Ecology in Classrooms and Outdoors

May 13, 2019

Dear Metro Enhancement Grant Review Committee,

Ecology in Classrooms and Outdoors (ECO) is delighted to submit our application to the Oregon City/Metro Enhancement Grant Program for the *Newell Creek Enhancement and Service Learning Project.* This project will connect students to nature, advance their understanding of local conservation efforts in their community, and build their awareness of the need for protecting and managing natural areas.

ECO's mission is to inspire K-12 students to connect to our natural world by providing hands-on ecology enrichment programs. Our ECO model is unique and comprehensive, aligned with Next Generation Science Standards (NGSS), the Oregon Environmental Literacy Plan (OELP), and Science Technology Engineering and Math (STEM) education. On this mission focused project, ECO will provide ecology education, facilitate student participation in field trips, and complete a 2nd year of restoration work at the Newell Creek site. Newell Creek will be enhanced, with a reduction of invasives below 20% and a density of 1600 native plants per acre.

We are hopeful that Oregon City/ Metro Enhancement Grant Program funds this sincere effort to both improve and conserve Newell Creek and spark young minds about the positive impact they can have as stewards of their local environment and community. Please reach out if you have any questions.

Sincerely,

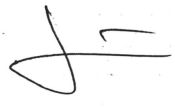
Sarah W

Sarah Woods
Director of Operations & Co-Founder, ECO

Enhancement Grant Program Application

Before filling out this form, please read the Enhancement Grant Program Information for complete submittal instructions and to be sure that your proposal qualifies for funding. Applications received after the deadline will not be accepted. Liability insurance coverage may be required. Limit answers to the space provided.

Title of Project Newell Creek Enhancement and Service Learning Project
Organization Ecology in Classrooms and Outdoors (ECO
Is this a Non-Profit Organization? Yes X No __
Non-Profit Federal tax exempt ID Number 20-3710367
Address PO Box 90293
City, State, Zip Portland, OR 97290
Project Coordinator Sarah Woods Phone 503-680-2389
Email sarah@ecologyoutdoors.org
Chairperson of Governing Board (If Applicable) Jess Martin
Phone 503-320-2664

Signature 

(The person authorized to represent the organization must sign the application with a digital signature or actual signature on a hard copy.)

*****Complete the budget sheet on page 7 first.**
Amount totals from that sheet will auto fill into this table

Grant Amount Requested:	**$**	15,220
+ Matching Funds (Cash):	**$**	5,750
+ In-Kind Matching Funds (See question #15):	**$**	33,926
= Total Cost of Project:	**$**	54,896

Proposal Information

1. Is this your first grant application to the Enhancement Grant Committee?
Yes **No**

2. Have you received an Enhancement Grant in the last 3 years? (Include past Metro Enhancement Grants)
Yes No

If yes, please describe the projects/programs for which you received funding.
Newell Creek Enhancement: Students from Gardiner Middle School worked on service-learning and habitat enhancement program at the Newell Creek natural area during the 2018-19 school year. The project goals were to 1) Reduce invasive plant species below 20% 2) Plant native trees and shrubs to a density of 1600 native plants per acre 3) Improve students understanding of watershed health by 30% 4) Students are able to identify 12 native plants and conduct vegetation monitoring protocol and 5) Students publish a newsletter to be distributed to the community. Approximately 300 students from Gardiner Middle School participated in the project.

3. If you received an Enhancement Grant last year, what is the status of the project?
Status: The project is on track and ⅔ of the site visits have been completed.

4. Will this grant-funding request be used for the first phase of a project, with possible grant requests for future phases?
Yes **No**
If yes, please explain.

5. Briefly describe the project for which you are requesting funds.
Ecology in Classrooms and Outdoors (ECO) restoration and enhancement projects are one to ten acre projects best done in phases. Restoring native vegetation to a site where human impacts have disturbed native soil, changed the natural hydrology, and where invasive plants have invaded the area, necessitates several years of active stewardship. ECO sites are restored manually using little or no herbicides.

In addition, students will develop a connection to place, and a sense of accomplishment and ownership over time as native plants grow and invasive vegetation is significantly reduced. Students see the results of their hard work. This project is the second year of work on a three acre parcel of land.

The location of this project is three acres adjacent to Mountain View Cemetery operated by Oregon City Parks Department. These three acres to the north of the cemetery are part of the Newell Creek watershed. The three acre project area abuts property owned by Metro. The site has been impacted primarily by logging and by development of the cemetery, along the southwest edge. With the loss of mature native conifer trees erosion has occurred along much of the sloping three acres despite the remaining large big leaf maple trees and few conifers. Excessive sediment washing into the main-stem of Newell Creek can negatively affect trout, coho salmon, steelhead trout and Pacific lamprey found in Newell Creek.

Students from a local school will continue the habitat enhancement work that was started on by the students at Gardiner Middle School in the 2018-19 school year. Because middle school students rotate through different classes during the school day, there were scheduling challenges for the site visits. For the 2019-20 school year, we will be working with elementary students who spend their entire school day with one teacher, making the site visit scheduling much easier. We will work through a restoration program which calls for site assessment and plant inventory as a first step and concludes with vegetation monitoring.

The project goals are 1) Reduce invasive plant species below 20% 2) Plant native trees and shrubs to a density of 1600 native plants per acre 3) Improve students understanding of watershed health by 30% 4) students are able to identify 10-15 native plants and conduct vegetation monitoring protocol. Approximately, 180 students from a local elementary school will participate in the hands-on service-learning project. This is phase two of a project that was started last year.

6. Describe why this project was selected and the community need(s) to which it will respond. This project fulfills two community needs: 1) Enhancement of a valuable natural area and 2) Involvement of elementary school students in a service-learning project that includes both classroom lessons aligned with the Next Generation Science Standards (NGSS) and application of knowledge during real world habitat enhancement projects. This project-based learning supports science education and increase science and ecological literacy.

7a. Identify and describe how this proposal meets one or more of the goals for funding within the enhancement area boundaries (check those below that apply and describe by item number below).

1. **Result in significant improvement in the cleanliness of the City.**
2. Increase reuse and recycling efforts or provide a reduction in solid waste.
3. Increase the attractiveness or market value of residential, commercial or industrial areas.
4. Result in rehabilitation or upgrade of real or personal property owned or operated by a nonprofit organization having 501(c)(3) status under the Internal Revenue Code.
5. **Enhance new or existing wildlife, riparian zones, wetlands, forest lands or marine areas, and/or improve the public awareness and the opportunities to enjoy them.**
6. **Preserve or increase recreational areas and programs within the City.**
7. Improve safety within the City.
8. Increase employment or economic opportunities for City residents.
9. **Provide work or training opportunities to benefit youth, seniors and low-income persons or underserved population.**
10. Enhance art and culture within the City.

7b. List by item number from 7a and describe how the project meets each goal.

1. Result in significant improvement in the cleanliness of the City: The quality of the environment within the three acres will be improved by the hard work of local elementary students. By removing invasive vegetation such as English ivy and Himalayan blackberry and planting native vegetation upland areas of the watershed will be made more diverse and resilient, helping to control erosion and improve water quality, while also improving habitat for local wildlife.

5. Enhance new or existing wildlife, riparian zones, wetlands, forest lands or marine areas, and/or improve the public awareness and the opportunities to enjoy them.

The Newell Creek Watershed is an important natural resource within the City of Oregon City. The three acres site adjacent to Mountain View Cemetery is a unique parcel. A small tributary of Newell Creek is located on the three acres. While many of the large conifers have been logged off and old logging roads persist there are a series of springs and small ponds and a second and third growth mixed forest maturing. Students from a local elementary school will remove invasive species and plant native shrubs and conifers, improving biodiversity and making for a more resilient natural system. Also, along the edge of the site bordering Mountain View Cemetery invasive vegetation now dominates. Students will remove the invasive species and fortify the edge with dense planting of sun loving native vegetation such as red-flowering currant; Oregon grape; big leaf maple; vine maple; and nootka rose.

6. Preserve or increase recreational areas and programs within the City: The area on which ECO students will be working is a recreational area. By bringing local students to the Newell Creek natural area, students will build awareness that the site is a resource for the city, and better understand what it takes to steward it, and similar natural areas.

9. Provide work or training opportunities to benefit youth, seniors and low-income persons or underserved population: This project provides training/background to interest students in careers in science/environmental science. Class lessons build science literacy and the field work increases skills, including plant identification, planting and removal techniques and data collection.

8. Project Period: 10 months
(Number of months in duration)
Beginning Date: August 15, 2019
Ending Date: June 15, 2020

9. What is the geographic area of Oregon City where the project will take place?
A three acre parcel adjacent to Mountain View Cemetery in the Newell Creek Watershed.

10. How will the community benefit by your project? What is the estimated number of people affected and anticipated outcome(s)?

-The community will benefit in two ways: 1) Enhanced natural area in the Newell Creek Watershed, and 2) Elementary school students will participate in a service-learning project receiving hands-on science education.

-Approximately 180 students will be participating in the project. In total, at least 200 people will be affected by this project.

11. What community resources will be used as support for this project (i.e. community, city-owned property, city departments, transportation services or other civic groups)?
This project is located on city property and managed by Oregon City Parks and Recreation Department. ECO will coordinate all site activities with Oregon City Parks staff.

12. Briefly describe prior experience managing similar projects, including any past enhancement projects.

ECO facilitates student restoration projects across the Metro region and along the Oregon Coast. This year alone, students from 37 schools will work on restoration projects at 19 sites, on approximately 45 acres.

13. List anticipated project milestones and dates (e.g. groundbreakings, significant facility improvements, large gatherings of volunteers, public meetings, conferences, special activities and events).

<u>August/September 2019</u>

ECO educators will meet with participating teachers to create a classroom and field trip schedule. ECO will coordinate the site activities and schedule with Jonathan Waverly from the Oregon City Parks Department.

<u>October-December 2019</u>

Students will receive one in-class lesson to be introduced to site and learn about watershed health, native plant identification, and invasive plants. Students will take a pre-survey. Students will visit Newell Creek for the first site visit. Students will be introduced to the site and begin work by removing invasive species and learning plant identification.

<u>February- March 2020</u>

Students will receive a second in-class lesson to learn about water quality and macroinvertebrates. Students will go to Newell Creek for the second site visit. Students will use different data collection techniques to survey the site and plant native trees and shrubs.

<u>April 2020</u>

Students will receive a third in-class lesson to learn about land conservation and food webs. Students will take a post survey to gauge the impact of the program.

14. An exit report will be required once the project is complete, per a signed Enhancement agreement. Describe the measurements you will use to assess the program/project effectiveness. In other words, how will the effectiveness of the program/project be tracked and evaluated (i.e. number of people served; improvements and/or beautification; number of volunteers attracted; amount of area cleaned or rehabilitated, etc.)? Be sure to describe project goals, changes and noticeable benefits that will come about as a result.

ECO will measure student progress by the following: number of trees planted, number of student participants, pre & post surveys taken by students indicating an increased understanding of watershed health by +30%, and students are able to identify 12 native plants. Photo-monitoring of the site, and progress toward a vegetation monitoring goal of 1600 native plants per acre with less than 20% invasive plant species on site.

15. List sources of support for in-kind matching support (e.g. volunteer hours and donations). In order to estimate the value of donated volunteer time refer to the Enhancement Grant Program Information sheet for current value.

Item	Source of Support	Estimated Value ($)
Service Learning Volunteers	Elementary school students	$21,726
Project administration	ECO in-kind match	$1,500
Curriculum and materials	ECO in-kind match	$6,000
Restoration equipment/ tools	ECO in-kind match	$2,700
ECO liability insurance	ECO in-kind match	$1,600
Native plants	Oregon City Parks	$400

16. List all grants applied for in support of this project and commitments confirmed to date.
Corporate Sponsor $5,000
Oregon Forest Resources $750

17. What is the percentage of Enhancement will be used for personnel services or administrative costs? **6.7%**

18. Will the administrator be a paid position? **Yes** No

19. Proposed Budget—on the following page please complete the proposed budget. Modify line items as needed to reflect proposed expenses.

- Column A: Show grant monies needed for the program/project.
- Column B: Show cash matching funds.
- Column C: Show donations or in-kind volunteer labor (from question 15).
- Column D: Totals for each category.

****These figures will be transferred to the table on the first page of this application.*

Proposed Budget

Suggested List (not inclusive)	(A) Grant Dollars Requested	(B) Matching Funds (Cash)	(C) In-Kind Matching Support	(D) Total
Personnel Services **Director of Operations:** **24 hrs @ $50/hr** **Program Director:** **82 hrs @ $45/hr** **Educators:** **211 hrs @ $35/hr**	$12,300	$5,000		$17,300
Elementary students: **180 students x 5 hours x $24.14**			$21,726	$21,726
Project Administration costs	$1,000		$1,500	$2,500
Class Materials	$900		$6,000	$6,900
Equipment/Supplies			$3,100	$3,100
Transportation Costs **Bus funds:** **12 trips x $125/trip = $1,500** **Mileage:** **500 miles x $0.54 = $270**	$1,020	$750		$1,770
Insurance Costs (if needed)			$1,600	$1,600
Totals	**$15,220**	**$5,750**	**$33,926**	**$54,896**

OREGON CITY

Parks Division

500 Hilda Street | Oregon City OR 97045
Ph (503) 496-1201 | Fax (503) 656-7488

May 7, 2019

Dear Grant Review Committee,

This letter is written in support of the *Newell Creek Enhancement and Service-Learning Project*. The Oregon City Parks/Cemetery Department has partnered with Ecology in Classrooms and Outdoors (ECO) during the 2018-19 school year, and fully supports the continued restoration and enhancement work at the Newell Creek/ Mt View Cemetery site.

The Oregon City Parks/Cemetery Department operates and manages the Newell Creek/Mt View Cemetery site. This location has been affected by clearing and human caused impacts. The disturbance and changes to the landscape have caused significant erosion and a large population of invasive species. Due to the erosion, there has been excessive sediment moving into the Creek, which can negatively affect the wildlife and other fauna native to the habitat.

Now in its second year of restoration, this site still requires more work to continue to improve the health of the watershed and the surrounding area. ECO will spearhead the reduction of invasive plant species and also replace with native trees and shrubs which will help to reduce the erosion and sediment load into the Creek.

Oregon City Parks/Cemetery Department hopes that Oregon City Metro Enhancement Grant Program will provide funding for ECO's work at the Newell Creek/Mt View Cemetery site. We have seen the wonderful effects of the first year of work at the site and know that a second year will help make this area more resilient, less prone to erosion, and will ultimately improve water quality. On top of that it involves kids from local classrooms that get to help make a difference in their community. Please let me know if you have any questions.

Sincerely,

Jonathan Waverly

Jonathan Waverly
(Oregon City Parks/Cemetery Operations Manager)
503-496-1460

NEWELL CREEK 2018-2019

Site before students arrive. Blackberry is seen on either side which the students removed throughout their visits.

Students sample for macroinvertebrates in the ponds around Newell Creek. Students assessed the health of the water based on the species they found.

Students plant a snowberry together in the area around Newell Creek.

Students write reflections of their field trip and time spent in nature.

Group photo of all 300 7th grade students on their first field trip

Student Quotes

“Next time we come I’m most excited to see if there are tadpoles or frogs. Because we found so so many eggs.”

“I like learning out here way better than in my classroom.”

“As I rest in a bed of moss, smelling the loose dirt, a bird sings its song, a leaf falls from its home in the tree, into the green waters of the still, frozen in time creek. Behind me the dead rests slumbering in the moss.”

Newell Creek Reflection

As the massive brigade of almost 300 students came into sight across the cemetery’s rolling hillside, my nerves began to kick in. It was my first day in the field with ECO and the plan was for me to shadow the other educators and lend a hand removing invasive plants. However, as it happens, things do not always go as planned, and I learned quickly that flexibility and improvisation are essential.

One of the educators was unable to make it and so I stepped in to lead the invasive removal station. The plan was to have students dig up blackberry on a hillside where it had been well established. I was trepidatious at first because I was not sure the students would enjoy such a laborious activity. After leading my group to gather the necessary tools, I quickly realized that my preconceived notions were misplaced. The students were absolutely thrilled to be outside for the day and ready to get started.

Their excitement gave me the confidence I needed to rise to the occasion. After performing a quick demo on how to properly dig out the roots of a blackberry cane, a group of 7th-grade students approached me with determination in their eyes. They wanted to seek out the largest root and not stop until it was removed, and they did just that.

When we came to the end of our station, the students were circled around a group of four, who was holding up a large blackberry root and everyone was cheering! The four determined young champions had excavated a hole around the massive root mass almost two feet deep and three feet wide. They had worked hard to get every last bit of the root.

The sense of empowerment and satisfaction was visibly emanating from the student’s faces as they held up the heart of the blackberry. It was at this moment I was filled with the unfamiliar feeling of hope for our future and knew I had found the right job.