

1997 Project Abstract

For the Period Ending June 30, 1999

This project was supported by [MN Future Resources Fund (MS xxx.xx), OR Environment and Natural Resources Trust Fund (MS xxx.xx), OR Great Lakes Protection Account (MS xxxx) – (See attachment with subdivision numbers or language)]

TITLE: A Public School Partnership: Environmental Service Learning

PROJECT MANAGER: Larry Johnson, Principal

ORGANIZATION: Stowe Environmental Elementary School

ADDRESS: 715-101st Avenue West, Duluth, Minnesota 55808

WEB SITE ADDRESS: (If applicable) <http://www.cp.duluth.mn.us/~stowe/>

LEGAL CITATION: ML 1997, Ch. 216, Sec. 15, Subd. 13 (f)

APPROPRIATION AMOUNT: \$100,000

Statement of Objectives

- To develop an environmental service model for an entire school community
- To develop a partnership of public schools, agencies, higher education and communities that would take environmental service learning beyond the scope of this project
- To create a Multi-Media Guide which defines the process Stowe followed to integrate environmental education with service to the environment and community

Overall Project Results

- Stowe's environmental service model involved approximately 600 students, and 22 elementary classroom educators. There was 100% participation on site. The model's service projects incorporated principles and concepts found in the Green Print for Minnesota Schools and the Addendum.
- Partnerships with 10 agencies; city, state, federal community, private industry, citizen groups, and higher education were developed to help create an avenue for service to the environment and community and resources for integrating environmental education into the classroom. Some of these partnerships will remain intact because the environmental education is now integrated into the curriculum.
- A guide was created that defined the process Stowe followed to integrate environmental education with service to the environment and community.
- The environment in the region has been helped as a result of the projects.

Project Results Use and Dissemination

Results can be a guide for other elementary schools and agencies to assist them in their efforts in incorporating environmental service projects into their programs.

The guide is available as a printed pamphlet as well as a link on Stowe's web page (address listed above).

Representatives: Dennis Ozment, Chair; Dave Bishop, Steve Dehler, Ron Erhardt, Mark Holsten, Willard Munger, Mark Olson, Tom Osthoff, Leslie Schumacher, Kathy Tingelstad.

Senators: Dennis Frederickson, Jerry Janezich, Janet Johnson, Jane Krentz, Gary Laidig, Bob Lessard, James Metzen, Leonard Price, Martha Robertson, Jim Vickerman.

JUL 02 1999

Date of Report: July 1, 1999
LCMR Final Work Program Report
Project Completion Date: June 30, 1999

LCMR Work Program 1997

I. Project Title: A Public School Partnership: Environmental Service Learning

Project Manager: Larry Johnson, Principal
Affiliation: Stowe Environmental Elementary School
Mailing address: 715 101st Avenue West
Duluth, MN 55808

Telephone Number: 218-626-4500 **E-Mail:** stowe@computerpro.com
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Web site address: <http://www.cp.duluth.mn.us/~stowe/>

Total Biennial Project Budget:

\$ LCMR:		\$100,000
\$ LCMR:		\$0
Amount	1stQrt.	\$26,025
Spent:	2ndQrt.	\$19,866
	3rdQrt.	\$27,875
	4thQrt.	\$26,234
\$ LCMR		\$100,000
Balance:		\$0

A. Legal Citation: ML 1997, Chap. 216____, Sec. 15____, Subd. 13(f)____

Appropriation Language: Environmental Service Learning

This appropriation is from the trust fund to the department of natural resources for an agreement with Stowe Environmental Elementary School to develop a partnership of schools, communities, and agencies to create a model of environmental service learning.

II. Project Summary and Results:

A partnership of schools, communities, and agencies working to create a model of environmental service learning based upon the application of significant environmental education principles.

- A. A team that includes 22 elementary classroom educators, 23 classes, 600 students, 6 cooperating agencies, project coordinator, project assistants and community members will be brought together to implement projects that will incorporate sound principles and concepts found in the GreenPrint for Minnesota Schools and the Addendum: A GreenPrint for Minnesota Schools.
Implemented projects will relate to themes and geographic locations which were implemented in 1993. This service learning will positively impact the natural environment and environmental education within the Head of the Lakes Region.
- B. Project participants will be trained in effective environmental service principles and procedures.
- C. School children will work with teachers, agency representatives and community members to develop a greater understanding of the environment via classroom and field learning. This learning enables them to identify the environmental needs within their focus area allowing them to develop and complete service projects.
There will be a minimum of 12 projects; 6 per year, 1 per grade level.
- D. The active participation in the learning, decision making and service, strongly influences attitudes and future actions that these children, their families and communities make in regard to the environment. The environment in the region will be helped as a result of each project for years to come.
- E. With input from all partners the following are examples of potential projects that could be developed.
Kindergarten students would work with members of the Gary New Duluth citizens coalition preserving and caring for the school grounds and the adjacent forest.
First grade students and the Lake Superior Zoo could set up and maintain composting in the children's zoo area using animal and staff food scraps and leaves.

II. Project Summary and Results Continued

Second grade students and WLSSD could work on neighborhood awareness by identifying how pollutants move via creeks, lawns and roads to our water source. By maintaining a community park with a creek, students will be demonstrating how what is done here can affect someone else.

Third grade students and Jay Cooke State Park staff might choose to study the impact of human use on our parks: roadsalt on park roads - test alternatives or erosion on non authorized trails - set up plantings to hold soils and discourage off trail access.

Fourth grade students and UMD's Outdoor Education Program will concentrate on St. Louis River issues. They could develop a project to restore access sites, restock fish, plant trees or make river bank improvements in conjunction with the research that they now do on life in, on, and by the river.

Fifth grade students and the Lake Superior Center could study the impact of mercury in the lake and develop an informational booklet letting people know of proper disposal procedures and the alternatives to products containing mercury.

They may also help develop an active learning station at the Center for visiting children and their families.

- F. Agency personnel will develop a better understanding of working with teachers and how service learning can be incorporated into their area of expertise.
- G. A Multi-Media Guide, which clearly defines the process followed, will be compiled and be available for use by other schools that would like to integrate environmental education with service to the environment and communities. This guide will be made available through the Internet.

III. Progress Summary 4th Quarter, June 1999

Regarding II A, B Done, Summary in first quarter report.

Regarding II C, D Done, Summary in first quarter report

Regarding II E

Stowe's Service Learning Projects from year one had a positive impact on the natural environment in the region, as well as our staff and cooperating agencies. Draft time lines that were developed for EE instruction and the final service project, were followed for the remainder of the second year. The positive impact from year one reinforced everyone's efforts.

There were seven projects completed in year two:

Special Education students put containers out in the school and the community in order to collect aluminum to fund the purchase of handicap playground equipment. This allowed handicap students to continue to enjoy the out-of-doors with their peers.

Through this project, the students learned a lot about recycling, community involvement and handicap accessible areas and playgrounds.

- K Kindergartners lent a helping hand to replant areas around the school yard. The project helped students care for their "own yard" and see how it is important to things around them. They learned to contribute to their community by taking responsibility for their own surroundings.

- 1 First graders helped create a butterfly garden of native flowers. The city gardeners needed help in developing more butterfly gardens in this part of Duluth. Butterfly houses were added around the plot.

- 2 Second graders adopted a city park that has a creek running through it. Most of the neighborhoods in the Stowe enrollment area have creeks that run through or near them. Students learned that what is done in an area can affect someone or something else.
Through the year long environmental curriculum and park adoption students saw themselves as a part of the parks environment, and knew that in order to keep the park they had to use it responsibly.

- 3 Third graders moved their efforts to larger green spaces. They studied state parks by focusing on Jay Cooke. Since more people use state parks, third graders and park staff looked at the impact of human use on different parts of the park. By studying the park's natural systems, students learned how to use native plantings to help the park's habitat.

III. Progress Summary 4th Quarter, June 1999 Continued

- 4 Fourth graders helped educate an urban watershed area about run-off pollution by stenciling drains in Stowe's enrollment area. Students addressed the three types of pollution. They learned how easily our resources can be damaged when some forms of pollution are discharged untreated into rivers at many points through storm drains.
By stenciling neighborhood storm drains, students helped create an awareness of this direct link. They will pass on an important message to urge people to make wise decisions about their use and disposal of car fluids, soaps and lawn and garden fertilizers.
- 5 Fifth graders helped Lake Superior by addressing the watershed area Stowe is in. They added to a pine nursery and used some of the pines in at-risk areas inland from Lake Superior.
Students are learning that if everyone can help at-risk areas in their respective watersheds the quality of the lake improves.

Regarding II F

Agency personnel, teachers and students have all developed a better understanding on how to collaborate. Each party continued to welcome the opportunity to work together.

Regarding II G

The surveys; notes; interviews; video and cassette recordings and photos of staff, students, EE classes and project implementations that were compiled throughout year one were formatted into a multi-media guide.

A version of the guide can be found on the internet as a link on Stowe's web page. (Address is found on page 1 of this report).

Another version of the guide is a booklet. An example of this has been included with this report.

III. Progress Summary 3rd Quarter, February 1999

Regarding II A, B Done, Summary in first quarter report.

Regarding II C, D Done, Summary in first quarter report

Regarding II E

Stowe's Service Learning Projects from year one had a positive impact on the natural environment in the region. The projects have instilled on students the expectation that every year you learn about and help the environment around you. Input at a planning session helped focus the make-up of our second year. Draft time lines that were developed for EE instruction and the final service project.

These are the projects being developed for year two:

Special Education students have put containers out in the school and the community in order to collect aluminum to fund the purchase of handicap playground equipment. This will allow handicap students to continue to enjoy the out-of-doors with their peers. Through this project, the students learned a lot about recycling, community involvement and handicap accessible areas and playgrounds.

- K Kindergartners will lend a helping hand to replant areas around the school yard. The project will help students care of their "own yard" and see how it is important to things around them. They are learning to contribute to their community by taking responsibility for their own surroundings.
- 1 First graders will help create a butterfly garden of native flowers. The city gardeners need help in developing more butterfly gardens in this part of Duluth.
- 2 Second graders have adopted a city park that has a creek running through it. Most of the neighborhoods in the Stowe enrollment area have creeks that run through or near them. Students will learn that what is done in an area can affect someone or something else.
Through the year long environmental curriculum and park adoption students will see themselves as a part of the parks environment, and know that in order to keep the park they have to use it responsibly.
- 3. Third graders moved their efforts to larger green spaces. They are studying state parks by focusing on Jay Cooke. Since more people use state parks, third graders and park staff looked at the impact of human use on different parts of the park. By studying the park's natural systems, students learn how to use native plantings to help the park's habitat.

III. Progress Summary 3rd Quarter, February 1999 Continued

4. Fourth graders plan to help educate an urban watershed area about run-off pollution by stenciling drains in Stowe's enrollment area. Students address the three types of pollution. They learned how easily our resources can be damaged, when some forms of pollution are discharged untreated into rivers at many points through storm drains.
By stenciling neighborhood storm drains, students helped create an awareness of this direct link. They will pass on an important message to urge people to make wise decisions about their use and disposal of car fluids, soaps and lawn and garden fertilizers.
5. Fifth graders are looking at helping Lake Superior by addressing the watershed area Stowe is in. They will add to a pine nursery and use some of the pines in at-risk areas inland from Lake Superior.
Students are learning that if everyone can help at-risk areas in their respective watersheds the quality of the lake improves.

Regarding II F

Agency personnel, teachers and students have all developed a better understanding on how to collaborate. Each party continued to welcome the opportunity to work together.

Regarding II G

Surveys; notes; interviews; video and cassette recordings and photos of staff, students, EE classes and project implementations have been compiled throughout year one. Formatting the multi-media guide began in the fall. Drafts were previewed by staff and changes made. The guide is at the printers.

Another version of the guide is being developed for the internet. It will eventually be found as a link on Stowe's web page. (Address is found on page 1 of this report).

III. Progress Summary 2nd Quarter, July 1998

Regarding II A, B Done, Summary in first quarter report.

Regarding II C, D Done, Summary in first quarter report

Regarding II E

The service learning projects and the aligned environmental curriculum that were developed during the first quarter, remained intact for the remainder of the year. Each project proved to be grade level appropriate. As a result the students became active learners and contributors.

Stowe's Service Learning Projects have had a positive impact on the natural environment in the region. The projects have instilled the expectation that every year you learn about and help the environment around you.

These are the projects being developed:

Special Education students put containers out in the school and the community in order to collect aluminum to fund the purchase of handicap playground equipment. This will allow handicap students to continue to enjoy the out-of-doors with their peers. To date the students and their teachers have raised \$3,900 through can collection and community matches. Through this project, the students have learned a lot about recycling, community involvement and handicap accessible areas and playgrounds.

K Kindergartners lent a helping hand to replant areas around the school yard. The project helped students care of their "own yard" and see how it is important to things around them. They are learning to contribute to their community by taking responsibility for their own surroundings.

1 First graders helped create a butterfly garden of native flowers. The city gardeners needed help in developing more butterfly gardens in this part of Duluth.
In year one students transplanted small plants. In year two student will be sowing seeds to thicken the plot. The children looked at their environment and saw the relationships between plants and animals. They established a flower garden that would benefit butterflies.

2 Second graders adopted a city park that has a creek running through it. Most of the neighborhoods in the Stowe enrollment area have creeks that run through or near them. Students will learned that what is done in an area can affect someone or something else.
Through the year long environmental curriculum and park adoption students now see themselves as a part of the parks environment, and know that in order to keep the park they have to use it responsibly.

III. Progress Summary 2nd Quarter, July 1998 Continued

3. Third graders moved their efforts to larger green spaces. They studied state parks by focusing on Jay Cooke. Since more people use state parks, third graders and park staff looked at the impact of human use on different parts of the park.
By studying the park's natural systems, students learn how to use native plantings to hold soils in sensitive trail areas. They made willow wattles from cuttings, dug trenches, placed them in the trenches and covered and stacked them into place. The wattles will sprout and their root systems will help anchor hillside trails.
Because of their effort, foot trails to certain areas in the park will remain open. The students became active participants in the use and care of public lands.
4. Fourth graders plan to help educate an urban watershed area about run-off pollution by stenciling drains in Stowe's enrollment area. Students address the three types of pollution. They learned how easily our resources can be damaged, when some forms of pollution are discharged untreated into rivers at many points through storm drains.
By stenciling neighborhood storm drains, students helped create an awareness of this direct link. They will pass on an important message to urge people to make wise decisions about their use and disposal of car fluids, soaps and lawn and garden fertilizers.
5. Fifth graders are looking at helping Lake Superior by addressing the watershed area Stowe is in. They started a pine nursery. The pines will then be available to transplant in at-risk areas inland from Lake Superior. Students are learning that if everyone can help at-risk areas in their respective watersheds the quality of the lake improves.

Regarding II F

Agency personnel, teachers and students have all developed a better understanding on how to collaborate. Each party continued to welcome the opportunity to work together.

Regarding II G

Surveys; notes; interviews; video and cassette recordings and photos of staff, students, EE classes and project implementations have been compiled throughout the year.

III. Progress Summary 1st Quarter, February 1998

Regarding II B

Project participants were trained at an inservice on October 16th, 1997 in effective service learning principles and procedures. Emphasis was placed on real need and real solutions.

Regarding II C, D

Agency and community representatives were contacted and developed a list of needs for their respective groups.

Teachers, EE specialists and students then chose one need that would work developmentally for their grade level, and have a positive impact on the natural environment and environmental education within our region.

These are the projects being developed:

Regarding II E

These are the projects being developed:

Special Education students will put containers out around the community in order to collect aluminum to fund the purchase of handicap playground equipment. This will allow handicap students to continue to enjoy the out-of-doors with their peers.

- K Kindergartners will lend a helping hand to replant areas around the school yard. The project helps students care of their "own yard" and see how it is important to things around them. They are learning to contribute to their community by taking responsibility for their own surroundings.
- 1 First graders will help create a butterfly garden of native flowers. They will help restore the seed stock of native flowers in the region. Students will also encourage the recycling of yard waste by composing them in their gardens.
- 2 Second graders will adopt and help maintain a city park that has a creek running through it. Most of the neighborhoods in the Stowe enrollment area have creeks that run through or near them. Students learn (and pass on to their families) that what is done in an area can affect someone or something else.
- 3. Third graders and park staff look at the impact of human use on different parts of the park. By studying the park's natural systems, students learn how to use native plantings to hold soils in sensitive trail areas. Students are active participants in the use and care of our public lands.

III. Progress Summary 1st Quarter, February 1998 Continued

4. Fourth graders will help educate an urban watershed area about run-off pollution by stenciling drains in Stowe's enrollment area. Solid waste and river use will be addressed by increasing the availability of proper containers at river access points. The students will be passing on an important message that urges the community to make wise decisions about waste disposal at home and at play.
5. Fifth graders are looking at helping Lake Superior by addressing the watershed area Stowe is in. They will create a pine nursery from seed. Pines will then be available to transplant in at-risk areas inland from Lake Superior. Students are learning that if everyone can help at-risk areas in their respective watersheds the quality of the lake improves.

Regarding II F

Agency personnel, teachers and students have all developed a better understanding on how to collaborate. Each party continued to welcome the opportunity to work together.

Regarding II G

Surveys; notes; interviews; video and cassette recordings and photos of staff, students, EE classes and project implementations have been compiled throughout the year.

IV. Outline of Project Results and First Quarter Budget

Results	Amount Budgeted	Amount Spent				Balance
		1 st	2 nd	3 rd	4 th	
1. Hire and orient project coordinator Completion Date: September 1997	500	500				0
2. Hire and orient graduate students Completion Date: September 1997 September 1998	500	250		250		0
3. Survey staff and Agency Personnel about needed training Completion Date: November 1997 November 1998	2,000	1,000		1,000		0
4. Deliver two day training workshops for staff and agency personnel Completion Date: April 1998 April 1999	11,500	2,875		3,000	5,625	0
5. Graduate students teach lessons, with direction from project coordinator related to environmental service and assist in service project completion Completion Date: June 1999	63,500	15,875	15,875	14,100	17,650	0
6. Graduate students and project coordinator work with teachers and agency personnel to establish service project objectives Completion Date: December 1997 December 1998	9,000	4,500		4,500		0
7. Graduate students and project coordinator evaluate the project Completion Date: June 1999	4,100	1,025	1,025	1,025	1,025	0
8. Complete a User friendly report about this project Completion Date: June 1999	8,900	0	2,966	4,000	1,934	0
Totals	100,000	26,025	19,866	27,875	26,234	0

V. Dissemination:

The surveys; notes; interviews; video and cassette recordings; and photos of staff, students, EE classes and project implementations that were compiled throughout year one were formatted into a multi-media guide.

A version of the guide can be found on the internet as a link on Stowe's web page. (Address is found on page 1 of this report).

Another version of the guide is a booklet. An example of this has been included with this report. This guide will be useful to other schools and agencies who would like to integrate environmental education, with service to the environment and communities. It effectively summarizes the steps and procedures Stowe followed to create an effective environmental service learning model at the elementary level.

VI. Context:

A. Significance:

The environmental service learning projects developed at Stowe related to grade level themes and geographic locations. Stowe implemented these themes in 1993 for its school wide environmental emphasis. By following these themes the service projects and related environmental learning never repeated. Each consecutive grade level was involved in a new project with increasing scope and depth. The different geographical themes gave us the opportunity to collaborate and cooperate with a wider variety of agency and community groups. All participants agreed that this was a very workable model.

Yearly All-School Themes		
School Yard	K	School Issues
Neighborhood	1	City Issues
Duluth/Community	2	Regional Issues
Jay Cooke State Park	3	State Issues
St. Louis River	4	National Issues
Lake Superior	5	International Issues

Grade Level Areas of Study
Geographically/Politically

VI. A. Continued

Stowe had 100% participation by staff. With this level of participation we were able to involve the whole student body- approximately 600 K-5 students and their families and communities indirectly. These 600 children are from some of the 3000 homes in Stowe's enrollment area. A variety of ages, abilities and backgrounds were introduced to environmental service learning. The service learning team included: 23 elementary classroom educators, 24 classes, 6 cooperating agencies, project coordinator, project assistant, 4 graduate students and community members.

Projects that were implemented during year one of the appropriation, remained intact through the end of year two. Addressing a real need of an agency or group ensured all participants that there would be a positive impact on the natural environment within the Head of the Lakes Region. By having a real need, it made it easier to involve agencies and groups in classroom visits, finding resources and project guidance from year to year. A real need helped the project move forward and stay focused.

Stowe utilized the principles and concepts found in the Green Print for Minnesota and the Addendum to guide the environmental learning involved with each service project. Access to several out-of-classroom sites was essential for student learning. Several sites are within walking distance from the school: Stowe woods, the river-front, a neighborhood park and creek. Other sites utilized were: Bagley Nature Center University of Minnesota-Duluth, Jay Cooke and other river front trails and neighborhoods. The school's adjacent Nature Trail was vital in providing year round out-door environmental education.

The weekly environmental education helped students understand working systems around them and see the relationships between people's behaviors and choices and the environment. This learning involved thinking, problem solving and decision making with the topics and activities that were related to the service project. A weekly focus on the environment helped increase their awareness, and see the need to care for the environment.

"Year plans" were developed during orientation meetings at the beginning of the school year. See Attachment 1. Each grade level had a plan that focused the environmental learning towards the service project at the end of the year. Age appropriate lessons and activities were then added. Students had a year to build towards their service project.

Throughout the year the environmental education and service projects were reinforced by using ideas, vocabulary and topics in other classes/subjects. Sometimes integration was planned, sometimes it was not. Integrating a project's environmental education into the classroom was made easy by having a "year plan" for each grade level. Classroom topics that were related to the service project were tagged. (Some of these topics were already apart of the curriculum due to the environmental structure at Stowe). These topics then created opportunities for students to transfer and apply what they had learned. Opportunities for transfer and application were found

VI. A. Continued

in science, social studies, reading, language, math, music and art. Integration into the classroom allowed students to put more meaning into their service project. Students were informed, active participants in a real environmental solution at their developmental level.

A sequential integrated framework of environmental education was the backbone for each service learning project. Working with a sequential integrated environmental curriculum and these past 2 years of environmental service learning, Stowe has started to develop a population that is knowledgeable, has increasing skills, attitudes, motivation and a commitment to work as individuals or as a team to help the environment.

Participants were trained in what service learning was and what it meant for Stowe students and staff. They knew that the service learning had to:

- meet an actual need,
- be a collaborative effort between school/community,
- be integrated with academic curriculum,
- include reflection,
- have practical application of what is taught, and
- help foster the development of a sense of caring.

During this training a goal and role sheet was developed, that made everyone an active participant. These roles also let people know where to go for help. Please see Attachment 2. Agencies were given grade level backgrounds, so they knew how the students were being prepared for the service project. Many remarked on how innovative this was for an elementary school. They gave Stowe some very realistic needs and had reasonable expectations.

Stowe staff were given opportunities to learn more about topics related to their project. Teachers could then utilize this information back in their classroom and integrate it into the curriculum. Surveys were sent out, compiled and a list of inservices was developed, around the needs teachers had. Inservices were held after school, as well as during the school day. For a list of staff inservices. Please see Attachment 3.

Throughout the year there were meetings at different levels. These meetings helped track progress and plan ahead. Prior to fall orientation, the principal, environmental coordinator and service learning coordinator met to discuss the year. This group then met with the graduate students. Grade level assignments were made and roles addressed. Weekly, the environmental graduate students met with Stowe's environmental education coordinator at the University of Minnesota-Duluth. They also met with the grade level staff monthly. Stowe's principal, environmental education coordinator and the service learning coordinator also met monthly. Informally the service learning coordinator would check in with staff and graduate students to monitor supply needs, check safety measures, staff participation and double check agency contacts.

VI. A. Continued

At the end of each year, a year-end-wrap-up took place. This meeting involved the principal, the environmental coordinator, the environmental education graduate students and the service learning coordinator. Grade level discussions dealt with what went well and what improvements could be made. All of these meetings were very important. They provided the checks and balances we needed at all levels of the project.

Preparation on site was key to getting agencies to participate and provide a real need for a service project. Having students provide a real service that would impact their own neighborhoods, set a tone of commitment to the community. A big part of site preparation was having skilled trained environmental educators guide the learning. These graduate students were well versed in service learning. They utilized many quality standards of service learning throughout the year. They knew reflection was important for students to personalize their learning and service contributions. They planned time in environmental education for reflection and helped teachers plan time for students to reflect back in their classrooms. The graduate students also knew that recognition put a closure on the year's project, not the awareness gained. After projects were completed, celebrations were provided to recognize the contributions students had made in regards to the environment and their community.

A lot of small components helped ensure quality and continuity from year to year. At the end of year two it was evident that participants were enthusiastic about the merits of this model. Following quality standards does indeed affect the outcome.

The natural environment in the Head of the Lakes Region has been positively affected:

- Bare ground around the school was replanted
- A new habitat for butterflies was established with native wild flowers
- A neighborhood park was rejuvenated
- Two sensitive areas in a state park were stabilized
- Two riverfront communities now have visual reminders of direct discharge on their storm drains, the waters in the St. Louis River will now have less direct discharge
- And Lake Superior's watershed habitat was improved by planting white pine trees in at-risk areas.

B. Time:

The project will be completed on or before June 30, 1999. The time frame is two years beginning August 1997, although consideration for the future is included in each classroom. The projects were completed by June 10, 1999. Some teachers have planned to continue some of the integrated environmental education as it is a part of the curriculum. Others have planned to take it one step further and continue the service with their agency partner. This continuation will take service learning beyond the scope of this grant for these classrooms.

C. Budget Context:

This is the first appropriation to Stowe School from the LCMR. There is no LCMR budget history for this project. Supplemental funding has become available from the following sources:

\$12,000	September 1993	District Staff Development Grant
5,000	November 1993	Minnesota Power Grant
3,000	December 1993	Duluth Clinic Grant
7,500	December 1993	Duluth Superior Area Community Foundation Grant
14,000	December 1993	Northland Foundation Grant
2,300	January 1994	Eisenhower Grant to District
15,000	September 1994	District Staff Development Grant
2,300	Continuous	Waste Reduction Savings Returned to School
350	January 1995	School Nature Area/Project Wild Grant
2,400	January 1995	Terrific Teacher Grant
15,500	March 1995	City of Duluth Block Grant to Citizen's Coalition for Stowe Arboretum
3,400	April 1995	Anonymous Donations
12,200	May 1995	Office of Environmental Assistance Grant
15,500	November 1995	District Staff Development Grant
<u>18,060</u>	July 1996	Office of Environmental Assistance Grant
\$128,510	Total	

This Supplemental funding along with the commitment of staff, agencies, and community has built a solid base for the proposed project: A Public School Partnership: Environmental Service Learning.

VII. Cooperation

The partnerships created in year one remain intact for the second year.

Special Education	WLSSD
Kindergarten	Gary/New Duluth Community Club
1 st Grade	City of Duluth-City Gardener
2 nd Grade	City of Duluth-Parks Department
3 rd Grade	Jay Cooke State Park
4 th Grade	WLSSD, St. Louis River Citizens Action Committee through Lake Superior Research Institution
5 th Grade	USDA-NRCS, DNR Forestry, Lake Superior Center, Potlatch

VIII. Location:

Attachment 4 is a map of the region indicating the area in which the projects were implemented.

IX: Reporting Requirements:

Periodic workprogram progress reports have been submitted in February, 1998, July, 1998, and February, 1999. This is the final workprogram progress report and final report required by June 30, 1999.

X. For Research Projects:

Not applicable.

This is the end of the LCMR final workprogram report.

**FINAL REVISED YEAR PLAN FOR
KINDERGARTEN ENVIRONMENTAL EDUCATION*
Lidie Whittier-Stowe Elementary School 1998-99**

Lesson #	Date	Title
1	Oct. 8	Fall Leaf Matching
2	Oct. 22	"Unnature" Trail
3	Oct. 29	"The Earth and I"
4	Nov. 5	Getting Ready for Winter
5	Nov. 12	Bats
6	Nov. 19	Thanksgiving food-Where it Comes From
7	Dec. 7	"Needle" Trees
8	Jan. 4	Snowflakes
9	Jan. 11	Snowshoeing Part I. (Patty)
9	Jan. 18	Snowshoeing Part I. (Kathy)
10	Jan. 25	Animal Tracks
11	Feb. 1	Animals and Winter
12	Feb. 8	Snowshoeing Part II. (Kathy)
	Feb. 15	No EE-President's Day
12	Feb.22	Snowshoeing Part II. (Patty)
	March 1	No EE-UMD Spring Break
13	March 8	Snowshoeing Part III. (Kathy)
13	March 15	Snowshoeing Part III. (Patty)
14	March 22	Seeds Part I.
	March 29	No EE-Stowe Spring Break
15	April 5	Seeds Part II.
16	April 12	"Hug a Tree"
17	April 19	Rainbow Chips
	April 26	No EE-Stowe staff development
18	May 6	Plant grass seed-Service Project
19	May 10	Last day of EE-Party!

*This is the final plan of all lessons that were conducted throughout the year.

FIRST GRADE YEAR PLAN '98

ERIK OLSON

1. THE FIVE SENSES IN NATURE.
2. TREES AND THEIR PARTS.
3. BIRDS AND BIRD MIGRATION.
4. SPIDERS.
5. INTRODUCTION TO SERVICE LEARNING PROJECT.
6. WATER CYCLE.
7. WEATHER.
8. (SKIPPED DUE TO GRAND CANYON TRIP.)
9. INSECTS.
10. PLANTS & SOIL.
11. PLANTS IN WINTER.
12. INSECTS IN WINTER.
13. WINTER TRACKS.
14. HABITATS: HOMES.
15. HABITATS: FOOD.
16. WINTERFEST.
17. PREDATOR/PREY.
18. BATS AND MOTHS: BATTLE OVER OUR GARDEN.
- UMD SPRING BREAK
19. METAMORPHOSIS.
20. BUTTERFLIES AND MOTHS.
21. SPRING FLING.
- STOWE ON SPRING BREAK
22. WORMS.
23. MATING RITUALS AND NESTING.
24. EARTH DAY.
25. SOIL WORK.
26. SEEDS.
27. PLANTING DAY.
28. BEES AND POLLINATION.
29. WRAP-UP AND PRESENTATION OF GARDEN.

Stowe Elementary School
Second Grade Environmental Education Year Plan
Final Version

October 6 & 8- Habitat Introduction
October 13 & 15- Habitat, specifically of trees
October 20 & 22- Introduction to parks
October 27 & Nov. 5- Adopt Birchwood park, plant tulips (travel to park)
November 10 & 12- Water intro as habitat, water cycle
November 17 & 19- Water as habitat, focusing on snow and ice
November 24 & 29- Thanksgiving Break – No E. E.
December 1 & 3- Field Trip and Quarter Transition- No E. E.
December 7 & 9- Food as habitat, intro
December 14 & 16- Food as habitat, continued
December 21 & 23- Holiday Break – No E. E.
December 28 & 30- Holiday Break – No E. E.
January 4 & 6- Shelter as habitat, intro
January 11 & 13- Shelter as habitat, continued
January 18 & 20- Space as habitat
January 25 & Feb 17- Habitat tie-together and conclusion (snow day Jan 27)(sick Feb 10)
February 1 & 3- Snowshoeing
February 8- Birchwood park in the winter (Monday classes only)
February 22 & 24- Winter adaptations
March 1 & 3- UMD Spring Break – No E. E.
March 8 & 10-Camouflage
March 15 & 17- Spring adaptations of plants and animals
March 22 & 24- Spring changes at Birchwood Park (travel to park)
March 29 & 31- Stowe Spring Break – No E. E.
April 5 & 7- Life cycle of trees; how forests change
April 12 & 14-What is service? How to help. Intro to project in general.
April 19 & 21- Trees! How do they grow? What do they do? How do they provide
habitat (habitat revisited)? (Earth Week)
April 28 & May 3- Erosion (In service day April 26)
May 5 & 10- Introduction to specifics of the upcoming project
May 12- Spring exploration for Wednesday classes only
May 17- Service learning project
Week of May 24- Reflection: I will have already returned to Pennsylvania for the
summer, so I will provide a lesson plan in advance for formal reflection on the service
learning project. You may either use this lesson plan, or construct your own.

YEAR PLAN FOR THIRD GRADE ENVIRONMENTAL EDUCATION

(Final revised version)

Lidie Whittier-Stowe Elementary 1999

<u>DATE</u>	<u>TOPIC</u>	<u>OBJECTIVE</u>
January 6/7	Review game	To review what they have learned so far in EE and to get comfortable with their new EE teacher.
13/14	National Parks	To compare National Parks with state parks and learn about the first National Park.
20/21	Chickadee Olympics-part 1	To create a "chickadee" adapted for winter survival.
28	Chickadee Olympics -part 2 (Shega and Mell only-snow day)	To put "chickadees" to the test.
February 3	Chickadee Olympics -part 2 (Gunderson and Fleming only)	To put "chickadees" to the test.
10/11	Winter Survival Skills-people	To learn about being outside comfortably in winter.
17/18	No EE (sick)	
24/25	Snowshoeing	To learn how to snowshoe and have fun being outside in winter.
March 3/4	No EE	UMD break
10/11	Soil Explore	To understand where soil comes from.
17/18	Trees and Soil	To understand what erosion is and how trees and soil are connected.
23/25	Maple Sugarbush-at UMD	To learn how maple syrup is made.

31/1	No EE	Stowe Spring Break
April 7/8	Tree life cycles	To understand a tree life cycle.
14/15	Forest Cycles: Succession	To understand the process of forest succession.
21/22	Earth Day	To define service and listen to the earth.
28/29	What trees are we planting?	To learn specifics about the trees that will be planted for project and how wildlife will benefit from those trees.
May 5/6	Service project review	To review what they have learned that relates directly to service project.
13	Service Project	To plant trees in Jay Cooke State Park.

Stowe Elementary School-Fourth Grade
1998-1999 Year Plan
Environmental Education

<u>Lesson #</u>	<u>Date</u>	<u>Topic</u>
1	Oct. 5	Introductions, expectations, create journals, discuss service project (drain stenciling)
2	Oct.12	Water, water molecule, water cycle Center Activities
	Oct.19	St. Louis River Tour
	Oct.26	Stowe OFF
	Nov. 2	Complete Activities from 10/12
3	Nov.9	"The Incredible Journey"
4	Nov.16	Water Facts Scavenger Hunt
	Nov.23	UMD OFF
5	Nov.30	Succession (Part One of "Pond Today-Meadow Tomorrow" Activity)
6	Dec. 7	Wetlands (Part Two of PT-MT Activity)
7	Dec.14	(Final Part of PT-MT Activity)
	Dec.21	UMD/Stowe OFF
	Dec.28	UMD/Stowe OFF
8	Jan. 4	Climate Patterns
9	Jan.11	Water Pollution
10	Jan.18	Water Pollution Detectives
11	Jan.25	Snow Activities
12	Feb. 1	Microbiology
13	Feb. 8	Microbiology

	Feb.15	Stowe-OFF
14	Feb.22	Ground Water
	Mar. 1	UMD OFF
15	Mar. 8	Water Distribution Activity
	Mar.15	Water Distribution Activity (part 2)
	Mar.22	Water Distribution Activity (part 3)
	Mar.29	Stowe OFF
16	Apr. 5	Freshwater Ecosystems
	Apr.12	No EE
17	Apr.19	Earth Week Activities
	Apr.26	Stowe-OFF
18	May 3	Plotting service project
19	May 10	Service Project (rain delay!) Thank you's & evals.
20	May 14	Service Project
21	May 17	Culminating Activity

**REVISED YEAR PLAN FOR
FIFTH GRADE ENVIRONMENTAL EDUCATION
Lidie Whittier-Stowe Elementary 1998/9**

(Note: Since three out of four teachers requested to have EE every other week, I revised the schedule to better tie the lessons together for everyone. Preo's class will have additional days not on this schedule)

October

6	Introductions to each other and year
13	Introduction to Lake Superior
20	Introduction to service project: "The Man who Planted Trees"
27	Water Cycle

November

3	Build a Tree
10	Watersheds
17	Watersheds cont. (Sum of the Parts).

December

9	Food Web
16	Biodiversity

January

4/6	Exotic Species
18/20	Pollution/Bioaccumulation

February

1/3	<i>The Lorax</i>
22/24	Humans and Lake Superior

March

1/3	No EE-UMD break
8/10	Fish of the Lake Superior Watershed
22/24	Twigs

April

12/14	Service Project Tree Survey
27	Review Relay or Bingo

May

11	Tree Planting at Mission Creek and Park Point
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1997-1999 LCMR – SERVICE LEARNING GRANT

Goal : To involve all Stowe students in a Service Learning Project that provides a clear service while meeting a real need for an agency or group of people.

Roles:

Tim Bates

- Works with the environmental ed. graduate students
- Reviews E.E. lessons to assure quality and appropriateness
- Coordinate inservices, workshops and staff development opportunities for staff and partnering groups/agencies.
- Help grad students imbed the inquiry grad standard in the service learning curriculum.

E.E. Students

- Lay an environmental education foundation for the grade level projects.
- Contact Tim for: appropriateness of lessons, any visuals/materials that UMD could provide to enhance the lesson.
- Stay in contact with partnering groups/ agencies
- Contact Celeste for help working with : the partnering groups/agencies, teachers and the grade level focus, and any supplies that might need to be ordered.
- Imbed the inquiry grad standard in the service learning curriculum.
- Work with classroom teachers to determine projects and their timelines.

Celeste Daw

- Oversee each project
- Monitor time lines and progress towards each project's objectives
- Help with communications with partnering groups/ agencies
- Be available for assistance for grad students (working with teachers/agencies, as a resource for grade levels or other resources)
- Report to Tim on effectiveness of lessons/abilities of grad students (feed back from students, teachers, aids or observations)
- Monitor teacher involvement/participation
- Accountable to Mr. Johnson for quality of service learning projects
- Keep records

Classroom Teachers

- Determine with grad students projects and their timelines
- Observe relationship between weekly lessons and the inquiry standard
- Have ultimate responsibility for project implementation
- Develop with grad students a follow-up activity
- Implement the follow-up activity

TO: STOWE STAFF
 FROM: TIM BATES
 RE: STAFF WORKSHOPS

I have taken the responses that you have given to the e.e. in-service survey that Larry sent out a few weeks ago and compiled them into a 2 year plan. Some of the workshops you suggested have been combined with other suggestions that were similar. There is a chance that some of your ideas have been lost in the process (if this is the case let me know). The following is the plan for workshop through the spring of 1999 – those for this spring have specific dates. Attached is a registration form. Please complete this form and return it to my mailbox by April 3.

Spring 1998 Workshops

Classroom and Outside E.E. Activities for Lower Grades

Tuesday, April 8 2:30-4:30

There are a wide variety of activities that can be used to help incorporate e.e. into your teaching. We will look at these activities and try some of them. Be prepared to have some fun. Dress for going outside. Instructor: Tim Bates

How to Plant trees and Flowers in the Northland

Monday, May 11 2:30-4:30

Learn the proper techniques from the expert, Bob Olen. Discover what is necessary for soil preparation, actual planting, and maintenance of trees and flowers that you plant. Hands on practice, so bring work clothes. Instructor: Bob Olen-St. Louis Co. Extension Agent

Introduction to Stowe's Nature Trail

Tuesday, May 19 2:30-4:00

Here is your opportunity to explore the newly created nature trail in the Stowe Woods. We will hike the routes and explore what is out on this great resource. Most of the trails are wood chipped. Wear hiking shoes/boots & dress for outside. Instructor: Tim Bates

Butterflies and Insects of the Northland and how to Garden for them

I'm still trying to set this one up for this spring and will let you know if it will help.

1998-99 School Year

Waste Reduction—Oct. '98

- Recycling & Composting
- Waste Audit

St. Louis River Exploration—Late Sept./Early Oct. '98

Nature Trail Series—Oct. '98, Jan. & April '99

- Animals
- Trees
- Wildflowers
- History of this site-Jerome

Birds—Nov. '98 or Jan. '99

- Attracting & Feeding
- Migration
- Winter Habits

Snowshoes & Snowshoeing—Jan. '99

E.E. Literature—Jan. '99

- How Can It Fit Into the Reading Series

Sustainable Gardening & Agriculture—Feb. '99

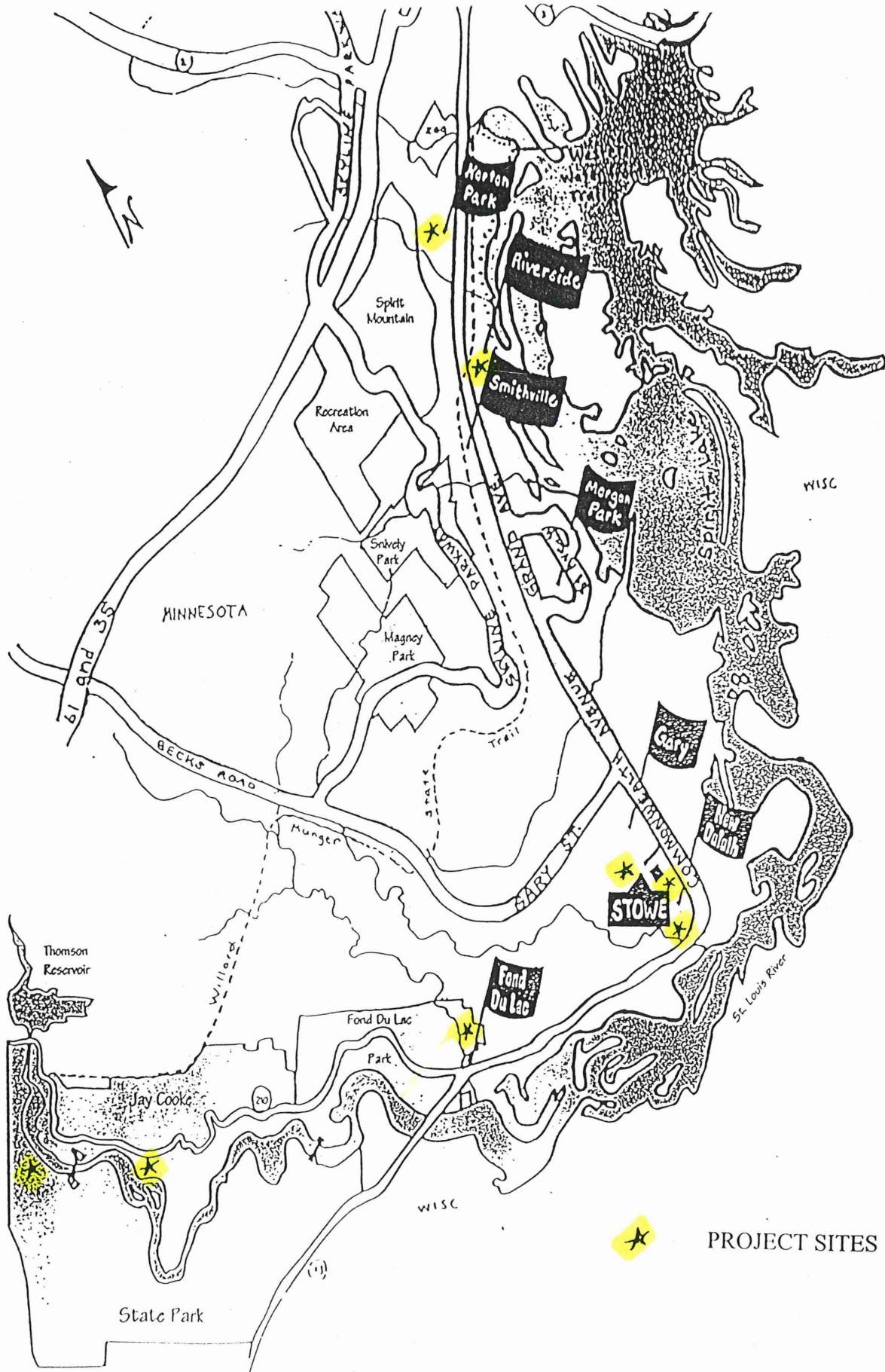
Alternative Energy—March '99

Pond Investigation—May '99

History Tour of Jay Cooke—May '99

Environmentally Sensitive Sites in our Area—May '99-Hemlock Ravine, Steel Mill site, ??

STOWE AREA MAP



PROJECT SITES