



Cozine Creek Restoration Project

SPRING 2018

Linfield ENVS 470 Capstone

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From left to right:

Back row: Bill, Connor, Noah, James, Hayden, and Kyle

Front row: Mehana, Nancy, Gabi, Peri, and Luke

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INTRODUCTION

Starting in 2016, the Environmental Studies Program (ENVS) at Linfield College initiated a partnership with the Greater Yamhill Watershed Council (GYWC) to involve students in an ongoing effort to improve the ecological condition of the 12 acre section of property that the college owns adjacent to Cozine Creek. During the first year, ENVS capstone students created an inventory and assessment in order to better understand the characteristics of the site, as well as the concerns and preferences of the stakeholders. Based upon this inventory and assessment, students in the spring 2017 capstone course developed management goals as well as a proposal to restore the oak and riparian woodland and encourage educational uses of the property. The class of 2018 drew from these previous efforts to write and submit a grant application to the Oregon Watershed Enhancement Board (OWEB) for \$15,000. With this grant, students in the 2018 ENVS capstone course hope to secure the funding to begin a restoration effort with assistance from the Greater Yamhill Watershed Council (GYWC) and Upshot LLC, a local restoration contractor. Future capstone students in the ENVS program will have the opportunity to sustain this effort by organizing ongoing volunteer work parties in partnership with the GYWC, Linfield Facilities, and the Office of Community Engagement and Service (CES), conducting research projects, as well as active monitoring of progress of the restoration effort over time. In addition to the OWEB grant, we received a \$1,500 grant from the Associated Students of Linfield College (ASLC) to support a Cozine Stewardship Internship. We also developed and submitted a grant application to Yamhill Watershed Stewardship Fund (YWSF) for \$2,500 to help purchase additional native plant materials to support our restoration effort. These combined grant proposals, including in-kind matches, bring the total value of our efforts to over \$27,500.

The goal of this report is to provide future generations of ENVS students with a foundation for working in the Cozine Creek area. In addition to the completed OWEB and YWSF grant proposals that are included in the appendices, we provide a more detailed version of the problem and solution narratives associated with the grant proposal. Also, it includes a section describing our efforts to involve students and community members with stewardship of the site. We then provide a comprehensive description of the treatment prescriptions and planting plan, along with a specific monitoring framework and suggestions for future research to track the effectiveness of the restoration effort over time. It is our hope that the information provided in

this report will be useful to future students in the ENVS program and the greater McMinnville community and will contribute to the long term restoration and improvement of the Linfield Cozine Creek natural area and the greater Cozine Creek watershed.

DETAILED PROBLEMS

Cozine Creek is 11.3 miles long and flows mostly in Yamhill County. Linfield College owns approximately 12 acres north of the campus along the banks of Cozine Creek in McMinnville, Oregon. The property is bordered by Baker Street on the west edge, Baker and Cows Streets on the north edge, and Davis Street to the east. Cozine Creek runs eastward through the center of the property. There is a walking trail through the property that runs from the Linfield campus to Highway 99 and two other trails that branch off and go to the greenhouse area of Linfield and to the Davis Street underpass. Cozine Creek floods during winter months covering the lower areas and bridge with mud.

The focus area for this OWEB grant proposal is the 4.63 acre portion of the property starting at Baker Street and stretching half way down the creek toward Davis Street. This area of the Cozine Creek property primarily consists of riparian forest and oak woodland habitat. The most abundant tree species on the Cozine Creek property are Oregon white ash (*Fraxinus latifolia*) and Oregon white oak (*Quercus garryana*). Many invasive species including Himalayan blackberry (*Rubus armeniacus*), English ivy (*Hedera helix*), Italian arum (*Arum italicum*), and reed canary grass (*Phalaris arundinacea*) are found on the property, although some native species are present, including creek dogwood (*Cornus sericea*) and camas lily (*Camassia quamash*). Linfield facilities, students (from Linfield, Chemeketa, and local public schools) have participated in work parties to clear the invasive plants and replant natives. The Environmental Studies Department has committed to returning the site to a more ecologically healthy state in part by increasing the diversity and abundance of native plants.

Camas lily (Figure 1) is an important part of the Cozine natural area because of its historical and cultural significance for the Yamhelas Tribe of the Kalapuyan Nation and thus requires special recognition. The camas patch on the college campus is reported to be the largest standing plot in McMinnville. After students and facilities workers cleared Himalayan blackberry, camas has spread into those areas.



Figure 1. Camas Lily (*Camassia quamash*)

The City of McMinnville relies on the Cozine Creek area for stormwater drainage, especially during flood events. Stormwater runoff flows to Cozine Creek by pipes or in open channels. A culvert on Ford Street crosses Cozine Creek 0.3 miles below Linfield College, blocking fish passage upstream. Another medium fish passage barrier is owned by the City of McMinnville and is located below Elmwood Street. There also is a large culvert that acts as a fish passage barrier under Baker Street above the college. The Davis and Baker Street culverts are barriers to juvenile fish during dry summer months when the culverts are not submerged.

Students in Environmental Research Methods courses (ENVS 385 and 460) have been measuring water quality in Cozine Creek since 2011 (Figure 2). The studies have shown that Cozine Creek has low dissolved oxygen and pH, as well as high water temperature, turbidity, phosphate, coliform bacteria, and biochemical oxygen demand (BOD). These water quality factors can negatively impact aquatic life. Currently, a lack of riparian vegetation results in inadequate shade to keep the water cool and is contributing to bank erosion and sedimentation in certain areas of the stream. Cozine Creek has been a water quality and habitat focus area for the GYWC since its founding in 1995. The GYWC has monitored water quality in Cozine Creek for

over twenty years, including monitoring for more than one hundred pesticides (herbicides, fungicides, and insecticides) and pesticide breakdown products.



Figure 2. Peri Muellner collecting water quality data at one of the research sites

Cozine Creek has been 303d listed under the Clean Water Act for multiple water quality impairments, including stream temperatures that are too hot for salmonids, dissolved oxygen levels that are too low for general aquatic life, and summertime *E. Coli* levels that impact human recreational contact. Despite these challenges, Cozine Creek provides important fish and wildlife habitat. Cozine Creek is listed by Oregon Department of Fish and Wildlife (ODFW) as providing rearing habitat for juvenile salmonids, including ESA-listed winter steelhead trout and spring Chinook, particularly during high winter flows on the Yamhill River. It is likely that Cozine also provides rearing habitat for juvenile Coho salmon that have proliferated across the Yamhill River Watershed in recent decades. A number of smaller resident fish species are found throughout Cozine Creek including Oregon chub, red shiners, sculpins, and threespine sticklebacks. It is possible that resident cutthroat trout persist in the upper watershed's forest and agriculture lands, but they have not been reported in city limits in recent decades. In an Inventory and Assessment

done by the ENVS 485 class, students reported more than 54 species of birds and 11 species of mammals (including beaver) on the Linfield property.

Since 2004, the GYWC and its partners have secured \$20,000 in state grant funding to improve four acres of Cozine riparian habitat in urban McMinnville working with six landowners, including an eighty-member Homeowners' Association. Knowing that this was only scratching the surface of the habitat restoration needs and opportunities, the GYWC has sought diverse support to accelerate the pace and effectiveness of its efforts to improve the health of Cozine Creek. Since 2014, Linfield College has provided more than \$4,000 in funding and \$10,000 of in-kind support through an MOU to the Environmental Studies Capstone Course and student internships focused on improving the health of Cozine Creek. In 2017, the City of McMinnville awarded GYWC \$5,000 to begin a concerted effort to recruit Cozine landowners for habitat projects to improve water quality and habitat for wildlife. Community response to the 2017 project recruitment has been overwhelmingly positive. Several private landowners including Linfield College and the City of McMinnville are working with the GYWC to apply for habitat restoration funding for riparian enhancement projects on their properties similar to the proposed solutions in the following section.

DETAILED SOLUTIONS

Building upon earlier efforts by the Linfield facilities office, ENVS students, and the GYWC, our proposal requested funds necessary to control invasive plant species and replant with a diversity of native vegetation on approximately half of Linfield's Cozine property in an effort to enhance bank stability, reduce surface erosion, improve summertime shade, and provide habitat for wildlife. The five different management methods proposed include no treatment, manual, manual/chemical, mechanical/chemical, and manual/mechanical (Figure 3). The timeline, experiment map, and contractor estimate are in Appendix A.

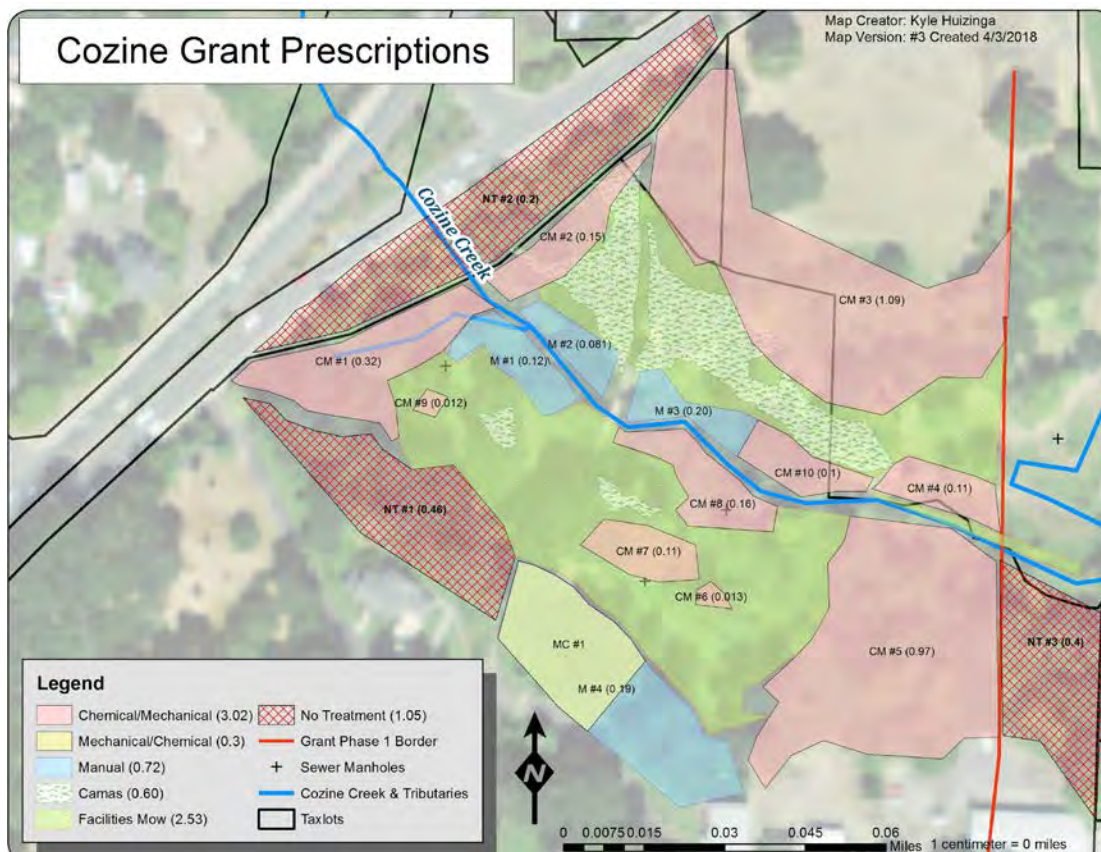


Figure 3. Map of phase 1 project prescription plan

In addition to using grant funding to control invasives and replant with native species, we also will be using this project as an opportunity to demonstrate the efficacy of various management practices that a landowner might implement for similar habitat restoration projects. This grant will be the start of a research and monitoring project that will be overseen by the

ENVS Department. Proposed experiments will include not only the different treatment types, but also different types of planting, weed control, and deer browse protection. After the invasive species have been controlled, we will replant native species. The GYWC Executive Director, Luke Westphal, will serve as project manager and provide oversight for all project activities. Luke, along with the Linfield Environmental Studies Department and the Linfield College Community Engagement and Service Office will coordinate volunteer work parties with students and local community members to plant native species, install deer protection, provide additional brush and weed control, and other general maintenance to ensure plant survival. There also will be different plant types including bareroot, live stakes, potted or container plants, and seeds. This will be monitored to find which plants survive best so they can be used in future plantings.

Deer browse is moderate to high throughout McMinnville and the Cozine Creek watershed. In the past, plantings on Cozine Creek that did not incorporate deer browse protection suffered significant mortality and/or stunted growth. The use of wire cages, mesh protection, and tree tubes resulted in higher rates of plant survival. We will be examining the efficacy of different types of protection.

We also plan to install project signs printed on outdoor-ready vinyl in the area to increase community awareness and understanding of the project's goals, funders, and partners, as well as how people can get involved. Signs also discourage off-path public entry into the sensitive habitat areas. In addition, interpretive information, including the history of the college and camas lily, would contribute to the educational aspect of the project.

STEWARDSHIP AND OUTREACH

Beginning in 2017, the environmental studies capstone sequence, ENVS 460/470, began planning and executing monthly work parties in conjunction with the GYWC. Using GYWC gloves and tools, students and community members have contributed over one hundred hours during the 2017-2018 school year, in addition to the 150 hours in the 2016-2017 school year, completing tasks such as invasive species removal, trash clean up, and native species planting. The Office of Sustainability has been involved in the advertisement and support of the work parties. Additionally, an ENVS student works in the Office of Community Engagement and Service and involves Change Corps social media for advertising to draw from a larger volunteer base (Figure 4). We hope future classes will work to continue these relationships to make it easier for them to maintain the grant prescriptions.



The image shows a screenshot of a Facebook event post. At the top left is a circular profile picture of Luke Westphal. To its right, the text reads "Luke Westphal shared an event." followed by "April 12 at 7:52pm". Below this is the event description: "Busy the next two weekends? Join us on the 28th for our lastCozine Creek work party of Spring Semester!". The main part of the post is a photograph of a group of about 15 people, mostly young adults, posing in a wooded area. They are standing behind a large pile of cut green branches and leaves. Some are wearing blue jackets or hats. Below the photo is the event title "Weed Pull & Native Planting at Cozine..." with the date "APR 28" and time "Sat 9 AM". The location is "Behind Newby Hall on Cozine Way, M...". There is a "★ Interested" button. At the bottom are "Like" and "Comment" buttons.

Figure 4. An example of a Facebook event/post for a work party

Throughout the year, work parties have been conducted in various ways. Some were organized entirely by capstone students, some partnered with Change Corps, a part of the CES office, and others served as part of larger service day events organized by the CES office. Each year, the Days of Service Director plans four large, campus-wide events and is willing to send a group of students to work in Cozine as long as the ENVS Department or GYWC provides supervision. Additionally, the Environment and Conservation Service Coordinator, a member of the CES office, is responsible for planning monthly service events for students. This year, the capstone class and the Service Coordinator partnered to hold one event each semester. In addition to student efforts, GYWC's executive director worked with community members to organize various work parties along Cozine Creek up and downstream of the college. The GYWC also reached out to Chemeketa Community College, McMinnville High school students, and church groups. Linfield College and the GYWC will continue to provide in-kind hours to coordinate volunteer work parties during the time period of the grant to conduct interplantings, additional weed control, maintenance of deer tubes, and other general project needs. In addition, there will be an internship opportunity available with the GYWC for a student to serve as a liaison between the Linfield and McMinnville communities in planning the monthly work parties. Having work parties allows students, faculty, and community members to be involved with the restoration of the Cozine Creek area and increases the engagement and commitment of stakeholders.

The capstone class gained recognition from ASLC to create a club for regular Cozine work parties, the Cozine Conservation Corps (CCC). Members of the CCC will provide volunteers with knowledge of the property's history, students also are taught about native and invasive species and how to appropriately and effectively remove or leave plants on the property. Participants can use the Cozine work events to accumulate community service hours that meet requirements of organizations and honor societies. Every Greek organization is eligible to earn an award for "Most Chapter Service Hours" and many have semesterly service requirements. Additionally, many honors societies (and some clubs) have service expectations. The specific requirements vary by Greek chapter and department honors society. The Fraternity and Sorority Life Office can provide names and emails upon request so chapters can be contacted about work parties. ASLC's Clubs Director has a list of club presidents. Additionally, ASLC's publicity team is willing to film videos and/or make posts about big events. The CCC has the ability to

send one all campus email per year or Dan Ferguson can be contacted to place the event in the Wildcat Weekly. This email typically goes out on Mondays, so it would be good to email him on Thursday or Friday of the week prior to when you want the announcement to appear. The most effective way to ensure participation is word of mouth. Finding involved and committed students is crucial because they can easily be convinced to bring their friends to events. People may or may not read posters or emails and people tabling to advertise events are often ignored. However, it is significantly harder to refuse a direct invitation from a friend. A good idea would be starting with a work party where every capstone and every CCC member brings a friend, followed by an event where each participant from the previous work party brings a new friend.

PRESCRIPTIONS

The following treatments will be used to control the invasive vegetation and allow for the planting of native species. Each prescription will be implemented over the grant period in accordance with the project timeline. These prescription terms are used throughout the grant application to maintain consistency.

- *Manual* means hand removal and hand cutting.
- *No Treatment* means nothing done; areas with this description will be used as controls to compare to other treatment types.
- *Manual/Chemical* describes the use of hand removal/ hand cutting followed by herbicide spot spray.
- *Mechanical/Chemical* will be mechanical treatment followed with spot spray herbicides.
- *Chemical/Mechanical* will begin with the herbicide treatment and follow with mechanical treatment.

Mechanical treatment can mean several different types of treatment. Each will be defined when descriptions of each prescription are made.

The different treatments will be made in the following locations (Figure 5). *Manual (M)* treatment will be performed in on 4 separate sites. M (#1-3) are currently untreated riparian sites that are designated for volunteer work events in the future. Site M #4 is the subject of numerous work events over the past 2 years. The site will continue to be manually treated with spot spray treatment of Italian arum. *Mechanical/Chemical (MC)* treatment will be performed on MC #1, just northwest of M #4. This site has already been mechanical treated with mowing and trimming by Linfield Facilities Services. Chemical treatment is expected in the future to treat the excess Himalayan blackberry, English ivy, and Italian arum. *Chemical/Mechanical (CM)* treatment is expected for the majority of the area in the grant application. In all of these prescribed sites, Himalayan blackberry and English ivy are prevalent. *No Treatment (NT)* is prescribed to two areas within the grant application area. NT (#1) is a site bordering the Linfield College President's house. In an effort to address privacy concerns, we are performing no treatment to this area. The NT (#2) area borders Highway 99. We are avoiding any treatment at this point because of the close proximity to the highway and the steep slope. The green areas on the map generally consist of grass and patches of Italian arum. Other than spot sprays for the Italian arum,

these areas will be maintained mostly by Linfield Facilities Services. Maintenance from Linfield Facilities consists periodic mows.

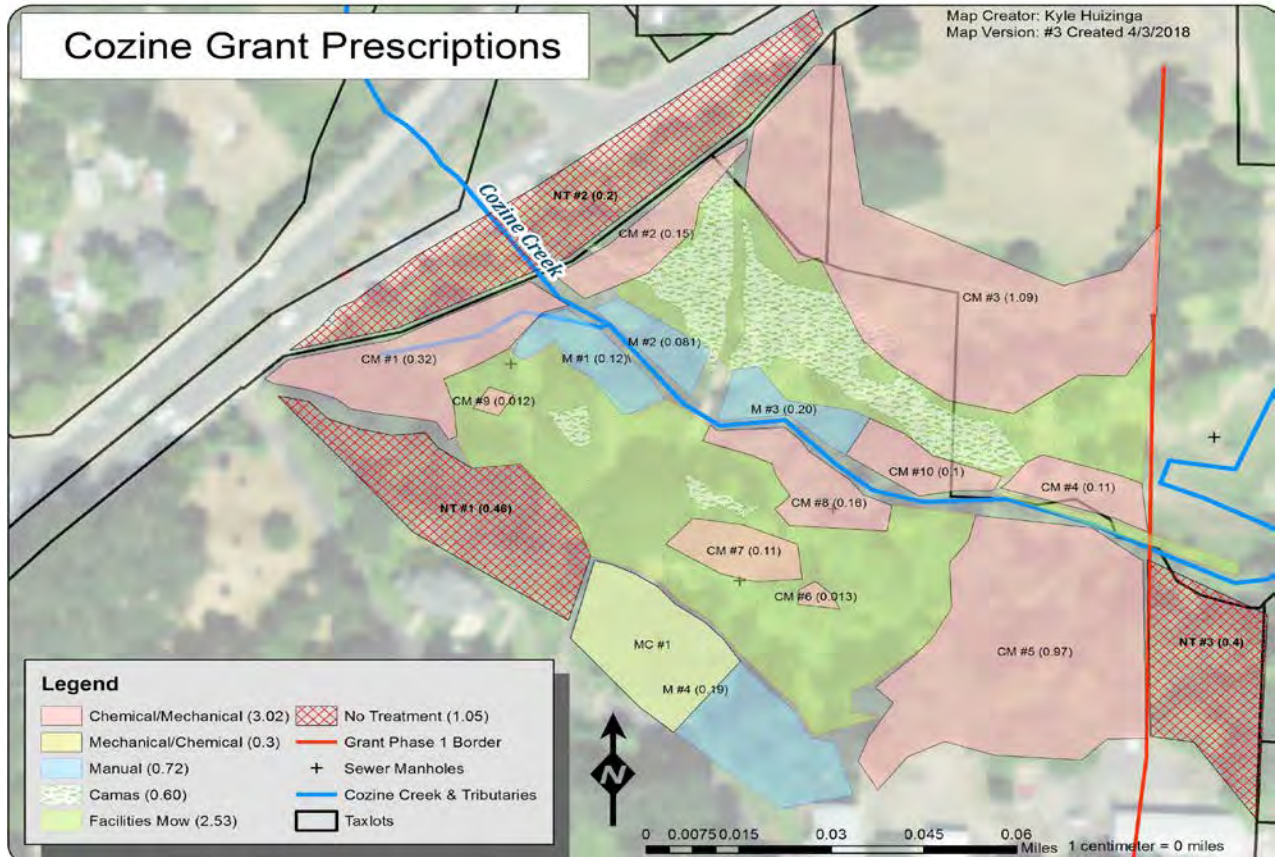


Figure 5. Site prescriptions

Herbicide Use

The following herbicides will be used:

Opensight

Garlon 3a

Roundup Custom

Polaris (Imazapyr)

Dyne-Amic (surfactant)

Areas that contain an abundance of Himalayan blackberry and English ivy will be treated using a mixture of the herbicides OpenSight and Garlon 3a. These areas will be treated twice during the first two years. Both treatments will be spot sprayed. We expect the second treatment

affect significantly fewer plants because we will only treat regrowth. In between the herbicidal sprays, mechanical treatment (mowing) will be performed for management of the dead plant material. The intent of the mechanical treatment is to create a suitable area for the growth of new plants.

Italian arum will be sprayed with an herbicide mixture of (OpenSight/Garlon 3a/and Imazapyr). Application periods will be the same for the Himalayan blackberry and English ivy.

The reed canary grass will also be treated with the herbicide Glyphosate (Roundup) using the same application periods as the previous treatments.

Manual treatment will occur regularly with volunteer work parties scheduled every month in fall and spring semesters. The ENVS Department will be responsible for continuing management and plans to continue work on M #4 - MC #1 and begin manual treatment upstream of the bridge. Future work parties will be to continue manual removal of invasives, as well as to plant native species in the areas that were treated when they are more than 75 percent weed free.

After planting, a spot/ring herbicide spray is planned in early June around each planted tree or shrub to promote the growth of the native plants and reduce competition from weeds and invasive plants.

Timeline

The first herbicide treatment will take place in late June/early July of 2018 (Table 1). All invasive plants will be treated with herbicides during this period. The plants should die four to eight weeks after the initial herbicide treatment. In mid-August 2018, mechanical treatment will begin on the chemical/mechanical prescribed sites. In September 2018, a second spot spray will be repeated on any sites where invasives have grown back. In February 2019, the planting process will begin in areas that are more than 75 percent weed free. Multiple volunteer work events will be needed to complete the planting and installation of deer protection. Finally, in late June/early July 2019, the same procedures will be repeated in areas where there are remaining invasive plants. A timeline is also included in the grant application package, appendix A.

Table 1. Timeline for project implementation

Application	Time
Invasive Plant Control	Late June/Early July 2018
Ongoing Maintenance/Spot Sprays	September 2018
Replanting with Native Species	February 2019
Volunteer Work Parties	Monthly during Academic Year (2018-2022)

Facilities

The Cozine Creek area costs \$32.50 an hour to mow, and the area takes 8 hours to completely mow. The area is mowed 4 times per year. The total cost per year is \$1,040.

Before work parties, facilities should be contacted about the proposed treatment area, the work that will be done, and what tools and/or services will be needed. Following the end of the work party, facilities has been removing invasives that the volunteers placed on tarps.

Due to imperfect communication between the ENVS department and Linfield Facilities Services, mechanical treatment was performed within the areas originally designated as manual treatment. The manual treatment areas that have been treated mechanically are M#1, M#2, and M#3. The mechanical treatment occurred in early spring of 2018. To prevent this, there has been a briefing of facilities staff by the ENVS department May of 2018. Consistent and clear correspondence with facilities directors is extremely important as they are valuable partners.

Planting

The planting process will begin several weeks following the chemical application. In February 2019, volunteer work events will be coordinated to begin the planting process. Approximately 40 native species will be planted (Figure 6). The majority need deer browse protection to increase the odds of survival. The deer browse protection will be purchased and installed during the volunteer work events. Details regarding the planting plan can be found in Appendix C.

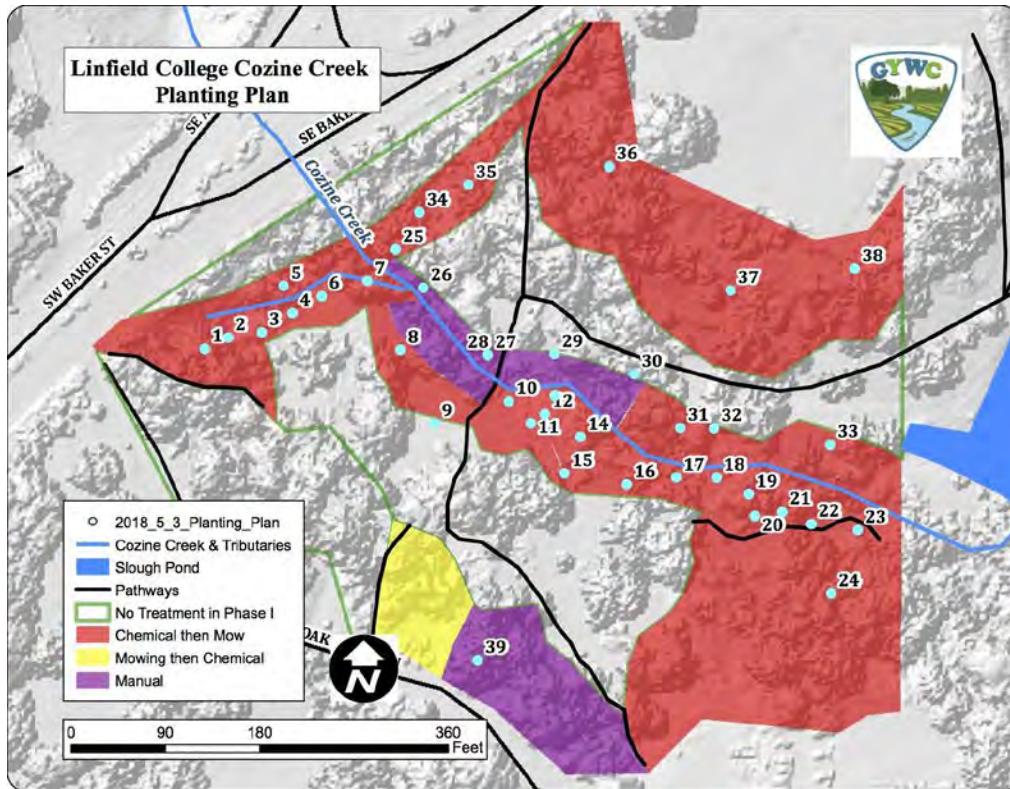


Figure 6. Proposed planting plan created by Luke Westphal

MONITORING AND FUTURE RESEARCH

Cozine Creek is a unique area that provides students and faculty at Linfield College with the opportunity to conduct research. This proposal includes a monitoring plan that will be used to determine the effectiveness of different treatment types as well as photo points to observe changes in vegetation over time (Appendix D). We will continue to monitor vegetation, wildlife, and water quality, and begin additional research projects.

Current Monitoring

Water Quality

Since 2011, the Environmental Studies Senior Capstone students (ENVS 385 and 460) have tested water quality at several locations on Cozine Creek (Figure 7). Water quality parameters including DO (dissolved oxygen), BOD (biochemical oxygen demand), turbidity, pH, nutrient levels, bacterial counts, and macroinvertebrate diversity have been and will continue to be measured. Students in every ENVS Senior Capstone Research Methods class found the water quality in Cozine to be poor compared to parameter levels adequate for salmon. The 2017 report can be seen here: (http://digitalcommons.linfield.edu/envsstud_papers/1/).

Cozine Research Site Map

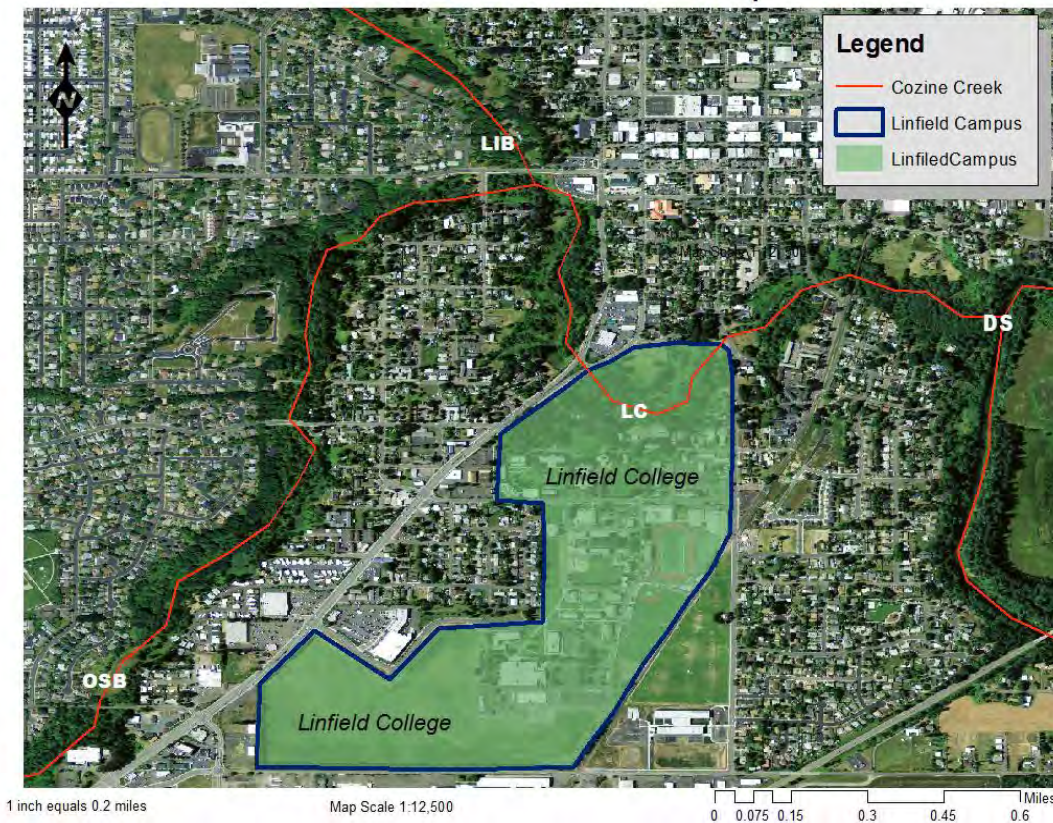


Figure 7. Location of water quality monitoring sites created by Kyle Huizinga (LIB: McMinnville Library; LC: Linfield College; OSB: Old Sheridan Bridge; DS: Downstream Site)

Students in future ENVS 460 classes will continue to monitor the water quality in Cozine Creek as done by previous classes. We collected water samples at the Linfield site in May 2018. It is recommended that future classes monitor water quality every spring in addition to the annual fall monitoring, if possible.

Measuring Vegetation

This grant is designed to allow Linfield students and faculty to assess the effectiveness of different management techniques including invasive removal, planting options, and deer exclusion devices. Invasive species management began in August 2016 removing Himalayan blackberry and English ivy from Newby hill. Since then, students in the ENVS 460 and 470 classes have organized and led monthly work parties in the Cozine Creek area removing invasive species and planting native species. To monitor the effectiveness of our work, the ENVS 460

students collected baseline vegetation data in three areas in fall 2017. We ran transects to examine the effectiveness of each of the methods of invasive species removal (Table 2). Success will be defined as a decrease in invasive species cover, an increase in native species cover, and an increase in the species diversity of native plants.

Table 2. GPS coordinates for the start of each transect

Site Name	Transect Number	Latitude	Longitude
Newby Hill	1	45.20262	-123.19888
	2	45.20257	-123.19879
	3	45.20247	-123.19824
	4	45.20242	-123.19869
	5	45.2024	-123.19865
Burn Site	1	45.20308	-123.19755
	2	45.20308	-123.19743
	3	45.20327	-123.19865
	4	45.20303	-123.19731
	5	45.20293	-123.19782
North Bridge	1	45.20320	-123.19850
	2	45.20324	-123.19863
	3	45.20327	-123.19865
	4	45.20329	-123.19869
	5	45.20327	-123.19870
Uncleared Area (230° mag North)	1	45.20280	-123.19810
Uncleared Area (41° mag North)	2	45.20282	-123.19796
Uncleared Area (64° mag North)	3	45.20259	-123.19820

To further analyze the effectiveness of each treatment method, work hours as well as number of people present will be documented at each work party. The area in which the work

party was completed will also be documented. Luke Westphal has documentation of this as well. This will help us track work hours to specific areas.

Plant Success

Replanting the management areas with native plants is an essential part of reverting the area back to a more natural state. We are going to use different types of planting stock (seed, bareroot, stakes, plugs, and gallon containers) and will be examining which species of plants as well as the types of nursery stock plants do best. Students will document the survivorship by counting and measuring the number, size, and species of each surviving plant. We also will use different types of deer browse exclusion materials (tubes, cages, and mesh) and assess which plants have better survival and growth relative to the protection used.

Other Potential Research Projects

The Linfield College Cozine Creek property provides students and faculty the opportunity to conduct research in additional areas including wildlife use as habitat, land use, and history. Cozine Creek has the potential to be an area where many academic departments can conduct research.

Our knowledge of the use of the Cozine Creek area by wildlife is limited. We have a fairly complete list of birds that use the area, but little is known about insects, amphibians, and mammals. Potential research projects include monitoring wildlife by using cameras, counting and recording animals, and installing nest boxes and bat houses around Cozine to monitor the presence of both bat and bird species in the area. A student in the Biology Department recently was awarded a grant to conduct bat monitoring in Cozine Creek this summer. Students could conduct studies concerning the number of pollinators present in Cozine, as well as how their populations change relative to the cover by native species.

Linfield College's Cozine Creek property has a variety of stakeholders including students, faculty, neighboring properties, and the McMinnville Community. Previous classes have conducted social surveys to examine perceptions about the property. Results from this survey can be seen here in the Cozine Creek Inventory and Assessment. Future students could continue to monitor changing perceptions of stakeholders by conducting social surveys in the future.

Appendix A: Grant Application Package



Small Grant Program Application 2017-2019

Application Processing Information (to be completed by the Small Grant Team Contact):

Application #: _____
 Date Received: _____
 Date Acted On: _____
 _____ Recommended _____ Denied
 SGT Contact
 Signature: _____

I. General Information

OWEB Funds Requested (round to nearest dollar) \$15,000 Total Project Cost \$ 27,516

Name of Project (five words or fewer) Linfield Cozine Creek Phase 1

Project Location (if more than one, include location/landowner information on each map)

This project occurs at (check one): A single site _____ Multiple sites

Yamhill River Watershed

Yamhill County

T4S, R4W, S20

--123.199, 45.203

Yamhill River Watershed, 1709000807

Cozine Creek

N/A

1. Have you previously submitted an application to OWEB, either through the regular or small grant program, for this project, or one similar to it on the same property? _____ Yes Grant # _____ No

If yes, explain _____

2. Does this application propose a grant for a property in which OWEB previously invested funds for purchase of fee title or a conservation easement; or is OWEB currently considering an acquisition grant for this property? _____ Yes Grant # _____ No

If yes, explain _____

II. Contact Information

Applicant Org.: Greater Yamhill Watershed Council (GYWC)	Tax ID: 80-0660213	Contact: Luke Westphal, GYWC Executive Director
Mailing Address: PO Box 1517 McMinnville, OR		Zip: 97128
Phone: 503-474-1047	Email: Luke@gywc.org	

Landowner(s): Linfield College, Allison Horn (Facilities Services Director)		
Landowner Address: 900 SE Baker ST, McMinnville, OR		Zip: 97128
Phone: (503) 883-2227	Email: ahorn@linfield.edu	

Project Manager for the Grantee: Luke Westphal, GYWC Executive Director		
Project Manager Address: PO Box 1517 McMinnville, OR		Zip: 97128
Phone: 503-474-1047	Email: Luke@gywc.org	

Fiscal Agent Org.: GYWC	Tax ID: 80-0660213	Contact: Luke Westphal
Fiscal Agent Address: PO Box 1517 McMinnville, OR		Zip: 97128
Phone: 503-474-1047	Email: Luke@gywc.org	

Technical Contact: Luke Westphal,
GYWC Executive Director

Phone: 503-474-1047

Email: Luke@gywc.org

III. Project Information

Priority Watershed Concern: the project will address — Check One Only.

Instream Process & Function Riparian Process & Function Urban Impact Reduction
 Wetland Process & Function Road Impact Reduction Upland Process & Function
 Fish Passage Water Quantity & Quality/ Irrigation Efficiency

Small Grant Team Priority Project Type(s) addressed by the project (list specific eligible project type):

Manage Vegetation: Plant and seed native riparian species and Control Weeds (in conjunction with a restoration project)

1-a. Is the project consistent with the local watershed assessment or action plan?

Yes Name primary assessment/plan 2013 GYWC Watershed Restoration Action Plan
 No
 N/A—The watershed does not yet have an assessment or action plan

1-b. Is the project consistent with the local Agricultural Water Quality Management Area Plan?

Yes No

1-c. Is the project consistent with any developed plan for the property (e.g., local conservation or stewardship)?

Yes No
If yes, name the plan(s): Linfield College Cozine Creek Management Plan 2016

2. Describe the current *watershed* PROBLEM(s) you are seeking to address.

Linfield College owns ~ 12 acres of floodplain habitat along Cozine Creek north of the main campus between SE Baker ST and SE Davis ST in McMinnville, Oregon (see attached map). This area includes ~ 0.3 miles of Cozine Creek, and is located ~ 0.6 miles upstream of the confluence with the South Yamhill River. The area's primary overstory vegetation is a mix of Oregon ash, Oregon white oak, Douglas fir, and willow varieties. Vegetation inventories conducted by the Linfield Environmental Studies Department (ENVS) suggest that the average age of the Oregon white oak trees in the Cozine floodplain on campus are more than 150 years old. The area's understory, however, is lacking in native vegetation cover, and is primarily a mix of lawn turf, bare earth, a small meadow of camas lily, and several acres of weeds, particularly Himalayan blackberry, invasive ivy varieties, and Italian arum, among others. Streambank erosion is observable throughout the reach, particularly on the upstream portions where a stormwater tributary merges with the main stem of Cozine Creek.

Since 2014, Linfield College's Environmental Studies Program (ENVS) has provided more than \$4,000 in funding and \$10,000 of in-kind support through an MOU with the GYWC to develop a Senior Capstone Course and student internships focused on improving the health of the Cozine Creek watershed, beginning with the ~12 acre floodplain owned by Linfield College. Previous ENVS Capstone classes have completed an assessment of the floodplain property and a management plan for future uses. The current ENVS Capstone class has produced this OWEB Small Grant proposal for a Phase 1 restoration project of a portion of the property.

For this Phase 1 OWEB Small Grant proposal, the project area includes ~ 4.63 acres of floodplain habitat and ~600 stream feet, and is focused on portions of the upstream area of the ~12 acre property (see attached map). The understory includes patches of native plants including camas lily, Pacific ninebark, red-twig dogwood, Douglas spirea, and sword ferns, which are located in and among ~4.63 acres of weeds, including Armenian blackberry, invasive ivy varieties, Italian arum, reed canarygrass, yellow flag iris, and English holly.

Within the Phase 1 project area, Linfield Facilities Services (Facilities) and ENVS have been working in partnership with the GYWC, Linfield Delta Fraternity, and local community members to begin clearing the invasive weeds and replanting natives in some areas. In support of these efforts, Facilities has expanded

their mowing and spot-spray operations to control weeds within the floodplain area, and the GYWC / ENVS have coordinated more than 200 hours of volunteer labor to control weeds manually, valued at \$5,000+. Without these efforts, the Phase 1 project area would entirely covered in blackberry, invasive ivy, and other weeds. Linfield Facilities and ENVS are eager to continue to improve habitat and educational uses of the Linfield floodplain area, and are committed to maintaining and expanding upon their current successes.

Cozine Creek has been a water quality and habitat focus area for the GYWC since its founding in 1995. The GYWC has monitored water quality in Cozine Creek for 20+ years, including 8 different pollutant parameters, as well as 7 years monitoring for over 100 pesticides (herbicides, fungicides, and insecticides) and pesticide breakdowns. Based on the GYWC's data, Cozine Creek has been 303d listed under the Clean Water Act for multiple water quality impairments, including stream temperatures that are too hot for salmonids, dissolved oxygen levels that are too low for general aquatic life, and summertime E. Coli bacteria levels that impact human recreational contact. In addition, ongoing water quality monitoring conducted by the ENVS Research Methods Courses (ENVS 385 and 460) from 2011 to present have highlighted Cozine Creek's continued impairments for water quality.

Despite these challenges, Cozine Creek provides important fish and wildlife habitat. Cozine Creek provides Essential Salmonid Habitat (ESH) for ESA-listed winter steelhead trout and spring Chinook salmon, particularly for juvenile rearing during high winter flows on the South Yamhill River. This ESH designation extends along the mainstem of Cozine Creek from the confluence with the South Yamhill River, upstream through Linfield Campus, and terminates near the SW corner of McMinnville's City Limits. It is likely that Cozine Creek also provides rearing habitat for juvenile Coho salmon, which have proliferated across the Yamhill River Watershed in recent decades. A number of smaller resident fish species are also found throughout Cozine Creek, including red shiners, sculpins, and three-spine stickleback. It is likely that resident cutthroat trout persist in the upper Cozine watershed's forest and agriculture lands, but they have not been reported within City limits in recent decades. Linfield students and faculty have documented more than 54 species of birds and 11 species of mammals using the Linfield Campus floodplain area for habitat. In addition, lamprey species have been observed by GYWC staff immediately downstream of Linfield Campus at SE Davis ST.

3. Describe the SOLUTION(s) you are proposing to address the current problem(s). Attach a site map, color photo(s), and (if applicable) preliminary project drawings or designs.

-- Project Summary --

Building upon the efforts by Linfield College and the GYWC to improve habitat along the Cozine Creek floodplain on campus, this proposal requests funds necessary to finish carrying out control of invasive plant species in portions of the upstream area of the property and for replanting with a diversity of native vegetation. These activities will enhance bank stability, reduce surface erosion, improve summertime shade, and provide habitat for fish, wildlife, and pollinators.

Please see attached project timeline and contractor estimate for additional details.

This project is designed to demonstrate, empirically and visually, the efficacy and associated costs of typical land management practices that a landowner may implement for similar habitat restoration projects. This project will employ the use of varying types of planting stock (seed, bareroot, stakes, plugs, & gallon containers), weed control treatments, and deer browse exclusion materials (tubes, cages, and mesh). The weed control treatments include no treatment (excluded areas described below in Phasing), manual treatment, mechanical followed by chemical, and chemical followed by mechanical. Please see attached map for additional details of weed control treatments. The planting and deer browse plans will be created as the weed control activities are implemented.

In addition, this project will serve as an ongoing research site that will be monitored by the ENVS department. Over the next several years, ENVS students will monitor and evaluate these treatment units for percent weed / native cover, planting survival and growth, and deer browse exclusion results. The students will also document expenses of cash and in-kind match for each treatment unit, in order to provide a report on the resources needed to develop and maintain these restoration sites using different management techniques.

-- Project Phasing --

This Phase 1 project excludes several areas, including a 0.4 acre City Road ROW along Baker ST and a 0.7 acre buffer around the Linfield President's home and backyard along Oak Grove Lane. These two areas were excluded at this time due to a lack of permissions for treatment, as well as funding limitations. However, Linfield ENVS and the GYWC fully anticipate treatment of these areas during a Phase 2 OWEB Small Grant proposal which the ENVS Capstone class will produce in 2020/2021.

The Phase 1 project area also excludes ~ 2.2 acres of turf grass and camas meadows upslope of the stream corridor west of the pond, in addition to the remaining ~ 4 acres of Linfield floodplain property that extends eastward from the pond toward Davis ST. These areas were excluded from Phase 1 due to funding limitations, and will be treated in a Phase 2 grant proposal. Facilities will continue to mow these excluded areas to keep the weeds suppressed, but no restoration activities will occur there for Phase 2. A Phase 2 grant proposal will fully complete habitat restoration of the College's ~12 acre Cozine floodplain, including converting the turf grass to a natural mix of groundcovers, while increasing biodiversity and erosion control in the camas meadows.

Looking ahead, after completion of Phase 2, the GYWC and Linfield (ENVS) Capstone Course plan to work in partnership to recruit the remaining ~7 acres of private landownership between Baker ST and Davis ST for a Phase 3 grant proposal, for a total of ~19 acres restored across all three phases. Private landowners have already been recruited for ~1.25 acres of future restoration in this Phase 3 area.

Finally, efforts are already underway by the GYWC to recruit and fund habitat restoration from the Cozine Creek confluence with the South Yamhill River, working upstream toward Linfield College campus (see attached map), with the intention that the entire ~54 acre, 0.85 stream mile corridor will be improved in the next 10+ years.

-- Project Management --

The GYWC Executive Director, Luke Westphal, will serve as project manager and provide oversight for all project activities.

Linfield Facilities and ENVS Department will provide in-kind technical assistance for project design and implementation.

A Linfield student intern employed by the GYWC will serve as a Cozine Stewardship Coordinator to implement all volunteer activities, including planting and weed control work parties, as well as general project maintenance. The 2018 ENVS Senior Capstone students have already secured a \$1,500 grant from the Linfield College Student Council to fund 50% of this position. The Capstone students have also established a campus club, the Cozine Conservation Corp., to actively engage the Linfield student body in these habitat restoration activities. In addition, we anticipate that this Phase 1 project proposal will enable the ENVS Dept. to catalyze Linfield funding sources for the establishment of an ongoing Cozine Stewardship Internship position, which would be tasked with the coordination of volunteer activities for the long-term maintenance of the project area in partnership with the GYWC.

-- Site Preparation & Plantings --

Please see attached map of weed treatment units.

For the Chemical / Mechanical and Mechanical / Chemical weed control treatment areas, Upshot Services LLC will be contracted for Spring and Fall ATV spot-spray applications and Spring ring-sprays around plantings, as well as Summer mowing and management of debris / downed wood using a Compact Track Loader (CTL). Any cost savings in contract services realized during implementation may be shifted to additional planting materials or other project needs.

For the Manual weed control treatment areas, the GYWC's Linfield Cozine Intern position will coordinate monthly Spring and Fall Semester community volunteer work parties to cut, hand pull, and dig out weeds. Additional Summer work parties may be coordinated as needed and as funding allows.

The Cozine Stewardship position will also coordinate volunteer planting parties. The GYWC, Facilities, and ENVS will develop the site specific planting and deer browse exclusion plans. Areas will be planted when they are least 75% weed free and where plantings will not hinder ongoing site preparation and maintenance activities. Plantings will include ~ 40 trees to fill gaps in the canopy (e.g. red alder, ponderosa pine, western red cedar, Oregon ash, and cottonwood), ~1,000 shrubs and short trees (red-twig dogwood, vine maple, twinberry, Indian plum, Douglas spirea, etc.), and ~552 groundcovers and wildflowers (ferns, iris, fairy bell, wild ginger, Oregon sunshine, creeping Oregon grape, et cetera). Weed matting will be used on ~200 of the plantings to demonstrate the efficacy of these materials. Native grass and wildflower seed mixes will be spread by hand to provide habitat and control for erosion on slopes and disturbed areas.

Deer browse pressure is moderate to high in this area. Prior planting projects within the City of McMinnville and along Cozine Creek that did not employ the use of deer browse protection suffered significant mortality, and stunted growth of those plants that did survive. This project will incorporate the use of cages, deer tubes, and plastic mesh protectors around most of the tree and shrub plantings to demonstrate the varying efficacies of these deer browse exclusion methods. The groundcovers and wildflowers will not be protected from deer browse, and species will be selected for deer resistance, knowing that some losses from browse are anticipated.

A small grant (\$2,500) will be submitted to the Yamhill Watershed Stewardship Fund (YWSF), a local environmental education foundation that developed out of the GYWC, to pay for additional plantings, seed mixes, deer browse protection, and all of the weed matting supplies. This foundation provides small grants up to \$2,500 for environmental projects that partner with local educational institutions and which provide opportunities for the community to engage in service learning activities.

-- Other --

2 project signs printed on outdoor-ready vinyl will be placed at the north and south entrances to the project area. The signage will be used to increase community awareness and understanding of the project, including: 1) Project Goals & Benefits, 2) Funders & Partners, and 3) How You Can Get Involved. The signs will be produced by Copy Cabana with a 10% non-profit discount.

Funds are also requested for GYWC mileage for project management and coordination of volunteer activities. Although the project is located just a few miles from the GYWC's McMinnville office, we anticipate traveling to pick up plant materials from Salmon-Safe-certified Scholl's Valley Nursery in Tigard (55 miles round trip, once), as well as Seven Oaks Nursery in Albany (128 miles round trip, two trips = 256 miles). We will also have multiple local 5-10 mile round trip events to gather tools and supplies for volunteer work parties (30 miles total).

In addition, funds are requested for 2 years of post-project plant establishment, which will be used to contract Upshot Services LLC for 2 spot-sprays each year (\$1000). Up-Shot Services is donating ~\$214 of in-kind services for maintenance spot-spraying. Linfield ENVS and GYWC will provide in-kind hours to coordinate volunteer work parties during these 2 years to inter-plant for losses with donated plant materials from partners, and conduct additional weed control, maintenance of deer tubes, and other general project needs.

4. Insurance Information

If applicable, select all the activities that are part of your project (check all that apply). You will be required to submit the DAS Risk Assessment Tool for items 1-5:

- 1. Working with hazardous materials (not including materials used in the normal operation of equipment such as hydraulic fluid)
- 2. Earth moving work around the footprint of a well
- 3. Aerial application of chemicals
- 4. Transporting individuals on the water

5. Removal or alteration of structures that hold back water on land or instream including dams, levees, dikes, tidegates and other water control devices (this does not include temporary diversion dams used solely to divert water for irrigation)
6. Applicant's staff or volunteers are working with kids related to the project (DAS Risk assessment tool not required, additional insurance is required)
7. Applicant's staff are applying herbicides or pesticides (DAS Risk assessment tool not required, additional insurance is required)

OWEB considers these projects to carry a greater risk to the organization, organization's employees, volunteers, and the community. If boxes 1-5 are checked above, the applicant must submit the DAS Risk Assessment, <http://www.oregon.gov/das/Risk/Pages/CntrctrlnsReq.aspx>, with this application. Additional information regarding the insurance policy and requirements can be found here: <http://www.oregon.gov/OWEB/GRANTS/docs/insurance/Insurance-Requirements.pdf>.

5. Technical Guidance Source (check at least one and identify the Practice Code, or page and paragraph).

<input checked="" type="checkbox"/> NRCS Field Office Technical Guide Practice Code <u>490 Tree/Shrub Site Preperation,</u> <u>391 Riparian Forest Buffer, 390 Riparian</u> <u>Herbaceous Cover</u>	___ Guide to Placing Large Wood in Streams Page # / Para ___
___ Oregon Road/Stream Crossing Restoration Guide Page # / Para ___	___ Forest Practices Tech Note #4 Page # / Para ___
___ Nonpoint Source Pollution Control Guidebook Page # / Para ___	___ Forest Practices Tech Note #5 Page # / Para ___
___ Urban Subwatershed Restoration Manual Page # / Para ___	___ Tribal Natural Resource Plans and Water Plans (attach the relevant page or pages)

6. Maintenance and Post-Implementation Monitoring

a) Project maintenance is the responsibility of the landowner. What aspects of the project will be maintained? (See application instructions.)

Who will maintain?	What will be maintained?	How will it be maintained?	# of years # of times/year
GYWC, Contractor, and Linfield ENVS	Weed Control	Hand pull and/or spot spray of weeds	Up to 5 Years, 2 Times per year, as needed
	Native Plantings & Deer Browse Exclusion Materials	Interplantings and Deer Browse Exclusion Maintenance	Up to 5 Years, 2 Times per year, as needed

b) Post-implementation monitoring including photo points and visual inspection is *required* for small grants (Year-Two Status Report). What (if any) *additional* aspects of the project will be monitored post-implementation? (See application instructions)

Who will monitor?	What will be monitored?	Cite monitoring protocols	# of years # of times/year

GYWC and Linfield ENVS	Weed Coverage, Native Plant Survival, Deer Browse	GYWC Visual Assessment, Linfield ENVS Research Plot Transects and Photo Points	Up to 5 years, 2 times per year, as needed
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7. Who will be responsible for writing the Year-Two Status Report?

Name: Luke Westphal, Executive Director	Org.: Greater Yamhill Watershed Council (GYWC)
Mailing Address PO Box 1517 McMinnville, OR	Zip 97128
Phone: 503-474-1047	Email: Luke@gywc.org

8. Have the required permits been obtained for the project? ___ Yes ___ No X Not Required
 If yes, what permits have been issued? (Attach copies) _____
 If no, what permits must be obtained and by when? _____

9. Is this project required as a condition of a local, state, or federal permit, order, or enforcement action (e.g., a manure storage and management project required by ODA permit)?
 ___ Yes X No

10. Project Partners. Show all anticipated funding sources, and indicate the dollar value for cash or in-kind contributions. Be sure to provide a dollar value for each funding source. If the funding source is providing in-kind contributions, briefly describe the nature of the contribution in the Funding Source Column. In the Amount/Value Column, provide a total dollar amount or value for each funding source.

Funding Source Name the partner and contribution	Cash	In-Kind	Amount/ Value
OWEB: Project Implementation & 2-Years Post-Project Plant Establishment	\$15,000		\$15,000
Landowner, Linfield College: Cash match for Cozine Stewardship Position; In-Kind Technical Assistance for project design and implementation	\$1,500	\$1,050	\$2,550
Yamhill Watershed Stewardship Fund (YWSF): \$2,500 Small Grant for additional plantings, seed mix, deer protection supplies, and weed mats	\$2,500		\$2,500
Volunteers: GYWC Members, Linfield Students/Faculty, and neighboring landowners will assist with planting natives, weed control, and general maintenance		\$7,242	\$7,242
Upshot Services LLC: Discounted contract services for weed control and maintenance		\$214	\$214
Copy Cabana: Discounted project signage		\$10	\$10
Total Estimated Funds (add all amounts in the far right column)			\$27,516

The total should equal the total cost of the project on page 1

11. Project Budget (Word). Itemize projected costs for each budget category that apply to your project. A minimum of 25% match is required. See application instructions and additional team conditions for further guidance.

PLEASE NOTE: Budgets may be submitted in either Word or Excel formats. Forms can be found here:

http://www.oregon.gov/OWEB/GRANTS/smgrant_forms.shtml

Fill in the amounts, rounded to the nearest dollar; please **do not** include cents.

Please see attached Budget spreadsheet

We, the undersigned, attest that to the best of our knowledge the information contained in this application is true, that the proposed project is not required by a state or federal agency directive, and that the project will be completed within 24 months from the date of the team funding recommendation of the application. *We understand that the submitted application is a matter of public record.*

Also, should funding for this project be awarded we understand:

- 1) **We may not incur** any project expenses until all designated signatories have signed an OWEB grant agreement,
- 2) **We will be required to provide** proper accounting of project expenses, and
- 3) **We will be required to provide** necessary and normal maintenance to sustain the value of the project once it is completed.

By their signatures, the **landowner(s)** attest that they have no plans to sell their property as of the date of this application, are authorized to sign as landowner, and they agree to provide, upon prior request and at a mutually acceptable time, site access to the applicant or representatives of OWEB for a period up to two years following project completion to allow project work to be implemented, monitored, and maintained.

Luke Wedel 5/7/18
Applicant Date

Thomas F. Heelis 5/03/18
Landowner Date

~~Monahan 5/3/18~~
~~Fiscal Agent Date~~
Luke Wedel 5/7/18

Attachment Checklist

- Project location map (Required)
- Color photographs of site (Required)
- Site drawings/diagrams (if applicable)
- Juniper Checklist (if applicable)
- Cooperative agreement, if 2 or more landowners (Optional) **May be submitted in lieu of ALL Landowner signatures on Application ALL Landowners must sign the Grant Agreement**
- Racial and Ethnic Impact Statement (Required)
- Restoration Metrics form (Required)
- Other materials (as required by team)
- Optional Forms At Application Stage (Required at the time of Request for Release of Funds, see instructions)**
- Irrigation Efficiency
- Culvert/Stream Crossing
- Secured Match
- Land Use



Racial and Ethnic Impact Statement

This form is used for information purposes only and must be included with the grant application.

Chapter 600 of the 2013 Oregon Laws require applicants to include with each grant application a racial and ethnic impact statement. The statement provides information as to the disproportionate or unique impact the proposed policies or programs may have on minority persons¹ in the State of Oregon if the grant is awarded to a corporation or other legal entity other than natural persons.

- 1. The proposed grant project policies or programs could have a disproportionate or unique **positive** impact on the following minority persons:

Indicate all that apply:

- Women
- Persons with Disabilities
- African-Americans
- Hispanics
- Asians or Pacific Islanders
- American Indians
- Alaskan Natives

- 2. The proposed grant project policies or programs could have a disproportionate or unique **negative** impact on the following minority persons:

Indicate all that apply:

- Women
- Persons with Disabilities
- African-Americans
- Hispanics
- Asians or Pacific Islanders
- American Indians
- Alaskan Natives

- 3. The proposed grant project policies or programs **will have no** disproportionate or unique impact on minority persons.

If you checked numbers 1 or 2 above, on a separate sheet of paper, provide the rationale for the existence of policies or programs having a disproportionate or unique impact on minority persons in this state. Further provide evidence of consultation with representative(s) of the affected minority persons.

I HEREBY CERTIFY on this 23rd day of January, 2018, the information contained on this form and any attachment is complete and accurate to the best of my knowledge.

Signature
Printed Name: Luke Westphal
Title: GYWC Executive Director

¹ "Minority persons" are defined in SB 463 (2013 Regular Session) as women, persons with disabilities (as defined in ORS 174.107), African-Americans, Hispanics, Asians or Pacific Islanders, American Indians and Alaskan Natives.



Restoration Metrics Form

OWEB receives a portion of its funds from the federal government and is required to report how its grantees have used both federal and state funds. The information you provide in the following form will be used for federal and state reporting purposes.

Please complete all portions of the form below as they apply to your project and submit all pages (do not exclude any pages). Please provide specific values, do not enter values like "2-3" or "<100". Enter your best approximation of what the project will accomplish.

If you have any questions, please contact Cecilia Noyes, OWEB Federal Reporting Coordinator, at 503-986-0204 (cecilia.noyes@state.or.us) or Ginger Lofftus, OWEB PCSRF Reporting Assistant, at 503-986-5372 (ginger.lofftus@state.or.us)

Section 1. Project Overview

Answer all five questions below, even if you have answered a similar question in a previous section in the grant application.

1. Land Use Setting: CHECK ONE BOX ONLY.

<input checked="" type="checkbox"/> Urban/Suburban/Exurban (Projects located within urban growth boundaries or rural residential areas)	<input type="checkbox"/> Rural (Projects located outside urban growth boundaries or rural residential areas.)
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2. Dominant Watershed Setting: CHECK ONE BOX ONLY. *Example:* Your project involves managing erosion in the upland area with some erosion control extended to the riparian area. Because most of the work is to occur in the upland area, you would check only the Upland box below.

<input type="checkbox"/> Estuary (where freshwater meets and mixes with saltwater of ocean tides.)	<input checked="" type="checkbox"/> Riparian (adjacent to a water body, within the active floodplain.)
<input type="checkbox"/> Instream (below the ordinary high-water mark or within the active channel — includes fish passage.)	<input type="checkbox"/> Upland (above the floodplain.)
<input type="checkbox"/> Wetland (areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions.)	<input type="checkbox"/> Groundwater (Projects that recharge groundwater or primarily affect the subsurface water table.)

3. Total Acres Treated: 4.63 Total Stream Miles Treated: 0.11
(do not include upstream stream miles made accessible to fish with passage improvements)

4. Project Monitoring: All OWEB funded restoration projects require post-implementation status reporting including photo point monitoring. Please indicate below: 1) the location of the monitoring activities relative to the project, including photo point locations, 2) whether effectiveness monitoring is planned, and 3) whether additional monitoring will be conducted for this project.

4.1) Identify the location for the planned monitoring activities relative to the restoration project location. Check as many boxes as apply.

<input checked="" type="checkbox"/> Onsite	<input type="checkbox"/> Downstream	<input type="checkbox"/> Upstream	<input type="checkbox"/> Upslope
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4.2) Effectiveness monitoring will be conducted for this project. Please note that effectiveness monitoring cannot be funded with OWEB Small Grant Funds. To review effectiveness monitoring and post-implementation status reporting definitions click on the link to the OWEB Web site below. http://www.oregon.gov/OWEB/MONITOR/effective_monitoring.shtml

4.3) Will this project conduct monitoring activities beyond the required post-implementation status reporting and photo point monitoring?

Yes No If you answer yes, select the monitoring activities below, if you answer no proceed to Section 2.

Check all proposed monitoring activities

<input type="checkbox"/> Adult Fish presence/absence/abundance/distribution survey(s)	<input type="checkbox"/> Spawning surveys
<input type="checkbox"/> Juvenile Fish presence/absence/abundance/distribution survey(s)	<input type="checkbox"/> Upland vegetation (Presence/Absence)
<input type="checkbox"/> Instream Habitat surveys	<input type="checkbox"/> Water quality
<input type="checkbox"/> Macroinvertebrates	<input type="checkbox"/> Water quantity
<input checked="" type="checkbox"/> Noxious weed (Presence/Absence)	<input checked="" type="checkbox"/> Photo Points
<input checked="" type="checkbox"/> Riparian vegetation (Presence/Absence)	<input type="checkbox"/> Other (explain): _____

Section 2. Project Activities

Provide values for each Project Activity applicable to your application. Leave blank any Project Activity or metric line that is not appropriate to your application. All data entered in this form should be what you plan to do with the project. Data about completed projects will be reported at the end of the project to the Oregon Watershed Restoration Inventory (OWRI). For each activity type where you enter metrics, estimate the percentage of the total cost of the project (OWEB and all other funding sources, shown in III. 9. of this application) that applies to the activity. The sum of all of the activity cost percentages should equal 100%. Please distribute all administrative, project management and other general project costs among the various project activities when estimating percentages.

Example: A project will remove a fish passage barrier, place large boulders instream, and plant a riparian buffer. You would enter the appropriate metrics into the Fish Passage, Instream Habitat, and Riparian Habitat activity sections of this form. Then, estimate the percentage of the total cost of the project for each activity. For instance: 20% towards Fish Passage activities, 25% towards Instream Habitat activities, and 55% towards Riparian Habitat activities.

Fish Screening Projects: Projects that result in the installation or improvement of screening systems that prevent fish from passing into areas that do not support fish survival, for example, into irrigation diversion channels.

Note: OWEB funds cannot be used for fish screening projects

____ % Estimate the percentage of total cost of the project applied to fish screening activities

New Fish Screens Installed

____ # Estimate the number of new screens installed (do not count diversions where existing screens are replaced)

____ cfs Estimate the cubic feet per second of flow influenced by new screen(s) installed (to nearest 0.01 cfs)

Existing Screens Replaced, repaired or modified

____ # Estimate the number of existing screens replaced, repaired or modified

____ cfs Estimate the cubic feet per second of flow influenced by existing screen(s) screens (to nearest 0.01 cfs)

Fish Passage Improvement: *Projects that improve fish migration by addressing a migration barrier problem.* Complete sections A-E as they apply to the proposed project. For projects that improve fish passage at road crossings complete both sections A (define the problem) and B (define the treatment). Non-road crossing improvements are reported in sections C and D. Section E should be completed for all fish passage improvement projects. Refer to the application instructions for additional information and examples.

A. Road Crossings – Define Existing Fish Passage Problem

1. Culverts hindering fish passage	____ # crossings
2. Bridges hindering fish passage	____ # crossings
3. Fords hindering fish passage	____ # crossings

B. Road Crossings – Define the Fish Passage Improvements to be implemented by this project

1. Culverts installed/improved -Improvements include installing baffles inside culverts or installing/improving engineered bypasses (e.g. weirs) directly below a culvert outlet to improve passage.	____ # crossings	____ str. mi with improved access*
2. Bridges installed/improved -Improvements include installing/improving engineered bypasses (e.g. weirs) directly below a bridge crossing to improve passage.	____ # crossings	____ str. mi with improved access*
3. Fords installed/improved	____ # crossings	____ str. mi with improved access*
4. Road Crossings removed and <u>not</u> replaced	____ # crossings	____ str. mi with improved access*

*Estimate stream miles in the main channel and tributaries made more accessible above the crossing(s) (to nearest 0.01 mile). If a barrier exists upstream, report the length made accessible up to that next upstream barrier.

C. Fish Passage Barriers – Other than Road Crossings

1. Type(s) of barriers to be treated/removed to improve fish passage.	<input type="checkbox"/> Diversion Dam <input type="checkbox"/> Push-up Dam <input type="checkbox"/> Wood or Concrete Dam <input type="checkbox"/> Weir (not associated with a road crossing) <input type="checkbox"/> Logs <input type="checkbox"/> Debris <input type="checkbox"/> Boulder/Rock Barrier (not weirs) <input type="checkbox"/> Landslide Other (explain) ____
2. ____ # Estimate the total number of non-road crossing barriers (listed above) to be removed or altered to improve passage.	

D. Fish Ladders or Engineered Bypasses (not associated with Road Crossings)

1. Fish ladders will be installed/improved	____ # fish ladders to be installed/improved
2. Engineered bypasses will be installed/improved. This includes weirs, rock boulder step pools, and chutes constructed/roughened in bed rock. Do not count engineered bypasses located at a road crossing to improve passage at the crossing. These types of improvements should be identified above in section B as a Road Crossing Fish Passage Improvement.	____ # engineered bypasses to be installed/improved

E. Fish Passage Summary Metrics

1. ____ % Estimate the percentage of total cost of the project applied to fish passage improvements
2. ____ mi Estimate the total stream miles that will be made more accessible in the main channel and tributaries above the project (to nearest 0.01 mile). *This metric summarizes the stream miles for all of the proposed passage improvements (defined above in Sections A-D). If a barrier exists upstream of the project, report the length made accessible up to that next upstream barrier.*

3. ____ # Estimate the total number of barriers (this includes road crossings, diversion dams, push up dams, wood or concrete dams, weirs, etc.) to be removed or altered to improve passage.

Instream Flow: Projects that maintain and/or increase the instream flow of water. Irrigation improvements that are primarily designed to improve water quality should be reported under Upland – Agriculture Management. Check all proposed activities.

<input type="checkbox"/> Irrigation practice improved to increase instream flows (e.g. install diversion headgate, replace open ditches with pipes)	<input type="checkbox"/> Water flow gauges installed to measure water use
<input type="checkbox"/> This project will dedicate instream flow.	<input type="checkbox"/> Other (explain): ____

____ % Estimate the percentage of total cost of the project applied to instream flow activities

____ mi. Estimate the miles of stream where increased flow is the result of decreased/eliminated water withdrawals

____ cfs Estimate the increase in flow of water in the stream as a result of conservation effort (cubic feet per second)

____ mm/dd/yyyy Initial start date of irrigation practice improvement

____ mm/dd/yyyy Final end date of irrigation practice improvement (if improvement is permanent enter 12/31/9999)

____ mm/dd/yyyy Water lease/agreement initial start date of no withdrawal

____ mm/dd/yyyy Water lease/agreement final end date of no withdrawal (if lease/agreement is permanent, enter 12/31/9999)

Instream Habitat: Projects that are designed to improve instream habitat conditions. Check all proposed activities.

<input type="checkbox"/> Channel reconfiguration and connectivity (e.g., creating instream pools, meanders, improving floodplain connectivity, off-channel habitat, removal or alteration of levee or berm, removal of sediment)	<input type="checkbox"/> Spawning gravel placement
<input type="checkbox"/> Channel structure - large wood placement	<input type="checkbox"/> Plant Removal/control (instream) List scientific names of plants ____
<input type="checkbox"/> Channel structure - boulder placement	<input type="checkbox"/> Carcass or nutrient placement: <input type="checkbox"/> salmonid carcass; <input type="checkbox"/> fish meal brick; <input type="checkbox"/> other nutrient
<input type="checkbox"/> Channel structure placement (<u>other</u> than large wood or boulder placements), e.g., engineered structures or deflectors, barbs, weirs, etc.	<input type="checkbox"/> Other (explain): ____
<input type="checkbox"/> Streambank stabilization through resloping and/or placing rocks, logs (e.g. revetments, gabions, barbs), or bioengineering on streambank	

____ % Estimate the percentage of total cost of the project applied to instream habitat activities

____ mi. Estimate the miles of stream to be treated with instream habitat treatments (to nearest 0.01 mile)

____ % Estimate the percentage of instream activity costs for carcass or nutrient placements. If you do not select carcass/nutrient placements as an instream activity, leave this value blank. *Example: Your project will place salmon carcasses. You estimated that 25% of the total project cost will apply to instream habitat activities and one half of the instream improvements costs will apply to the carcass placement, you would report 50%.*

Riparian Habitat: Projects above the ordinary high-water mark of the stream and within the floodplain of the stream. Check all proposed activities.

<input checked="" type="checkbox"/> Riparian planting	<input checked="" type="checkbox"/> Non-native/noxious plant control
<input type="checkbox"/> Riparian exclusion fencing	<input type="checkbox"/> Vegetation management (e.g. prescribed burnings, stand thinning, stand conversions, silviculture)
<input type="checkbox"/> Livestock exclusion by means other than fencing (includes placing obstacles to exclude livestock, people, vehicles, etc., but not for individual plant protection)	<input type="checkbox"/> Debris/structure removal (OWEB funds cannot be used for general trash removal)
<input type="checkbox"/> Water gap development (fenced livestock crossing or livestock bridge)	<input type="checkbox"/> Other (explain): _____ <i>Do not report livestock water developments here, report livestock water developments under upland habitat treatments.</i>

100 % Estimate the percentage of total cost of the project applied to riparian habitat activities

4.6 ac. Estimate the acres of riparian habitat to be planted (to nearest 0.1 acres)

4.6 ac. Estimate the acres of riparian habitat to be treated for non-native/noxious weeds (to nearest 0.1 acres)

4.6 ac. Estimate the total riparian acres to be treated. (to nearest 0.1 acres)

0.11 mi. Estimate the miles of riparian streambank to be treated (to nearest 0.01 mi).

Stream sides treated one two (Do not double count miles if a second side is treated)

Upland Habitat: Projects implemented above the floodplain. Check all proposed activities.

<input type="checkbox"/> Planting/seeding for erosion control (e.g., convert from crops to native vegetation, plant area where non-native/noxious weeds removed, grassed waterways, windbreaks, filter strips) List scientific names of plants: _____	<input type="checkbox"/> Livestock Manure Management (e.g., feedlot improvements to reduce runoff, relocate/improve manure holding structures and manure piles to reduce/eliminate drainage into streams)
<input type="checkbox"/> Slope stabilization (e.g., grade stabilization, landslide reparation, terracing slopes)	<input type="checkbox"/> Upland Livestock Management (<u>other</u> than livestock water developments), e.g., grazing plans, fencing
<input type="checkbox"/> Non-native/noxious plant control; List scientific names of plants: _____	<input type="checkbox"/> Restore Historic Upland Habitats (e.g. oak woodland, oak savannah, upland prairie restoration)
<input type="checkbox"/> Juniper removal/control	<input type="checkbox"/> Livestock/Wildlife Water Developments
<input type="checkbox"/> Vegetation Management (<u>other</u> than non-native/noxious plant control or juniper removal, e.g. tree thinning, brush control, burning) List scientific names of plants: _____	<input type="checkbox"/> Erosion control structures not already reported under Upland Agriculture Management or Road Drainage System and Surface Improvements.
<input type="checkbox"/> Upland Agriculture Management (e.g., no/low-till, wind breaks, filter strips, crop rotation, terracing, water and sediment control basins, grade stabilization and irrigation improvements)	<input type="checkbox"/> Other (explain): _____

_____ % Estimate the percentage of total cost of the project will apply to upland habitat activities

_____ # Estimate the number of livestock/wildlife water developments

_____ ac. Estimate the acres of upland habitat to be treated for non-native/noxious plants (to nearest 0.1 acres)

_____ ac. Estimate the total acres of upland habitat to be treated (do not include acres of upland habitat affected by livestock water developments (to nearest 0.1 acres)

_____ % Estimate the percentage of upland activity costs applied to Livestock Manure Management. If you do not select Livestock Manure Management as an upland activity, leave this value blank.

Example: Project will relocate a feedlot to reduce livestock manure runoff. You estimated that 33% of the total project cost will apply to upland habitat activities and one half of the upland improvements costs will apply to the feedlot relocation, you would report 50%.

Road Activities: Projects designed to improve road impacts to watersheds. Check all proposed activities.

<input type="checkbox"/> Road drainage system and surface improvements & reconstruction	<input type="checkbox"/> Other (explain): _____
<input type="checkbox"/> Road closure, relocation, obliteration (decommissioning)	

____ % Estimate the percentage of total cost of the project applied to road activities

____ mi. Estimate the miles of road treated (to nearest 0.01 mile)

Urban Impact Reduction: Check all of the urban impact related activities that will be used by this project.

<input type="checkbox"/> Toxin reduction: list names of each toxic species, element or material: _____	<input type="checkbox"/> Bioswales
<input type="checkbox"/> Pesticide reduction: list names of each pesticide: _____	<input type="checkbox"/> Detention Facility
<input type="checkbox"/> Stormwater/wastewater modification or treatment (includes rain gardens)	<input type="checkbox"/> Other urban impact reduction (explain): _____

Check all of the water quality limiting factors addressed by the Urban Impact Reduction activities selected above. Do not select limiting factors addressed by other types of restoration activities.

<input type="checkbox"/> Bacteria	<input type="checkbox"/> Pesticides	<input type="checkbox"/> Nutrients
<input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/> Toxics	<input type="checkbox"/> Sediment
<input type="checkbox"/> Heavy Metals	<input type="checkbox"/> High Temperature	<input type="checkbox"/> Other (explain): _____

____% Estimate the percentage of total cost of the project applied to urban impact activities

Wetland Habitat: *Projects designed to create or improve wetland areas.* Check all proposed activities.

<input type="checkbox"/> Wetland planting	<input type="checkbox"/> Artificial wetland area created from an area not formerly a wetland
<input type="checkbox"/> Non-native/noxious/invasive plant control	<input type="checkbox"/> Other (explain): _____
<input type="checkbox"/> Wetland improvement/restoration of existing or historic wetland (other than vegetation planting or removal)	

____ % Estimate the percentage of total cost of the project applied to wetland habitat activities

____ ac. Estimate the acres of wetland habitat to be treated for non-native/noxious/invasive plants (to nearest 0.1 acres)

____ ac. Estimate the acres of artificial wetland created (to nearest 0.1 acres)

____ ac. Estimate the total acres of wetland habitat (existing or historic) treated (to nearest 0.1 acres)

Estuarine Habitat: *Projects that result in improvement or increase in the availability of estuarine habitat.*
 Check all proposed activities.

<input type="checkbox"/> Estuarine planting	<input type="checkbox"/> Non-native/noxious plant control
<input type="checkbox"/> Channel modification/creation (e.g., improve intertidal flow to existing estuarine habitat)	<input type="checkbox"/> Creation of new estuarine habitat where one did not exist previously by methods other than tidegates or dikes
<input type="checkbox"/> Dike or berm modification/removal	<input type="checkbox"/> Estuarine culvert modification/removal
<input type="checkbox"/> Removal of existing fill material	<input type="checkbox"/> Exclusion devices
<input type="checkbox"/> Placement of fill material (for proper terrestrial function)	<input type="checkbox"/> Other (explain): _____

____ % Estimate the percentage of total cost of the project applied to estuarine habitat activities

____ ac. Estimate the acres of estuarine habitat to be treated for non-native/noxious plants (to nearest 0.1 acres)

____ ac. Estimate the total acres of estuarine habitat (existing or historic) to be treated (to nearest 0.1 acres)

Section 3. Salmon/Steelhead Populations Targeted and Expected Benefits to Salmon/Steelhead

The information provided will be used by OWEB better to meet federal and state reporting requirements. Completion of this section is required but will not be used to evaluate this application for funding.

- This project is NOT specifically designed to benefit salmon or steelhead.
 ► If you check this box, STOP here.

Targeted Salmon/Steelhead Populations: Select one or more of the salmon ESUs (Evolutionary Significant Unit) or steelhead DPSs (Distinct Population Segment) that the project will address/benefit. For species where the ESU/DPS name is not known or determined, use the species name with unidentified ESU (e.g., Chinook salmon – unidentified ESU). Additional information on the designation and location of the salmon/steelhead populations can be found at:

http://www.westcoast.fisheries.noaa.gov/maps_data/species_population_boundaries.html

Chinook Salmon (<i>Oncorhynchus tshawytscha</i>)		Coho Salmon (<i>O. kisutch</i>)	
<input type="checkbox"/>	Deschutes River summer/fall-run ESU	<input type="checkbox"/>	Lower Columbia River ESU
<input type="checkbox"/>	Lower Columbia River ESU	<input type="checkbox"/>	Oregon Coast ESU
<input type="checkbox"/>	Mid-Columbia River spring-run ESU	<input type="checkbox"/>	Southern Oregon/Northern California ESU
<input type="checkbox"/>	Oregon Coast ESU	<input type="checkbox"/>	unidentified ESU
<input type="checkbox"/>	Snake River Fall-run ESU	Steelhead (<i>O. mykiss</i>)	
<input type="checkbox"/>	Snake River Spring/Summer-run ESU	<input type="checkbox"/>	Klamath Mountains Province DPS
<input type="checkbox"/>	Southern Oregon and Northern California Coastal ESU	<input type="checkbox"/>	Lower Columbia River DPS
<input type="checkbox"/>	Upper Klamath-Trinity Rivers ESU	<input type="checkbox"/>	Middle Columbia River DPS
<input checked="" type="checkbox"/>	Upper Willamette River ESU	<input type="checkbox"/>	Oregon Coast DPS
<input type="checkbox"/>	unidentified ESU	<input type="checkbox"/>	Snake River Basin DPS
Chum Salmon (<i>O. keta</i>)		<input type="checkbox"/>	Washington Coast DPS (SW Washington)
<input type="checkbox"/>	Columbia River ESU	<input checked="" type="checkbox"/>	Upper Willamette River DPS
<input type="checkbox"/>	Pacific Coast ESU	<input type="checkbox"/>	Steelhead/Trout unidentified DPS
<input type="checkbox"/>	unidentified ESU		

Expected Benefits: Write a brief description of the goals and purpose of the project and how it is expected to benefit salmon/steelhead or salmon/steelhead habitat. See Application Instructions for helpful examples.

This project seeks to improve riparian vegetation along the main branch of Cozine Creek in McMinnville, OR in Yamhill County. Cozine Creek provides rearing habitat for ESA-listed winter steelhead trout and spring chinook salmon. The riparian vegetation is expected to contribute to water quality by improving summertime shade and reducing surface and streambank erosion.

10. Project Budget- Itemize projected costs for each of the following "Expense Categories" that apply to your project. A minimum of 25% match is required. See application instructions and additional team conditions for further guidance.

Totals automatically round to the nearest dollar. Please do not include cents.					
Expense Category	No. of Units	Unit Cost	OWEB Funds	Match Funds	Description--what will be purchased or done and who will provide the item/perform the work
SALARIES, WAGES AND BENEFITS. Refers to in-house staff/applicant employees for whom payroll taxes are paid. List position titles; include only costs of employees charged to this grant.					
Project Management	40	\$ 22.00	\$ 880		GYWC Executive Director, Luke Westphal, will oversee project implementation
Volunteer Coordination	200	\$ 15.00	\$ 1,500	\$ 1,500	GYWC Cozine Stewardship Intern will coordinate all volunteer activities
SUBTOTAL (1)			\$ 2,380	\$ 1,500	
CONTRACTED SERVICES. Labor, supplies, materials, and travel to be provided by non-staff for project implementation.					
Chemical & Mowing Site Prep, (Average Cost Per Hour)	52	\$ 122.19	\$ 6,354		Upshot Services LLC will perform this work. See attached estimate for details.
Technical Assistance (TA) for Design & Implementation	30	\$ 35.00		\$ 1,050	Linfield ENVIS and Facilities will provide general technical assistance for this project.
Volunteer Labor for Site Prep, Planting, and Maintenance	300	\$ 24.14		\$ 7,242	Linfield and GYWC Members will provide volunteer labor. Match value based on 2017 Independent Sector National Volunteer Hourly Rate.
SUBTOTAL (2)			\$ 6,354	\$ 8,292	
MATERIALS AND SUPPLIES. Refers to items that are purchased by or invoiced to the applicant, and are "used up" in the course of the project. Costs to OWEB must be directly related to the implementation of this grant.					
Native Plant Materials (Average Cost Per Plant)	1,592	\$ 1.10	\$ 1,251	\$ 500	SWCD's and/or Willamette Valley native plant nurseries will supply plant materials; YWSF Small Grant will purchase additional plant materials
Native / Erosion Seed Mixes (Average Cost Per Pound)	30	\$ 50.00	\$ 500	\$ 1,000	Willamette Valley native seed producers will supply seed mixes. YWSF Small Grant will purchase additional seed
Deer Browse Protection (Average Cost Per Protector)	700	\$ 4.00	\$ 2,000	\$ 800	YWSF Small Grant will purchase additional deer browse protection materials. Cages will be supplied by Wilco; Tubes by Tree Pro Inc; and Mesh protectors by local SWCDs
Weed Matting (Average Cost Per Mat)	200	\$ 1.00	\$ -	\$ 200	YWSF Small Grant will purchase. Tree Pro Inc will supply the weed mats.
Project Signage	2	\$ 50.00	\$ 90	\$ 10	Copy Cabana will supply outdoor-ready informational signage to place at the two ends of the property and will provide a 10% discount.
SUBTOTAL (3)			\$ 3,841	\$ 2,510	
EQUIPMENT. Refers to items over \$1,000 with a usual lifespan of over 2 years. Purchase of equipment is discouraged in Small Grants.					
SUBTOTAL (4)			\$ -	\$ -	

Expense Category	No. of Units	Unit Cost	OWEB Funds	Match Funds	Description--what will be purchased or done and who will provide the item/perform the work
TRAVEL. Mileage. For current rates go to: http://www.oregon.gov/OWEB/Pages/forms_linked.aspx#					
Mileage, GYWC Staff	340	\$ 0.545	\$ 185		Travel for Project Management, Volunteer Coordination, Supplies Pick-Ups, & Coordination of Volunteer Activities
SUBTOTAL (5)			\$ 185	\$ -	
OTHER. Land use signature costs, project permit costs, small equipment repair, commercial equipment rental.					
Land Use Form Signature	1	40.00	\$ 40.00		City of McMinnville Planning Department will sign-off on land use compatibility
SUBTOTAL (6)			40	0	
Modified Total Direct Cost (MTDC) (Add Subtotals 1-6)			12,800	12,302	
INDIRECT COSTS: Not to exceed 10% of Modified Total Direct Costs (MTDC). Compute by multiplying MTDC by 0.10 or less. See the current Budget Categories Definitions document for eligible costs. http://www.oregon.gov/OWEB/Pages/forms_linked.aspx#					
Indirect Costs			1,000		not to exceed 10% of MTDC, however, grants of \$2,000 or less may request up to \$200
POST GRANT					
Year-Two Status Report			200		(Not to exceed \$200) GYWC will prepare reports
Post-Project Plant Establishment			1,000	214	(Not to exceed \$1,000 in OWEB funds) Upshot Services LLC will perform this work, and provide a partial day of in-kind services, see attached estimate
PROJECT TOTALS			15,000	12,516	(Not to exceed \$15,000 in OWEB funds)

Cozine Creek Linfield College Phase I

Timeline & Activities

2018

June Contracted spot-spray of blackberries, english ivy, reed canarygrass, Italian arum, and other target weeds in chemical weed control areas (see treatment map)

July Contracted CTL mowing and piling of debris / downed wood in mechanical weed control areas

September Contracted spot-spray of blackberries, english ivy, reed canarygrass, Italian arum, and other target weeds in chemical weed control areas

Fall Semester GYWC / Linfield coordinate monthly volunteer work parties to control invasive species in manual weed control areas (see treatment map); Plant container-plants and live stakes in areas that are at least 75% + weed-free and not in the way of future site prep and maintenance; Spread native / erosion seed mix as needed.

2019

February GYWC / Linfield coordinate volunteers to plant areas that are at least 75% + weed-free and not in the way of future site prep and maintenance

Spring Semester GYWC / Linfield coordinate monthly volunteer work parties to control invasive species in manual weed control areas

June Contracted spot-spray of blackberries, english ivy, reed canarygrass, Italian arum, and other target weeds, and ring spray around plantings in chemical weed control areas.

July Contracted CTL mowing and piling of debris / downed wood in mechanical control areas.

September Contracted spot-spray of blackberries, english ivy, reed canarygrass, Italian arum, and other target weeds in chemical weed control areas

Fall Semester GYWC / Linfield coordinate monthly volunteer work parties to control invasive species in manual weed control areas; Plant container-plants and live stakes in areas that are at least 75% + weed-free and not in the way of future site prep and maintenance; Spread native / erosion seed mix as needed.

2020

February GYWC / Linfield coordinate volunteers to finish planting areas that are at least 75% + weed-free and not in the way of future site prep and maintenance

Spring Semester GYWC / Linfield coordinate monthly volunteer work parties to control invasive species in manual weed control units

June Contracted spot-spray of blackberries, english ivy, reed canarygrass, Italian arum, and other target weeds; and ring spray around plantings in chemical weed control areas

End of Two-Year Implementation Phase June 2018 - June 2020

Begin Two-Year Post-Planting Maintenance Phase June 2020 - June 2022 (not to exceed \$1,000)

September Contracted spot-spray of blackberries, english ivy, reed canarygrass, Italian arum, and other target weeds in chemical weed control areas

Fall Semester GYWC / Linfield coordinate monthly volunteer work parties to control invasive species in manual weed control areas; interplant container and live stakes in areas with 25% loss using donated plant materials from local partners

2021

Spring Semester GYWC / Linfield coordinate monthly volunteer work parties to control invasive species in manual weed control areas

June Contracted spot-spray of blackberries, english ivy, reed canarygrass, Italian arum, and other target weeds; and ring spray around plantings in chemical weed control areas;

September Contracted spot-spray of blackberries, english ivy, reed canarygrass, Italian arum, and other target weeds in chemical weed control areas

Fall Semester GYWC / Linfield coordinate monthly volunteer work parties to control invasive species in manual weed control areas; interplant container and live stakes in areas with 25% loss using donated plant materials from local partners

2022

February GYWC / Linfield coordinate volunteers interplant for areas with 25% loss using donated plant materials from local partners

Spring Semester GYWC / Linfield coordinate monthly volunteer work parties to control invasive species in manual weed control areas

June Contracted spot-spray of blackberries, english ivy, reed canarygrass, Italian arum, and other target weeds; and ring spray around plantings in chemical weed control areas;

Two-Year Post Project Status Report Due; End of OWEB & YWSF Small Grant Funds

2022 - 2027 Long-Term Maintenance & Monitoring

February GYWC / Linfield coordinate volunteers to interplant for areas with 25% loss using donated plant materials from local partners

Spring Semester GYWC / Linfield coordinate monthly volunteer work parties to control invasive species across entire Phase I Project site ENVIS Students continue to monitor and document plant survival, percent invasive / native cover, diversity of native and invasive plant species, and deer exclusion results

Fall Semester GYWC / Linfield coordinate monthly volunteer work parties to control invasive species across entire site; interplant for container and live stake experiment areas with 25% loss using donated plant materials from local partners; ENVIS Students continue to monitor and document plant survival, percent invasive / native cover, diversity of native and invasive plant species, and deer exclusion results

Upshot Services
 16220 Muddy Valley Road
 McMinnville OR 97128
 (503) 857-6140
james.riedman@gmail.com

ESTIMATE

Date	4/10/2018
Bid #	18016
Customer	GYWC
Project	GYWC - Linfield Phase I

Client

Greater Yamhill Watershed Council
 237 NE Ford Street, Suite 9
 McMinnville OR 97128
luke@gywc.org
 503-474-1047

Project Description

2018: In June spot spray blackberries, english ivy, reed canary grass, Italian arum, and other target weeds. Followed by CTL mowing and debris piling in July. And spot spray remaining broadleaf weeds and canary grass in late August/September.
2019: In June spot spray blackberries, english ivy, reed canary grass, Italian arum, and other target weeds. Followed by CTL mowing and debris piling in July. And spot spray remaining broadleaf weeds and canary grass in late August/September.
2020: In June spot spray target weeds and ring spray around plantings. September spray remaining target weeds.
2021: In June spot spray target weeds and ring spray around plantings. September spray remaining target weeds.
2022: In June spot spray target weeds and ring spray around plantings.

2018 Contracted Services					
Month / Activity	Expenses	Unit	Quantity	Rate	Amount
June 2018 Spot Spraying	ATV & Two Person Crew, 1 Day	Hour	8	\$100.00	\$800.00
	Herbicide - Opensight	Ounce	4	\$6.26	\$25.04
	Herbicide - Garlon 3a	Ounce	85.3	\$0.42	\$35.84
	Herbicide - Roundup Custom	Ounce	42.7	\$0.15	\$6.40
	Herbicide - Polaris	Ounce	21.3	\$0.53	\$11.31
	Herbicide - Dyne-Amic (surfactant)	Ounce	85.3	\$0.31	\$26.45
	Herbicide - Spray Indicator	Ounce	85.3	\$0.27	\$23.04
	Mobilization	Each	1	\$100.00	\$100.00
Sub-Total					\$1,028.08

Month / Activity	Expenses	Unit	Quantity	Rate	Amount
July 2018 Mowing & Debris Piling	CTL Mower & One Person Crew, 1.5 Days	Hour	12	\$125.00	\$1,500.00
	Mobilization (add 1 mobilization fee if not leaving mower & trailer on-site overnight)	Each	1	\$100.00	\$100.00
Sub-Total					\$1,600.00

Month / Activity	Expenses	Unit	Quantity	Rate	Amount
September 2018 Spot Spraying	ATV & Two Person Crew, 1 Day	Hour	8	\$100.00	\$800.00
	Herbicide - Opensight	Ounce	2	\$6.26	\$12.52
	Herbicide - Garlon 3a	Ounce	42.7	\$0.42	\$17.92
	Herbicide - Roundup Custom	Ounce	21.3	\$0.15	\$3.20
	Herbicide - Polaris	Ounce	10.7	\$0.53	\$5.65
	Herbicide - Dyne-Amic (surfactant)	Ounce	42.7	\$0.31	\$13.23
	Herbicide - Spray Indicator	Ounce	42.7	\$0.27	\$11.52
	Mobilization	Each	1	\$100.00	\$100.00
Sub-Total					\$964.04

2018 Total \$3,592.12

2019 Contracted Services					
Month / Activity	Expenses	Unit	Quantity	Rate	Amount
June 2019 Spot Spraying and Ring Spray Around Plantings	ATV & One Person Crew, 1 Day	Hour	8	\$75.00	\$600.00
	Herbicide - Opensight	Ounce	2	\$6.26	\$12.52
	Herbicide - Garlon 3a	Ounce	64	\$0.42	\$26.88
	Herbicide - Roundup Custom	Ounce	32	\$0.15	\$4.80
	Herbicide - Polaris	Ounce	16	\$0.53	\$8.48
	Herbicide - Dyne-Amic (surfactant)	Ounce	64	\$0.31	\$19.84
	Herbicide - Spray Indicator	Ounce	64	\$0.27	\$17.28
	Mobilization	Each	1	\$100.00	\$100.00
Sub-Total					\$789.80

Month	Activities / Expenses	Unit	Quantity	Rate	Amount
July 2019 Mowing & Debris Piling	Mowing - CTL Mower, One Man Crew, 1 Day	Hour	8	\$125.00	\$1,000.00
	Mobilization	Each	1.0	\$100.00	\$100.00
Sub-Total					\$1,100.00

Month / Activity	Expenses	Unit	Quantity	Rate	Amount
September 2019 Spot Spraying	ATV & One Person Crew, 0.5 Day	Hour	4	\$75.00	\$300.00
	Herbicide - Opensight	Ounce	1	\$6.26	\$6.26
	Herbicide - Garlon 3a	Ounce	32	\$0.42	\$13.44
	Herbicide - Roundup Custom	Ounce	16	\$0.15	\$2.40
	Herbicide - Polaris	Ounce	8	\$0.53	\$4.24
	Herbicide - Dyne-Amic (surfactant)	Ounce	32	\$0.31	\$9.92
	Herbicide - Spray Indicator	Ounce	32	\$0.27	\$8.64
	Mobilization	Each	1	\$100.00	\$100.00
Sub-Total					\$444.90

2019 Total \$2,334.70

2020 Contracted Services					
Month / Activity	Expenses	Unit	Quantity	Rate	Amount
June 2020 Spot Spraying and Ring Spray Around Plantings	ATV & One Person Crew, 0.5 Day	Hour	4	\$75.00	\$300.00
	Herbicide - Opensight	Ounce	0.5	\$6.26	\$3.34
	Herbicide - Garlon 3a	Ounce	10.7	\$0.42	\$4.48
	Herbicide - Roundup Custom	Ounce	16.0	\$0.15	\$2.40
	Herbicide - Polaris	Ounce	8.0	\$0.53	\$4.24
	Herbicide - Dyne-Amic (surfactant)	Ounce	21.3	\$0.31	\$6.61
	Herbicide - Spray Indicator	Ounce	21.3	\$0.27	\$5.76
	Mobilization	Each	1	\$100.00	\$100.00
Sub-Total					\$426.83

End of 2-Year Project Implementation Period (June 2018 - June 2020) Total Cost:	\$6,353.65
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Begin 2-Year Post-Project Plant Establishment Period (July 2020 - June 2022) Not to Exceed \$1,000 \$1,000.00

Month / Activity	Expenses	Unit	Quantity	Rate	Amount
September 2020 Spot Spraying	ATV & One Person Crew, 0.5 Day	Hour	4	\$75.00	\$300.00
	Herbicide - Opensight	Ounce	0.3	\$6.26	\$1.67
	Herbicide - Garlon 3a	Ounce	5.3	\$0.42	\$2.24
	Herbicide - Roundup Custom	Ounce	8.0	\$0.15	\$1.20
	Herbicide - Polaris	Ounce	4.0	\$0.53	\$2.12
	Herbicide - Dyne-Amic (surfactant)	Ounce	10.7	\$0.31	\$3.31
	Herbicide - Spray Indicator	Ounce	10.7	\$0.27	\$2.88
	Mobilization	Each	1	\$100.00	\$100.00
Sub-Total					\$413.42

2021 Contracted Services					
Month / Activity	Expenses	Unit	Quantity	Rate	Amount
June 2021 Spot Spraying and Ring Spray Around Plantings	ATV & One Person Crew, 0.25 Day	Hour	2	\$75.00	\$150.00
	Herbicide - Opensight	Ounce	0.5	\$6.26	\$3.34
	Herbicide - Garlon 3a	Ounce	10.7	\$0.42	\$4.48
	Herbicide - Roundup Custom	Ounce	10.7	\$0.15	\$1.60
	Herbicide - Polaris	Ounce	5.3	\$0.53	\$2.83
	Herbicide - Dyne-Amic (surfactant)	Ounce	16.0	\$0.31	\$4.96
	Herbicide - Spray Indicator	Ounce	16.0	\$0.27	\$4.32
	Mobilization	Each	1	\$100.00	\$100.00
Sub-Total					\$271.53

Month / Activity	Expenses	Unit	Quantity	Rate	Amount
September 2021 Spot Spraying	ATV & One Person Crew, 0.25 Day	Hour	2	\$75.00	\$150.00
	Herbicide - Opensight	Ounce	0.3	\$6.26	\$1.67
	Herbicide - Garlon 3a	Ounce	5.3	\$0.42	\$2.24
	Herbicide - Roundup Custom	Ounce	5.3	\$0.15	\$0.80
	Herbicide - Polaris	Ounce	2.7	\$0.53	\$1.41
	Herbicide - Dyne-Amic (surfactant)	Ounce	8	\$0.31	\$2.48
	Herbicide - Spray Indicator	Ounce	8	\$0.27	\$2.16
	Mobilization	Each	1	\$100.00	\$100.00
Sub-Total					\$260.76

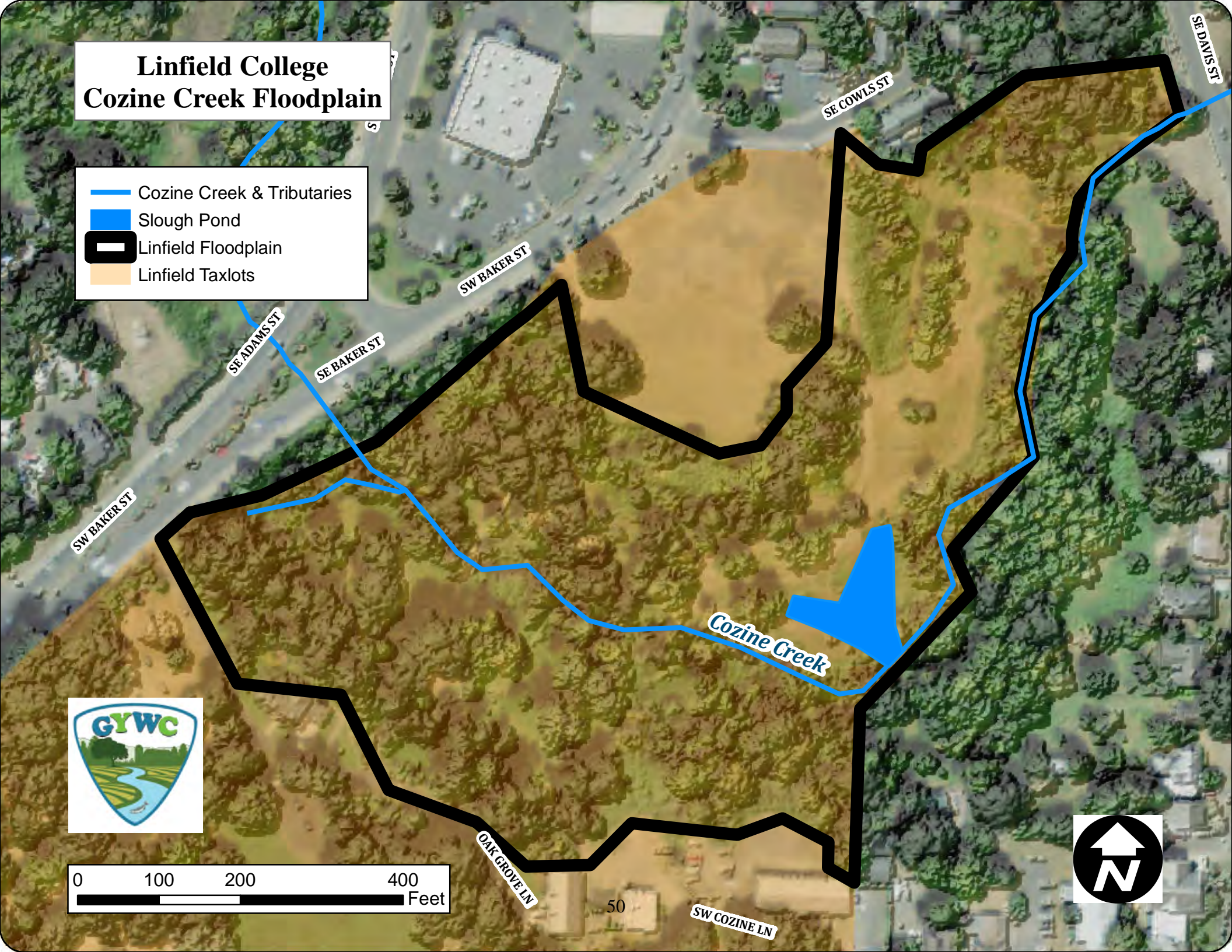
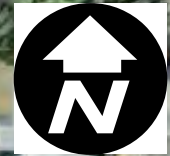
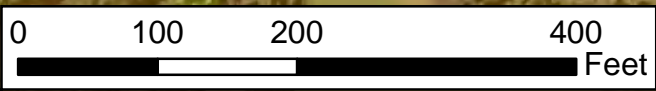
2022 Contracted Services					
Month / Activity	Expenses	Unit	Quantity	Rate	Amount
June 2022 Spot Spraying and Ring Spray Around Plantings	ATV & One Person Crew, 0.25 Day	Hour	2	\$75.00	\$150.00
	Herbicide - Opensight	Ounce	0.4	\$6.26	\$2.50
	Herbicide - Garlon 3a	Ounce	8	\$0.42	\$3.36
	Herbicide - Roundup Custom	Ounce	8	\$0.15	\$1.20
	Herbicide - Polaris	Ounce	8	\$0.53	\$4.24
	Herbicide - Dyne-Amic (surfactant)	Ounce	16	\$0.31	\$4.96
	Herbicide - Spray Indicator	Ounce	8	\$0.27	\$2.16
	Mobilization	Each	1	\$100.00	\$100.00
Sub-Total					\$268.42
Discount					\$214.13
Sub-Total w/ Discount					\$54.29

End of Post-Project Plant Establishment Period (July 2020 - June 2022) Not to Exceed \$1,000 \$1,000.00

Project Implementation June 2018 - June 2020	\$6,353.65
Post-Project Plant Establishment June 2020 - June 2022	\$1,000.00
TOTAL	\$7,353.65

Linfield College Cozine Creek Floodplain

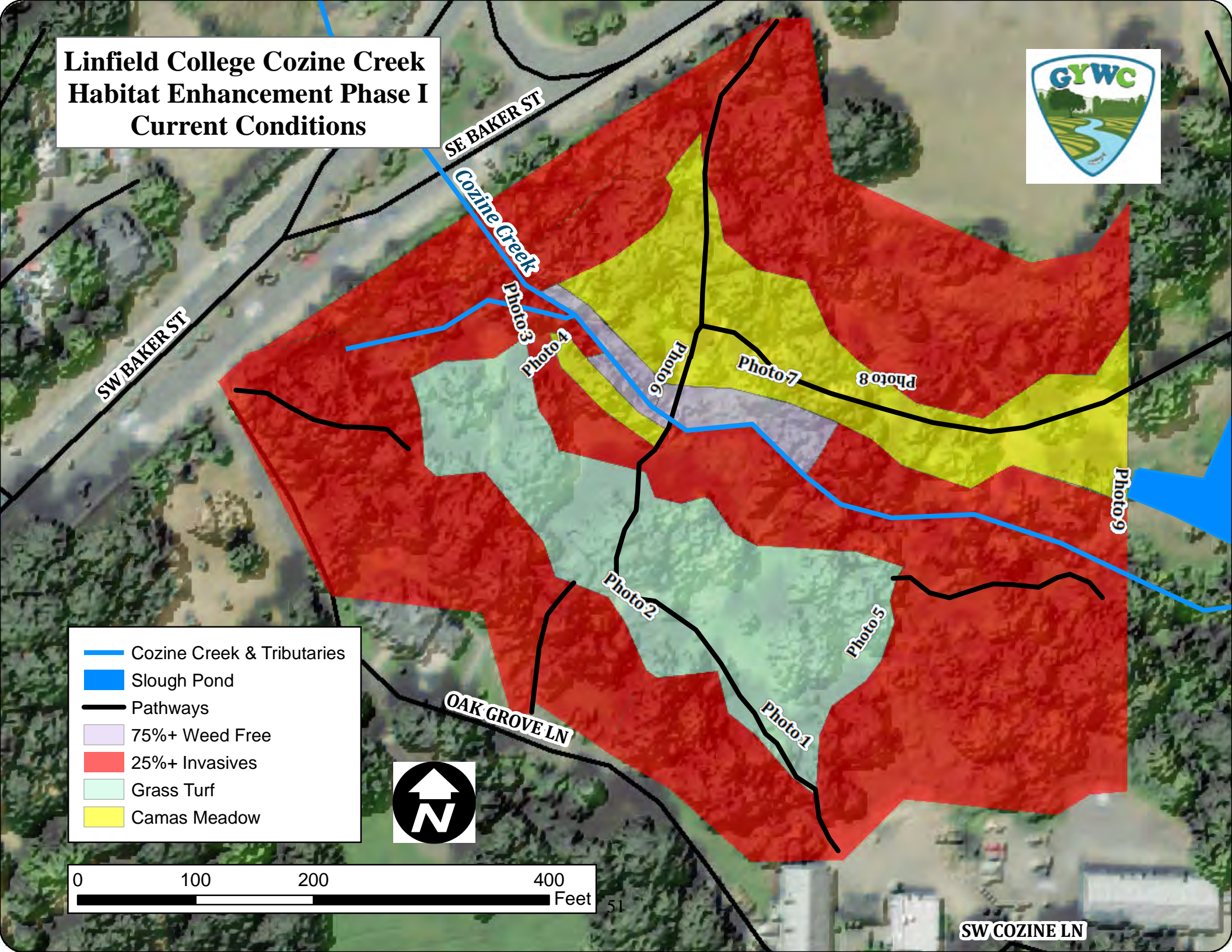
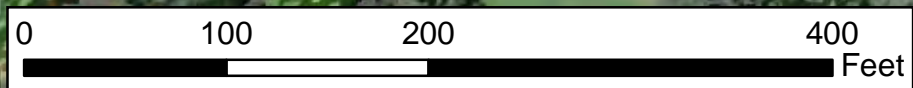
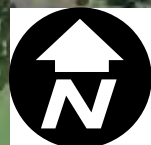
- Cozine Creek & Tributaries
- Slough Pond
- ▭ Linfield Floodplain
- Linfield Taxlots



Linfield College Cozine Creek Habitat Enhancement Phase I Current Conditions



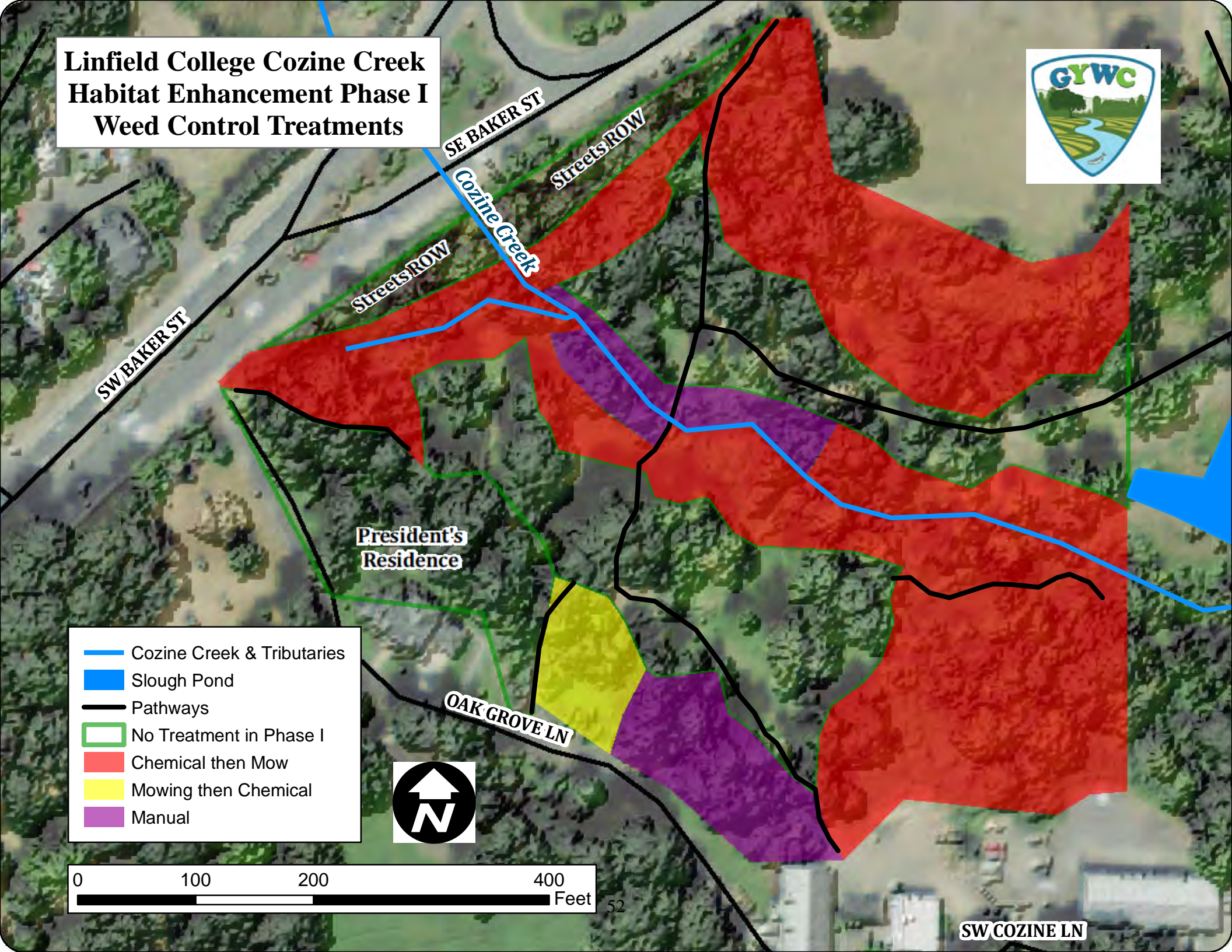
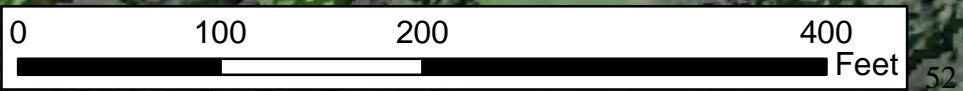
- Cozine Creek & Tributaries
- Slough Pond
- Pathways
- 75%+ Weed Free
- 25%+ Invasives
- Grass Turf
- Camas Meadow



Linfield College Cozine Creek Habitat Enhancement Phase I Weed Control Treatments

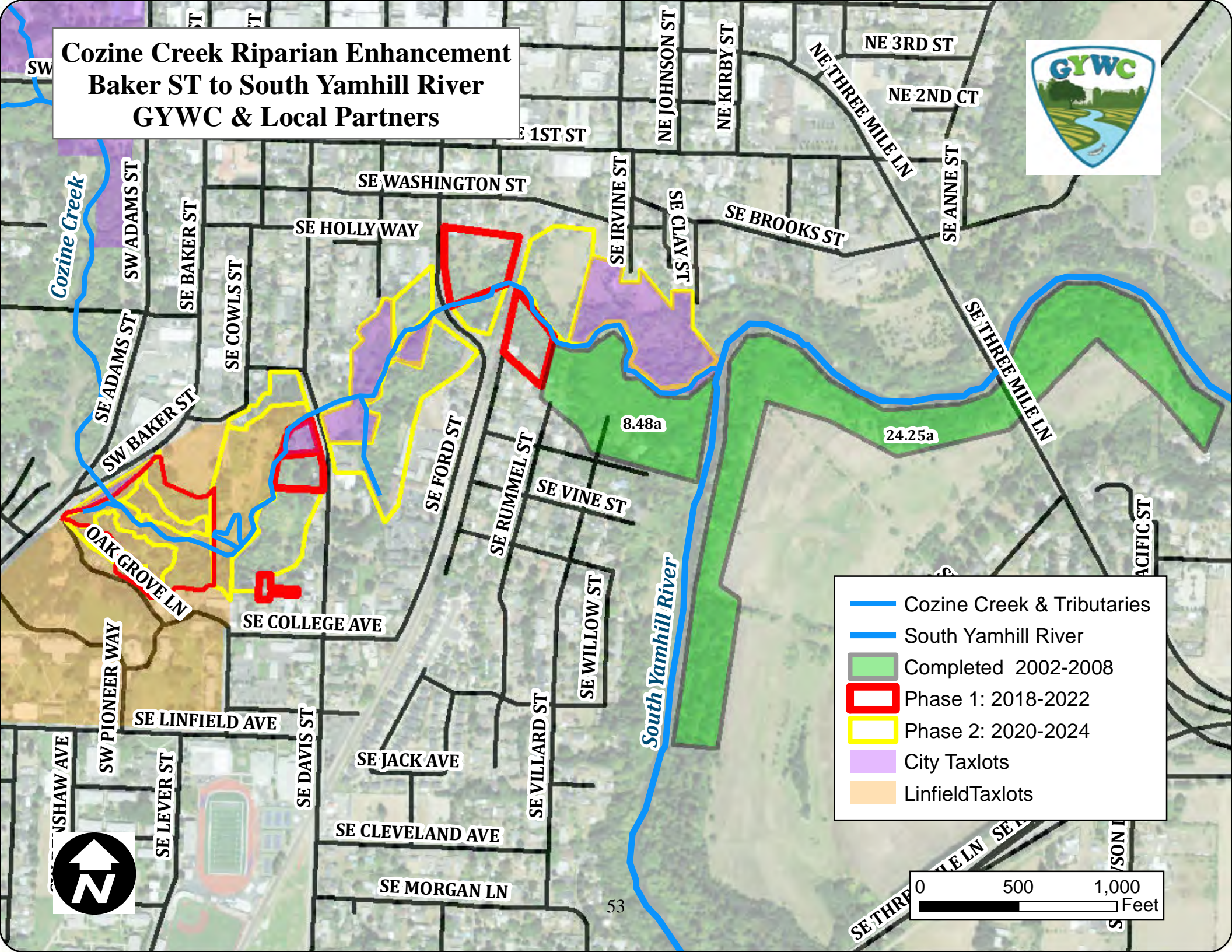


- Cozine Creek & Tributaries
- Slough Pond
- Pathways
- No Treatment in Phase I
- Chemical then Mow
- Mowing then Chemical
- Manual

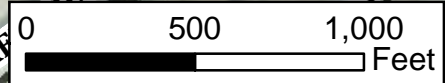


SW COZINE LN

**Cozine Creek Riparian Enhancement
Baker ST to South Yamhill River
GYWC & Local Partners**



- Cozine Creek & Tributaries
- South Yamhill River
- Completed 2002-2008
- Phase 1: 2018-2022
- Phase 2: 2020-2024
- City Taxlots
- Linfield Taxlots



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Cozine Creek Watershed Riparian Enhancement Projects GYWC & Local Partners

-  Linfield Phase I
-  Additional Projects Recruited
-  Completed 2002 - Present
-  McMinnville City Limits
-  South Yamhill River
-  Cozine Creek & Tributaries

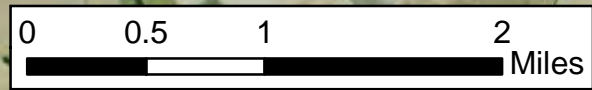
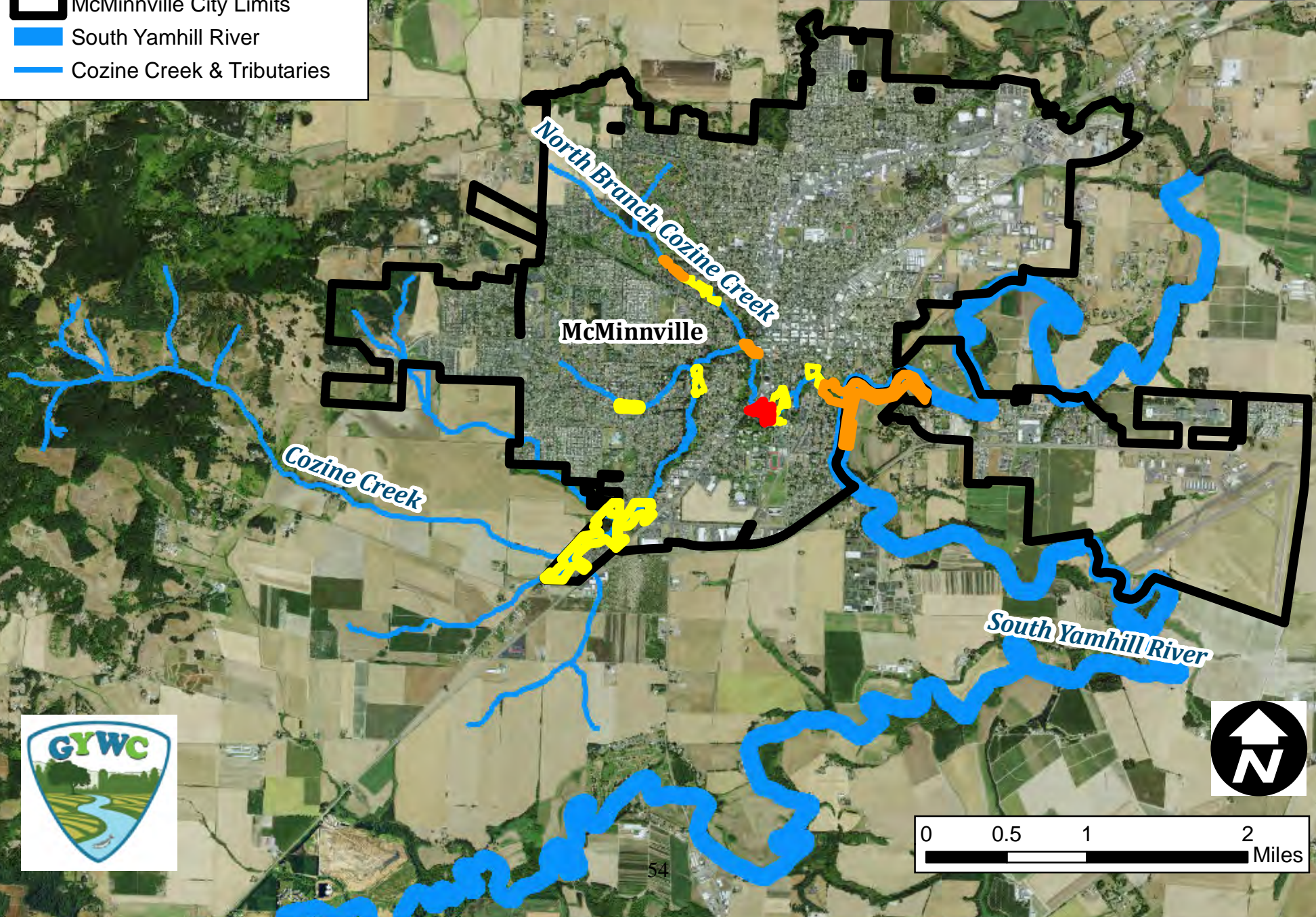




Photo Point 1

SE Project Area, Looking Southwest

Photo Date: 4/10/2018

Since 2015, Linfield ENVS and GYWC have coordinated volunteers to manually control weeds and plant some natives on this floodplain slope behind Newby Hall. As a result of these treatments, existing patches of native snowberry and trilliums have been able to spread, and invasive blackberry has been significantly suppressed. However, invasive groundcovers continue to persist, including ivy varieties, Italian arum, and periwinkle. This area will continue to be used as a demonstration of manual weed control techniques. Volunteers will be coordinated by a GYWC Cozine Stewardship student intern to continue manual control of weeds, replant with native shrubs and groundcovers, and install deer browse protection.



Photo Point 2

South Middle Project Area, Looking SW

Photo Date: 4/10/2018

In support of Linfield ENVS / GYWC's volunteer-led weed control efforts, in Fall 2017, Linfield Facilities mowed a thicket of blackberry and ivy in the area between Nwby Hill and the President's Residence. This area will be used as a weed control demonstration site for treating blackberry by mowing followed by herbicide application. A contractor will spot-spray the re-growth in June and mow the area in July. Volunteers coordinated by the GYWC's Cozine Stewardship intern will replant the area with native vegetation and install browse protection.



Photo Point 3

NW Project Area, Looking West

Photo Date: 4/10/2018

A stormwater tributary drains to the main branch Cozine from an outlet pipe off of Oak Grove Lane and Baker ST. The area is dominated by invasive blackberry, ivy, and reed canarygrass. In 2017, Linfield Facilities mowed portions of the area and spot-sprayed the re-growth. A contractor will complete the weed control by spot-spraying then mowing this area. Volunteers will be coordinated by the GYWC's Cozine Stewardship intern to replant with native trees to fill gaps in the canopy, as well as shrubs, groundcovers, and rushes and sedges.



Photo Point 4

NW Project Area, Looking SE

Photo Date: 4/10/2018

The main branch of Cozine Creek is dominated by invasive blackberry and patches of reed canarygrass. In 2017, Linfield Facilities mowed a band upslope from the creek to provide access for manual weed control and then sprayed the re-growth. Linfield / GYWC volunteers have begun to manually remove the remaining blackberry. Camas lilly has emerged in dense patches where the weeds have been treated. This area will continue to be manually weeded by volunteers and replanted with native trees to fill gaps in the canopy, shrubs and groundcovers.



Photo Point 5

SW Project Area, Looking SE

Photo Date: 4/10/2018

A large thicket of invasive blackberry, ivy, and brush dominates the SW portion of the project along the creek (left, outside of picture) and slopes (right) leading up to the area behind the Campus Safety building. In 2017, Linfield Facilities mowed the edges of the lower perimeter and spot sprayed the re-growth. Linfield / GYWC volunteers have since created access paths for future grant-funded contract spot-spray work and manually removed some of the blackberry crowns on the perimeter. This portion of the project will be contract spot-sprayed, followed by mowing. Volunteers will replant with native trees to fill gaps in the canopy along the creek, and shrubs and groundcovers.



Photo Point 6

North Middle Project Area, Looking NW

Photo Date: 4/10/2018

Invasive blackberry persists along the north side of Cozine Creek in a narrow band, and in dense thickets along the slopes near Baker ST. The Creekside area will be manually weeded by volunteers, and the sloped areas near the road will be contract spot-sprayed and mowed. Volunteers will replant these areas with native trees to fill gaps in the canopy, shrubs, and groundcovers. Over the years, Linfield Facilities has reclaimed the remaining areas from blackberry thickets through mowing and spot-spraying, and a dense plot of Camas has volunteered from remnant bulbs in the soil. This Camas meadow is excluded from the Phase 1 grant, and will be inter-planted with native grasses and wildflowers in Phase 2 to increase biodiversity and provide native vegetative cover during the winter rains when the Camas has died back.



Photo Point 7

Northwest Project Area, Looking Southeast

Photo Date: 4/10/2018

Invasive blackberry persists along the north side of Cozine Creek in a narrow band. In 2017, Linfield Facilities mowed a band upslope from the creek to provide access for manual weed control and then sprayed the re-growth. Linfield / GYWC volunteers have begun to manually remove the remaining blackberry. Camas lily has emerged in dense patches where the weeds have been treated. This area will continue to be manually weeded by volunteers and replanted with native trees to fill gaps in the canopy, shrubs and groundcovers.



Photo Point 8

North Project Area, Looking N

Photo Date: 4/10/2018

The North slopes along the project area include dense thickets of invasive blackberry, invasive ivy and poison oak. In 2017, Linfield Facilities mowed and spot-sprayed the bottom perimeter. The slopes will be contract spot-sprayed then mowed, and volunteers will replant with native trees, shrubs, and groundcovers. Over the years, Linfield Facilities has mowed and spot-sprayed the bottomlands where a dense camas meadow has volunteered from remnant bulbs in the soil. This Camas meadow is excluded from the Phase 1 grant, and will be inter-planted with native grasses and wildflowers in Phase 2 to increase biodiversity and provide native vegetative cover during the winter rains when the Camas has died back.



Photo Point 9

West Middle Project Area, Looking NE

Photo Date: 4/10/2018

Invasive blackberry and reed canarygrass persists along the north side of Cozine Creek in a narrow band. The creekside will be contract spot-sprayed then mowed, and volunteers will replant with native trees, shrubs, and groundcovers. Over the years, Linfield Facilities has mowed and spot-sprayed these bottomlands where patches of camas have volunteered from remnant bulbs in the soil. This Camas / Turf grass area is excluded from the Phase 1 grant, and will be inter-planted with native grasses and wildflowers in Phase 2 to increase biodiversity and provide native vegetative cover during the winter rains when the Camas has died back.



Linfield College

Office of the President
900 SE Baker Street
McMinnville, OR 97128-6894
/ 503.883.2408 / 503.883.2630
www.linfield.edu

April 30, 2018

Oregon Watershed Enhancement Board (OWEB)
Mid-Willamette West Small Grant Team
Attn: Marc, Bell, Team Contact
540 Main St., Suite A
Dallas, OR 97338

Dear Mid-Willamette West OWEB Small Grant Team:

As the president of Linfield College, I commit this institution to allowing its land to be a part of the Cozine Creek Phase I project as described in the Greater Yamhill Watershed Council's application to OWEB.

This project will provide much needed restoration to over 12 acres of floodplain on our campus, which is adjacent to residential neighborhoods in the City of McMinnville. This area is used by the Linfield community and area citizens for bird watching, camas viewing, and fieldwork in biology and environmental studies. Thus, improving this living laboratory supports Linfield's mission "to connect learning, life and community." It will encourage further use of the Cozine Creek as an educational resource for people at Linfield and beyond.

As such, the college administration lends its full support to the project and urges OWEB to look favorably upon this proposal.

Sincerely,

Thomas L. Hellie, Ph.D.
President

TLH:cjm

April 19, 2018

Oregon Watershed Enhancement Board
Mid-Willamette West Small Grant Team
Attn: Marc Bell, Team Contact
580 Main St Suite A
Dallas, OR 97338

Dear Mid-Willamette West OWEB Small Grant Team,

On behalf of the Linfield College Facilities Services Department (Facilities), we are writing to share our support for the Greater Yamhill Watershed Council's (GYWC) application for the Linfield College Cozine Creek Phase 1 project through the Oregon Watershed Enhancement Board (OWEB) Small Grant Program.

This proposal will enable Linfield College to improve the health of Cozine Creek by controlling invasive weeds and planting a variety of native trees, shrubs, wildflowers, and groundcovers. Linfield College has limited resources available to make improvements to the more than 12+ acres of Cozine Creek floodplain on campus, and relies on partnerships with the Linfield Environmental Studies Department (ENVS), student volunteers, and local conservation organizations such as the GYWC and Yamhill Soil & Water Conservation District (YSWCD) to make such projects a reality.

Facilities and ENVS have already begun to remove blackberry bushes and other weeds in the Cozine floodplain, and to install a number of native plants. We are grateful for the opportunity to continue and expand upon these successful efforts by requesting grant funding necessary to finish controlling invasive weeds in this Phase I project area and to install a variety of native plants that benefit water quality, wildlife, and pollinators.

We are in strong support of the GYWC's efforts to bring together diverse partners to improve the health of Cozine Creek along the Linfield College campus. In support of this OWEB Small Grant proposal, Linfield Facilities will provide up to 10 hours of in-kind technical assistance (valued at \$35/hr and \$350 total) to provide general support for project design and implementation.

Thank you for your consideration,



Allison Horn
Director, Facilities & Auxiliary Services
alhorn@linfield.edu



Javier Mendoza
Groundskeeping Supervisor/Pest Management Coordinator
jmendoz@linfield.edu



Linfield College

April 5, 2018

Oregon Watershed Enhancement Board
Mid-Willamette West Small Grant Team
Attn: Marc Bell, Team Contact
580 Main St Suite A
Dallas, OR 97338

Dear Mid-Willamette West OWEB Small Grant Team,

On behalf of the Linfield College's Environmental Studies Program (ENVS), we are writing to share our support for the Greater Yamhill Watershed Council's (GYWC) application for the Linfield College Cozine Creek Phase 1 project through the Oregon Watershed Enhancement Board (OWEB) Small Grant Program.

This proposal will enable Linfield College to improve the health of the section of Cozine Creek owned by the College by controlling invasive weeds and planting a variety of native trees, shrubs, wildflowers, and groundcovers. Linfield College has limited resources available to make improvements to the more than 12+ acres of Cozine Creek floodplain on campus, and relies on partnerships with volunteers and local conservation organizations such as the GYWC and Yamhill Soil & Water Conservation District (YSWCD) to make such projects a reality.

Since 2016, the Linfield ENVS department has provided over \$4,000 in capacity support through an MOU with the GYWC and YSWCD to fully develop a Senior Capstone Course (ENVS 470). Over the last two years, the students in the course have developed a property inventory and assessment, as well as a management plan with an enhancement proposal for the Cozine Creek floodplain that runs through campus. Linfield Facilities and ENVS have already begun to remove blackberry bushes and other weeds in the floodplain, and to install a number of native plants. We are grateful for the opportunity to continue and expand upon these successes by requesting grant funding necessary to finish controlling invasive weeds and to install a variety of native plants that benefit water quality, wildlife, and pollinators.

In addition, this project will serve as both a visual and empirical demonstration of best management practices that landowners may pursue to improve riparian and oak woodlands on their own properties. The proposal seeks to employ a variety of treatment methods for weed control, deer exclusion, and re-vegetation. Over the next several years, the ENVS Senior Capstone Course students will monitor the results of these treatments and report on the effectiveness and associated costs. Our goal is to see increased cover and diversity of native plants at the expense of the invasive weeds.

We are in strong support of the GYWC's efforts to bring together diverse stakeholders to improve the health of Cozine Creek watershed, including our reach along Linfield College campus. In support of this OWEB Small Grant proposal, the Linfield ENVS program will provide up to 20 hours of in-kind technical assistance (valued at \$35/hr and \$700 total) to provide general support for project design and implementation.

Thank you for your time and consideration,



Nancy Broshot, Ph.D.
Professor; Chair
Environmental Studies
nbroshe@linfield.edu
(503) 883-2753



William Fleeger, Ph.D.
Visiting Senior Scholar of Environmental Policy and Sustainability
Environmental Studies
wfleeger@linfield.edu
(503) 883-2341

April 10th, 2018

Oregon Watershed Enhancement Board

Mid-Willamette West Small Grant Team

Attn: Marc Bell, Team Contact

580 Main St Suite A

Dallas, OR 97338

Dear Mid-Willamette West OWEB Small Grant Team,

I am writing to share my hearty support for the Greater Yamhill Watershed Council's (GYWC) application for the Linfield College Cozine Creek Phase 1 project through the Oregon Watershed Enhancement Board (OWEB) Small Grant Program

This proposal will enable Linfield College to improve the health of Cozine Creek by controlling invasive weeds and planting a variety of native trees, shrubs, wildflowers, and groundcovers. Linfield College has limited resources available to make improvements to the more than 12+ acres of Cozine Creek floodplain on campus, and relies on partnerships with volunteers and local conservation organizations such as the GYWC and Yamhill Soil & Water Conservation District (YSWCD) to make such projects a reality.

My family has been involved with the GYWC in a variety of ways since the 1990's. I first became involved with the Council as a High School Sophomore helping with water quality sampling in the GYWC's first water quality monitoring studies for Cozine Creek and other streams across the Yamhill Valley, which documented a number of water quality impairments in our local streams and rivers. My Dad became involved and we applied for assistance to restore 7 acres of riparian habitat along our reach of Muddy Creek outside of McMinnville, which was dominated by thickets of blackberry. He also engaged with the greater mission of the Council, providing leadership and guidance on the GYWC's Board of Directors until 2013, and myself continuing in his position since 2014.

In my prior capacity as the Yamhill Soil and Water Conservation District's Conservation Herbicide Applicator, I have worked with the GYWC to implement riparian and floodplain habitat projects in Yamhill County. As owner of Upshot Services LLC, I continue to provide support for the GYWC's watershed programs and offer discounted rates for their habitat restoration needs.

I am confident in the GYWC's ability to successfully implement the proposed activities and deliverables. In support of this grant application, I will provide up to \$214 of in-kind services for weed control.

I look forward to working with the GYWC and Linfield College in the implementation of this project.



James Riedman
Upshot Services LLC, Owner
503-857-6140



Upshot
Services
LLC

Appendix B: Yamhill Watershed Stewardship Fund Application



Watershed Stewardship Grant Application and Proposal

(These grant funds are intended for watershed stewardship projects in the Yamhill Region, including, but not limited to organizational support, education, outreach, and restoration activities).

Applicant/Org. Name: Greater Yamhill Watershed Council GYWC, applying on behalf of the Linfield Environmental Studies Department

Contact Name: Luke Westphal, GYWC Executive Director

Mailing Address: PO Box 1517

Phone: 503-474-1047

City, State Zip: McMinnville, OR 97128

E-Mail: Luke@gywc.org

Applicant Signature:

Date: 5/10/2018

PROJECT INFORMATION (Complete Budget sheet and attach to application)

Name of Project: Cozine Creek Habitat Restoration at Linfield College, Phase I

Total Project Cost: \$30,266

YWSF Funds Requested: \$2,500

(YWSF will grant a maximum of \$2,500 per year)

Other funding organizations/individuals/partners: Linfield College; Oregon Watershed Enhancement Board (OWEB), Community Volunteers, Upshot Services LLC, Copy Cabana

Match Funds Amounts (dollar-to-dollar local match): \$16,500

Proposed Project Start Date: June 2018

Proposed Project Completion Date: YWSF Grant Completion -- June 2020
OWEB Grant Completion -- June 2022

Project Deliverables:

- Engage the local community in restoration of native vegetation across ~4.63 acres of Cozine Creek habitat on Linfield Campus
- Elevate public awareness and understanding of the importance of a healthy Cozine Creek watershed and how community members, stakeholders, and landowners may get involved.
- Empower students in the Environmental Studies program (ENVS) to develop professional skills in community engagement, habitat restoration, and effectiveness monitoring
- Educate urban and rural landowners about weed control and native revegetation techniques, and associated costs and effectiveness.



Grant Application Budget

Total Project Cost: \$ 30,266

Total YWSF Funds Requested \$ 2,500
(Not to exceed \$2,500)

Income (*Matching or In-Kind funds*)

Source	Amt. Requested	Amt. Committed	In Kind
YWSF Grant	\$2,500	Pending	
OWEB Small Grant	\$15,000	Pending	
Linfield College Student Council Internship Grant	\$1,500	Committed	
Linfield College ENVS		Committed	\$700
Linfield College Facilities		Committed	\$3,100
Community Volunteers		Committed	\$7,242
Upshot Services LLC		Committed	\$214
Copy Cabana		Committed	\$10
TOTALS	\$19,000		\$11,266

Expenses (*Goods/services/materials/Supplies*)

Source / Description	Amt. Requested	Amt. Committed	In Kind
YWSF – Native Plants	\$500	Pending	
YWSF – Native / Erosion Seed	\$1,000	Pending	
YWSF – Deer Browse Protection Supplies	\$800	Pending	
YWSF – Weed Mat Supplies	\$200	Pending	
OWEB – Native Plants	\$1,251	Pending	
OWEB – Native / Erosion Seed	\$500	Pending	
OWEB – Deer Browse Protection Supplies	\$2,000	Pending	
OWEB – Contracted Site Prep & Weed Control	\$7,354	Pending	
OWEB – Project Signage	\$90	Pending	
OWEB – Land Use Form Sign-Off	\$40	Pending	
OWEB – GYWC Project Management	\$880	Pending	
OWEB – GYWC Cozine Stewardship Internship	\$1,500	Pending	
OWEB – GYWC Travel	\$185	Pending	
OWEB – GYWC Grant Administration	\$1,000	Pending	
OWEB – GYWC Grant Reporting	\$200	Pending	
Linfield College Student Council - Cash Match for GYWC Cozine Stewardship Internship	\$1,500	Committed	
Linfield College ENVS – Technical Assistance for Project Design and Implementation		Committed	\$700
Linfield College Facilities – Additional Mowing		Committed	\$3,100
Community Volunteers – Labor for Site Prep, Planting, and Maintenance		Committed	\$7,242
Upshot Services LLC – Discount on Contracted Site Prep & Weed Control		Committed	\$214
Copy Cabana –Discount on Signage		Committed	\$10
TOTALS	\$19,000		\$11,266

1)Describe the project and how the funds will be used (how many people this project will reach, project purpose). How will applicant propose to recognize the grant funding from YWSF, if awarded).

The project takes place along Cozine Creek north of the main campus of Linfield College between SE Baker ST and SE Davis ST in McMinnville, Oregon. The purpose of the project is to engage the local community in the restoration of native habitat across 4.63 acres of Cozine Creek within a portion of Linfield College's 12-acre floodplain property (see attached maps).

Funding will be used to:

- Prepare the site for native plantings through a combination of community-based volunteer work parties and professional contracted services
- Coordinate community volunteers to plant the project site with a diversity of native trees, shrubs, wildflowers, and groundcovers;
- Educate local community members, landowners, and stakeholders about the importance of a healthy Cozine Creek and they can get involved

To implement this project, the 2018 Environmental Studies Program (ENVS) Senior Capstone Course students have prepared this pending \$2,500 Yamhill Watershed Stewardship Fund (YWSF) large grant and a pending \$15,000 Oregon Watershed Enhancement Board (OWEB) Small Grant Program grant proposal. In support of these grant proposals, the 2018 ENVS Capstone students have secured a \$1,500 grant from the Linfield Student Council to match funding for a Cozine Stewardship Coordinator student internship, and even established a student club, the Cozine Conservation Corp., to engage the Linfield student body in the long-term implementation of this restoration project.

This project is part of an ongoing Cozine Creek Community and Habitat Partnership, a collaborative effort by the Greater Yamhill Watershed Council (GYWC), Linfield College, the City of McMinnville, and the Yamhill Soil & Water Conservation District (YSWCD) to engage landowners, community members, and stakeholders in improving the health of the Cozine Creek watershed. In Fall 2017, the City of McMinnville awarded our Partnership a \$5,000 non-profit grant to recruit landowners for weed control and native planting projects across the Cozine Creek watershed. The Partnership has conducted numerous community presentations, service learning events, and landowner outreach activities to help elevate community awareness of the importance of a healthy Cozine Creek and how the general public can get involved. Community response has been overwhelmingly positive, and the Partnership has already recruited more than 50 acres of public and private land ownership along Cozine Creek for projects to control invasive weeds and re-vegetate with native plants, including this project with Linfield College.

The YWSF will be recognized as a partner and funder in outreach events and educational materials associated with this project and the Cozine Creek Community & Habitat Partnership. This project will be promoted across the Linfield Campus which includes 1800+ students and staff, as well across the broader McMinnville community. In addition to the community engagement activities described above, Linfield ENVS plans to install project signage at the site, conduct community presentations, engage other Linfield departments in research and use of the property, publish college newspaper articles, create an informational website and brochures of the project, and begin organizing an annual Camas Festival to celebrate the floodplain property and traditional uses of native plants.

2. How would this project further YWSF's mission of promoting knowledge and

appreciation of healthy lands, water and wildlife in the Yamhill Region?

This project will improve water quality and habitat along Cozine Creek, encourage proper use of the College's floodplain property, expand educational opportunities in the community, and renew our connection to Cozine Creek, both for Linfield College and the surrounding community.

The project will be used to showcase techniques which a typical landowner may use to improve local floodplain and upland habitats, including various treatments for invasive weed control, native revegetation, and protection from deer browse.

In addition, the site will serve as a long-term educational project for students in the Linfield Environmental Studies (ENVS) Program to gain valuable professional skills required to:

- Monitor and report on the effectiveness and costs of various habitat restoration treatments;
- Coordinate students, community members, and local organizations for service-learning work parties to implement and maintain the habitat restoration project;
- Produce educational materials and community presentations to increase local stakeholder awareness and understanding of the importance of a healthy Cozine Creek watershed, and how they can get involved.
- Engage Cozine Creek landowners to participate in future ENVS-led grant writing projects to restore additional acres of Cozine Creek habitat, beginning with the remaining ~7 acres of private property adjacent to the College floodplain between Baker and Davis Streets. Within this area, 1.25 acres in this area have already been recruited and weed control activities initiated.

3. Demonstrate how you have the qualifications or capacity to successfully complete the project (professional qualifications, timeline, workplan etc.).*

Workplan and Timeline

Please see attached timeline for additional details

- 1) A Linfield Cozine Stewardship Intern will coordinate monthly Spring and Fall Semester community volunteer work parties to cut, hand pull, and dig out weeds in the Manual treatment areas. Summer work parties may be coordinated as well.
- 2) In the Chemical / Mechanical and Mechanical / Chemical weed control treatment areas, Upshot Services LLC will be contracted for Spring and Fall ATV spot-spray applications and Spring ring-sprays around plantings, as well as Summer mowing and management of debris / downed wood using a Compact Track Loader (CTL).
- 3) The Linfield Cozine Stewardships Intern will coordinate volunteer work parties to plant native species, hand cast native/erosion seed mixes, and install deer browse protectors and weed mats. The plantings plans will be designed by the GYWC, Linfield facilities, and Linfield ENVS.

Professional qualification

The Greater Yamhill Watershed Council's (GYWC) Executive Director, Luke Westphal, will serve as the primary project leader and will oversee implementation of all project activities and supervise the Cozine Stewardship position. Luke has more than 10 years of experience in urban and rural watershed outreach and habitat restoration, including 5 years at the City of Salem Public Works Stormwater Department, and more than 5 years as the Executive Director of the GYWC. Luke grew up just SW of McMinnville on his family's century farm. His family were early settlers of the McMinnville area in the mid and late 1800's, and even initiated the original land claim where Linfield College now sits.

William Fleeger, PhD, and Nancy Broshot, PhD, will serve as leaders for the Linfield College Environmental Studies Department's (ENVS) project activities, including oversight for the Senior Capstone Course and the Cozine Stewardship Internships. Nancy has taught at Linfield since 2001 and serves as the ENVS Chair. William has taught at Linfield since 2014 as a Visiting Senior Scholar in Environmental Policy and Sustainability and has been integral in leading capacity building efforts for the Cozine Creek Partnership.

Upshot Services LLC is recognized as a trusted, local contract service provider for weed control and habitat restoration. They provide a number of land stewardship services for habitat conservation easements and property acquisitions owned and maintained by the Yamhill Soil & Water Conservation District and the Nature Conservancy, as well as many privately held properties across Yamhill, Polk, and Tillamook Counties. The company owner, James Riedman, has served on the GYWC Board Directors since 2014, taking over for his father who served for more than 15 years. In support of this project, Upshot Services LLC is providing a non-profit discount for their contract services.



Application Processing Information *(to be completed by the YWSF Board):*

Date Board Decision: _____ Approved/ Denied: _____

If Approved:

Grant Agreement Number: _____

YWSF Funding Level: _____

Comments:

YWSF President Signature:

Date:

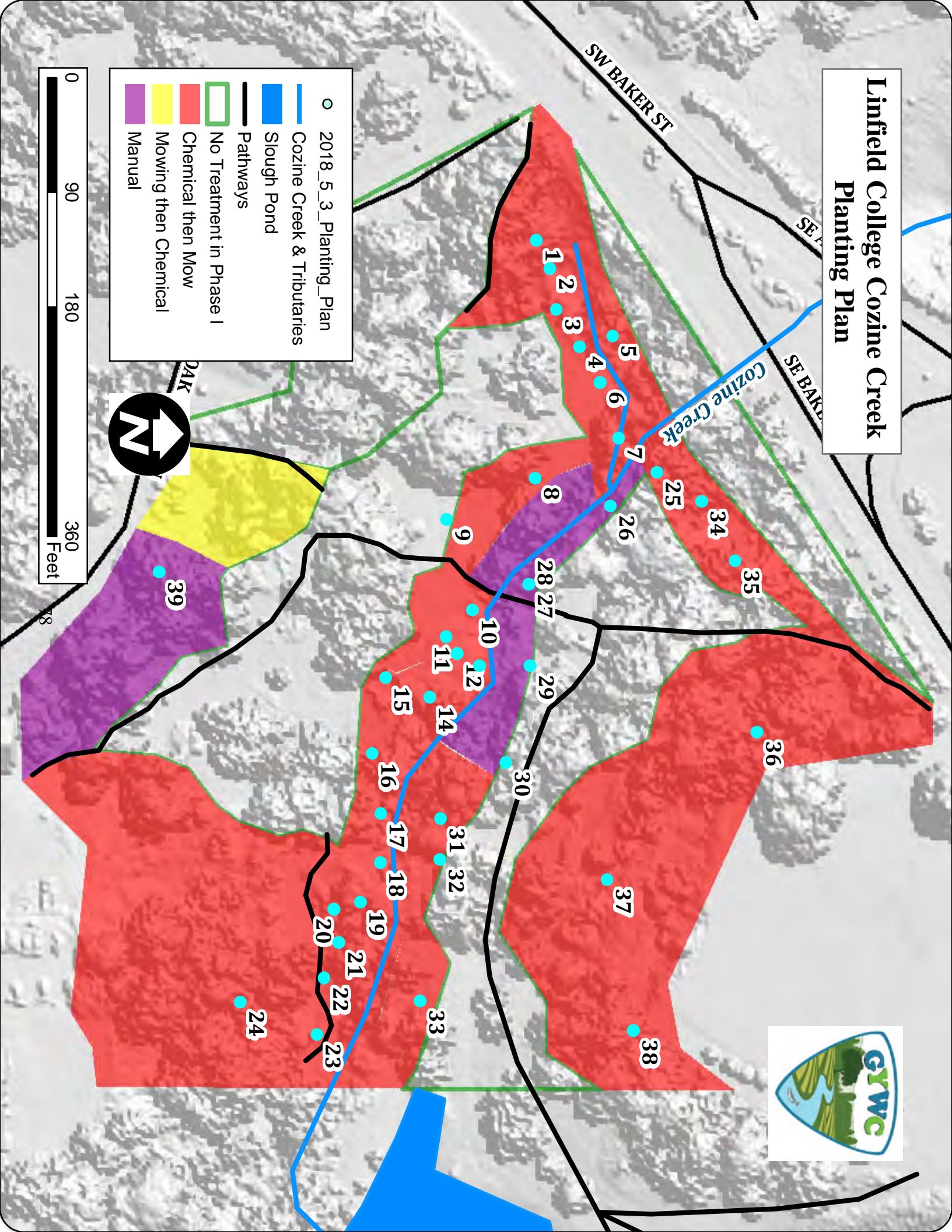
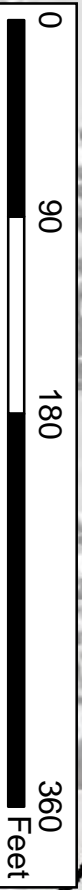
Grant application revised 4 March 2017

Appendix C: Planting Plan

Linfield College Cozine Creek Planting Plan



- 2018_5_3_Planting_Plan
- Cozine Creek & Tributaries
- Slough Pond
- Pathways
- No Treatment in Phase I
- Chemical then Mow
- Mowing then Chemical
- Manual



Appendix D: CCC Club Charter Application

Application Form for Clubs and Organizations To be ASLC Chartered

Please type this form or write legibly. Forms written illegibly will not be considered and returned. Club Charter Applications or any questions can be addressed to the Club Director on the second floor of Riley Hall.

Name of Club or Organization to be chartered:

Cozine Conservation Corps

Faculty Advisor: William Alexy Date: 3/20/18

List of Officers:

President: Noah Berg Email: nberg@linfield.edu

Vice President: Connor Sende Email: csende@linfield.edu

Nature of Club or Organization:

Religion/ Ethics Academics Service/ Advocacy
 Athletics/Outdoors Politics Culture Special Interest

Affiliation:

None Local Regional National

What types of events or outreach does your Club or Organization plan on doing?

Example (Fundraising, educational, volunteer, etc)

Our club plans to organize monthly service events to maintain the Cozine Creek nature area on campus. Along with the volunteer service itself, we hope to educate Linfield community members about the history, uniqueness and importance of our natural area.

List any College resources you may use. Example: classrooms, fields, lighting/sound equipment, etc.

Classrooms, ENVS department tools

Club Constitution

Article I. Purpose- A general statement of the purpose, nature and scope of the club.

Our club plans to organize monthly service events to maintain the Cozine Creek nature area on campus. Along with the service, we hope to educate Linfield community members about the history, uniqueness and importance of our natural area.



Article II: Goals- Statement relating to the type of activities which the club members will sponsor or those which they will participate while attempting to achieve the purpose.

To educate and engage Linfield community members in the restoration and maintenance of the Cozine Creek natural area (college owned property)

Article III: By-Laws- A general statement is needed relating to the process and procedures necessary to amend or change this constitution. This section must be consistent with article VIII of the ASLC By-Laws. (Including voting requirements and a description of officer duties.)

Club President Duties: Organize the work parties with the ENVS department and Copstone class, as well as the Greater Vanhill Watershed Council, Social Media Outreach

Club Vice-President Duties: Research history of Cozine and present education materials at work parties and club meetings

Bylaws:

If left blank the bylaws will be as follows:

- The voting of new club officers must happen annually by a 2/3 vote of club members
- A club constitution or bylaws change can officially be made by a majority vote of club members present at a club meeting

Advisor Consent Form

Advisors must sign this consent form only after reviewing all paperwork in the Club Charter Application packet. Advisors can be full or part time employees of Linfield College.

Cozine Conservation Corps
Name of Club or Organization

Noah Berg
Print Name of Club President

3/20/18
Date

Noah Berg
Signature of Club President

3/20/18
Date

William Fleeger
Print Name of Advisor

3/20/18
Date

W Fleeger
Signature of Advisor

3/20/18
Date

ASLC Club Resource Center Guideline Consent Form

The ASLC Club Resource Center was created in order to provide a space for club leaders to conduct club related affairs. Clubs and Organizations need to adhere to these guidelines for using the ASLC Club Resource Center. These are designed to help maintain a clean and organized environment that all clubs can use and enjoy. Any questions regarding these guidelines should be directed to the ASLC Club Director at ASLCclubs@linfield.edu.

Guidelines:

- I. The Resource Center is a shared space with ASLC Publicity, so all ASLC Clubs and Organizations will give Publicity Personnel priority to the Resource Center. Clubs will not be allowed to use Publicity's resources.
- II. Clean up after you are done using the resources. This includes returning the supplies to their appropriate places, cleaning pain brushes and picking up all trash/paper. If you find the room in disarray please contact the ASLC Club Director, (ASLCclubs@linfield.edu) so that it can be taken care of.
- III. Clubs are welcome to store large posters/educational pieces as long as they are out of the way of foot traffic and do not obstruct resources (tables, sink, desks, etc). ASLC is not responsible for lost or stolen items so be wary of leaving valuables. While the Resource Center will be locked, other people do have access to it, so don't leave valuables unattended.
- IV. Any tampering with the fences or gates at the far side of the room is prohibited, there is no need to be in that area.

I (ASLC Club or Organization) have read, understood and agree to adhere to the guidelines governing the use of the ASLC Club Resource Center. Violating these guidelines could result in my access being terminated.

Noah Berg
Signature of Club/Organization President

1029634
ID

3/20/18
Date

