee meeting was held May 3, 2012 at Jeffers Pond Elementary in Prior Lake. The committee provided valuable feedback into the summer EOE workshops. Several Advisory Committee members also provided input into the design of the Green Ribbon Schools Program. They also supported the promotion of the program and evaluation of Green Ribbon School applicants.

So far, five of the six pilot schools have submitted requests for the additional funding for training and curriculum development. Most of the trainings and curriculum development is occurring this summer, but it must be completed by early November. The initial report from the project evaluator regarding the MDE-hosted December 2011 training attended by the 32 teachers and administrators found significant increases in teachers’ pedagogical knowledge and skills relating to integrating EOE into the academic curriculum and in their self-efficacy toward integrating EOE into the academic curriculum. Outcomes of the teacher professional development will also be evaluated at the end of the project.

The project coordinator also successfully led Minnesota’s involvement in the national Green Ribbon Schools recognition program. Sixteen Minnesota schools applied for the recognition, and over 200 individuals accessed the on-line application. Many commented that the process helped encourage them to make their facilities, policies and practices more sustainable, and provided them with great ideas and resources to educate students on the environment and outdoors. Garlough Environmental Magnet School in West St. Paul, Kennedy Community School in St. Joseph and North Shore Community School in Duluth were among 78 schools recognized in Washington, D.C. on June 4 with the inaugural National Green Ribbon Schools Award from the U.S. Department of Education.

Seventeen teachers not associated with the pilot schools attended the first summer regional EOE workshop at the Cascade Meadow Wetlands & Environmental Science Center in Rochester on July 11, 2012. All of them felt that the workshop was “effective” or “very effective” in helping them integrate EOE into their classroom, and all but one of them identified specific things they will implement in the next school year. One of the teachers had this to say about the workshop: “I wanted to write and thank you for putting on such an informative, energizing workshop at Cascade Meadow today. I learned a great deal and left the workshop feeling excited about the coming school year!” Several others wrote similar comments on their evaluations.

Result Status as of January 25, 2012:

Advisory Committee members participated in the selection of the regional specialists. Three highly-qualified and experienced specialists have been hired:

- Su Beran – a former state education coordinator for MPCA and teacher, Sue has done masters work in experiential education at Minnesota State University. She has years of experience providing EE technical assistance and training teachers, including the State EE scope and sequence document.
- Kim Kovich – is a science teacher at Champlin Park High school and served on the Outdoor Education Task Force. He has a Master's in Education from the University of Minnesota. He has been a high school teacher since 1982 and has held many leadership positions on several organizations, including many outdoor groups.
- Patty Born Selly – is an environmental and outdoor education consultant and has worked on several education projects for the MDNR and has 15 years of experience training teachers. She has a Master's in Education from Hamline University.

After a request for proposal process to hire an evaluator, an agreement was completed with the University of Minnesota-Duluth (UMD) to conduct the evaluation. Dr. Julie Ernst, who has considerable experience and is nationally-known for her work evaluating environmental education in school settings, will be the project lead at UMD.

The regional specialists, evaluator and Advisory Committee members, under the direction of the Project Coordinator, designed and delivered a successful two-day training on Dec. 8-9 at Camp Courage near Maple Lake, MN. Several other environmental and outdoor education experts were recruited by the Project Coordinator and donated their expertise and resources to the training, including representatives from DNR, Jeffers Foundation, Prior Lake – Savage schools, UM Extension, St. John's University, Three Rivers Park District, Pheasants Forever and several community members that were interested in supporting the pilot schools in their area. Thirty-two teachers and administrators from the pilot schools participated in the training. Working with the evaluator, the Project Coordinator delivered pre and post surveys of the teachers regarding the professional development. Final results have not been tabulated yet by the evaluator, but feedback from the participants was extremely positive. One experienced teacher stated it was the best professional development they had ever attended and another shared:

“I found the training extremely helpful and it really opened my eyes to a much broader incorporation of EOE than I had ever imagined! The activities demonstrated how well the outdoors can facilitate student learning in all disciplines. I appreciated that we were given the opportunity to be students and experience how engaging EOE really is! It was so much better than reading it in a book.”

The regional trainers have been assigned to continue supporting the trained teachers over the next several months as they adapt their curriculum and begin to implement EOE lessons. They will also be determining additional professional needs that the project will support over the next several months. Additional surveys of the teachers and their students will be conducted as the project progresses.

Because of the direct linkages to environmental education, the Project Coordinator has also led Minnesota's involvement in the national Green Ribbon Schools recognition program. It has provided an opportunity to encourage and recognize schools that are not only making their

facilities, policies and practices more sustainable, but educating students on the environment and outdoors. Applications for the recognition are being accepted through Feb. 22, 2012, and the Commissioner will forward up to four schools for consideration for the national award. Several schools have expressed interest and are in the process of applying.

The Project Coordinator is also exploring options to provide training to additional teachers beyond the original scope of the project during the remaining months of the project. While little or no funding is available from the project to cover expenses or substitutes for additional teachers to be trained, several organizations have expressed interest in partnering with MDE to support additional workshops and reduce costs to participants.

Result Status as of August 3, 2011:

Research has been done and information gathered on successful EOE programs, including observing and participating in successful EOE workshops and programs in the region that were attended by 238 educators to date.

In addition to notifying the workshop participants in person, program information was also developed, including a webpage at MDE and promotional materials. Information has been distributed through SEEK, education listserves and networks, including a featured article in the Minnesota Science Teachers Association newsletter, and at several meetings and educator gatherings.

A formal invitation for proposals was announced in early summer to manage the evaluation component of the project. After the formal MDE review process, a qualified contractor has been selected for the evaluation. We are in the process of negotiating an agreement and contract and they should be in place by the end of August.

Position descriptions for the regional trainers were developed and notice of the positions were made through SEEK and other electronic EOE listserves and networks. Advisory committee members reviewed the position descriptions and assisted with recruitment. 18 qualified educators have applied for the positions. We plan to bring trainers on board in the next few weeks.

Result Status as of January 2011:

Hiring of coordinator position delayed due to hiring freeze. Applications for the coordinator position have been received and screened for eligibility. Interviews are scheduled for early January.

RESULT/ACTIVITY 2: Incentives for innovative environmental and outdoor education models provided through mini-grants.

Description: Middle schools and high schools will be invited to submit proposals for the design and implementation of innovative environmental and outdoor education programs that bolster student achievement in middle school or high school science, physical education, social studies and/or mathematics. Other non-profit providers of environmental and outdoor education may partner with middle schools and high schools to develop the grant proposals and implement the grant activities. Funding priority will be given to programs that target traditionally underachieving or at-risk student populations. A small number of programs (5-10) will receive grants ranging from \$3,000 to \$10,000 apiece. Funded proposals, collectively, will reach at least

750 students, 200 or more of whom are considered to be underachieving or at risk of underachieving.

Summary Budget Information for Result/Activity 2:

ENRTF Budget: \$ 78,759
Amount Spent: \$ 83,560
Balance: \$ -4,801

Deliverable/Outcome	Completion Date	Budget
<p>1. Design and announce the RFP for innovative environmental and outdoor education programs.</p> <p>This outcome will involve the coordinator, approximately 4 advisory committee members and the evaluator.</p>	August_30, 2011	\$ 16,400
<p>2. Select 5-10 proposals to be funded \$3,000 – \$10,000 per proposal.</p> <p>This outcome will involve the coordinator, evaluator and approximately 4 volunteers, following established guidelines of the MDE grants division.</p>	November 1, 2011	\$ 8,218
<p>3. Implement and support the grant programs (November 1, 2011 – May 15, 2013).</p> <p>This outcome will involve the coordinator, evaluator, 3 regional trainers, approximately 6 school grant recipients, and at least 750 students.</p>	May 15, 2013	\$ 25,311
<p>4. Monitor and evaluate the grant programs (November 1, 2011 – June 30, 2013).</p> <p>This outcome will involve the coordinator, evaluator and approximately 6 school grant recipients.</p>	June 30, 2013	\$ 12,466
<p>5. Write a report of the grant program activities including results and recommendations for activities that should continue beyond the LCCMR grant period.</p> <p>This outcome will involve the coordinator, evaluator and advisory committee.</p>	June 30, 2013	\$ 16,364
Total for two years (Result 2)		\$ 78,759

Result Completion Date: June 30, 2013. Work Program progress reports will be submitted not later than August 2011, January 2012, July 2012 and January 2013.

Final Report Summary:

The six pilot schools successfully completed implementing their mini-grant projects and submitted their final program and financial reports. The six schools each received grants ranging from \$4,549.94 to \$8,500.00. Total awards to the schools added up to \$44,626.51. Because of the teachers' busy schedules, it was difficult to connect with the teachers and find a time that was convenient to visit them. However, regional trainers and the project coordinator visited all the schools at least once and several schools more than once to verify the reports.

The teachers reported that 1,037+ students were engaged by the projects at their schools and a similar amount will be impacted each year going forward. The teachers worked with the project evaluator to assess student outcomes throughout the project. The evaluator looked at many different options to assess the students. It was hoped that comparisons could be made with Minnesota Comprehensive Assessments, but that proved difficult for many reasons. However, the evaluator did find that potentially students in the EOE projects at two schools may be associated with stronger science and reading achievement on the MCAs than in comparable schools. Teachers and students perceived that the project helped students achieve standards in multiple content areas and created a positive influence on engagement, EOE sensitivity, understanding and skills. Surveys of students suggested a significant increase in understanding of ecological systems among participants. The students from two schools that took the national Middle School Environmental Literacy Survey scored significantly higher on MSELs than the national mean.

The mini-grants proved to be a big incentive and valuable tool to enable the schools to accomplish a lot of quality EOE outcomes. Specific results and recommendations from the project, including the full evaluation report, are available in the final project report that is being submitted to LCCMR and will be posted on SEEK.

Result Status as of January 30, 2013:

The six pilot schools reported in their recent interim reports that they have plans or have expended their mini-grants and have implemented the majority of their grant activities. Staff continue to monitor and support the schools and plan to visit each of them at least once more before the end of the project.

Teachers continue to engage their students in the project and work closely with the project evaluator to assess the outcomes of the project. Last September the pilot schools did pre-assessments with at least two classrooms of their current students with questionnaires developed by the project evaluator. The same students will be given post-assessments this spring. The evaluator is working with a couple of the larger projects to assess the feasibility of using Minnesota Statewide Comprehensive Assessments to see if any comparisons can be made with that data also. The national Middle School Environmental Literacy Survey (MSELs) developed by the Center for Instruction, Staff Development & Evaluation will again be administered to two additional classes in the spring.

Result Status as of July 30, 2012:

The six pilot schools are in various stages of implementing their grant projects. They are being monitored and supported by the project coordinator and the three regional specialists, including site visits to all six schools in the last few months. Teachers at the pilot schools were required to identify the number of students impacted during the project, which they estimated to be over 1200 students. In April, the pilot schools were asked to provide at least two classrooms of their current students with an end of year one assessment and complete teacher questionnaires developed by the project evaluator. Two of the schools also volunteered to have a section of their eighth graders participate in the national Middle School Environmental Literacy Survey (MSELS) developed by the Center for Instruction, Staff Development & Evaluation.

Despite only partial implementation of some of the grant projects, the project evaluator found that the 159 students assessed in April reported that participating in their EOE project somewhat increased their academic engagement, environmental sensitivity, and understanding of ecological systems. This is consistent with the seven teacher respondents on the post year one questionnaire, who indicated somewhat of an increase in these areas for students who participated in the EOE projects. Students indicated learning outdoor skills such as survival skills (fire and shelter building), navigation, and snow shoeing. Teachers, interestingly, when asked what outdoor skills students' learned, indicated similar skills, but also listed things such as phenology, gardening, building a rain garden, tree identification, etc.. One open-ended student response to note: "This project encouraged me to teach my niece about the importance of taking care of the environment. Because of this class, I was inspired to go outside and pick up trash in my neighborhood with my niece."

Year two data collection regarding student learning outcomes will include pre- and post-testing for the youngest grade level participants at each school, as well as post-only questionnaires for students have participating in year one. Teachers will also complete a questionnaire at the end of year two regarding their perceptions of student learning. The MSELS has not yet been scored or analyzed, but it will be administered to two additional classes next spring.

Result Status as of January 25, 2012:

A request for proposals was released to Minnesota middle and high schools in mid-August 2011 encouraging them to apply for the mini-grants. Twenty-one applications were received and reviewed with the help of Advisory Committee members. The following six schools were selected and awarded mini-grants in the amount of up to \$5,000 in late November 2011:

- Concordia Creative Learning Academy, St. Paul
- Kennedy Community School, St. Cloud Public Schools
- Rockford Middle School Center for Environmental Studies
- River's Edge Academy, St. Paul
- Simley High School, Inver Grove Heights
- Waconia High School

The school projects will impact approximately 1600 or more students in multiple and diverse content areas, including a high percentage of at-risk and underachieving students. Included in the schools are two charters, an alternative learning program and a couple of traditional, public middle schools and high schools.

Over the next several months, the Project Coordinator and regional specialists will be supporting the schools in the implementation of their projects and working with the evaluator to effectively measure the impact of the projects.

Result Status as of August 3, 2011:

This outcome has needed to be adjusted due to the delays in hiring the coordinator, the state government shutdown and timing a request for proposals to match when school personnel would be available and able to respond (i.e. not during the summer). However, advisory committee members have been providing guidance by reviewing priorities and criteria for a mini-grant program, and we have been gathering the necessary plans and paperwork to put out notice of the mini-grant program through a request for proposals to schools as soon as possible. With the granting of the extension and once the amended workplan is approved, we will be ready to release the grant RFP within a couple of weeks.

Result Status as of January 2011:

Applications for the coordinator position have been received and screened for eligibility. Interviews are scheduled for early January.

V. TOTAL ENRTF PROJECT BUDGET:

Personnel: \$ 215,000 for fulltime project coordinator

Contracts: \$ 60,652 (\$10,000 for program evaluation; \$50,652 for innovation mini-grants)

Equipment/Tools/Supplies: \$ 3,000

Acquisition (Fee Title or Permanent Easements): \$ 0

Travel: \$ 6,848 in-state travel following state guidelines for travel expense reimbursement. This amount includes mileage, meals and housing for at least 30 teachers, 3 regional trainers, and 12 advisory committee members, as identified in the table of Part IV Result 1, to attend meetings and training workshops.

- Mileage is limited to people who live greater than 50 miles from the event sites.
- Housing is for the regional training events, which will be held at residential environmental learning centers. Training events at environmental centers are estimated at \$40 per day for meals and housing.
- Meeting expenses are estimated at \$9/day for meal expenses.

Travel expenses will be reimbursed at applicable state employee rates for the Project Coordinator and the Evaluator to attend events and visit grantee schools.

Additional Budget Items: \$ 14,500. This amount includes the following—

1. Reimbursements for substitute teachers to enable 30 teachers to attend follow-up workshops. (Substitute reimbursement: \$125/day for 2 days)
2. Stipends for up to 3 Regional Trainers to develop and present training and follow-up workshops and to provide support to teachers during the project.

TOTAL ENRTF PROJECT BUDGET: \$ 300,000

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

VI. PROJECT STRATEGY:

A. Project Partners: The Department of Natural Resources (DNR) is partnering with the Minnesota Department of Education (MDE) on this project. MDE's contact at DNR will be C.B. Bylander, DNR Outreach Section Chief. Both agencies co-chaired the legislatively mandated Outdoor Education Advisory Committee which published the *Outdoor Education Legislative Report – 2009*. Other partners will include the following--

- *Project Coordinator:* Fulltime staff person to be hired at the Minnesota Department of Education with expertise in implementing environmental education and/or outdoor education within a standards-based curriculum at the secondary level (grades 7-12).
- *Evaluator:* Consultant to be contracted by the Minnesota Department of Education who will plan and implement the evaluation activities throughout the duration of the project. Contractor will be selected using criteria developed by the Minnesota Department of Education.
- *Advisory Committee:* Leaders in environmental education and outdoor education from state agencies, environmental learning centers, school curriculum coordinators, and postsecondary education and others with expertise in environmental or outdoor education or school curriculum.
- *Regional Trainers:* Educators with secondary classroom knowledge and experience, especially in the areas of environmental and outdoor education.

B. Project Impact and Long-term Strategy:

This project is a direct response to state and national trends that show declining participation in outdoor recreation, a decreased understanding of the natural world, and a shift to a more sedentary lifestyle. These trends are linked, in part, to issues identified by the Outdoor Education Advisory Committee in its *Outdoor Education Legislative Report – 2009*; and in the document, *A GreenPrint for Minnesota: State Plan for Environmental Education, third edition*. This project addresses four strategic themes identified in the reports: 1) increasing understanding of outdoor education and its benefits, 2) improving understanding of ecological systems, 3) garnering resources to support implementation of outdoor education, and 4) making environmental and outdoor education “academically relevant” through connections to state standards.

Specifically, this project will improve the achievement of students in grades 7-12 by using the environment and the outdoors as a context for academic learning. In addition to mastering selected academic standards, students will develop their outdoor skills and increase their understanding of the natural environment. These goals will be achieved by providing professional development to teachers, and funding innovative programs—two strategies identified in the *Outdoor Education Legislative Report – 2009*. An evaluation plan will be designed during the initial stages of the project to ensure that the professional development and innovation grant activities are appropriately monitored and reported, and that subsequent conclusions about the project results are well-informed. Also, the ongoing evaluation will permit adjustments in program activities to achieve the desired results.

A description of the project and its impact or results will be reported in a written evaluation following the conclusion of the project. The report will identify project activities that demonstrate the greatest potential for improving the academic achievement of secondary students by using the environment and outdoors as a context for learning. These “promising” activities can be the basis for future grant proposals, curriculum improvement efforts, and professional development intended to reach a wider audience of teachers and students. For example, exemplary lesson plans developed by teachers will provide concrete illustrations of how to integrate environmental concepts and outdoor skills with Minnesota’s academic standards. These model lesson plans will be reported on the SEEK (Sharing Environmental Knowledge) website and incorporated into the professional development carried out by the regional Math and Science Teacher Academies. Resources to assist teachers in their planning of standards-based environmental and outdoor education activities will be posted on the SEEK site, as well. Insights and “lessons learned” through this project will benefit educators in environmental learning centers and state agencies (e.g., DNR, PCA, MDE) and other providers of environmental and outdoor education.

C. Other Funds Proposed to be Spent during the Project Period:

The Minnesota Department of Education will provide in-kind support including a workspace at its Roseville site, office technology (computer, telephone, audio-visual equipment, etc.), transportation support, workshop and meeting space, and professional collaboration with state instructional specialists in the content areas. It is anticipated that the Department of Natural Resources, other state agencies and educational entities are likely to contribute staff time toward one or more parts of the project.

D. Spending History: None

VII. DISSEMINATION: Information about the project results will be shared in the following ways:

- A final report, including findings of a project evaluation, will be created.
- Professional development plans (i.e., training modules) and selected model lesson plans will be compiled for access by educators and the public on the Minnesota Department of Education and/or SEEK (Sharing Environmental Knowledge) websites.

VIII. REPORTING REQUIREMENTS: Periodic work program progress reports will be submitted not later than January 2011, August 2011, January 2012, July 2012 and January 2013. A final work program report and associated products will be submitted between June 15 and August 1, 2013 as requested by the LCCMR.

IX. RESEARCH PROJECTS: NA

Attachment A: Budget Detail for 2010 Projects - Summary and a Budget page for each partner (if applicable)								
Project Title: Innovative Model for Environmental and Outdoor Education in Grades 7-12								
Project Manager Name: Jeff Ledermann, Minnesota Department of Education								
Trust Fund Appropriation: \$ 300,000								
1) See list of non-eligible expenses, do not include any of these items in your budget sheet								
2) Remove any budget item lines not applicable								
2010 Trust Fund Budget	Result 1 Budget:	Amount Spent (6/28/13)	Balance (6/28/13)	Result 2 Budget:	Amount Spent (6/28/13)	Balance (6/28/13)	TOTAL BUDGET	TOTAL BALANCE
	Professional development	Professional development	Professional development	Innovation mini-grants	Innovation mini-grants	Innovation mini-grants		
BUDGET ITEM								
PERSONNEL: wages and benefits: Project Coordinator*	172,000	179,563	-7,563	43,000	44,891	-1,891	215,000	-9,453
Contracts								
Professional/technical: Evaluator contracted via MDE evaluation criteria	5,000	5,000	0	5,000	5,000	0	10,000	0
Other contracts Grants to schools via RFP developed by advisory committee members		0		29,687	32,336	-2,649	29,687	-2,649
Other contracts Round 2 teacher development and/or curriculum updating	20,965	12,290	8,675		0	0	20,965	8,675
Supplies Instructional materials	3,000	1,222	1,778				3,000	1,778
Travel expenses in Minnesota meals, lodging and mileage for planning, training, support and evaluation	5,776	5,330	446	1,072	1,333	-261	6,848	185
Substitutes for teacher participants	7,000	6,388	612		0	0	7,000	612
Stipends for regional specialists	7,500	7,500	0		0	0	7,500	0
COLUMN TOTAL	\$221,241	\$217,293	\$3,948	\$78,759	\$83,560	-\$4,801	300,000	-853
*In FY12, tracking time indicates the project coordinator is spending about 20% of total time and travel on activities that support result 2. Activities that support the over-arching goals of the project and/or simultaneously support outcomes associated with both results are reported in the Result 1 wages								*\$853 over budget to be covered by MDE.

Environmental and Outdoor Education in Minnesota

Goal of Environmental Literacy

Since 1990, state goals for environmental education have been in place with the objective of an environmentally literate citizenry (see sidebar). However, according to the *Third Minnesota Report Card on Environmental Literacy*, almost 38 percent of Minnesota adults have a below-average level of knowledge about the environment. Only eight percent received an A grade.

Minnesota Department of Education (MDE) Coordinates Project to Support Environmental and Outdoor Education

With funding from the Minnesota Environment and Natural Resources Trust Fund as recommended by the Legislative-Citizen Commission on Minnesota Resources, beginning in 2011, MDE will be coordinating a project to integrate environmental education and outdoor education into the instruction of academic standards for students in grades 7-12. Professional development and program incentive grants will be provided to help teachers use the environment and outdoors as a context for student learning.

Outdoor Experiences Critical to Attitudes and Behaviors that Protect the Environment

People that participate in nature-based outdoor activities as children are more likely to have attitudes favorable toward the environment and engage in behaviors that are protective of the environment (Wells and Lekies, 2006). Additionally, experience out-of-doors builds creativity, physical competence, social skills, environmental knowledge, confidence and problem-solving (Chawla, 2006).

Environment-based Learning Boosts Achievement

Students demonstrate improved achievement when receiving school instruction that uses the environment as an integrating context for learning. Studies have shown that students scored as well or better on standardized measures in reading, math and language. This approach also has been shown to foster cooperative learning and civic responsibility (SEER, 2005).

For more information, contact:

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Minnesota Statute § 115A.073

ENVIRONMENTAL EDUCATION GOALS

(a) Pupils and citizens should be able to apply informed decision-making processes to maintain a sustainable lifestyle. In order to do so, citizens should:

- (1) understand ecological systems;
- (2) understand the cause and effect relationship between human attitudes and behavior and the environment;
- (3) be able to evaluate alternative responses to environmental issues before deciding on alternative courses of action; and
- (4) understand the effects of multiple uses of the environment.

(b) Pupils and citizens shall have access to information and experiences needed to make informed decisions about actions to take on environmental issues



Environmental and Outdoor Education Resources



Minnesota's home of environmental education resources

[SEEK \(Sharing Environmental Education Knowledge\)](#), is the home of Minnesota's environmental education (EE) resources. SEEK is a dynamic website that is constantly evolving. It includes a comprehensive directory of over 1200 resources, press releases, employment opportunities, research abstracts, web links, a calendar of events, and much more.



[A GreenPrint for Minnesota: State plan for environmental education, third edition](#) is the state plan for environmental education for 2008-2018. It was developed by the [Environmental Education Advisory Board](#), which sunset as of June 30, 2008, and supporting staff with input from the environmental education community. *GreenPrint, third edition* is designed to serve those who educate, provide funds, develop programs, support efforts, and set policies that affect environmental education in Minnesota.



The [Environmental Literacy Scope and Sequence](#) (March 2002) is designed to help create opportunities for mainstreaming environmental education (EE) in a way that has not been possible before. It provides a systems approach to environmental education that can focus the efforts of teachers and deliverers of EE to unify their many independent efforts to achieve the goal of environmental literacy. Because the Scope and Sequence is based on both state and national standards, it enables environmental education deliverers to build, adapt or integrate curriculum and assessments that are most appropriate for their particular grade level or audience.

[The Children & Nature Network \(C&NN\)](#) was created to encourage and support the people and organizations working nationally and internationally to reconnect children with nature. The network provides a critical link between researchers and individuals, educators and organizations dedicated to children's health and well-being.

[Minnesota Association for Environmental Education](#): <http://www.minnesotae.org/>

[Minnesota Naturalists Association](#): <http://www.mnnaturalists.org/>

[Minnesota Department of Natural Resources](#): <http://www.dnr.state.mn.us/index.html>

[Minnesota Project Get Outdoors](#) : <http://mnprojectgetoutdoors.org/>

Research Cited:

Chawla, Louise. (2006). "Learning to Love the Natural World Enough to Protect it," in *Barn* nr. 2 2006:57-58.

SEER. (2005). "California Student Assessment Project Phase Two: The Effects of Environment-Based Education on Student Achievement." SEER: Poway, CA. Available on website of the State Education and Environment Roundtable (SEER) at www.seer.org.

Wells, Nancy M. and Kristi S. Lekies. (2006). "Nature and the Life Course: Pathways from Childhood Nature Experiences to Adult Environmentalism." *Children, Youth and Environments* 16(1): 1-24.

MDE Environmental and Outdoor Education Project Outreach Activities

Date	Event/Meeting	Location	# of Educators	# of Students
4/8/11	Midwest EE Conference	Rochester	50	
4/12/11	DNR Education Committee	St. Paul	10	
4/13/11	DNR Outdoor Mentor Program	St. Paul	1	
4/15/11	Nature Connection Workshop	White Bear Lake	30	
4/20/11	Renewable Energy Guide for Schools	St. Paul	5	
4/27/11	EE/OE Advisory Committee	Roseville	25	
4/30/11	MN Science Teachers Board	St. Paul	20	
5/5/11	Jeffers Pond Env. Festival	Prior Lake	5	25
5/12/11	Green Schools Workshop	St. Paul	10	
5/13/11	OHA Nature Day	Mahtomedi	10	80
5/17/11	3 Rivers Park Workshop	Plymouth	12	
6/27-29/11	Rivers Institute, Hamline University	St. Croix River State Parks	60	
8/12/11	Will Steger Foundation Teacher Workshop	Apple Valley	100	
8/17/11	Green Schools Coalition	St. Paul	20	
8/18/11	Health Science Educators Workshop	Roseville	20	
8/23/11	Math and Science Frameworks Workshop	Roseville	100	
8/30/11	Math and Science Partnership	Roseville - phone	22	
9/1/11	Wilderness Inquiry	Minneapolis	4	
9/1/11	CERTs Grantees	Minneapolis	15	
9/13/11	PCA managers	St. Paul	2	
9/13/11	DNR Education Committee	St. Paul	8	
9/14/11	Math and Science Frameworks Workshop	Roseville	50	
9/15/11	PCA School Sector Staff	St. Paul	8	
9/22/11	MAEE Board Meeting	Sandstone	10	
10/13/11	GreenCorps Members	St. Paul	24	
10/14/11	Metro State Education Students	Afton	10	
10/19/11	Energy Education Working Group	St. Paul	8	
10/20/11	Education MN exhibits	St. Paul	40	
11/17/11	Interagency Pollution Prevention Advisory Team	Roseville	20	
12/8/11-12/9/11	EOE Teacher Training	Maple Plain	50	
12/14/11	Green Ribbon Schools Advisory Group	Roseville	17	

1/23/12	Student EOE Presentation	Roseville	16	6
1/25/12	Will Steger Foundation	Roseville	3	
1/30/12	Rockford School Board	Rockford	12	
2/28/12	National Green Schools Conference	Denver	80	
3/5/12	School Recycling Focus Group	St. Paul	15	
3/8/12	Children and Nature Connection	Roseville	6	
3/14/12	Conserve School	Land O'Lakes	5	60
3/21/12	Environmental Initiative Awards	Fridley	25	
3/22/12	Concordia Creative Learning Academy	St. Paul	5	
3/28/12	Rivers Edge Academy	St. Paul	8	
4/5/12	PCA School Planning	St. Paul	4	
4/10/12	DNR Education Committee	St. Paul	8	
4/12/12	MN Green Schools Coalition	St. Paul	40	
4/24/12	MN Ag Teachers Conference	St. Paul	140	
4/25/12	3 Rivers Parks EE Panel	Plymouth	6	
4/30/12	Children and Nature Connection	White Bear Lake	11	
5/3/12	EOE Advisory Committee	Prior Lake	6	
5/4/12	Rivers Institute Planning	St. Paul	6	
5/14/12	Rockford Middle School	Rockford	6	
5/14/12	Waconia Public Schools	Waconia	3	
5/17/12	Children and Nature Connection	St. Paul	6	
5/18/12	Special Education Directors Conference	Roseville	25	
6/4/12	National Green Ribbon Schools Workshop Panel	Washington, DC	50	
6/13/12	Kennedy Community Schools	St. Joseph	20	
6/21/12	MAEE State Conference Presentation	Itasca	22	
6/25-26/12	Rivers Institute, Hamline University	Interstate and Afton State Parks	54	
7/7/12	Digital Bridge to Nature Workshop	Vadnais Heights	14	
7/11/12	EOE Regional Workshop	Rochester	25	
7/23-25/12	Rivers Institute, Hamline University	Fort Snelling State Park	60	
7/31/12	EOE Regional Workshop	St. John's U	18	
8/6/12	Meet with Will Steger Staff	Minneapolis	8	
8/7/12	Will Steger Teacher Institute	Apple Valley	80	
8/8/12	Cretin-Derham Hall Teachers	St. Paul	3	
8/9/12	St. Paul Teachers EE	St. Paul	20	

	Workshop			
8/10/12	Children Nature Connection	St. Paul	9	
8/13/12	EOE Regional Workshop	St. Paul	33	
8/23/12	IPPAT	St. Paul	16	
9/20/12	State Agency Health Group	St. Paul	12	
9/25/12	Growing School Partnerships	St. Louis Park	20	
9/25/12	EOE Regional Workshop	Sandstone	14	
10/2/12	EOE Advisory Committee	West St. Paul	8	
10/9/12	Green Schools Coalition	St. Paul	36	
10/11/12	Upper Mississippi Academy	Roseville	1	
10/29/12	Green Schools Workshop	St. Joseph	12	
10/30/12	Children Nature Connection	St. Paul	8	
11/5/12	Green Schools Workshop	West St. Paul	40	
11/14/12	Dragonfly Workshop Planning	Roseville	2	
11/15/12	MAEE Meeting	St. Paul	10	
11/28/12	Green Schools Workshop	Duluth	50	
11/30/12	Science Standards Workshop	Roseville	50	
12/4/12	Healthy Schools Conference	St. Paul	15	
12/18/12	MDH School Env Quality Working Group	St. Paul	12	
1/9/13	Designing Natural Play Areas Presentation	Roseville	70	
1/18/13	MN School Board Presentation – Green Schools	Minneapolis	12	
1/23/13	EOE Regional Workshop	North Mankato	16	2
1/25/13	Hennepin County School Organics Group	Golden Valley	18	
2/21/13	MN Clean Energy Conference	St. Cloud	35	
2/22/13	MN School Gardening Conference	Chanhassen	14	
2/26/13	Green Schools Conference Planning Team	St. Paul	5	
2/26/13	Sustainability Workshop at Science Museum	St. Paul	10	
2/28/13	Project Get Outside Meeting	St. Paul	6	
3/6/13	OH Anderson Elementary horse logging	Mahtomedi	3	75
3/19/13	MN Junior Duck Stamp Competition	Bloomington	10	
3/21/13	MN Green Schools Coalition Strategic Planning Meeting	St. Paul	15	
3/27/13	Renewable Energy Concept Center Planning Meeting	St. Paul	6	
3/28/13	Fox 9 Think Green Award Judging	St. Louis Park	6	
4/10/13	Watershed Partners Meeting	Minneapolis	20	

4/12/13	MN Children and Nature Connection	Bloomington	10	
4/17/13	Metro CERTs Event	St. Paul	20	
4/18/13	GreenStep Schools Meeting	St. Paul	6	
4/23/13	Jeffers Foundation Meeting	Plymouth	13	
4/25/13	Sustainability Semester School	St. Paul	3	
5/1/13	Indian Education Grant Review	St. Paul	4	
5/8/13	Global Learning Experts	St. Paul	6	
5/21/13	MDH School Meeting	St. Paul	12	
5/22/13	EOE Advisory Committee	Rockford	10	
6/11/13	DNR Education Committee	St. Paul	8	
6/12/13	MN Gifted and Talented Education Conference	Austin	22	
6/15/13	Natural Play Area Field Trip	West St. Paul	18	
TOTALS			2302	248
4/1/13	Mom Enough Interview	Minneapolis	1000+	