Final Report Format GREEN Field Trips

1. Written summary of grant activities that include progressive steps on how actual activity/project was completed.

With support from the Metropolitan Greenspaces Program, Cascade Earth Force provided five elementary and middle-school classrooms with the training, materials, water monitoring equipment, resource partners, field experiences, and support needed to assess watershed health and take action on local watershed issues. This yearlong project used the *GREEN: Protecting Our Watersheds* materials to assist youth and educators in using their watershed analysis as a springboard for watershed stewardship and action. Earth Force developed the GREEN materials to provide handson, inquiry-based learning experiences for young people to understand, improve and sustain water ecosystems in their community. Through this project, teachers and students learned the ecological importance of all the functions related to their watershed, studied the characteristics of healthy watersheds, looked at the characteristics of their own local watershed, and developed projects to address a local issue they uncovered in that watershed. The success of the program is underscored by the partnerships that developed as students, teachers, and community members implemented their action projects. These strong partnerships will continue well beyond the life of the first year project.

The project began with two-days of professional development for the participating educators. Community resource partners and watershed experts were directly involved in these training workshops, and additional community partner contacts were provided in list form. All of these partner referrals were willing and prepared to work with the teachers and students.

Cascade Earth Force trained the educators in water quality monitoring and the six steps of the GREEN process:

1. Conducting a Watershed Inventory: Use scientific data collection techniques to identify watershed and water quality conditions and uses; identify potential threats or impairments to water quality; create a list of verified threats or impairments to the water quality.

2. Selecting a Watershed Problem: Develop and use criteria for selecting an impairment or threat; use a decision making process that supports a teamwork ethic; select one impairment or threat to be the focus of the action project.

3. Looking At What People Are Doing: Identify the human behaviors and policies related to the problem or threat; identify the key players and decision makers regarding the problem; describe a variety of community opinions about the problem or threat; develop a recommendation for improving a policy or practice.

Deciding What To Do: Select one strategy to be used when carrying out the action project.
Taking Civic Action: Assign within the action team specific tasks; establish an action plan with a timeline; carry out the action plan.

6. Looking Back and Ahead: Assess the impact of the project; decide if anything has been left undone; chronicle the effort in a project story.

The educators then worked with their students utilizing the GREEN process, with on-going support from Cascade Earth Force and community partners. During the spring season, students and teachers were invited to showcase their projects to the community and student peers at the Children's Clean Water Festival.

 Written evaluation and comments by grantee and/or others involved in the activity/project. This should include: what worked/what did not work, helpful hints for future project managers.

The greatest challenges with this project this year were rooted in the bigger issues of general school funding and support, overworked teachers, tenuous school schedules, and the disenfranchisement of teachers and students within the greater community. These conditions made for a very challenging environment for teachers to get their students out into the out of doors for watershed studies, hindered progress with the action projects, and often truncated the professional development of the educators and the actual 6-step process of the GREEN program.

3. Photo documentation showing how the activity/project was accomplished.

Another great challenge with working with educators and schools on the edge this year was getting the teachers to respond to requests from Cascade Earth Force staff. There was extensive communication with very few educators enough to get thorough information about projects and photo documentation of their projects. Attachment 1 includes the latest project descriptions and updates that were collected from teachers. Attachment 2 contains photos of the various projects.

4. If the grant included a restoration/enhancement portion, please include before/during/after photos of the site. Set, permanent photo points for monitoring purposes are strongly recommended. Include map and photo points with slides of photo points.

N/A

5. If the grant included a restoration/enhancement portion please outline the maintenance plan or follow up activities that will ensure success of the project.

N/A

6. If the grant included a restoration/enhancement portion please note the number and species of trees, seedling and shrubs planted. Accurate numbers and species are necessary.

N/A

7. Actual product of the grant such as curriculum, video, guide, brochure, etc. that the grant monies funded.

N/A

ATTACHMENT 1 PROJECT STORIES

Kelly Creek Elementary School ~ Earth Force Project ~ Spring 2003 Update Kelly Creek Meadows Wetland Project Cynthia Rauscher, Third Grade Teacher

For the past three years Cynthia Rauscher's third grade classes have been protecting and enhancing the Kelly Creek Meadows Wetland. This wetland is located within walking distance from Kelly Creek Elementary School. In cooperation with the Cascade Earth Force-Green Program, her students were encouraged to follow these steps in order to design and implement a project that create a lasting improvement to a selected watershed threat or impairment:

- 1. Investigate and identify water quality conditions in a targeted area
- 2. Identify a water quality problem to watershed health
- 3. Share and compare sampling data and observations with experts
- 4. Select the specific underlying causes that students will address through a project
- 5. Identify policies and community practices related to the cause and develop options for changing human behavior through civic action
- 6. Explore civic processes-for example, storm water management plans
- 7. Plan, implement, and evaluate our watershed protection project

Following the Green process has ensured that students work toward a sustainable change in the health of the watershed, as opposed to conducting a one-time, short-term fix for the problem. It is possible for all schools to develop their own project because they can adapt their project to suit their own location and interests. This national program was designed for 4th grade through High School. Julie Magers, the Director of Cascade Earth Force, asked Mrs. Rauscher's classes to be part of their program because of her previous experiences working with Mrs.Rauscher and Kelly Creek Elementary School.

In order to protect Kelly Creek Meadows Wetland, a fenced area around a holding pond and Burlingame Creek was developed by Homeport Builders Inc. when Kelly Creek Meadows' homes were being built. Mrs. Rauscher's third graders were looking for a community action project near their school. The Gresham City Planning Office and Gresham Water District suggested that the children adopt the protection of this wetland as their project. The children continue to be excited because it provides a monthly walking field trip for the class.

This community action project has definitely involved the neighborhood community. Kelly Creek School parent volunteers accompany the class on their monthly walks and help with classroom activities. Dan Goodrich, from Homeport Builders, provided the children with willow shoots for planting in the first year of this project. He continues to instruct the classes each year about the purpose of the wetland's holding ponds and french drains. He also helps children collect water samples from the pond.

Each year third graders vote for the wetland project they wish to work on. community action project for this school year 2002-2003 is called, *Protect the Wetland Frogs' Habitat*. Twice a year, students have tested the wetland pond water for the presence of Nitrates, Phosphates, Dissolved Oxygen, pH and Temperature. In January 2003 it was noted that the Nitrate level had doubled compared to May 2002. Since pesticides and fertilizer use may cause this higher level, and as part of community action, it was decided to inform the neighborhood about the higher nitrate level by raising public awareness.

The class leafleted fifty homes with information about protecting the frog habitat by limiting use of pesticides and fertilizers. Feedback was received from several people in the neighborhood who said they were impressed by this effort.

Other efforts and recognitions include:

- In the past three years, our 3rd grade classes surveyed other grades at Kelly Creek School and instructed them about the importance of protecting the wetland environment.
- At the annual Children's Clean Water Festival at Rock Creek Community College, third graders hosted an informational booth about their wetland project.
- Third graders received an award certificate from the EPA-Adopt Your Watershed Program for their work in their neighborhood wetland.
- 3rd graders have joined with two kindergarten classes in their frog study. They have become partners on the walking field trips promoting cross-grade learning.
- The Kelly Creek Meadows Wetland Project received a Diack Ecology Grant primarily because of the project's site is within close proximity to the school, has community partnerships and is an interactive ecology science program for children. The supplies received from this grant have been put to good use. Rubber boots for the whole class, raingear that is essential for our climate, additional water testing kits, insect collecting materials, water bug charts, compasses, and a portable science habitat for the classroom were obtained.
- Participating in the Kelly Creek Science Fair in February 2003, students displayed action photos, murals of our wetland, a water testing data chart, clay frogs and felt frog puppets they created. Guests from the neighborhood, members of the Diack Ecology Foundation, parents, Kelly Creek students and staff attended.

 In April 2003, this project was presented to the Gresham-Barlow School Board. In a PowerPoint presentation, Kelly Creek students showed how they have been working to protect and enhance this wetland. Student representatives from all classes working on this project presented what they had learned and enjoyed from this study.

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Each year past students and parents return to visit the classroom and tell how much this wetland project has meant to them. One student continues to do a litter patrol in another wetland/park near her home because of what she had learned about wetlands in third grade. A key component of this program is encouraging students to take civic action in their communities through projects by generating support for watershed protection in the future. Through this project, Cynthia Rauscher has tapped into the goodwill and positive energy of third grade youth over the past three years!

### Lewisville Middle School ~ Earth Force Project ~ Spring 2003 Update Jewel Creek Project Pam Schwatka, Seventh Grade Teacher

During the fall and winter seasons of 2002-2003, Pam Schwatka and her 7<sup>th</sup> grade class at Lewisville Middle School explored their school property and local community and made a selection for the area of their watershed that they wanted to focus on for their Earth Force project. They adopted Jewel Creek and visited it regularly to conduct water sampling and benthic macro invertebrate collection. From their watershed assessments, they generated a list of issues regarding the health of the creek and the surrounding area. In January, they invited local experts into their classroom to discuss the data they collected. Ultimately, students aspired to clean up the creek, but had a variety of impairments to the health of the waterway. They performed a variety of actions including blackberry bush removal, litter clean up, and door-to-door campaigning to inform local residents of their project. They hoped to get community buy-in to help steward the local creek.

A collective of partners who helped students and Ms. Schwatka with their project include: Dana Wulfe (Columbia Springs Conservancy), Cary Armstrong (Clark County Public Works), Jenny Boyd (Lower Columbia River Estuary Project), Gary Bock (Watershed Stewards), and Rusty Post (Washington Dept. of Ecology).

#### Cascadia Middle School ~ Earth Force Project ~ Spring 2003 Update Burnt Bridge Creek Project Peter Ritson, 7<sup>th</sup> & 8<sup>th</sup> Grade Teacher

All year, students at Cascadia Middle School were engaged in watershed enhancement activities related to Burnt Bridge Creek, in Vancouver Washington. Burnt Bridge Creek is a creek which directly borders the school property.

When the students at Cascadia Middle School started to take inventory of their community, the first thing that came to mind was the urban creek located on the school property. On their walking tour, the students found a lot more than the sights and sounds of nature. They found abandoned cars, glass bottles, clothes, and bags of household trash. Local experts also pointed out the poor water quality resulting from pollution run-off. So, based on what they had researched, the students realized that something was missing. There were no trash cans, very little vegetation on the stream banks, and no signs stating "no littering" to the public.

Their research showed that the current practices of local residents were contributing to the problems surrounding this urban creek. As part of their long-term plan, they formed a partnership with the city of Vancouver and Clark County to encourage the public to limit their impact on the creek's habitat.

They took ownership of the creek located along the school's property by planting native vegetation along the steam banks of Burnt Bridge Creek.

They also hosted a public presentation of their work for community partners, members of the press, a county commissioner, parents, teachers, members of the general public, and students from a neighboring school who are all involved in a similar stewardship project. The event was held in conjunction with "National Monitoring Day." At the event, Cascadia MS students conducted water quality tests side by side with visitors and talked extensively about the scope of their research and outreach efforts related to the project. A local television station interviewed students, community partners, and the county commissioner. Following the event, students from Columbia High School engaged in dialogue with the Cascadia MS students about their stewardship activities.

Native American Youth Association ~ Earth Force Summer Program "Creating Public Awareness for Combined Sewage Overflow" Joseph Ball, Summer Program Coordinator

Summertime is usually a time for rest and relaxation – not at the Native American Youth Association. Participants in the NAYA Summer Program spent their summer examining the issues surrounding Combined Sewage Overflow.

Not your idea of fun? Well, within a five-week timeframe, the NAYA summer youth group worked with the Portland Airport, the Bureau of Environmental Services at the city of Portland, and the Port of Portland to determine the health of their local watershed. Field trips to the airport provided the youth group a chance to witness efforts to reduce

pollution run-off caused by airport activities and a restoration project that included the planting of native vegetation near a wetlands area. The city of Portland took the summer class to a manmade pond to emphasize the beneficial functions of wetlands and how they address the problems associated with the combined sewage overflow system. Water sampling was conducted and the youth group worked with community partners to assess the current health of the wetland areas.

After examining various sources of the pollution entering into the Willamette River, the summer participants choose to focus their efforts on creating a public awareness campaign directed toward the protection of wetland areas in and around the Willamette River, near their neighborhood. The campaign included posters and flyers emphasizing the importance of our wetlands. The campaign messages provided examples of daily actions that would reduce the human impact on our wetlands. In addition, a letter-writing effort to a Native American support group located at Portland General Electric prompted PGE to express their support of the education campaign by contributing funding for duplicating the posters and flyers into color copies. The campaign has been gaining support from community partners, local businesses and residents. Joseph Ball, team leader of the summer program at NAYA, was amazed by the energy and enthusiasm that his youth group possessed during their Earth Force summer experience. His goal is to expand on what these students have learned during the summer and apply it throughout the academic year with more time dedicated to their project.

In celebration of their successes, the NAYA youth group held an award ceremony and invited all of the community partners who provided assistance during their five-week summer program.

### Lewisville Middle School Chris Pickens, 7<sup>th</sup> grade teacher Battle Ground, WA

Mr. Pickens and his 7<sup>th</sup> grade class at Lewisville Middle School conducted a watershed inventory in and around their school property. They chose Mill Creek as their study area. As of December 2002, they had conducted water sampling and benthic macro invertebrate collection. They generated a list of issues regarding the health of the creek and the surrounding area. In January, they had plans to bring in local experts to discuss the data they collected. They ultimately wanted to clean up the creek. Mr. Pickens was unresponsive to communicating his activities with Cascade Earth Force staff. Nothing more is known about this project.

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#### ATTACHMENT 2 PHOTOGRAPHS



Joseph Ball with posterboards his youth participants created to convey their project to community members.

Cara Slaton of Cascade Earth Force working with students and parent volunteer on macroinvertebrate collection.





Cynthia Rauscher at Educator training workshop in winter 2003.

Cascadia Middle School student presenting class project information about Burnt Bridge Creek to watershed organizations in Mt. Angel, Oregon.





Cascadia Middle School students educating neighbors about macroinvertebrates as water quality indicator species on watershed health.

Cascadia students taking a break from their hard work at a neighborhood water quality event they conducted.



