Table of Contents

LIST OF RECOMMENDED WORKPLANS for 2016 319 FUNDING CONSIDERATION.2
Purchase of a No-Till Drill for use in the Malheur River Watershed..... 3
Salmon Safe certification in Peas/ Wheat/ Agronomic crop rotations..... 6
Upper Klamath Basin Non-Point Source Education Project..... 10
Getting the Word Out and Making Thinks Happen in the Malheur River Basin Phase II14
Powder Basin Water Quality Monitoring Program – Macroinverterbrate Sampling..... 18
Coquille Mainstem Cold Water Refugia Monitoring Project.....22
Coquille Stormwater Master Plan Update with Water Quality Implementation Plan.....25
Siletz Watershed - Monitoring and Assessment 2016-2017.....27
2017 WISE Pre-Project Monitoring Effectiveness Monitoring ProjectI. Proposal..... 31
Storm and Drinking Water Improvements for Cities Big/Small in the Long Tom Watershed.....35
Upper Nehalem Riparian Restoration..... 40
Lower Milk Creek Stream and Riparian Restoration..... 43
Nestucca, Neskowin and Sand Lake Watersheds Riparian Restoration Program..... 48
College Creeks Clean Water Retrofit..... 51
Scappoose Bay Watershed Restoration Action Plan..... 55
ODEQ – PSU TMDL Status and Trend Study.....58
Tillamook SWCD 2016 Stream Enhancement & Restoration.....60
Effectiveness Monitoring of Flood to Sprinkler Irrigation Conversion..... 66
Backyard Planting Program (2016/2017)..... 70
Pesticide Stewardship Program 2016..... 73

LIST OF RECOMMENDED WORKPLANS for 2016 319 FUNDING CONSIDERATION

REGION	Project Name	Submitted by	Type of project	Budget
ER	2015-16 No-Till Drill for Malheur River Watershed	OSU Extension - Malheur	no-till drill for BMP demonstration and experiment of no till	$24,904
ER	2015-16 Salmon Safe Certification in Peas/Wheat Agronomic Crop Rotation	OSU Extension - Umatilla	ongoing project, to promote green pea farms as Salmon Safe	$22,000
ER	2015-16 Upper Klamath Basin Non-Point Source Education Project	Klamath Watershed Partnership	NPS education program	$7,947
ER	2015-16 Getting the Word Out and Making Things Happen in the Malheur River Basin - Phase II	Malheur Watershed Council	basin-wide education and technical assistance project	$20,000
ER	2015-16 Powder Basin Water Quality Monitoring Program - Macro invertebrate Sampling	Powder Basin Watershed Council	macro-invertebrate continued sampling (2 interns)	$20,000
WR	Coquille Mainstem Cold Water Refugia Monitoring Project	Coos SWCD	monitoring for temperature 20 Lower Coquille locations	$6,000
WR	Coquille SW Master Plan Update with WQ Implement Plan	City of Coquille	update of the 1980 stormwater master plan	$14,136
WR	Siletz Watershed - Monitoring and Assessment 2016-2017	Lincoln SWCD	expanding monitoring in the Siletz DWSA	$24,714
WR	WISE Monitoring Effectiveness Monitoring Project Proposal	Rogue River Watershed Council	two and three of a three-year monitoring effort	$14,000
WR	Storm and Drinking Water Improvements for Cities in the Long Tom WS	Long Tom Watershed Council	outreach, public education: stormwater management	$30,000
NWR	Upper Nehalem - Riparian Restoration	Upper Nehalem WSC	continued riparian restoration, temperature parameter	$13,970
NWR	Tillamook SWCD 2016 Stream Enhancement & Restoration	Tillamook SWCD	riparian area livestock exclusion fencing, 8300 feet	$14,980
NWR	Milk Creek Riparian and Stream restoration project	Clackamas SWCD	continue riparian restoration, outreach	$14,980
NWR	Nestucca, Neskowin and Sand Lake Watersheds Rip Rest Program	Nestucca, Neskowin and Sand Lake WSC	riparian restoration, inavasive species removal	$14,980
NWR	College Creeks Clean Water Retrofit	*Sandy River Basin Watershed Council*	wq / aquatic habitat managent community college	$14,980
NWR	Scappoose Bay Watershed Restoration Action Plan	Scappoose Bay Watershed Council	outreach of ws restoration and technical assistance	$5,980
SW	DEQ– PSU TMDL Status and Trend Study	PSU	intern work to evaluate the effectiveness of TMDL impl.	$24,475
WR	Effect Monit of flood sprinkler irrigation conversion, Central Point	Jackson Co SWCD/Patton Environmental LLC	BMP evaluation for groundwater quality	$6,000
NWR	BYPP 2016-17 - 16-22	TEP	riparian restoration, pollutant monitoring	$14,980

SW	PSP	Existing hauler contract	contract work to collect and dispose waste pesticides	$24,475
TOTAL				$333,501

I. Proposal Title

Purchase of a No-Till Drill for use in the Malheur River Watershed.

II. Contact Information

Primary contact person: William H Buhrig

Organization/position: Oregon State University-Extension Crop Agent

Street address: 710 SW 5th Ave

City, State, ZIP: Ontario, OR 97914

Day phone: (541)881-1417 x106 Fax: (541)889-8840

Email: william.buhrig@oregonstate.edu

Secondary contact person: Kelly Weideman

Organization/position: Malheur Watershed Council Coordinator

Street address: 710 SW 5th Ave

City, State, ZIP: Ontario, OR 97914

Day phone: (541)881-1417 x105 Fax: (541)889-8840

Email: malheurwc@hotmail.com

III. Project Location

A. Town(s), County: **Malheur County**

B. Basin or watershed name: **Malheur Watershed**

IV. Project Summary

This project would purchase a Crustbuster 4615 no-till drill to provide an avenue for demonstration and experimentation of reduced tillage operations being performed by producers in the Malheur Watershed. Similar programs of drill availability in the past have generated increased grower interest in the potential of new cultural conservation practices. There appears to be good demand by growers wanting to implement reduced-tillage practices but are unsure of how it applies to their operation. By having a drill available for rent, producers can learn more about no- or reduced-tillage practices.

This project would expand the use and ability of the drill to help growers plant a quality, competitive stand while minimizing disturbance of the previous crops' residue. This will, in turn, help improve water infiltration and reduce runoff. Reducing runoff will help preserve the existing soil structure, limit nutrient loss and reduce tillage operations required to grow an economically viable crop. If this growing region continues to suffer from drought similar (or worse) than experienced in 2014, practices such as no-till or reduced-till will potentially become more critical as they will allow moisture applied (naturally or by irrigation) to be absorbed and stored in the soil more efficiently than bare ground and traditional, conventional methods. It is exciting to learn what we can do in regards to conservation with the knowledge that we are helping to improve our watershed and our water quality.

The use of a demonstration drill will result in the organization of field days and tours designed to help educate growers about this practice and it's potential. The success of this can be summarized with the three-legged stool analogy. One leg is the drill's *availability*, one leg is growers'*willingness* to use it and the third leg is *demonstration* of improved soil tilth and getting the word out to growers and other residents of our efforts in improving these watersheds. Data will be collected by the drill administrator to track the amount of acreage planted, type of irrigation system and the crop planted. This can then be compiled to show producer interest, adoption and types of application.

V. Watershed Plan/Areawide Strategy

With the continued widespread piping of irrigation laterals and installation of sprinkler systems, no-till or reduced till practices are a natural extension of the watershed's agricultural conversion. Areas of the Willow Creek agricultural area (a tributary of the Malheur River) have seen close to 50% conversion from furrow irrigation to sprinkler. This revolution in irrigation practices has resulted in a wave of growers looking to improve their practices without the traditional boundaries provided by the dominant method of irrigation: furrow. This region has experienced high nitrate levels in groundwater as well as sediment, phosphorus and bacteria loads found in surface water. The widespread adoption of sprinkler, drip and alternate tillage practices has provided a logical opportunity to reduce our surface and groundwater issues and dramatically increase our efficiencies regarding soil health and nutrient preservation.

This multi-pronged approach has been enhanced by this entire area's desire to work cooperatively from agency to agency and do what is best for the watersheds rather than play insignificant games and have territorial disputes. This program offered with the no-till drill is an integral puzzle piece to this cooperative nature that will continue to the support the dawn of better practices and water conservation.

The Malheur Watershed is listed as a 303(d) waterway which helps to underline the importance that we continue to work diligently on an integrated basis to help advance the health of the system.

VI. Desired Environmental Outcomes

The purchase of this drill will continue to provide an avenue of learning and experimentation for

local growers. This tool will enable the continued expansion of demonstrating how no-till and reduced tillage practices result in crop residue being left on the soil surface. By being able to suitably grow competitive crops by leaving more crop residue on the surface, this will help prevent sediment and nutrient runoff into streams during irrigation or rain events. Anecdotally, one producer who has worked with high residue operations says that wind erosion is drastically reduced and he does not even have dust clouds when working his fields.

Evaluation of progress will be done by cooperating with growers to create tillage comparisons where an existing yield cart can be used to measure yield differences between conventional and reduced tillage operations. We may try to cooperate further with the Malheur Soil and Water Conservation District on methods to assess water quality in drainage systems directly affected by use of the drill. One other method of measuring success will be to keep an account of producers using the drill for the first time.

VII. Phasing Considerations

The next step of this work may be to expand experimentation with strip tillage enabling the further determination of practices which may help preserve soil, save fuel, time and labor. If more efficient operations are developed, this will continue to potentially reduce our soil tillage practices and continue to reduce erosion and nutrient loss. This will result in extending the viable life of our cultivated fields and save the sediment burden on the impacted watersheds. By demonstrating the value of leaving the residue on top by reducing tillage, it will further encourage the use of soil, water and nutrient saving practices.

VIII. Project Partners, Sources of Matching Funds, and Estimated Total Project Cost

	319 Grant Funding	Match Funding (non-federal)
Equipment		14,761.46
Services/Supplies		800.00
Administrative Allowance (up to 10% of grant)		1556.15
Total	24,903	17117.61

I. Proposal Title

Salmon Safe certification in Peas/ Wheat/ Agronomic crop rotations

II. Contact Information

Primary contact person:	Dr. Clive Kaiser
Organization/position:	Oregon State University/ Associate Professor
Street address:	418 N Main St
City, State, ZIP:	Milton Freewater, OR, 97862

Day phone: (541) 9385597 Email: clive.kaiser@oregonstate.edu

III. Project Location

A. Town(s), County: **Milton Freewater/ Umatilla**

B. Basin or watershed name: **Walla Walla Basin Watershed**

River ☒ Stream ☐ Lake/Pond ☐ Estuary ☐ Groundwater ☐ Other ☐ _____

C. Is this project part of a Total Maximum Daily Load (TMDL), Drinking Water Source Protection (DWSP) or Groundwater Management Area (GWMA) effort? Yes ☒ No ☐
If yes, name: **Lower Umatilla Basin**

D. Map and spatial location information: All Pre-proposals must be accompanied by a map showing the project location in sufficient detail that it can be easily located by individuals unfamiliar with the area.

Map of project area is attached? Yes ☒ No ☐

Lat: **45°56'21.28"N** Long: **118°19'49.55"W**

IV. Project Summary

This is an ongoing project, currently funded by the DEQ. OSU Extension has been working actively with the OR/WA Green Pea industry to enable them to certify their farms as Salmon Safe. This is the result of more than a year of collaboration between OSU, ODA, the DEQ and Salmon Safe. Softer, more targeted chemistries have been identified which can be utilized for insect, disease and weed control within 100 feet of any open water source. In addition, chemistries that are unacceptable due to their

longevity, prolonged aerobic half-life in soils and toxicity to aquatic salmonoids have been identified. These products have been placed on a prohibited list and may not be used in production practices for Salmon Safe certification purposes, even on land further than 100 feet from an open water source. Several growers are being audited for compliance with the standards and it is expected that several contiguous farming units will be certified by the end of January 2015.

Currently, very few of the lands adjacent to waterways will qualify for Salmon Safe certification as several of the chemistries that are on the restricted list have been used to cultivate the peas/ wheat in this zone. Obviously, this is the area that is most sensitive to chemicals and this requires additional effort to encourage growers to use softer chemistries and alternative practices e.g. fallow so as not to contaminate the waterways with chemicals. For this reason, additional funding is sought to provide a financial incentive to growers to utilize the alternative chemistries which are >8X more expensive than traditional organophosphates currently being utilized. Where the land is left fallow, weed control will be required and income will be lost if the land is not in production. Consequently, a $20 per acre incentive for not farming the lands, or farming them with softer, more expensive chemistries is in order. Growers have acknowledged that this incentive would be sufficient for them to adopt the Salmon Safe standards on the land adjacent to waterways. It is hoped that a three-year ongoing incentive will be sufficient to create a habit amongst these growers and will also provide sufficient time for these growers to convert their entire farming operations to Salmon Safe.

V. Watershed Plan/Areawide Strategy

Kevin Masterson of he DEQ has, in conjunction with the Walla Walla Basin Watershed Council, continued to monitor pesticide residues in the local rivers and streams. This project has been ongoing for the last 6 years and is expected to continue for at least another two years. During that time, the pesticide levels have dropped considerably and been maintained at low levels since then, bar one exception when there was a spike. Much of this can be accredited to an active outreach and engagement program that Dr. Kaiser has been responsible for keeping growers informed as to the situation as well as addressing issues when they arise.
In addition, Dr. Kaiser has been actively campaigning for growers to use softer, more targeted chemicals in the Walla Walla Valley. This has been achieved by helping growers understand and accurately predict pest and disease models while targeting these pests when they are most susceptible. This has been achieved by setting up a comprehensive weather station network in the Valley. Support for this program came from NRCS and without grower buy in would not have been the success it is. The program has encouraged growers to use soft and targeted chemistries e.g. ovicides and larvacides and this has reduced the reliance on organophosphates down to on average to less than 1 full cover spray per growing season from as many as 8 full cover sprays

per season.

- Insecticide sales records were obtained from The McGregor Co. from 2005 till 2010. These records represent ~70% of the orchard acreage in the Walla Walla Valley and their market share has remained constant over the 6 year period.
    - Total Organophosphate (OP) usage in the Walla Walla Valley peaked in 2007 at ca. 11,500 lbs but has steadily decreased to 1,022 lbs in 2010. This is more than an 1100% reduction in OP usage over the last 5 years.
    - New insecticides with alternative chemistries have been introduced in the Walla Walla Valley between 2005 and 2010 and cumulative usage of all chemicals used in the Walla Walla Valley has steadily decreased from a peak of more than 18,000 lbs in 2007 to 2653 lbs in 2010. This is almost a 700% reduction in insecticide usage over the last 5 years.
- Insecticide sales records were also obtained from Blue Mountain Growers from 2005 to 2010. These records represent a constant ~ 20% of the orchard acreage in the Walla Walla Valley and made up of data from several competitors to the McGregor Co.
    - Total organophosphate (OP) usage in the Walla Walla Valley peaked in 2006 at ca. 3,514 lbs and remained constant till 2008. Since then OP usage has steadily declined and in 2010, only 2,426 lbs were sold. This constitutes a 145% reduction in OP usage over the last 5 years.
    - Blue Mountain Growers usage of insecticides with alternative chemistries in the Walla Walla Valley has been increasing steadily since 2005 (~245 lbs) and peaked in 2008 (~820 lbs) but declined slightly in 2009 and 2010 (~635 lbs).

Overall, total insecticides sold in the Walla Walla Valley and applied to ~90% of the fruit acreage has steadily decreased from a peak of ~22,100 lbs in 2007 to ~6,060 lbs in 2010. This constitutes a 364% reduction in chemical usage by weight.

VI. Desired Environmental Outcomes

1. A reduction in the concentrations of pollutants of major concern to salmonoids and aquatic life including: -
    - Azinphos-methyl
    - Chlorpyrifos
    - Diazinon
    - Dimethoate
    - Carbamate
2. Kevin Masterson and the Walla Walla Basin Watershed Council will be sampling the rivers flowing out of the pea/wheat fields for the presence of these pollutants. This will be done in conjunction with the pea/wheat farmers whenever they apply pesticides to their lands adjacent to the target areas. All chemistries should be below the benchmarks determined by EPA and if any "hits" are found, farm visits will be made to participants immediately by Dr. Kaiser.

VII. Phasing Considerations

Phase 1 was achieved successfully as complete production manual was compiled for wheat and peas. In addition, audits are being conducted in January 2015 for certification of existing farms.
Phase 2 is currently in progress with addition agronomic crops being added to the matrix. Corn is an additional crop that will need to be added.

VIII. Project Partners, Sources of Matching Funds, and Estimated Total Project Cost

	319 Grant Funding	Match Funding (non-federal)
Personal Services Dr. Clive Kaiser ($141,492) @ 15% (including 30% overheads)		$43,324
Total	$22,000	$43,324

I. Proposal Title

Upper Klamath Basin Non-Point Source Education Project

II. Contact Information

Primary contact person: Ginny Monroe

Organization/position: Klamath Watershed Partnership/Outreach Coordinator

Street address: 205 Riverside Drive, Suite C

City, State, ZIP: Klamath Falls, Oregon, 97601

Day phone: (541)850-1717 Fax: (541)850-8001

Email: blehman@klamathpartnership.org

Secondary contact person: Bill Lehman

Organization/position: Klamath Watershed Partnership/Executive Director

Street address: 205 Riverside Drive, Suite C

City, State, ZIP: Klamath Falls, Oregon, 97601

Day phone: (541)850-1717 Fax: (541)850-8001

Email: gmonroe@klamathpartnership.org

III. Project Location

A. Town(s), County: **Klamath Falls, Klamath County**

B. Basin or watershed name: **Upper Klamath Basin, Upper Klamath watershed**

River ☒ Stream ☐ Lake/Pond ☐ Estuary ☐ Groundwater ☐
Other ☒ **Upper Klamath watershed**

C. Is this project part of a Total Maximum Daily Load (TMDL), Drinking Water Source Protection (DWSP) or Groundwater Management Area (GWMA) effort? Yes ☐ No ☒
If yes, name: **Nonpoint Source NPS Outreach**

D. Map of project area is attached? Yes ☒ No ☐

Lat: **42.6800° N** Long: **121.6500° W**

IV. Project Summary

Since 2010, Klamath Watershed Partnership has managed the Urban Issues Working Group Non-Point Source (NPS) Education Project with a 319 grant through the Oregon Department of Environmental Quality. This project implemented several educational components: NPS pamphlets, NPS prevention education presented at local venues, indoor and outdoor educational displays, as well as permanent kiosks and signage installed at local parks and wetland areas. This project has provided excellent learning opportunities throughout the community. Going forward, the goal of the proposed work is to continue with the non-point source pollution prevention outreach programs to urban areas and smaller rural communities in Klamath County to better serve outlying Watershed Council working groups and smaller towns with fewer education opportunities that are all located within the Upper Klamath Basin.

The Upper Klamath Basin NPS Education Project consists of continuing education efforts in Klamath county Oregon. The Oregon Department of Environmental Quality has listed Upper Klamath Lake and many tributary streams as impaired through their TMDL process and uses their Water Quality Management Plan to guide efforts to address those impacts. To address these issues, Klamath Watershed Partnership proposes ongoing efforts to continue the non-point source pollution prevention education and outreach message. With the experience dedicated to NPS education, Klamath Watershed Partnership will lead the efforts to provide quality outreach programs and learning opportunities throughout the communities that impact the watershed. Proposed programs include: expanded displays at both indoor and outdoor venues, TMDL coordination with the local Oregon Department of Environmental Quality, increased education at regional Watershed council working group gatherings and presentations at local events to address issues related to NPS. Klamath Watershed Partnership will continue to address urban storm water concerns in our programs with existing materials developed through previous DEQ grant and will develop additional materials for distribution as needed. Regional involvement and educational programs will be expanded to the rural communities. Attendance at Irrigation District meetings, Klamath watershed working group meetings and other regional gatherings will include an opportunity for presenting NPS pamphlets and educational materials created specifically for this purpose. Signs created to educate the public on non-point source pollution will be displayed at Lake Ewauna trails, OC&E trails around Klamath County and the Link River trail, where several organizations are currently working on development of the trail. Success will be demonstrated with several methods: completed signs and displays that continually inform viewers of NPS issues, maintaining a list of educated landowners and volunteers capable of assisting with promotion of the cause for future events, and on-going programs that stress the importance of the educational message of preventing non-point source pollution. The continued efforts to provide materials and information that inform the public of the importance of reducing their impacts on the environment are keys to the success of reducing pollution and maintaining high water quality. Klamath Watershed Partnership will utilize their expertise to continue this cause by implementing the Upper Klamath Basin Non-Point Source Education Project.

V. Watershed Plan/Areawide Strategy

The Upper Klamath Basin Non-Point Source Education Project is part of an ongoing collaborative effort with 10 other state, federal, city, and private organizations. The objectives complement a wetland restoration project implemented by the US Fish and Wildlife Service, continuing education programs through the City of Klamath Falls and Klamath County, as well as renewed coordination with the local Oregon Department of Environmental Quality office. Klamath Watershed Partnership maintains good standing with rural landowners as a non-governmental source of reliable information. The organization is recognized by the Oregon Watershed Enhancement Board as the regional Watershed Council. In addition, Klamath Watershed Partnership works closely with local groups dedicated to conservation, including the Great Outdoors Alliance, Klamath Tracking and Accounting Program, and the Upper Klamath Conservation Action Network. These groups provide an excellent avenue for coordination and support that Klamath Watershed Partnership uses to lead water quality improvement efforts. This gives us access to regular discussion groups and local expertise that improves our educational message. We can quickly provide targeted educational efforts related to NPS and TMDL issues and specific regional issues. Ultimately, our long-standing involvement in the community allows the organization to use a wide variety of resources to promote the understanding of non-point source pollution.

VI. Desired Environmental Outcomes

The existing non-point source pollution educational program was developed by Klamath Watershed Partnership. This includes a pamphlet describing local issues associated with non-point source pollution, educational displays, facilities, and trained personnel. The pamphlet promoting NPS awareness will be distributed at all venues, including approximately 20 educational programs, festivals, and working group meetings. In the previous DEQ grant we were able to use volunteers for three stenciling projects. We will continue to use volunteers to assist with an additional five NPS stenciling project.

With funding from a previous DEQ grant we were able to install three kiosks: one at Spence Mountain Trail located near Klamath Lake, one at Hagelstein Park along Klamath Lake and one at the South Portal Visitor Center near Lake Ewauna. We also matched Klamath County funding to previous DEQ funding to install additional interpretive signage about NPS and wetlands at the South Portal Visitor Center. The educational message will continue in the urban area as well as expansion into working group meetings to target the rural communities. Objectives will be measured by tracking the number of visitors, schools, and meeting presentations. Information will be provided to participants who visit the wetlands display and those who utilize the traveling display.

VII. Phasing Considerations

We plan to continue these on-going educational programs as long as funding is available. The cost of travel, materials, and knowledgeable staff requires continued support. Expanding NPS educational programs and expanding to rural communities is an important part of the project that requires repeated efforts to ensure the message reaches successive generations.

VIII. Project Partners, Sources of Matching Funds, and

Estimated Total Project Cost

	319 Grant Funding	Match Funding (non-federal)
Personal Services		$5,000
Equipment		
Services/Supplies		$6,125
Travel		
Subcontracts		
Administrative Allowance (up to 10% of grant)		
Total	$7,627	$11,125

I. Proposal Title

Getting the Word Out and Making Thinks Happen in the Malheur River Basin Phase II

II. Contact Information

Primary contact person: Ken Diebel

Organization/position: Malheur Watershed Council

Street address: 710 SE 5th Ave

City, State, ZIP: Ontario, OR 97914

Day phone: (541)910-4034 email: kprn@eoni.com

Secondary contact person: Kelly Weidman

Organization/position: Malheur Watershed Council

Street address: 710 SE 5th Ave

City, State, ZIP: Ontario, OR 97914

Day phone: (541)881-1417 Fax: (541)889-8840, email: malheurwc@hotmail.com

III. Project Location

A. Town(s), County: **Ontario**

B. Basin or watershed name: **Malheur River**

River ☒ Stream ☐ Lake/Pond ☐ Estuary ☐ Groundwater ☐
Other ☒ **Malheur watershed**

C. Is this project part of a Total Maximum Daily Load (TMDL), Drinking Water Source Protection (DWSP) or Groundwater Management Area (GWMA) effort? Yes ☐ No ☒
If yes, name: **Nonpoint Source NPS Outreach**

IV. Project Summary

Our proposed project will cover the Malheur River Watershed, which includes the city of Ontario near the mouth and to the high elevation forestland in Harney and Grant County at the headwaters. The Malheur River and its tributaries exhibit some of the worst water quality in Oregon. The problems include high water temperatures, high bacteria counts, and elevated

nutrient and sediment levels. Poor riparian vegetation and irrigation-induced erosion are the primary causes of these water quality problems.

In the last 10 years landowners and agencies in the Malheur Basin have worked together to implement hundreds of conservation projects. Most projects have involved converting from flood to sprinkler and piping irrigation canals. The goal has been to reduce or eliminate irrigation-induced erosion. There is a need to continue this momentum in the irrigated areas and to expand our outreach activities to ranchers in the rangeland areas. Ranchers tend to be more difficult to connect with because of their remoteness, and they are not accustomed to working with the government.

We are proposing a basin-wide education and technical assistance project. Instead of using passive outreach techniques such as brochures and videos, we are planning to bring the outreach to the affected stakeholders.

Our first step will be to identify leaders in the community and enlist their help in attracting attendees to information meetings. We will conduct these meetings in the local community in places such as grange halls, schools and even in landowner shops and garages. Possible target groups or communities we hope to collaborate with include:

Irrigation districts,
SWCDs (Harney County included),
Oregon Cattlemen's Association,
Ranching communities in Juntura, Drewsey,
Burns Paiute Tribe.

The theme of the meetings will be wide-ranging, yet focused primarily on water quality issues. We will include updates from the local ODFW, BLM, and USFWS staff. DEQ and ODA will help the Council present data specific to current TMDL and agricultural water quality issues in the basin. A key aspect of the meetings will be presentations by the Watershed Council on the latest findings from past and ongoing water quality data collection efforts.

Just increasing awareness of watershed issues is not enough. We plan to provide technical assistance as well. This will be provided by having presentations from OSU Extension, OSU Malheur Experiment Station, and NRCS. The Council will work closely with the Malheur Experiment Station to use the information they gather from their study of the barriers to implementation of BMPs in the Malheur.

The Watershed Council will also hire a contractor to conduct the outreach and to provide technical expertise in riparian restoration, water quality monitoring, and grant writing. This will increase the Council's ability to perform its mission of protecting and restoring the Malheur River Basin.

Our goals are to:
1) Increase stakeholder knowledge and understanding of all watershed issues, particularly water quality and riparian issues in the Malheur River Basin.

V. Watershed Plan/Areawide Strategy

Outreach and technical assistance are key components of the following Basin-wide plans:

- Malheur River Basin TMDL and WQMP. 2010. Oregon DEQ.
- Malheur River Agricultural Water Quality Management Plan. 2001. Oregon Department of Agriculture. (Plan updated in 2011).

  "PRIMARY GOAL
  Encourage voluntary compliance by agricultural producers with federal and state requirements to solve water pollution through planning, technical assistance, financial assistance and educational programs to increase awareness."

- Malheur Watershed Action Plan. 1999. Malheur and Owyhee Watershed Council. (To be updated in 2014-15).

Our project will complement two sub-basin action plans.

- Willow Creek Working Group Action Plan. 2010.
- Bully Creek Watershed Assessment and Action Plan. 1997.

In the late 1990's and early 2000's the Watershed Council , the Malheur County SWCD, and state and federal agencies conducted extensive outreach, monitoring and project implementation programs. These programs are still active, but there is a need to expand the outreach to the rangelands, and to keep the momentum going in the irrigated areas.

VI. Desired Environmental Outcomes

The primary expected outcome of this project is an increased awareness of riparian, water quality and general watershed issues by stakeholders in the Malheur River Basin. We will measure this by counting the number of people we contact. We will also send out follow up surveys or make phone calls to measure stakeholder knowledge of watershed issues and to gage their interest in restoration and conservation

The secondary outcome is an increase in the technical ability of the Malheur Watershed Council staff to provide follow up in water quality monitoring, riparian restoration, and conservation project implementation to interested landowners. We can measure this by the number of projects implemented

VII. Project Partners, Sources of Matching Funds and Estimated Total Project Coshasing Considerations

This is Phase II of our outreach work. Last year we were successful in obtaining 319 funding for Phase I. However, due to unavoidable delays, we did not sign a contract for the funding until

December 2014. In this short time, we have begun our project by speaking to local commodity groups such as the Onion Growers, Wheat Growers, and a local irrigation conference. We are scheduled to talk to the Chamber of Commerce and have begun planning our series of town hall meetings. OSU Extension has begun developing a means of measuring our outreach effectiveness. Thus, we are ahead of schedule for implementing this project

BUDGET

	319 Grant Funding	Match Funding (non-federal)
Personal Services		$18,400
Equipment		
Services/Supplies		
Travel		
Subcontracts		
Select ONE: Administrative Allowance (up to 10% of grant) or Indirect Cost		
Total	$20000	$18,400

I. Proposal Title

Powder Basin Water Quality Monitoring Program – Macroinverterbrate Sampling

II. Contact Information

Primary contact person: Johanna Sedell

Organization/position: Powder Basin Watershed Council/Executive Director

Street address: 2960 Broadway

City, State, ZIP: Baker City OR 97814

Day phone: (541)523-7288 Fax: (541)523-7288 Email: pbwced@qwestoffice.net

Secondary contact person: Meghan Rorick

Organization/position: Powder Basin Watershed Council/Outreach Coordinator

Street address: 2960 Broadway

City, State, ZIP: Baker City OR 97814

Day phone: (541)523-7288 Fax: (541)523-7288

Email: pbwcoutreach@qwestoffice.net

III. Project Location

A. Town(s), County: **Baker County**

B. Basin or watershed name: **Powder Basin** HUC: (12 digit code required)

River ☒ Stream ☒ Lake/Pond ☐ Estuary ☐ Groundwater ☐ Other ☐ _____

C. Is this project part of a Total Maximum Daily Load (TMDL), Drinking Water Source Protection (DWSP) or Groundwater Management Area (GWMA) effort? Yes ☒ No ☐
If yes, name: **Powder Basin TMDL**

D. Map and spatial location information:

Map of project area is attached? Yes ☒ No ☐

Lat:**44.77848** Long:**117.84231**

IV. Project Summary

The Powder Basin Watershed Councils (PBWC) water quality monitoring program began in 2013 with funding through the 319 program. In the first year the program trained volunteers and the PBWC Monitoring Coordinator collected water quality data at 20 sites across the Powder, Brownlee, and Burnt River Subbasins. The goal of the initial grant was to provide additional data to su0ppport TMDL development, to connect residents to their watershed, and to provide natural resources managers with objective data for decision-making (DEQ #068-12).

From the beginning, the program has relied on support from DEQ, BLM, USFS, IPC, and community volunteers. These partnerships led to an increase in the number of sites being monitored in 2014, with 58 new sites added through an OWEB-funded expansion of the program. Volunteers and agency partners measure pH, dissolved oxygen,, conductivity, turbidity, and continuous temperature; a second 319 grad has added nutrient monitoring at 20 sites on BLM-managed land in the basin. Discussions with program partners have identified stream flow and macro invertebrate monitoring as two areas to grow the current monitoring program. A grant to support a pilot year of flow monitoring in 2015 is currently pending with OWEB.

With this project proposal, the council seeks to add benthic macro invertebrate sampling to the Water Quality Monitoring Program. Because macro invertebrates live in streams for an extended period of time, they are indicators of watershed conditions that are not captured by typical water quality grab samples. The dataset generated will support Total Maximum Daily Loads (TMDL) development and Oregon Department of Environmental Quality (ODES's) statewide monitoring efforts, inform natural resource management and conservation decisions, and serve as a reference point for the detection of changes in stream conditions.

Two inters will be hired for the 2016 field season and trained by ODEQ staff to collect macro invertebrates samples at 33 sites across Powder Basin. The ODEQ PREDATOR model and supporting Stressor ID models will be used to analyze the data. (The interns will also collect the second season of flow data; the number of flow sties will be determined once project partners refine site selection after analyzing the first year of flow data.) The Council is requesting 319 funds to support 50% of the total coast of macro invertebrate and flow monitoring from April 2016 – March 2018. The Council will ask for the other 50% from OWEB during the fall 2015 grant cycle.

V. Watershed Plan/Areawide Strategy

Data released by ODEQ in the Powder Basin Status Report and Action Plan (2013) have indicated limited improvements or slight decreases in water quality throughout the Powder Basin. Local efforts to address water quality concerns have included management changes on public and private lands, riparian fencing and in-stream restoration efforts, and changes to municipal wastewater handling. As natural resources managers implement changes, comprehensive monitoring data will support an adaptive management approach.

The additional of macro invertebrate sampling to the Council's monitoring program will

complement on-going water quality monitoring in Powder Basin to provide a more complete picture of watershed health. It will also support TMDL development, ODEQ's state-wide macro invertebrate monitoring efforts, and the development of restoration priorities within the basin. In addition, it will provide valuable scientific field experience and contact for students pursuing natural resources careers.

VI. Desired Environmental Outcomes

The goal of this project is to establish a baseline macro invertebrate dataset for 33 – 35 sites across Powder Basin that: 1) captures the diversity of stream conditions and accurately represents current conditions of the basin; 2) complements on-going water quality monitoring; 33) supports native salmonid recovery planning; and 4) fills beneficial use data gaps and supports TMDL development in Power Basin (Powder Basins Status Report and Action Plan, Sec. 7.6.2 pg. 130). Data will be collected using the Benthic Macro invertebrate Protocol for Wadcable Rivers and Streams, found in the ODEQ Water Quality Monitoring Mode of Operations Manual (2014). Field training and supplies will be provided by the ODEQ Volunteer Monitoring Program. The PBWC Quality Assurance Project Plan (QAPP), which was approved by the Volunteer Monitoring Specialist and the Quality Assurance Officer, will be updated to include macro invertebrate sampling.

Samples will be sent to a lab for identification to the genus/species level. The dataset generated will be analyzed with the help of Shannon Hubler, Natural Resources Specialist for ODEQ's Watershed Assessment Section, and one of the developers of the PREDATOR macro invertebrate model (DEQ08-LAB-0048-TR). PREDATOR is a predictive model that will establish the biological conditions at each site, with rankings from most disturbed to least disturbed. In additional, using the complementary weighted average inferce (Stressor ID) model will provide the tolerance information needed to identify the cause of impairment (for disturbed sites) and to develop restoration or adaptive management objectives. Because ODEQ model gives information on temperature tolerance, over the long term, the dataset will also provide information regarding climate change.

An ancillary goal of the project is to connect local college students to meaningful work experiences. Baker County is a high-poverty rural community dependent upon natural resources for much of its economy. By offering an internship program that connects local status to state and federal agency staff, the Council hopes to foster stronger ties between the community and partner agencies, providing students with skill sets and connections that can further careers in science and natural resource management.

VII. Phasing Considerations

Funding through the 319 program and OWEB established our monitoring program and will provide funding through June 2016. A recent award from the 319 program will support water quality monitoring at 78 sites through March of 2018. Additional funding from OWEB to add a pilot season of flow monitoring in 2015 is pending. The amount requested in this application will fund the addition of macro invertebrate sampling to our current water quality monitoring program from April 2016 through March 2018. An application will be submitted to OWEB this fall for funding that will allow two interns to also collect flow data from April 2016 through

VIII. Project Partners, Sources of Matching Funds, and Estimated Total Project Cost

. BUDGET

Type of expense reimbursement	319 Grant Funding	Match Funding (non-federal)	Total
Personal Services	$18,807.57	$22,007.57	$40,815.13
Equipment			
Services/Supplies	$19,288.00	$2,577.50	$21,865.50
Travel	$3,674.76	$5,691.35	$9366.11
Subcontracts		$3,000	$3,000
Select ONE: 10% of MTDC (Diminimis indirect rate) or Indirect Cost rate			
Total	$41,770.33	$33,276.42	$75,046.74

Oregon Department of Environmental Quality Volunteer Monitoring Program: Macro invertebrate Sampling Equipment, Field Training, Data Management and Analysis = $5,777.50

PBWC: Administration = $3,000.00

Oregon Watershed Enhancement Board: Cost of flow monitoring (with 50% of interns salaries) = $24,498.92

I. Proposal Title

Coquille Mainstem Cold Water Refugia Monitoring Project

II. Contact Information

Caley Sowers

Coos SWCD

319 N Adams

Coquille, OR 97423

(541) 396-6879, email: info@coosswcd.org

III. Project Location

Bandon, Coquille, Coos County
HUC: 171003050506

IV. Project Summary

This project proposes to conduct summer stream temperature monitoring at 20 lower Coquille River mainstem and tributary locations, between the municipalities of Bandon and Coquille. One of the primary water quality impairments in this section of the mainstem includes water temperatures that can reach over 70° from July through September, causing adverse or lethal impacts to salmonids.

Temperature is an especially important criteria in the reach due to the critical nature of the lower Coquille mainstem for rearing of juvenile fall Chinook salmon and moderate numbers of Coho. The reach is also an important migration corridor for salmon and steelhead. High summer temperatures result in the reach having very limited potential for anadromous salmonid rearing from July to September.

Rearing and migration reaches must have cold water refugia that are sufficiently distributed to allow salmon and steelhead locations where they can physiologically persist without significant adverse effects from higher water temperatures elsewhere. The overall goal of this project is to collect previously undocumented data on distribution of summer cold water refugia for rearing of ESA listed and non-listed salmonids in the lower Coquille River mainstem project area.
A planning phase of the project will be conducted prior to the start of actual temperature monitoring, including GIS mapping to identify potential monitoring locations along the mainstem and tributaries. Each potential monitoring location will be marked with a data point which will contain information about land ownership and landowner contact information, as available. Location monitoring planning will be followed by an outreach phase where landowners are contacted by Coos SWCD staff to obtain written permission access for stream temperature monitoring on private and public lands. Following a DEQ and ODA approved monitoring protocol, 20 digital temperature loggers will be placed during March 1 to April 15th at selected

stream locations within the project area from March 1st to April 15th by Coos SWCD and Coquille Watershed Association staff, with technical assistance from ODFW Habitat Protection biologist. Loggers will be retrieved in October prior to high flows, when stream temperatures have decreased to levels within salmonids tolerance. Logger locations will be identified with NAD83 GPS readings, detailed description, photo points, and field notes directing to the site. The budgeted HOBO® Waterproof Shuttle U-DTW-1 equipment, and a laptop will be used bi-monthly to download temperature data and inspect logger function. Once data has been collected, Coos SWCD staff with technical assistance from ODFW will compile and process temperature data into a readable format that can be used as important supplemental data for project funding proposals to enhance, protect, and improve fish access to existing cold water refugia. We anticipate the data will detail segments of the lower Coquille where refugia are limited, thus directly assist with development of riparian/cold water refugia projects. Success of the project will be demonstrated in a final report detailing the results of summer stream temperature monitoring. Project information will be presented to the public at the Coos SWCD 2017 Annual Meeting and shared with land management agencies upon request.

V. Watershed Plan/Areawide Strategy

The data collected from this project will augment and support the recently completed Coquille Watershed Association (CWA) Tide Gate Survey (Coquille Tide Gate Inventory & Project Development Report, Coquille Watershed Association 2016), which identified and mapped tide gates in a 37-mile span of the tidally-influenced lower Coquille River. The objective of this Tide Gate Survey was to produce a detailed inventory database of tide gates in the Coquille River system to help with generating a prioritized list of potential restoration projects, that the CWA and partners will be able to review and assemble within this prioritization the highest benefit projects for development into grant applications.

Stream temperature data would provide an additional parameter with which to evaluate and prioritize potential projects. The long-term goals/objectives of the Tide Gate Survey are foundationally linked to replacement and/or removal of all non-functioning and non-fish-friendly tide gates in the Coquille River system. The prioritization process and documentation of cold water refugia will greatly assist with efforts to improve fish access to critical cold water refugia rearing habitats, numerous miles of spawning and lead to better land management for agricultural landowners with working landscapes.

Additionally, stream temperature data from this Cold Water Refugia Monitoring Project will support the Coos Soil and Water Conservation District's ongoing efforts to work with local agricultural landowners to improve water quality via voluntary conservation and restoration practices. Temperature data will be used to educate landowners about the importance of riparian fencing and vegetative buffers to provide shade, as well as to support future proposals for project funding to enhance riparian shade or improve fish access to refugia sites through the replacement or removal of fish passage obstructions such as undersized culverts or tide gates.

VI. Desired Environmental Outcomes

1. Expected environmental outcomes of this project will be:

a) The attainment of current scientific data documenting the distribution of summer cold water refugia along the Coquille mainstem migration corridor.
b) Documentation of the general riparian condition of streams within the reach where the loggers are deployed as well as using aerial imagery to assist with understanding cold water refugia locations through understanding habitat condition.
c) Stream Temperature data will provide an additional parameter with which to evaluate and prioritize restoration projects in the Coquille River mainstem and its tributaries.
d) Stream Temperature Data will be used to support the development and implementation of new projects with specific goals of improving fish access and function of critical refugia by river reach.

2. Success of this project and its outcomes will be measured by:
a) The collection of quality, temperature data obtained by location
b) Number of new projects generated from this monitoring effort or supported by the data collected.
c) Improved understanding of lower Coquille River temperature factors that impact aquatic ecological function by river reach.

VIII. Project Partners, Sources of Matching Funds and Estimated Total Project Cost

BUDGET

7/18/2016 DEQ 319 Grant Funding for Thermal Refugia Grant

	Number of Items/or Units	Cost/Item	DEQ 319 Grant Funding	Match Funding (non federal)	Match Funding (Federal)	Total DEQ and Match	Comments
Personal Services							
Coos SWCD WTRSHD TECH. 127hrs. March	87	$28.00	$2,440	$2,340		$4,880	127hrs. Coos SWCD labor match
			$0			$0	
					$0.00	$0	
Subcontract/Coquille Watshed Assoc. Crew	50	$38.00	$1,900			$1,900	
ODFW Habitat Protection Biologist	50	$62.00		$3,100.00		$3,100	
Labor Subtotal	187		$2,900	$5,140.00	$0	$7,980	
Equipment							
Temperature Loggers, Onset U22-001	25	$128	$3,225			$3,225	
Coquille Tribe Match Temperature Loggers, Onset U22-001	8	$129			$1,032	$1,032	
HOBO® Waterproof Shuttle U-DTW-1	1	$249	$249			$249	
HOBOware Pro-Win, Software W USB, BWK-Pro-CD	1	$89	$89			$89	
						$0	
						$0	
Services/Supplies							
Temp. logger steel case/bolts/nuts	30	$12.00	$360			$360	
Stainless Steel 1/16" cable 200' / logger	400	$1.80	$720			$720	
Cable Clamps	80	$6.50	$520.00			$520	
Metal Fence posts	50	$5.15	$257.50			$258	
Service/Supplies Subtotal			$4,730.50	$0.00	$1,032.00	$5,762.50	
Travel/Mileage							
Agency miles/transportation/meetings	310	$0.54	$279.00			$0	
Agency miles/transportation	470	$0.54	$254.50			$0	
Travel Subtotal	780		$533.50	$0.00	$0.00	$0.00	
Project Subtotal			$8,232.40	$5,140.00	$1,032.00	$12,962.40	
			$823.24				
Administrative Allowance 10% of total							
			$9,044.64				
Total			65%				
Number of Match Percentage							

I.

Coquille Stormwater Master Plan Update with Water Quality Implementation Plan

II. Contact Information

Keith Urban

City of Coquille/Public Works Director

851 N. Central Blvd

Coquille, OR 97423

(541) 396-2115, email: kurban@cityofcoquille.org

III. Project Location

Coquille / Coos
HUC: 1710030505

IV. Project Summary

The project is a plan for Coquille and the surrounding basins, including Rink Creek Reservoir. We intend to update the 1980 stormwater master plan while incorporating a water quality implementation section. Also, we will review our city codes to ensure new development uses current best practice when it comes to stormwater management.

V. Watershed Plan/Areawide Strategy

We intend to use the plan to drive water quality improvements in the basins that drain through Coquille and our drinking water reservoir. It will also allow us to implement codes for future development. The plan can also be a model for other municipalities and be used by Coos County outside our city limits.

VI. Desired Environmental Outcomes

We expect our plan to identify stormwater projects, how to do those projects using best practices, and hold new development to codes that require those practices. However, until the plan is complete, we won't know exactly how to measure the results. That will be a component of each item in the document..

VII. Phasing Considerations

The plan will, no doubt, have goals that will be done over time. This project, however, will not be done in phases, but completed as one document to drive future projects and opportunities.

VIII. Project Partners, Sources of Matching Funds and Estimated Total Project Cost

BUDGET

	319 Grant Funding	Match Funding (non-federal)	Total
Personal services	0	2000	2000
Equipment			
Services/Supplies	0	250	250
Travel	1000	200	1200
Subcontracts	15000	10000	25000
Select One: Administrative allowance (up to 10% of grant) or Indirect Cost	2725		2725
Total	17725	12250	29975

I. Proposal Title

Siletz Watershed - Monitoring and Assessment 2016-2017

II. Contact Information

Una Monaghan
Lincoln SWCD/Watershed Technical Specialist
23 N Coast Hwy
Newport, OR 97365
541-265-2631; una@lincolnswcd.org
Secondary contact person: David Westgate
Lincoln SWCD/District Manager
23 N Coast Hwy
Newport, OR 97365
541-265-2631; dave@lincolnswcd.org

III. Project Location

Siletz, Logsden; Lincoln County

Basin	5th Field Sub-basin	HUC	DWSA
Siletz	Upper Siletz River	171002040703	yes
	Middle Siletz River	171002040504	yes
	Rock Creek	1710020406	yes
	Lower Siletz River	171002040705	yes

Siletz Drinking Water Source Area and TMDL development for fine sediment/turbidity and DO impairments. These Siletz Basin Projects will target non-point source (NPS) pollutants which may impend water quality and drinking water infrastructure in the Siletz Drinking Water Source Area.

IV. Project Summary

Lincoln SWCD has recently and is currently utilizing 319 funds in a similar way, as match to additional state and federal funds, to implement water quality trend monitoring, watershed assessment, outreach, and implementation of projects that reduce NPS temperature, sediment and turbidity loads on agricultural and rural properties adjacent to 303(d) listed water bodies.

The Siletz River (SR) is found within the northern Oregon Coast Range and drains an area of 237,720 acres. Over its 73 miles, the SR channel transitions from volcanic rocks to mixed bedrock-alluvial to alluvial; exposed bedrock is common, however gravel bars and cobble to boulder size clasts are ubiquitous. The SR supports coho, four distinct runs of Chinook, summer and winter steelhead, chum, cutthroat trout, two species of anadromous lamprey and a resident lamprey among other aquatic life. The hydrological regime in association with the climate of the Siletz catchment shows significant temporal variation. Most of the year the SR flows at low to

medium discharge within its channel; with the onset of winter, high precipitation and flooding typically occur.

Component 1
The SR is currently 303(d) listed for Turbidity (rivermiles 39.5-65.3). Larger rainfall events mobilize levels of fine sediments sufficient to degrade essential fish habitat by depositing fines in gravel beds, scouring and blocking light. Drinking water procurement also is affected by high turbidity levels; the City of Siletz, City of Toledo and City of Newport all have primary surface water intakes located within the Drinking Water Source Area (DWSA) in the SR.

LSWCD proposes to continue and expand monitoring in the Siletz DWSA by re-installing the continuous monitoring station (Forest Technologies Systems SedEvent [FTS]) system for Phase II TTS monitoring, previously funded through a DWSA Protection grant (2012-2013). The station is capable of collecting samples for suspended sediment analysis during significant precipitation events thereby increasing information available on source water characteristics, which, in turn, may be used to identify and prioritize areas for BMP's and restoration efforts to reduce erosion, sediment delivery and associated turbidity. Data generated from this monitoring station will also be provided to DEQ for its TMDL modeling and calculations, and will also be useful for climate resiliency planning.

Component 2
Oregon's 2012 Integrated Report identifies Category 5 water quality limited, 303(d) listings for Dissolved Oxygen (rivermiles 21.6-65.3) and Temperature (rivermiles7-46.8)) in the SR and with TMDLs needed.
LSWCD proposes to deploy Onset U26 Dissolved Oxygen (DO)/ Temperature loggers at up to 8 stations over a determined time to generate a new set of continuous data and identify whether DO levels are impaired, and how this may be addressed. LSWCD with CTSI propose to work with the DEQ laboratory to ensure the DO/Temperature data loggers are calibrated, deployed, audited and retrieved according to protocol to achieve quality control measures, including submission of all data to DEQ. A nutrient cycle 3 day test will also be conducted by boat during the time of logger deployment. Longitudinal placement of DO loggers and the nutrient testing will be designed by the DO TMDL working group to augment the informational needs of involved partners.

V. Watershed Plan/Areawide Strategy

These (2) proposed projects align with several plans and assessments which emphasize the need to identify water quality limitations which affect beneficial uses, for example, the MidCoast Agricultural Water Quality Area Plan to improve land conditions and reduce NPS loading to 303(d) listed streams. NPS pollution targeted by these projects also aligns with the DWSA in the Siletz River where the Cities of Siletz, Toledo and Newport municipalities have surface water intakes and where place-based planning is due to start in fall 2016. CTSI has been gathering continuous temperature and turbidity data throughout the Siletz Watershed for several years and conducting targeted studies of biological system responses to environmental stresses. These data augment existing biomonitoring efforts by CTSI and EPA. These projects are relevant to local conservation partners, LSWCD MidCoast Water Quality Monitoring Program is re-applying to OWEB in October to re-establish trend monitoring in the Siletz-Yaquina Basin.

NRCS, Salmon Drift Creek Watershed Council and MidCoast Watersheds Council are interested in these projects to better prioritize the highest need for outreach and BMP implementation. NPS pollution targeted by this project aligns with ODFW strategic approach to The Coastal Coho Conservation Plan and *Coastal Multi-Species Conservation and Management Plan* (CMP), where the Siletz Basin is identified for having 6 viable Species Management Units (SMU's), and the Oregon Plan for Salmon and Watersheds to document existing conditions, track changes and determine the impact of relevant programs and actions. These data are relevant to DEQ and can be implemented to model river metabolism estimates whereby the gross primary production (GPP) and ecosystem respiration (ER) of the river can be used to estimate nutrient demand. These data can also highlight linkages to other riparian conditions and serve as a basis for estimating the rates of GPP and ER which will produce sufficient DO concentrations in a stream of concern (Sobota, DEQ).

VI. Desired Environmental Outcomes

Siletz Drinking Water Source Area and Turbidity Threshold Sampling Project
Having the Forest Technologies Systems SedEvent [FTS] system operational in the DWSA is crucial for the municipalities. This tool will allow operators to better understand the fluxes of the river as driven by storm frequency and amplitude, the water samples gathered by this instrument may be valuable to identify source characteristics and the data thereof may be useful for hydrological and watershed modeling and prioritization of management actions at a local scale, for instance, preventing intake of water when turbidity is high enough to prevent damage to expensive operator systems or cause difficulty in achieving drinking water standards.
Siletz Continuous Dissolved Oxygen and Temperature Data Project
Potential DO and Temperature water quality problems have already been identified in the Siletz River. More sampling is needed to further assess the actual representativeness of the 303(d) listings. A new comprehensive set of continuous dissolved oxygen and temperature data generated will serve to estimate and model river metabolism and is useful for TMDL development and implementation. These data support efforts by CTSI to secure the habitat and ecological processes necessary for a long-term sustainable fishery and other beneficial uses of the Siletz River.

VII. Phasing Considerations

This project will meet all deliverables within the contract agreement timeline.

VIII. Project Partners, Sources of Matching Funds and Estimated Total Project Cost

BUDGET Component 1: Siletz DWSA Turbidity Threshold Sampling				
Project Management and Field Work	Unit #	$/Unit	Subtotal	In-Kind
Match				
Lincoln SWCD - Watershed Technical Specialist	2,800.00	80	35.00	2,800.00
Lincoln SWCD - WQ Field Tech	2,400.00	120	20.00	2,400.00
Instrument maintenance*		3,000.00		
Travel				
Mileage - Lincoln SWCD	324.00	600	0.54	324.00
TSS Sample shipping	300.00			
Subtotal	8,824.00			
Administrative Costs				
Lincoln SWCD (15%)	882.00	0.10		
COMPONENT 1 TOTAL		**9706.00**		
Component 2: Siletz River Dissolved Oxygen/ Nutrient Cruise				
Project Management and Field Work	Unit #	$/Unit	Subtotal	In-Kind
Match				
Lincoln SWCD - Watershed Tech	2100.00	60	35.00	1,750.00
Lincoln SWCD - WQ Field Tech	1800.00	90	20.00	2,800.00
Surface H2O C/T/Nutrient Cruise*	8,500.00			
Travel / Shipping / Laboratory				
Mileage - Lincoln SWCD	324.00	600	0.54	324.00
Shipping	100.00		100.00	
U26 CAPS (x8)	720.00	8	90	720.00
Instrument Maintenance*	100.00		100.00	
Computer laptop for DO management				1000.00
Surface H2O C/T/Nutrient Cruise				2,000.00
CTSI Project Management				5.275.00
DO logger deployment				
U26 (X4) SDCWC				5,000.00
U26 (x4) DEQ Laboratory /OWEB				5,000.00
Subtotal				13644
Administrative costs				
Lincoln SWCD (15%)				1364 (.10)
Component 2 TOTAL				15008
Summary				
Component 1: Expanded turbidity threshold sampling (TTS)				9,706.00
Component 2: Siletz River Continuous Dissolved Oxygen Study and Nutrient Cruise				15,008.00
Total Funds Requested				**24,714.00**
C2: CTSI : Project Manager/ Technicians				5,275.00
C2: CTSI : Boat/Trailer/Operator				2,000.00
C2: SDCWC : 4 loggers borrowed 1,250 ea				5,000.00
C2 : ODA : laptop for data management				1,000.0
Total match				18275

I. Proposal Title

2017 WISE Pre-Project Monitoring Effectiveness Monitoring ProjectI. Proposal

II. Contact Information

Sarah Sauter

Rogue River Watershed Council Program Manager

89 Alder Street

Central Point, OR 97502

(541) 664-1070; bbarr@rogueriverwc.org

III. Project Location

Jackson County: Ashland, Talent, Phoenix, Medford, Central Point, Eagle Point
HUC's: 171003080102, 171003080112, 171003070802, 171003070812
Bear Creek TMDL, Rogue River TMDL

IV. Project Summary

The 2017 WISE Pre-Project Monitoring Effectiveness Monitoring Project is a phased 319 project that will support years two and three of a three-year monitoring effort. Past and current project activities, funded in part by the Oregon Department of Environmental Quality (ODEQ) 319 Nonpoint Source Pollution program (DEQ Agreement #075-16), include the deployment of four real-time data sondes, collection of routine grab samples and visual algae surveys. Monitoring commenced in September 2015 and will continue through October 2018.

In 500 words or less, describe the proposed project including: the general location (municipalities, drinking water source area, and/or watershed); water quality impairment(s); causes or sources of water quality impairment(s); proposed management activities, e.g., education, technical assistance; goal(s) of the project; and how you will demonstrate success.

The Water for Irrigation, Streams, and Economy (WISE) Project area is located within the Rogue River Valley and incorporates parts of the Bear Creek and Little Butte Creek watersheds. The major land use within the WISE Project area is agriculture, primarily served by the Talent, Medford, and Rogue River Valley Irrigation Districts. The project area also encompasses the Medford Water Commission's Rogue River Drinking Water Protection Area.

Bear Creek and Little Butte Creek are adversely affected by urban and agricultural runoff. Current limitations, Total Maximum Daily Loads (TMDLs) and 303(d) listings include: dissolved oxygen, bacteria, sediment, temperature, pH, aquatic weeds, chlorophyll-*a* and a modified hydrograph. Despite the conditions, these streams support runs of Pacific Lamprey, Cutthroat Trout, winter and summer steelhead, fall Chinook Salmon, and the federally threatened Southern Oregon/Northern California Coast (SONCC) Coho Salmon.

WISE is a regionally-supported irrigation water management project designed to improve the health of the Bear Creek and Little Butte Creek watersheds by limiting nonpoint source pollution through modernized water management and irrigation infrastructure. WISE seeks to pipe nearly 250 miles of open, earthen canal; provide pressurized, clean water to users; replace leaking conveyance canals (which lose ~ 30,000 acre-feet of water annually); and eliminate connections to tributary surface waters. WISE will also expedite on-farm irrigation efficiency projects. Environmental benefits from WISE include improved water quality and habitat conditions for cold-water aquatic life by eliminating heated and pollution-laden return flows. The overall WISE Effectiveness Monitoring Project will help project proponents determine whether the desired ecological objectives (improving water quality and instream flows) of WISE are met. Phase I, the WISE Pre-Project Effectiveness Monitoring Project, is a three-year monitoring effort designed to document instream conditions prior to WISE implementation. The Phase I baseline monitoring project provides continuous, real-time monitoring of pH, dissolved oxygen, temperature, conductivity, turbidity and flow, routine water quality grab samples for bacteria and nutrients, and filamentous algae surveys at four strategic locations on Bear Creek and Little Butte Creek, both upstream and downstream of the WISE project area (see project map). The monitoring program will follow the quality control/quality assurance procedures outlined in an ODEQ-approved QAPP (RWC-15-VOL-0050-QAPP). ODEQ IWRS staff will assist with monthly preliminary data reviews and data analysis. Grab sample data will be submitted to the ODEQ Volunteer Monitoring program. Real-time flow and sonde-generated water quality data are stored on the Jackson County Watermaster server and made publicly available on the USBR webpage (http://www.usbr.gov/pn/hydromet/rtindex/rogue.html). The RRWC will publish annual grab sample and algae survey results on their website (www.roguervierwc.org).
The success of the WISE Pre-Project Effectiveness Monitoring project will be demonstrated by:

- Producing statistically valid and quantifiable data in a manner that can be repeated;
- Producing a final report that documents current instream conditions within WISE;
- Making project data available to the public.

V. Watershed Plan/Areawide Strategy

The WISE Pre-Project Effectiveness Monitoring Project compliments existing monitoring regimes in the Rogue Basin by increasing the geographic range, frequency, and constituents monitored. The project meets ODEQ Rogue Basin Priorities by addressing TMDL effectiveness monitoring and 303(d) listings for temperature, bacteria, nutrients, and turbidity in the Upper and Middle Rogue sub-basins. A comprehensive list of watershed assessments, reports and citations that suggest additional watershed monitoring are included as an attachment. Specific monitoring efforts we are coordinating with include:

Rogue Valley Council of Governments' (RVCOG) 5-year TMDL effectiveness monitoring program: RVCOG's 5-year TMDL effectiveness monitoring program is spatially comprehensive within the Bear Creek watershed, but limited to monthly grab samples. WISE pre-project continuous monitoring data and increased grab sample frequency will help RVCOG fill the data gaps in sample frequency to identify short-term, acute variations in water quality.
ODEQ ambient monitoring program: ODEQ conducts ambient monitoring at the mouths of Bear Creek and Little Butte Creek. By supplementing the ODEQ bi-monthly grab sampling regime with weekly grab samples and continuous data from the sondes, data from the WISE

monitoring program will provide ODEQ the precision needed to characterize the scale, frequency, and duration of water quality exceedances.
Jackson County Watermaster (JCWM) /Oregon Department of Water Resources (OWRD) real-time monitoring: JCWM and OWRD operate a number of streamflow gauge stations throughout Jackson County. The WISE pre-project data sondes are co-located with JCWM/ORWD flow gauges to ensure the water quality data are paired with flow data. The sonde-generated data is automatically uploaded to the Bureau of Reclamation online Hydromet database. This is the first time that OWRD and ODEQ will be able to produce a complete and continuous record of water quality and flow data.

VI. Desired Environmental Outcomes

The WISE Pre-Project Effectiveness Monitoring Project will document pre-construction surface water conditions throughout the WISE Project Area. The expected environmental outcome from this rigorous monitoring project is the generation of baseline data to be used for comparison with the restored instream conditions to confirm WISE Project implementation is effective and sustainable.
The outcomes will be measured by generating three years of continuous water quality data from the sondes, routine water quality grab samples, filamentous algae surveys and continuous stream flow data within the WISE project area. Data generated by the WISE Pre-Project Effectiveness Monitoring Project will allow water managers, regulators, engineers, and project partners to:

- Set appropriate water quality improvement targets for the WISE project;
- Evaluate the effectiveness of WISE as a water quality improvement tool;
- Predict how WISE will impact stream ecosystems;
- Generate site-specific information to inform WISE project design considerations;
- Justify WISE project expenses;
- Expand the frequency and geographic coverage of regional monitoring;
- Document daily and diurnal fluctuations in water quality;
- Report on the size, frequency, and duration of water quality exceedances; and
- Document how streams respond to drought and climate change.

VII. Phasing Considerations

Project partners expect to support two additional monitoring phases in association with the WISE Effectiveness Monitoring Project. Phase II, implementation monitoring, will document instream conditions during construction, assess progress toward the defined WISE performance goals, and inform decision making. Phase II monitoring is anticipated to begin in 2019, concurrent with WISE Project construction.

Phase III, effectiveness monitoring, will begin once WISE has been fully installed. Phase III post-project monitoring will be used to draw conclusions about the overall success or failure of WISE as a stream restoration project and provide lessons learned about monitoring that will benefit and guide future monitoring projects.

Future monitoring phases will be completed in accordance with the ODEQ-approved WISE Monitoring QAPP. However, given the long-term timeframe of the monitoring plan, the monitoring plan may require periodic modification. Modifications may include changes in monitoring tasks resulting from new technologies or protocols, elimination of monitoring tasks that prove unnecessary, addition of new tasks, changes in partner responsibilities, and modification of project goals.

VIII. Project Partners, Sources of Matching Funds and Estimated Total Project Cost

	319 Grant Funding	**Match Funding (Non-federal)**	**Total**
Personal Services *(Project Management: 230 hrs @ $32.33/hr)*	$2,162	$5,274	$7,436
Subcontracts *(RVCOG for grab sample monitoring: 11 months summer monitoring @ $2,237/mo and 10 months winter monitoring @ $235/mo; JCWM for sonde maintenance: 21 months @ $1,025/mo)*	$11,500	$36,976	$48,476
Administrative *(10% negotiated indirect rate)*	$1,366	$5,070	$6,436
Total	$15,028	$47,320	$62,348

Note: The Phase I monitoring project leverages $151,990 in existing commitments and over $90,593 in pledged commitments. The non-federal match for this grant will be in the form of cash from an OWEB monitoring grant (unsecured) and pledged in-kind commitments from RVCOG, JCWM, and JSWCD (secured).

I. Proposal Title

Storm and Drinking Water Improvements for Cities Big/Small in the Long Tom Watershed

II. Contact Information

Sarah Whitney

Long Tom Watershed Council/Urban Waters and Wildlife Program Manager

751 S. Danebo Ave.

Eugene, OR 97402

(541) 654-8965; urbanwaters@longtom.org

III. Project Location

Eugene, Springfield, Junction City, Monroe, Veneta, Lane County
HUCs: 1709000 170900040706, 170900030201, 170900030107, 170900030108, 170900030203, 170900030103, 170900030110
Willamette TMDL

IV. Project Summary

Recurrent/Phased 319: This proposal builds upon LTWC's successful Trout Friendly Landscape (TFL) program that the DEQ has previously supported, which works with business owners on a voluntary basis to improve their water quality impacts, largely through integrating on-site stormwater management and best management landscape practices. This proposal has an increased focus upon smaller municipalities that may not have resources to engage stormwater contributors in drinking water protection measures.

This proposal represents a new approach that has not been funded by DEQ, but that builds upon the successes realized through LTWC's now established Urban Waters and Wildlife program on related projects in Eugene/Springfield. Specifically, the emphasis upon drinking water and working in
Springfield and the smaller cities are new foci for the program that have not been funded previously by DEQ or other granting entities.

Proposed Project: Project will directly improve drinking-water quality for small communities in the Long Tom Watershed Council's service area (map 1). The proposed project includes business outreach in urban areas and providing education and technical assistance to mitigate water quality impacts through stormwater management and other water quality improvement strategies, specifically stormwater-retrofit installations and guidance on municipal stormwater strategies for existing and new development. Work will occur in small cities with 10,000 people or fewer such as Junction City, Monroe, and Veneta. Work will also occur in the Eugene/Springfield metro area; this upstream focus will improve the drinking water of smaller towns, such as Veneta, Monroe, and Corvallis that get their drinking water from metro area stormwater receiving streams.

Stormwater receiving streams.within the project area include the McKenzie, Willamette, and Long Tom Rivers, and Amazon Creek. The project will benefit towns that utilize these waterways as drinking water sources, including Eugene, Veneta, Monroe, and Corvallis. This project will also benefit groundwater sourced drinking-water towns such as Springfield, Veneta, and Junction City through helping to control groundwater contamination from urban pollutants.

Springfield, Veneta, and Junction City impact their own drinking-water supplies as wells are located within their UGBs. In these Cities, business outreach will be focused on those within the 10-year time of pollutant travel (maps 2&3). Eugene and a portion of Veneta's drinking water comes from the McKenzie River, supplied by EWEB. As the intake is located downstream of three Springfield stormwater drainage areas, an overlapping area of focus in Springfield has been developed (map 4). In Eugene, over 75 businesses have been identified by DEQ as potential threats to Monroe's drinking water (map 5). Corvallis gets 40% of its drinking water from the Willamette River shortly after the Long Tom River flows in, so drinking water concerns are similar to Monroe, Eugene, and Veneta.

All business outreach will focus on encouraging businesses to take the Trout Friendly Landscape (TFL) pledge, which focuses on incorporating on-site stormwater management and improving landscaped areas by managing for soil health, reducing pesticide and fertilizer use, and incorporating native plants for wildlife value and reduced irrigation needs. If precautions are not taken to reduce or eliminate urban pollutants (listed in section VI), they're transported to streams or groundwater in storm events, thus impacting drinking water sources.

Project dollars will cover outreach and feasibility studies including on-site consultations to identify pollutant sources, locations for stormwater facilities, landscape improvements, and assistance with permitting. LTWC's TFL project manager is a landscape architect with a stormwater management specialization, allowing for in-house designs and construction oversight. Training is also included for the landscape maintenance provider and for metro area stormwater facilities; maintenance check-ins will occur at least once a year for a minimum of five years post construction. The cities of Eugene and Springfield are TFL partners and provide cost offsets to businesses for the installation of stormwater facility retrofits; DEQ 319 project dollars will be leveraged in conjunction with these incentives.

V. Watershed Plan/Areawide Strategy

Launched in 2011, Urban Waters and Wildlife Program's successes are based upon unique partnerships between LTWC, Cities of Eugene and Springfield, McKenzie Watershed Council, water utilities, state and federal agencies, businesses, and commercial property owners to: monitor water quality, educate, provide technical assistance, and convert landscapes and landscaping practices to develop practical solutions to improve water quality concerns not currently addressed by regulations, nor in the foreseeable future.

This effort is listed as a priority in the LTWC Assessment (2000), Conservation Strategy (2005), Stream Health Report (2007), and current Strategic Plan. It is also specifically listed in The City of Eugene's

Stormwater Retrofit Strategy (2014), a supplement to their MS4 Permit. Additionally, these program components are in alignment with stated goals in the Pesticide Stewardship Partnership between ODA, DEQ, City of Eugene, and LTWC. The McKenzie River is the sole drinking water source for Eugene, and primary source for Veneta and the surrounding area (Nancy Toth & Karl Morgenstern, personal communication, 2014), and therefore this effort fits within EWEB's source protection efforts. The City of Springfield is a new partner; this project will assist them with meeting Stormwater Management Program and TMDL goals as well as several of Springfield City Council's long term key outcomes for stormwater including Goal 3: "Improve Surface and Subsurface Waters for Aquatic Life and Other Beneficial Uses" and Goal 5: "Citizens, Businesses, and Industries Understand the Need to Protect Water Quality." The Springfield Utility Board (SUB) is also involved as the project directly aligns with the Springfield Drinking Water Protection Plan which identifies both education and stormwater management as key strategies for protecting drinking water sources. This project also aligns with the Junction City Drinking Water Protection Plan (1997) that identifies industrial and commercial businesses as key groups to educate regarding their drinking water impact.

VI. Desired Environmental Outcomes

Outcomes: Low Impact Development stormwater facilities reduce pollutants such as petrochemicals, heavy metals, nutrients, pesticides, temperature, sediment, and flash stormwater impacts, thus improving the health of waterways from both structural and water quality aspects, improving both surface and ground drinking-water source quality. TFL projects educate business owners and customers, increasing citizen awareness of water quality impacts and solutions, and therefore have distal value and cultural/qualitative impacts in addition to impacts to water quality.

Quantitative Measurement: Will include: number of businesses solicited/educated, pledges signed by businesses, calculation of acres managed, and impervious surface removed. To quantify pollutant removal, the "International Database of BMPs" (Best Management Practices) data on pollutant removal and efficiency of stormwater facilities will be used to estimate the effectiveness of installations. Pesticide removal in Amazon Creek will be tracked through DEQ's Pesticide Stewardship Partnership (PSP) program. Additionally, the City of Eugene has water quality sampling associated with stormwater in Amazon Creek and Willamette River which can help detect trends in presence, concentration, and regularity of pollutants of concern.

Qualitative Measurement: Qualitative outcomes of awareness and understanding of stormwater quality issues, impacts, and solutions will be sought and captured through voluntary testimonials and feedback from participating project partners.

VII. Phasing Considerations

There are multiple plans to expand the Urban Waters and Wildlife program as need, interest, staffing and
funding allow. All future phases will continue the core goal of improving stormwater and thus drinking water quality. Some of the current program expansion plans include:

1. Outreach & education for industry sector professionals such as landscape contractors on the installation and maintenance of stormwater facilities and trout friendly landscapes

2. Outreach & education for design professionals such as landscape architects and engineers regarding stormwater receiving stream health and the direct impact of low impact development type stormwater facilities on watershed health

3. Continued assessment of projects installed or verified in previous grant cycles

4. Provide a template for other water quality focused entities on how to implement TFL in other cities, both large and small

5. Providing program elements in both Spanish and English, including pesticide safety
Other objectives and methods will be added as appropriate through identifying new goals, insights and lessons learned, and potential barriers that need to be overcome. Some objectives may be phased out due to achievement of set goals.

VIII. Project Partners, Sources of Matching Funds and Estimated Total Project Cost

City of Springfield Through an existing MOU, over the next 3 years, Springfield will provide $2500 directly to businesses to offset the cost of installing voluntary stormwater retrofits and an additional $5000 to be utilized for both the above purpose and to assist with the cost of performing business outreach and technical assistance. This grant will allow LTWC to leverage these funds into a much larger effort than the existing funds will afford. Please also see an attached letter of support to see the list of non-monetary match funds that will be provided in addition to the cash support noted above.

City of Eugene: Through an existing MOU, over the next 3 years, the City of Eugene has provided $68,000, the focus of which is to provide offsets to business for the cost of installing voluntary stormwater retrofit projects. This grant will allow LTWC to have sufficient funds for business outreach and to provide technical assistance. Please also see an attached letter of support to see the list of nonmonetary match funds that will be provided in addition to the cash support noted above.

Springfield Utility Board: Over the next two years, SUB has committed $3200 to assist with outreach and technical assistance for water quality projects within the City of Springfield. Please also see an attached letter of support to see the list of non-monetary match funds that will be provided in addition to the cash support noted above.

Eugene Water and Electric Board: $2000 was provided in 2015 for outreach and technical assistance for Springfield businesses that impact EWEB's drinking water intake. These funds have not yet been utilized, so will be utilized as match for this proposal. Please see the attached letter of support to see the list of non-monetary match funds that will be provided.

McKenzie Watershed Council - an existing MOU allows LTWC's Urban Waters and Wildlife Program to do work in urban areas within MWC's service area

Kevin Shanley, RLA: Mr. Shanley provides technical assistance for large scale projects involving water quality and habitat. Mr. Shanley is an award winning landscape architect who

has worked around the world.

Oregon Department of Agriculture: The project proposal marries perfectly with priorities identified by the Amazon Creek Pesticide Stewardship Partnership which encourages voluntary water quality actions. LTWC currently has an ODA PSP grant to reach out and provide technical assistance to commercial and industrial businesses that impact the A1 and A3 channels of the Amazon Creek. These are areas that have been identified by DEQ as impacting the City of Monroe's drinking water. This grant ends December 2016, though additional funding through ODA will be sought to continue this work upon grant completion. Only monies currently available have been used as match for this grant proposal.

Junction City: This partner is brand new for LTWC, as they were recently brought into LTWC's expanded area of service. Although there is general support for the work outlined in this proposal by business owners, there was not time for a full letter of support to be developed.

City of Veneta: Please see the attached letter of support for details on this exciting new partnership.

City of Monroe: The Council is looking forward to broadening our partnership with Monroe to include the urban areas by working with the municipality and business owners to address stormwater quality issues.

BUDGET

	319 Grant Funding	Match Funding (non-federal)	Total
Personal services	24,898	27,600	52,498
Services/Supplies	200		200
Travel	135		135
Subtotal	25233		
Select One: Administrative allowance (up to 10% of grant) or Indirect Cost	4794	1625	6419
Total	30027	29225	59252

I. Proposal Title

Upper Nehalem Riparian Restoration

II. Contact Information

Maggie Peyton

Upper Hehalem WSC

1201 Texas Ave, Suite A

Vernonia, OR 97064

(503) 396-2046; Maggie@nehalem.org

III. Project Location

Columbia/Clatsop
HUC: 171002020204
North Coast Nehalem TMDL

IV. Project Summary

This is a recurrent 319 project. Since 1998 the UNWC has worked in partnership with the DEQ under the 319 non-point source pollution reduction program to conduct a long-term Nehalem basin scale riparian restoration and water quality monitoring project. The goal of the restoration projects is to reduce solar radiation along the Total Maximum Daily Load (TMDL) temperature impaired reaches of the upper Nehalem watershed. As a result of 319 support, UNWC has successfully been able to engage 136 streamside landowners to date. UNWC relies on partners to act as technical advisors (ODFW, DEQ, NRCS, ODF, BLM, OWRD, OSU), other funding entities (OWEB, USFWS, BLM, PCJV, NFWF), Vernonia School District (Forestry class, sustainability group, faculty/students), landowners and community volunteers to provide support for match. Together with its partners the UNWC has been successful in riparian restoration activities to increase shade and bank stability in order to reduce temperature and sediment loading over time.

The project is located in the Nehalem basin in the north coast range-temperate rainforest ecosystem. The basin covers 855 square miles with 1,000+ miles of native salmon bearing streams. Primary land use is 85% upland timber production, 10% agricultural and 5% rural residential/urban lowland use.

The Nehalem Watershed contains 496 miles of 303(d) listed stream reaches identified in the North Coast TMDL (DEQ, 03) as surpassing maximum summer and fall temperature criteria for native salmon bearing streams. Non-point source pollutants impairing the Nehalem include excessive solar radiation, low summer flows, high winter flows, excessive sediment loading and pervasive stream simplification. Sources of temperature and sediment loading, and habitat degradation are evident from the headwaters to the bay with origins linked to past and present forest, farm, floodplain, rural residential and urban land-use practices.

In addition, under a DEQ approved Quality Assurance Project Plan (QAPP) UNWC/DEQ staff and volunteers have collected multiple years of water quality data (Temperature, Turbidity, Macro

invertebrate) from over 200 Laboratory Analytical Storage and Retrieval (LASAR) sampling sites strategically located through-out the Nehalem Watershed, from the headwaters to the bay. DEQ staff, Oregon Trout, Xerces Society and private consultants have assisted with analysis of this data by conducting a Forward Looking Infra-Red (FLIR,00); riparian shade model (TMDL, 03); macro invertebrate Index of Biotic Integrity (IBI, 97-02) and stressor and reference condition modeling (RIVPACS, 05).

The current proposal would enable the UNWC to continue implementing riparian restoration projects and water quality (baseline/trend) monitoring in the Nehalem Watershed into 2016/17.

Riparian Restoration: UNWC efforts will continue to be focused along TMDL temperature impaired reaches in cooperation with streamside landowners with additional focus in the Fishhawk Creek (lake) basin (see map). This grant will focus on implementation of new projects, as well as conducting plant establishment activities on a selection of recently installed projects (Younger phase (I & ll). UNWC currently oversees 105 riparian restoration projects. The long-term strategy for each riparian reforestation site is to continue inter-planting, maintaining (plant release/protection) and photo-point monitoring up to the point each site is considered to have achieved complex/diverse free to grow riparian conditions.

Water Quality Monitoring: UNWC will collect temperature (trend) and turbidity (baseline) samples from up to 40 sites predominately in the Upper and Middle Nehalem Watersheds. Temperature data from continuous HOBO loggers from up to 34 (LASAR sites) with the cooperation and support of DEQ Water Quality Monitoring Specialist, York Johnson, and Vernonia School District Superintendent Aaron Miller and students. The water quality monitoring component of this grant is UNWC's effort to provide education opportunities for in the Vernonia area. Turbidity samples will be collected from up to 40+ LASAR sites according to a DEQ approved QAPP. Samples will be collected by UNWC staff and volunteers for 3 weeks - 1x week/+ one peak event in the midst of the 2016-17 rainy season.

V. Watershed Plan/Areawide Strategy

The Upper Nehalem Watershed Council utilizes the following strategies to focus efforts to cool the waters of the state and advance the riparian reforestation mission:

North Coast TMDL (DEQ, 03),
Oregon Plan for Salmon and Watersheds (97),
Upper Nehalem Watershed Council - Strategic Plan (updated 2014),
Nehalem Conservation Action Plan (TNC 12),
Coastal Coho Conservation Plan (in-progress)
Nehalem Strategic Action Plan (in-progress)

VI. Desired Environmental Outcomes

Improved riparian conditions along temperature impaired reaches of the Nehalem Watershed, increased future large woody debris recruitment potential, increased hyporheic capacity, and temperature and sediment load reduction to the waters of the state, leading to improved survival of juvenile salmonids.

This project's pollution load reduction target is insolation of the waters of the Nehalem through increased riparian cover over time. This project will be monitoring water temperature and turbidity for the purpose of obtaining a baseline dataset and measuring the effect of riparian restoration projects on the condition of water quality in the entire Nehalem basin, but specifically in 303(d) listed streams.

VII. Phasing Considerations

There are no phasing considerations for this proposal beyond the need to establish riparian plantings to a free to grow state which requires seasonal maintenance and interplanting for up to 5 years.

VIII. Project Partners, Sources of Matching Funds and Estimated Total Project Cost

UNWC Steering Committee: Routine over-sight of the UNWC operation and strategic plan support to improve the local ecology, economy and society.

Landowners: Cooperation in the establishment of healthy riparian forests over time.

Vernonia School District: Faculty and student support of hands-on learning projects focused on riparian and wetland restoration, development of a sustainable native plant nursery, naturescaping of the school campus and temperature monitoring of the upper Nehalem.

Northern Oregon Restoration Partnership: Native plant materials (conifers, hardwoods, shrubs).

Technical Advisors: DEQ, ODA, ODFW, BLM, UNWC watershed technician.
Cost Share Funders: OWEB salmon habitat/riparian restoration grants.

BUDGET

	319 Grant Funding	Match Funding (non-federal)	Total
Personal services	7700	6660	14360
Equipment	700	500	1200
Services/Supplies	2000	3000	5000
Travel	800	400	1200
Subcontracts	1500		1500
Select One: Administrative allowance (up to 10% of grant) or Indirect Cost	1270	1056	1326
Total	13970	11616	25586

I. Proposal Title

Lower Milk Creek Stream and Riparian Restoration

II. Contact Information

Jenne Reische

Clackamas Soil & Water Conservation District, Riparian Specialist

221 Molalla Ave, Ste 102

Oregon City, OR 97045

(503) 210-6011; jreische@conservationdistrict.org

III. Project Location

Lower Milk Creek
HUC: 170900090606
Molalla River TMDL and PWS #4100157

IV. Project Summary

The proposed project builds on the extensive restoration work that CSWCD and partners have conducted in recent years in the Milk Creek watershed. In 2012, CSWCD completed a similar restoration project upstream that was funded in part by a DEQ 319 grant (# 085-12). The project upstream has been extremely successful, with impressive restoration uplift at the site, and has led to much community interest in the water quality and fish population of Milk Creek and its tributaries. Interest has been documented by requests for site visits and riparian assistance and attendance at outreach events in the watershed. Since 2012, numerous new waters quality improvement projects have been implemented.

The proposed project takes place in Clackamas County and involves restoring 275 feet of stream bank along Milk Creek and planting a riparian buffer adjacent to that area. This project builds on the extensive restoration work that CSWCD and partners have conducted in recent years in the Milk Creek watershed.
The landowners contacted the CSWCD Riparian Specialist in 2014 after attending a CSWCD streambank erosion workshop. The owners of the three-acre streamside property in Mulino, decided that their previously developed plans to mitigate erosion on their property were inadequate and consulted the CSWCD for more appropriate options that would benefit water quality and stream habitat. The site is 6.5 miles upstream from the confluence with the Molalla River.
The Molalla River Watershed TMDL specifically lists Milk Creek (a primary production stream for several listed fish) for temperature and identifies riparian restoration and stream flow as needs. Large wood recruitment potential is classified as "inadequate" in 82.7% of the Milk Creek watershed. The Molalla River TMDL watershed issues to be addressed are: lack of in-stream habitat, simplified channel structure, floodplain degradation, changes in stream hydrology, sediment inputs from bank erosion, high water temperature, and need for education of

residents regarding stream stewardship.
Forestry, agriculture, and residential development have greatly altered the watershed and have subsequently negatively impacted the water quality and habitat in Milk Creek. In the past, activities in the watershed included harvesting large trees and clearing land for farms and homesites. At our project site, channel modifications previously made for agriculture (conversion to pasture and hay land) and road construction (bridges above and below the project site) have significantly eroded the banks, increased sedimentation and turbidity, reduced the diversity of streambank vegetation, and introduced invasive weeds with poor root systems.

Proposed project actions include implementing the engineered solution for the eroding bank that will involve sloping back the now vertical bank to restore floodplain connectivity and adding boulders and root wads to the toe of the bank to stabilize and provide additional fish habitat. The design would improve water quality by reducing turbidity and helping to lower stream temperature and significantly improve native fish habitat (e.g. large wood structure, complexity, natural materials) in an area that it is greatly needed. Outreach and tours to the project site will also be conducted as part of the project.

Main project goals are to protect and improve water quality of Milk Creek and enhance in-stream habitat for juvenile and resident fish by:

• Reducing sediments input from erosion;
• Improving surface water and hyporheic flow during summer months by enhancing side channel and floodplain connectivity;
• Lowering water temperature by providing shade with a robust riparian buffer;
• Improving wildlife habitat/connectivity on the property and Milk Creek;
• Increasing watershed health knowledge by educating the community on the benefits of stream and riparian health through the offer of technical assistance, trainings and outreach events.

V. Watershed Plan/Areawide Strategy

Since 2009, CSWCD has worked in the Milk Creek Watershed, on outreach and implementation projects to improve water quality. There is strong interest in restoration and stream stewardship reflected by the numerous projects and technical assistance site visits in recent years. Many existing water quality projects are located in the Upper and Middle portions of the watershed. The proposed project is an opportunity to expand efforts to the Lower Milk Creek Watershed. Below is a list of CSWCD/partner efforts underway in the Milk Creek watershed.

• Milk Creek Instream Restoration at Meadowbrook – (DEQ 319 grant # 085-12) Three adjacent properties, 500 feet of vegetated log matrix, three log jams, 7.0 acres of riparian buffer, 8.0 acres of invasive weed control
• 6 Conservation Reserve Enhancement Projects, Riparian buffer totaling 30+ acres on Milk Creek and tributaries
• Temporary Easement on 100 acre Colton property includes Milk Creek and two main tributaries – Ten year easement to establish the following practices: reforestation, invasive weed control, tree and shrub planting and riparian forest buffer
• Canyon Creek Side Channel Restoration Project – Tributary to Milk Creek, in-stream habitat project/riparian restoration in partnership with Molalla River Watch and ODFW

• Milk Creek Watershed Event at Camp Adams – Community event featuring displays and presentations from agency and nonprofit partners, 113 participants
• Streambank Erosion Workshop for Landowners – Stream erosion workshop featuring Janine Castro and Colin Thorne, open to landowners, agencies, watershed councils, 33 attendees
• Milk Creek Rapid BioAssessment -Molalla River Watch project sponsored in part by CSWCD
• Milk Creek water quality monitoring -CSWCD monthly/quarterly sampling in Milk Creek for temp, pH, turbidity, DO, nitrates
• Milk Creek Invasive Knotweed Control -CSWCD WeedWise Program offers free invasive knotweed control to streamside residents of Milk Creek
• Fish Passage Barrier Removal at Camp Adams - Nate Creek Tributary to Milk Creek, Removal of old dam and construction of three log jams for fish habitat.

Milk Creek is also a source of drinking water supply in the Lower Molalla Basin (Canby Utility). A Source Water Assessment has been completed for the Canby Utility - PWS #4100157 and identifies potential contaminant sources that may impact the water supply. Potential contaminate source #110, Hwy 213 bridge over Milk Creek, is located approximately one mile downstream from the proposed project site. Implementation of the project will have a positive impact on water quality, and therefore help address issues highlighted in the Source Water Assessment. The riparian buffer and floodplain restoration will provide additional filtration of sediment and contaminates such as pesticides and fertilizers that may enter the stream from this reach.

VI. Desired Environmental Outcomes

Expected environmental outcomes:
• Reduce solar radiation to maintain cooler water temperature.
• Groundwater recharge via restored wetland and riparian functions.
• Significantly reduce erosion and turbidity in this reach of Milk Creek.
• Provide stream habitat complexity and riparian habitat complexity.
• Improve instream habitat for salmonids with woody structures that will create high flow refugia and resting places for juvenile fish, reduce water velocity during flood events, create pools, and entrain spawning gravel.
• Secondary environmental outcomes include increased watershed stewardship and an increase of riparian restoration projects in the watershed, as a result of outreach and education efforts that will be conducted as part of the project.
How outcomes will be measured:
• Native riparian vegetation and complexity will increase by 50% over 15 years; canopy cover will increase by 30% over 15 years; 75 % plant survival after two years. Measured by visual surveys, plant survival, and plant height, documented by photopoints.
• No additional visible loss of bank in this reach; bank erosion will be reduced. Measured by water quality sampling and visual surveys, documented by photopoints and data reports.
• Increased stream habitat complexity. Measured by habitat surveys, pebble counts to measure gravel deposition, and photopoints.
• Increased watershed stewardship knowledge/projects will be measured by the number of people who attend workshops and site tours, the number of landowners who contact CSWCD and Molalla River Watch for assistance, and the number of landowners who implement restoration projects on their properties.

VII. Phasing Considerations

This project can be divided into three distinct phases: 1) assessment and design 2) project construction and planting and 3) project maintenance and monitoring. Funding from the DEQ 319 grant will be used for the construction phase of the project in August or September of 2017.

The CSWCD retained the services of Waterways Consulting, a design firm with extensive experience in this type of project in Oregon, and a geomorphic field investigation and site survey, hydrologic and hydraulic analysis, and final design is complete. A DSL fill-removal permit has also been acquired for construction. Planting of the riparian buffer will occur the fall after construction in 2017.

We plan to monitor the success of this project for a minimum of 5 years. Monitoring will include follow-up plant surveys and use of photopoints to document: plant survival and mortality, height, and diversity; invasives removal efforts; changes in the floodplain; deposition of gravel in the stream; in-stream and riparian habitat, degree of soil loss on streambanks. Stream assessment scores will be tracked annually using NRCS Stream Visual Assessment Protocol (SVAP).

VIII. Project Partners, Sources of Matching Funds and Estimated Total Project Cost

Funds requested from this grant would be used toward the implementation of the engineered design.

The engineered design for the riparian and in-stream project has been developed by Waterways Consulting, a Portland based engineering and restoration firm that specializes in planning, assessment, and restoration of surface water environments. The engineered design was funded by the Clackamas SWCD.
Even though Clackamas County is close to the Portland metropolitan area, this project is located in the Molalla River watershed. The location limits the project's eligibility for funding that might otherwise be available for Portland-area projects. DEQ 319 funds can play an important role in implementing on-theground water quality projects in this watershed.

Lower Milk Creek Stream and Riparian Restoration Project Budget

Project Costs	Funds Requested from DEQ	Non-Federal Match		Other Contributions		Total
		Amount	Source	Amount	Source	
Materials & Supplies (Boulders, root wads, plants, outreach)	15,000	15,000	Landowner, Secured	16,000	Other Grants, Not Secured (OWEB)	56,000
		10,000	SWCD			
Tree Planting (Services)		3,000	Landowner (In-Kind)			3,000
Construction (Services)	15,000	10,000	SWCD	29,000	Other Grants, Not Secured	54,000
Cultural Resource (Services)		5,000	SWCD			5,000
Design (Services)		23,615	SWCD, Secured			23,615
Fish Salvage (Services)		1,000	ODFW, (In-Kind)			1,000
Project Administration and Oversight		5,000	SWCD, (In-Kind)			5,000
Travel		2,000	SWCD, Secured			2,000
Total	30,000					149,61

Funds requested from this grant would be used toward the implementation of the engineered design. The engineered design for the riparian and in-stream project has been developed by Waterways Consulting, a Portland based engineering and restoration firm that specializes in planning, assessment, and restoration of surface water environments. The engineered design was funded by the Clackamas SWCD.

I. Proposal Title

Nestucca, Neskowin and Sand Lake Watersheds Riparian Restoration Program

II. Contact Information

Haley Blake

NNWSC

P.O. Box 86

Pacific City, OR 97135

(503) 965-2200, email: nnmc@nestuccawaters.org

III. Project Location

Beaver, Hebo, Cloverdale, Pacific City, Tierra del Mar, NEskowin, South Tillamook
HUC: 17100203
Nestucca Bay Watershed TMDL

IV. Project Summary

The Nestucca - Neskowin Watersheds Council (Council) seeks continuation of its successful

Streamside Planting Program which has been in place since 2002. This work directly supports the WQMP of the 2002 Nestucca Bay Watershed TMDL to address temperature, bacteria and sedimentation concerns on 303 (d) listed waterbodies in this watershed. The Council has a successful track record of planting and maintaining riparian areas along streams, focusing on agricultural and rural residential lands. This proposal builds upon 14 years of successful water quality improvements. During that time, the Council planted over 215 acres along 85 stream miles and worked with over 140 landowners.

This proposal directly addresses identified North Coast priorities by expanding riparian enhancement and restoration in the Nestucca, Neskowin and Sand Lake Watersheds. Newly planted trees and shrubs are protected from invasive vegetation with weed mats and from beavers, deer, elk, porcupines and voles with seedling tree stem guards and wire cages supported by metal or bamboo posts.

Investing in maintenance of streamside plantings is crucial to the survival of planted trees. In the years since establishing a maintenance program, mortality has decreased from 50% to

around 33%. Non - native invasive plants such as Reed canary grass, blackberries and

knotweed out - compete the planted trees and shrubs. They do so by restricting access to light

and water through crowding and overtopping. The program includes the maintenance of each project site for 3 growing seasons post planting in order to control competing nonnative vegetation, maintain tree protection materials, and ensure the plantings reach a "free to grow" state.
Each project site is monitored for 5 years which includes photo-point monitoring, sun-eye data collection, and survival rate estimates. Success is based on the survival rates of planted material. The program aims to achieve survival rates of 65%. Sun eye data will be gathered over the 5 years of monitoring for each project
to document increases in stream shading. In addition to these physical improvements, the Council is changing landowner behavior in the Nestucca, Neskowin and Sand Lake watersheds. We focus upon otherwise ignored riparian areas. This work meets the unique challenges of Tillamook County dairy industry using sustainable pasture techniques while accomplishing our goals. Participating landowners see the benefit native trees and shrubs provide to the waterways and they then encourage their neighbors to work with the Council. We apply this system to private forest landowners as well.

V. Watershed Plan/Areawide Strategy

The NNSL partners with landowners, Tillamook Estuaries Partnership (TEP), the Tillamook Soil and Water Conservation District (TSWCD), and local agencies involved with watershed management to implement various projects, including NNWC's riparian restoration program and invasive species cleanups. DEQ is a member of the Council's Technical Advisory team that helps produce a biennial workplan directing Council priorities and specific Coordinator tasks.
TEP's Northwest Oregon Restoration Partnership (NORP) provides plant material for NNWC's riparian planting projects at a reduced cost. The plant material is grown locally from local seed sources and is generally large stock in one gallon pots. The larger plant stock facilitates better survival rates and diminishes maintenance costs over the course of the project. TSWCD provides livestock exclusion fencing and offstream watering on riparian restoration projects which include livestock.

VI. Desired Environmental Outcomes

NNWC's riparian restoration program aims to facilitate long term improvements in water quality and fish habitat through the control of non-native invasive species and the establishment of native trees and shrubs within riparian areas. Planting provides shading, lowers stream temperatures, helps retain sediment and takes up nutrients. Each project is maintained for 3 years and monitored for 5 years. The success of any given project is based on survival rates. The program aims to achieve survival rates of 65%.

VII. Phasing Considerations

Each project within the NNWC's riparian restoration program includes landowner recruitment, planting plan development, site preparation, material acquisition, planting, maintenance (tree release), and monitoring. Each project encompasses 3 years of maintenance, or tree release,

post planting. The overall goal beyond the initial implementation is to conduct tree release activities, replanting as necessary, and 5 years of monitoring in order to ensure adequate survival rates after 5 years.

NNWC's riparian project has been primarily funded year to year by DEQ 319 funds. Given the uncertainty of future 319 funds, NNWC recommends that DEQ allow the watershed council to scale back the extent of planting within any future awards and extend the funds out to cover at least 2, if not 3, years of maintenance for new planting projects. If additional DEQ funds become available during that time period, adjustments can be made to increase the scope of work relative to awarded funds.

VIII. Project Partners, Sources of Matching Funds and Estimated Total Project Cost

BUDGET

	319 Grant Funding	Match Funding (non-federal)	Total
Personal services	1000	1000	2000
Services/Supplies	4000	3000	7000
Subcontracts	31500	23500	55000
Select One: Administrative allowance (up to 10% of grant) or Indirect Cost	3500	2500	6000
Total	40000	3000	70000

I. Proposal Title

College Creeks Clean Water Retrofit

II. Contact Information

Steve Wise

Executive Director, Sandy River Basin Watershed Council

26000 SE Stark, GE Building

Gresham, OR 97030

(503) 708-7288; swise@sandyriver.org

III. Project Location

Beaver Creek/Sandy River
HUC: 1708000108
Lower Sandy Temperature TMDL

IV. Project Summary

The College Creeks Confluence Clean Water Retrofit project is exploring opportunities to apply scaled green infrastructure approaches to restore water quality and aquatic habitat at an urban community college serving diverse, underserved populations. Mt. Hood Community College (MHCC) lies at the confluence of Beaver Creek and its main tributary, Kelly Creek. Beaver Creek is the lowest tributary of the Sandy River, a regional salmon stronghold. The campus includes extensive impervious surfaces, and represents a stormwater hotspot, concentrating warmed, polluted runoff through several piped outfalls directly into Beaver and Kelly Creeks.

Requested funds will launch the multi-year implementation of the campus-wide retrofit of Mt. Hood Community College's 228 acres at the confluence of two fish-bearing creeks in the Sandy River's most urbanized area. Partners will retrofit buildings, infrastructure and landscape, employing green infrastructure practices to improve water quality, reduce volume, temperature and pollutant load in campus runoff, and restore habitat for native fish and wildlife.

Early action retrofits identified in a campus-wide opportunity analysis include large-scale bioretention and parking lot redesign, permeable surfaces, planters and rainwater harvesting at prominent student assembly areas, and naturescaping landscaped areas with native vegetation to improve habitat value and reduce future maintenance.

A basin-wide fish assessment of Beaver Creek conducted in 2011 by Multnomah County showed diverse populations of native salmonids including ESA-listed Chinook and Coho salmon and steelhead. Thirteen native fish species continue to utilize Beaver Creek despite historic and current impacts from urbanization, agriculture and other human development. MHCC Fisheries staff and students have monitored adult spawning coho and Chinook salmon, and carcasses in Beaver and Kelly Creeks for the past 5 years. Beaver and Kelly Creeks are both 303d listed streams for temperature. Historic development of the campus since 1966 included a dam across

lower Kelly Creek forming a small pond, significant building and parking lot infrastructure, all of which reduces Beaver Creek's water quality and fish habitat productivity. Survey data by project partner City of Gresham indicates a significant increase in temperature (>4 degrees C) downstream of the pond. In some cases this shifts the creek temperature from below to above the water quality standard. Portions of both creeks exceed water quality standards for legacy pesticides and toxics, based on historic and current agricultural and urban activity.

Improvements to habitat and water quality from prioritized green infrastructure retrofits will provide opportunities for students, community members, and volunteers to learn and practice sustainable approaches to stormwater management and habitat restoration. Actions supported by this request will also help MHCC to achieve certification as the world's first Salmon Safe community college, a living example of large-scale ecological restoration that can be replicated elsewhere in the Sandy basin, the East metro area and beyond.

SRBWC will organize project activities in a broad, effective partnership including MHCC facilities and academic staff, the East Multnomah Soil and Water Conservation District, City of Gresham, Salmon Safe, Metro, and Intel Laboratories.Volunteer participants will come from local youth corps, DePave, and community members.

V. Watershed Plan/Areawide Strategy

Sandy River salmonids were listed threatened under the Endangered Species Act in 1999. Current wild fish populations are between 10-25% of historic levels. The 2007 dam removal that restored free flowing passage in the Sandy, and substantial intact habitat in the Mt Hood National Forest upstream of the former dam site, created a salmon stronghold, and a priority watershed for recovery of Lower Columbia River wild fish.

The Sandy is a priority in ODFW's Lower Columbia Basin recovery plan. A 15-member coalition of public and non-profit agencies, The Sandy River Basin Partners, have developed short and long term restoration plans prioritizing habitat function within subbasins, which guide SRBWC's work. Although Beaver Creek was initally not rated a top restoration priority, recent surveys estimate that 9% of the Sandy's juvenile coho utilize Beaver Creek. The public-private Beaver Creek Conservation Partnership is collaborating to restore habitat surrounding the project area, with three major culvert restorations planned in the coming three years.

SRBWC's five-year vision emphasizes riparian vegetation and public engagement as two primary objectives, both of which are proposed actions. SRBWC established the Sandy Watershed Learning Center at MHCC in 2014 to collaborate with the college and community as a hub of hands-on watershed restoration.

The City of Gresham is conducting a stormwater green infrastructure opportunity analysis. The MHCC campus has rated high in initial reviews, because of its concentration of impervious surfaces, consolidated management, and proximity to creek habitat.

MHCC is a signatory to the Presidents Climate Change Commitment. MHCC's sustainability council is implementing sustainable strategies across campus, including energy, water, transportation and others, incorporating sustainability as a core element in campus programs and culture. Project plans are integrated with campus long-term capital plans currently under revision in part to accommodate this project's water quality improvements.

VI. Desired Environmental Outcomes

Project actions aim to reduce the volume, pollutant load and temperature of runoff entering Kelly and Beaver Creek from MHCC campus facilities, while increasing native plant cover and canopy. SRBWC and MHCC will develop geographic information system baseline data to describe current conditions on campus, and track the impact of potential GI actions. Data layers describing campus drainage infrastructure, parking lots and other hard-scapes, buildings, tree canopy and landscape will indicate current runoff performance and potential scenarios. Project partners will work with Intel to integrate LiDaR imagery of campus surfaces and Real-time Kinetic (RTK) GPS data for high resolution measurement of current and potential future conditions, and in collecting data to measure precipitation, runoff, water quality, and other relevant conditions. Agency partners City of Gresham, MHCC, and EMSWCD, collaborate on basin scale temperature, macro-invertebrate and water quality sampling, placing data from MHCC's retrofit as another piece in comparison of water quality and habitat conditions up and downstream

.

Project and monitoring criteria for campus retrofit actions include:

- % impervious area treated
- water volume diverted to green infrastructure
- pollutant volumes reduced
- tree canopy
- native plant coverage/ invasives reduced
- volunteer and student involvement hours
- wildlife response – pollinator, bird presence
- Salmon Safe independent certification.

VII. Phasing Considerations

Requested funds cover a portion of project design and implementation costs for first year, early action projects identified in the campus wide green infrastructure opportunitiy analysis conducted in Spring-Summer 2016. That analysis also includes additional priority projects for a five-year implementation plan to reduce impervious area of campus, as well as potential long-term, large scale improvements such as removal of the dam creating the campus pond and its temperature anomaly.

VIII. Project Partners, Sources of Matching Funds and Estimated Total Project Cost

BUDGET

	319 Grant Funding	Match Funding (non-federal)	Total
Personal services	7500	16288	23788
Services/Supplies	500	6000	6500
Subcontracts	19000	43080	62080
Select One: Administrative allowance (up to 10% of grant) or Indirect Cost	3000	1390	4390
Total	30000	66758	96758

I. Proposal Title

Scappoose Bay Watershed Restoration Action Plan.

II. Contact Information

Pat Welle

57420-2 Old Portland Road

Warren, OR 97053

(503) 397-7904; email: pat@scappoosebay-wc.org

III. Project Location

Scappoose Bay
HUC: 17090012
Lower Willamette Sub-basin TMDL

IV. Project Summary

This project is in the Scappoose Bay Watershed, including the major sub-basins of Milton Creek, and North and South Scappoose Creeks. These are critical salmonid-bearing streams that have significant water quality impairments: excessive temperatures due to solar exposure; high bacteria levels, turbidity, and streambank erosion, as well as significant floodplain disconnection. The causes of these impairments include historical splash damming, agriculture and residential development, loss of large wood in the system, loss of native species and riparian complexity, plus an influx of invasive species. There are multiple entities doing restoration activities within the basin, but minimal coordination and at times, duplicative efforts. A 2012 Limiting Factor Analysis identified specific impairments and treatments by location that could be applied to restore the watershed's health, specifically for salmonids but also for other species. Multiple other documents, including ODFW's Lower Columbia River Conservation and Recovery Plan (2010) support specific activities and are being used to develop this project. The proposed management activities for this project are Partner Education to identify and prioritize key watershed restoration projects and funding, and Technical Assistance to produce visual products to support a Restoration Action Plan process recently begun by multiple entities. At an initial meeting on June 2 2016, 16 local, regional and federal partners identified the need to coordinate and streamline restoration priorities within the basin, and to focus joint projects to those that will produce the greatest benefit to overall basin health. Since that meeting, a mission statement, objectives, outcomes, and timeline have been developed to produce an Action Plan in summer 2017.

Two significant tasks will be supported through this 319 project request: 1) a visual representation of partner's projects as they are located with respect to the limiting factor prescriptions (GIS mapping), and 2) staff support to lead the major plan elements, including prioritization mechanisms. Water quality monitoring is also included to continue baseline data that will support the Restoration Action Plan priorities.

The goal of this project is to increase the scale and benefit of watershed restoration activities;

the outcomes will be:
• A Scappoose Bay Watershed Restoration Action Plan, including restoration priorities and rationale, partner opportunities, funding options, and a defined measure of success.

• Conservation and restoration proposals with multiple partners, with identified funding sources. Success of this project will be measured using before and after metrics. The Action Plan will show the location and type of projects that have been completed or are being done, as well as current information on the water quality condition (parameters such as temperatures, bacteria, etc.), and stream health along significant reaches. At the end of the project, the number and type of new projects, and new partnership projects, will be identified. Additionally, new long-term water quality monitoring is scheduled to occur in the watershed; this will yield metrics on changes that occur due to increased restoration efforts.

V. Watershed Plan/Areawide Strategy

This project directly brings multiple land managers and entities together to work on water quality and other restoration efforts, and focuses our energies to increasing the number, size, and impact of restoration activities. A core working group will document partners' projects with respect to known watershed concerns, including excessive stream temperatures, and high turbidity and bacteria levels.

The larger group will review the data and use the maps of past and current restorative efforts to prioritize locations and types of projects that will directly address the issues of concern. The mapping portion is key to coordinate water quality related activities, reduce duplication and bring funding to those projects that will have the greatest impact.

Reference documents that will be utilized for this project include:

• ODFW, 2010. *Lower Columbia River Conservation and Recovery Plan for Oregon Populations of Salmon and Steelhead*; August 6, 2010.
• SBWC, 2012. *Limiting Factor Analysis and Restoration Plan, Scappoose Creek Watershed*; May 2012. Prepared by Bio-Surveys, LLC. 200 pages.
o Significant portions include prescription maps and tables, pages 157-174.
• SBWC, 2012. *Limiting Factor Analysis and Restoration Plan, Milton Creek Watershed*; May 2012. Prepared by Bio-Surveys, LLC. 134 pages.
o Significant portions include prescription maps and tables, pages 113-122.
• SBWC, 2015. *Scappoose Bay Watershed Council Action Plan 2015-2020*. 11 pages.
o Significant portions are External Goals, pages 6-8.
• OR DEQ, 2006. *Willamette Basin TMDL: Lower Willamette Subbasin*; September 2006. 198 pages.
• David Evans and Associates, for the SBWC, 2000. *Scappoose Bay Watershed Assessment*; January 2000. 199 pages.
• David Evans and Associates, for the SBWC, 2000. *A Comprehensive Assessment of Fish Passage Barriers in the Scappoose Bay Watershed*; May 2001. 120 pages.

VI. Desired Environmental Outcomes

The expected environmental outcomes of this project include reduced stream temperatures due to increased riparian vegetation and channel pooling, improved stream habitat and complexity with increased large woody debris, and potential reductions in turbidity due to erosion control projects.

These outcomes will take place over a long-term as a result of the increased partnerships and project prioritization completed with this grant. Baseline water quality monitoring was done in the major tributaries between 2009-2011, and is in a second season in Scappoose Bay (2015-16). The data includes air and water temperatures, dissolved oxygen, bacteria, pH, conductivity, and turbidity values at 27 locations over a 2-year period from 2009-2011; and the same parameters at 6 locations in Scappoose Bay (including major creek outlets) for the June-September period for 2015 and 2016.

This project request includes funding for a third season of water quality sampling Scappoose Bay, at the same locations used in 2015 and 2016. A third dataset will answer variability issues and support the base of long-term trends. Baseline data will be compared with the newly-collected water quality data to monitor ongoing changes.

VII. Phasing Considerations

Future phases of this project will be specific requests from the Restoration Action Plan – prioritized activities at locations identified for maximum watershed benefit. The goal of this first phase is to match water quality limitations with potential actions using a defined rationale, and to match partnerships to maximize the best use of each entity's abilities.

VIII. Project Partners, Sources of Matching Funds and Estimated Total Project Cost

Budget Category	Project Tasks			319 Funds	Match	Total
	GIS Mapping	Action Plan	WQ Monitoring			
Personnel		$9,700	$4,040	$8,220	$5,520	$13,740
Equipment				$0	$500	$500
Services/Supplies				$0	$0	$0
Travel				$0	$0	$0
Subcontracts	$1,000			$1,000	$1,260	$2,260
Indirect Costs				$922		$922
Total				**$10,142**	**$7,280**	**$17,422**

I. Proposal Title

ODEQ – PSU TMDL Status and Trend Study

II. Contact Information

Daniel Sobota, Environmental Solutions Division, Oregon DEQ

sobota.daniel@deq.state.or.us; 503-229-5138

III. Project Location

Rotating watersheds statewide; ODEQ will work with PSU to determine the specific study basins.

IV. Project Summary

The 2016 319 grant will be used to fund an Intergovernmental Agreement (IGA) between ODEQ and Portland State University (PSU). For this IGA, graduate student interns work with ODEQ staff to evaluate the effectiveness of TMDL implementation activities at achieving water quality standards in watersheds throughout the state. Thus far, the program has supported two Master's students to evaluate status and trends of water quality in the southern Willamette Valley (Amazon and Coyote Creeks) and the Portland Metro area (Johnson Creek). The students have worked closely with regional ODEQ staff, local municipalities, and watershed councils to develop and conduct their projects. Reports generated from this work benefit ODEQ and regional watershed groups by consolidating water quality and TMDL implementation activity data to a central location that can be easily accessed.

V. Watershed Plan/Areawide Strategy

We have received extremely positive responses from local and regional groups who have participated in or witnessed outcomes of this project. We have toured with local workgroups in Eugene, presented at regional watershed meetings in Eugene and Portland, and have made professional presentations at scientific meetings (Johnson Creek Science Symposium) and university seminars (Oregon State University). We plan to continue partnering with PSU, which will continue to provide matching funds, to fund graduate students to work on different aspects of TMDL implementation activities in different watersheds throughout the state.

VI. Desired Environmental Outcomes

This project will result in an evaluation of the effectiveness of the TMDL implementation on achieving water quality standards. The project will provide status and trend information, which will be used by DEQ in its adaptive resource management approach of the basin's water quality and to inform future actions to make TMDLs more effective.

VII. Phasing Considerations

DEQ and PSU have an IGA (061-15) in place for this work.

VIII. Project Partners, Sources of Matching Funds and Estimated Total Project Cost

BUDGET

	319 Grant Funding	Match Funding (non-federal)	Total
Total	24,475	16,317	40,792

I. Proposal Title

Tillamook SWCD 2016 Stream Enhancement & Restoration

II. Contact Information

Primary contact person:	Ray Monroe
Organization/position:	Tillamook County SWCD/Manager
Street address:	4000 Blimp Blvd., Suite 200
City, State, ZIP:	Tillamook, OR 97141
Day phone: (503)842-2240 Fax: ( )	Email: ray.monroe@or.nacdnet.net

Secondary contact person:	Rudy Fenk
Organization/position:	Tillamook County SWCD Board Chairman
Street address:	4000 Blimp Blvd., Suite 200
City, State, ZIP:	Tillamook, OR 97141
Day phone: (503)842-2240	Email: rfenk@embarqmail.com

III. Project Location

A. Town(s), County: **Tillamook County**

B. Basin or watershed name: **North Coast Basin** HUC: (12 digit code required) **171002-02 and 03**

River ☒ Stream ☒ Lake/Pond ☐ Estuary ☐ Groundwater ☐ Other ☐_____

C. Is this project part of a Total Maximum Daily Load (TMDL), Drinking Water Source Protection (DWSP) or Groundwater Management Area (GWMA) effort? Yes ☐ No ☒
If yes, name:

D. Map and spatial location information: All proposals must be accompanied by a map showing the project location in sufficient detail that it can be easily located by individuals unfamiliar with the area.

Map of project area is attached? Yes ☐ No ☒

Lat: Long: *Specific sites will be approved by DEQ North Coast Basin Coordinator before work begins

IV. Project Summary

This project is a recurrent 319 project. DEQ has provided NPS 319 funds in 2000, 2001, 2004, 2007, 2009, 2010, 2012 (extended to 2015), and 2016 in our ongoing riparian area livestock exclusion fencing and planting project partnership in the Northern Oregon Coast Basin. We hope DEQ will continue to fund this successful partnership to help us reach our goal to reduce or eliminate the potential for NPS pollutants from agricultural sources. Over 200 stream miles of Tillamook County have already been addressed.

Proposed Project: This project proposes to continue those efforts on additional project sites in the Nehalem and Wilson-Trask-Nestucca watersheds, with a focus on the Tillamook River. Specific sites will be approved by DEQ North Coast Basin Coordinator before work begins. Approximately 8,300 feet of stream side will be treated. The DEQ 319 Funds will be used to pay the labor cost to build the fence and install off-stream water devices. The Tillamook County Creamery Association or landowner pays for the materials and equipment time. ODA or the SWCD pays for the planning and project management.
Sources of Water Quality Impairment: Riparian pasture lands in Tillamook County can be a source of non-point source water pollution by contributing harmful nutrients, bacteria, sediment, and reduced shading to our streams. The Wilson- Trask-Nestucca basin has water bodies 303(d) listed for dissolved oxygen, biological criteria, iron, and pH. Water bodies of the Nehalem basin are also listed for biological criteria and dissolved oxygen.

Proposed Management Activities: Many private agricultural landowners seek technical assistance from NRCS/SWCD to create water quality management plans. The resulting plans suggest best management practices (BMPs) to address areas on their farm that could use improvement. This project contributes to control of non-point-source water pollution by assisting agricultural landowners to implement the following BMPs in their riparian areas: livestock exclusion fences, off-channel watering systems, and, through our partners' efforts, native vegetation plantings. How we will demonstrate success: Site specific data is not available to project an exact amount of pollutant load reduction, however, these conservation practices have been shown to be highly effective in promoting a healthy riparian condition which can alleviate water quality problems such as bacteria, sediment, temperature, and nutrients. Through the efforts of the Tillamook Estuaries

Partnership Volunteer Monitoring Program, and DEQ monitoring efforts, data collected between 1997 and 2010 show that bacteria and sedimentation levels are decreasing, and riparian habitat is in the Tillamook Bay Watershed. Each site will be reviewed and photographed pre-fencing and again post-fencing each year for five years. Additionally, the off-channel watering facilities will be noted in the photo points and reviewed in the final report. This will show that fences are installed and excluding livestock which allows the riparian plantings (which will be subsequently installed and maintained for 3 years by our partners) the freedom to grow. An MOU with each landowner requires them to maintain the fence for 10 years. The fences have an expected 20 year lifetime

V. Watershed Plan/Areawide Strategy

Description: For the past 20 years this Tillamook County SWCD riparian livestock exclusion fencing and planting program has been intricately crafted in cooperation with many partners and their related water quality improvement plans and efforts. This project spawned out of the Oregon Plan for Salmon and Watersheds in partnership with the Hire the Fisher and Jobs in the Woods programs, and has evolved into the multi-partner effort it has become today. The partners are (or have been) riparian landowners, yourselves (Oregon DEQ), the Oregon Department of Agriculture (ODA), Tillamook County Creamery Association (TCCA), Tillamook Estuaries Partnership Backyard Planting Program and Northwest Oregon Restoration Partnership (TEP-BYPP), Lower Nehalem Watershed Council (LNWC), Tillamook Bay Watershed Council (TBWC), Nestucca Neskowin & Sand Lake Watersheds Council, Oregon Department of Fish and Wildlife Restoration and Enhancement Program (ODFW-R&E), Oregon Watershed Enhancement Board (OWEB), and Tillamook County SWCD.

Generally the TCCA or the landowner provide the fencing materials, OWEB and/or DEQ provided the dollars to pay the crew to install the fence and off-stream water, and Tillamook SWCD, TEP or the Watershed Council provides the plant materials through other funding sources. Our Gehl skidloader, which is integral to our speedy fencing ability, was funded in part by ODFW R&E funds. In the table below you will find citations to our partner's and our strategy documents showing that we all support this focus on improving local water quality in Tillamook County.

Citations:

Effort	Planned Element(s)	Author/Source
DEQ Northwest Region Project Priorities: TMDLs/303(d) Development and Implementation Watershed Approach Implementation	**Basin/Priority Activity:** All NWR Basins/TMDL Implementation **Specific Location:** North Coast, Tillamook **Water Quality Problem**: Temperature, Bacteria,Dissolved Oxygen,Nutrients (phosphorus),Sediment,Toxics (mercury) **Project Need:** Riparian & In-channel restoration (Native planting,erosion control). Agriculture BMPs (includes fencing & digester projects)	DEQ 2014 Oregon Nonpoint Source Management Program Plan (page 22) http://www.deq.state.or.us/wq/nonpoint/docs/npsplanF.pdf
Tillamook Bay Comprehensive Conservation and Management Plan (CCMP) 1999 (under revision}	WAQ-02 Implement Voluntary Farm Management Plans, HAB 06 Protect & restore floodplain/lowland riparian areas, HAB-09 limit livestock access to streams, HAB ll Encourage restoration on private lands	Tillamook Estuaries Partnership http://www.deq.state.or.us/wq/nonpoint/docs/npsplanF.pdf

North Coast Basin Agricultural Water Quality Management Area Plan {AWQMAP) September 2011 (under revision)	The goal of the North Coast Basin Ag WQM Area Plan and Area Rules is to reduce undesirable water quality by promoting good land stewardship Selected Specific goals of the North Coast Basin Ag WQM Area Plan include: 2. Promote land management and land conditions that limit the movement of nutrients and bacteria from agricultural and rural lands to state waters. 3. Promote land management and streamside vegetation conditions that promote stable stream banks. 4. Promote land management and land conditions that reduce sedimentation of streams due to soil erosion. 5. Seek to control water pollution as close to its source as possible. Objectives deemed necessary to reach these goals include: 10. Control erosion and sediment delivery from agricultural and rural lands to waters of the state. 11. Control nutrient and bacteria loading from agricultural and rural lands to waters of the state. 13. Limit livestock access to streams, wetlands, and the riparian areas. 15. Promote stream bank stabilization and the restoration and enhancement of wetlands and riparian habitat.	North Coast Basin Local Advisory Committee with assistance from the Oregon Department of Agriculture (page 7) http://www.oregon.gov/oda/shared/Documents/Publication/NaturalResources/NorthCoastAWQAreaPlan.pdf
Nestucca-Neskowin Watershed Council Action Plan Revised January 2013	Water Quality Action #4: Encourage and implement fencing and off stream watering projects to improve water quality Habitat Action #2: Encourage and implement fish habitat and riparian enhancement/restoration projects. This council has a very active streamside planting program.	Nestucca-Neskowin Watershed Council http://www.nestuccawaters.org/Action%20Plan202013%20Final.pdf

Tillamook Bay Watershed Council Strategic Action Plan (2015-2025)	Ecological Priorities: • Tillamook River Coho Implementation 1- The council has begun developing projects identified under the habitat and • limiting factors assessment, including riparian planting for improved shade. • Tillamook River Coho Implementation 2 - Site preparation • and planting of approximately .5 miles of Tillamook River • riparian area with trees free to grow in 5 years. • Trask River Habitat Restoration Implementation 2 - Mill Creek Project, Planting of native trees and shrubs in all areas affected by the project, as well as an expanded area on the north side of the creek	Tillamook Bay Watershed Council (pages 15, 16, & 18) http://www.watersheds.com/sites/default/files/Tillamook%20Action%20Plan--Final.pdf
Nehalem Conservation Action Plan	Riparian Strategy: Objective: Plant at least 0.5 mile of stream bank with native riparian vegetation annually and maintain planting regularly for at least three years. (High Priority)	Nehalem Watershed Councils (page 80) http://unwc.nehalem.org/wopcontent/uploads/2013/Riparian.pdf
Backyard Planting Program	This program on private residential lands dove-tails nicely with our program on private agricultural lands in Tiillamook County. Shows a whole watershed approach. TEP's Backyard Planting Program (BYPP) is a cost-free, voluntary assistance program for private landowners that want to remove invasive species from their stream sides and improve habitats for fish and wildlife.	Tillamook Estuaries Partnership http://www.tbnep.org/backyard-planting.php

Tillamook County SWCD Business Plan
March 2015
	Selected Resource Concerns:
	• Agricultural Surface Runoff and Potential Ground Water Degradation
	  ○ GOAL: Reduce agricultural related bacteria loading to Tillamook County's Rivers 80% by 2010.
	• Aquatic Habitat Degradation (Riparian Zone)
	  ○ GOAL: Support the Oregon Plan for Salmon and Watersheds by improving 30 miles of degraded stream riparian zones each year.
		Tillamook County SWCD Business Plan http://tillamookcountyswcd.org/wp-content/uploads/2014/01/Tillamook-Business-Plan.pdf

VI. Desired Environmental Outcomes

1. **Expected environmental outcomes:**
   A) Reduced NPS water pollution from agricultural lands in 303(d) listed watersheds in Tillamook County.
   B) Improved health of riparian areas on agricultural lands, resulting in cleaner, cooler water which contributes to improved habitat for aquatic organisms, humans and wildlife.
2. **How they will be measured:**
   A) TEP and DEQ are monitoring for selected NPS water pollutants, we expect to see a continued trend of pollutant reductions.
   B) ODA is developing a streamside vegetation assessment tool that will measure the percentage of agricultural lands meeting goals of Local Water Quality Management Area Plans. They have plans to use this tool in our Tillamook River focus area.

VII. Phasing Considerations

Our riparian fencing is the first phase. This phase excludes livestock so that our partners can begin the riparian planting, which is the second phase. This will be followed by maintenance of the plantings by our partners for at least three years, which is the third phase.

VIII. Project Partners, Sources of Matching Funds, and Estimated Total Project Cost

Estimated Budget 7/25/2016

Type of expense reimburement	319 Grant Funding	Match Funding (non-federal)	Total
Personal Services	$13,500	$2,500	$16,000
Equipment			
Services/Supplies		$7,200	$7,200
Travel		$300	$300
Subcontracts			
Select ONE: Administrative Allowance	$1,500		$1,500
Total	$15,000	$10,000	$25,000

I. Proposal Title

Effectiveness Monitoring of Flood to Sprinkler Irrigation Conversion

II. Contact Information

Primary contact person:	Clint Nichols, Rural Natural Resource Planner
Organization/position:	Jackson County Soil & Water Conservation District
Street address:	89 Alder Street
City, State, ZIP:	Central Point, OR 97502
Day phone: (541)664-9689 x3	Fax: (541)664-9689
Email: markie.germer@jJSWCD.org	

Secondary contact person:	Amy Patton
Organization/position:	Patton Environmental LLC
Street address:	9 Hillcrest Street
City, State, ZIP:	Ashland, OR 97520

Day phone: (541) 690-9983 Fax: (541)482-7900 Email: pattonenv@gmail.com

III. Project Location

A. Town(s), County: **Central Point, Oregon, Jackson County**

B. Basin or watershed name: **Rogue Basin** HUC: (12 digit code required)

River ☐ Stream ☐ Lake/Pond ☐ Estuary ☐ Groundwater ☒ Other ☐ _____

C. Is this project part of a Total Maximum Daily Load (TMDL), Drinking Water Source Protection (DWSP) or Groundwater Management Area (GWMA) effort? Yes ☐ No ☒
If yes, name:

D. Map and spatial location information: All proposals must be accompanied by a map showing the project location in sufficient detail that it can be easily located by individuals unfamiliar with the area.

Map of project area is attached? Yes ☒ No ☐

IV. Project Summary

This project is not a recurrent or phased 319 project. However, as part of a 2014 319 project titled "Targeted Education to Address Nitrate Inputs to Groundwater in Areas of the Rogue Basin Where Public Drinking Water Supplies are Impacted' '.Jackson Soil & Water Conservation District (JJSWCD) began offering free well water testing for nitrate at their offices. A couple of the wells tested at JJSWCD and down gradient of a planned irrigation conversion project, had elevated nitrate concentrations. Those water quality results triggered a question about whether the irrigation conversion would result in well water quality improvements.

For all projects: In 500 words or less, describe the proposed project including the general location, water quality impairments, causes or sources of water quality impairments, proposed management activities (eg education, technical assistance), goals of the project, and how you will demonstrate success.

In areas of shallow groundwater, converting from flood to sprinkler irrigation may protect groundwater quality in addition to conserving water. This study seeks to confirm that improvements in irrigation practices can improve groundwater quality in order further support more irrigation improvement projects in the future.

The Oregon Department of Environmental Quality's 2011 Rogue Basin Groundwater Investigation report identifies area wide groundwater contamination by anthropogenic sources of nitrate in Jackson County. 47% of the 52 wells tested by DEQ in 2011 had elevated nitrate concentrations.

This project focuses on an area of Central Point Oregon that has some pockets of moderate and high nitrate contamination. The area is on the rural/ urban fringe of this small town, in a neighborhood that has been converted from septic systems to sewer, but for which a municipal water supply is not yet available. Nitrate contamination could be the result of failing septic systems past or present-not all homes have likely hooked up to sewer), a nearby irrigation canal, nearby flood irrigation on agricultural properties, or possibly activities {farm stock, gardening) on individual properties.

Drinking water wells in this area likely utilize a shallow, water table aquifer. Most soils in the area are described as well drained. This situation would improve the chances that ground water quality changes could be measureable in a shorter period of time than in other areas of the valley.

The primary goal of the project is to show groundwater quality improvements in neighborhood wells as a result of an up gradient flood to sprinkler irrigation conversion. The project, planned for the fall of 2016 involves a fourteen-acre farm under new ownership that has been used for horse pasture. New, sprinkler irrigation will replace historic flood irrigation in the spring/ Summer of 2017. JSWCD will provide technical assistance and funding for the project, which will be recorded as in-kind match for this project, in addition to other, related technical assistance on other projects. Well water samples will be collected and analyzed for nitrate at both a certified drinking water laboratory and by using field nitrate tests. Unless additional

funding becomes available, only field nitrate tests will be used in future years to continue to monitor nitrate concentrations in down gradient wells for a period of years

A secondary goal of the project is to provide baseline ground water quality data to augment the DEQ groundwater study data in the Rogue Basin and for use in future studies and to provide public education to well owners about water quality issues and solutions.

V. Watershed Plan/Areawide Strategy

Success will be demonstrated by the Jab analysis of approximately 25 well samples twice per year for a two year period, showing a reduction in nitrate concentrations following conversion from flood irrigation. Continued field analysis of well samples will show continued nitrate reductions.

VI. Desired Environmental Outcomes

1) The expected environmental outcome would be a reduction in nitrate concentrations in domestic drinking water wells down gradient of properties where flood to sprinkler irrigation conversion has taken place.

2) These outcomes would be measured by biannual well water testing for nitrate over a period of two years. Approximately 25 area well owners, preferably with shallow wells, would be solicited to participate in a two-year or longer study. Samples from these 25 wells would be collected beginning in the fall of 2016, then spring of 2017, fall of 2017, and spring of 2018. Samples would be analyzed for nitrate both by a certified drinking water laboratory and using field test kits. Additional funding through the Oregon Department of Agriculture and JSWCD will be sought to augment this study. If additional funding does not become available, any future nitrate analysis beyond two years of this project would be conducted with field test kits.

VII. Phasing Considerations

Because nitrate is persistent once introduced into groundwater, and groundwater flow is often slow, it may take years to show nitrate concentration reductions even once the source has been reduced or eliminated. Soil survey data in this project area indicates a shallow ground water table and "rapid drainage" which should improve the speed of groundwater improvements.

Whereas the irrigation conversion project will take place with or without 319 grant funding, the state loses the benefit of an unusual opportunity for effectiveness monitoring of a recommended best management practice for water quality.

The project allows for biannual monitoring over a two-year period (including one set of baseline water samples). Ideally, annual or biannual monitoring of well water quality should continue for several more years or until the wells show significant water quality improvement. Additional funding through the Oregon Department of Agriculture and JSWCD will be sought to augment

this study, including expanding the list of analyzed parameters beyond nitrate. If future funding does not become available, this continued testing could be conducted at JSWCD with field nitrate testing equipment. However, field testing of nitrate will not provide the quality controls and quality assurance of laboratory tests, which are needed for reliable effectiveness monitoring results.

VIII. Project Partners, Sources of Matching Funds, and Estimated Total Project Cost

BUDGET

Type of expense reimburement	319 Grant Funding	Match Funding (non-federal)	Total
Personal Services		$3,500	$3,500
Equipment			
Services/Supplies	$5,800		$2,800
Travel			
Subcontracts	$3,200		$3,200
Indirect Cost		$500	$500
Total	$6,000	$4,000	$10,000

I. Proposal Title

Backyard Planting Program (2016/2017)

II. Contact Information

David Harris

Tillamook Estuaries Partnership

613 Commercial St.

Garibaldi, OR 97118

(503) 322-222; email: David@tbnep.org

III. Project Location

Tillamook County
HUC: 17100203+17100202
Tillamook, Nestucca, North Coast: Temperature, Bacteria, Dissolved Oxygen, Sediment

IV. Project Summary

TEP created the BYPP program in 2003 to address the need for riparian restoration throughout the Tillamook, Nehalem, NEstucca, Sand Lake and Netarts Bay watersheds. BYPP has implemented over 150 planting projkects for more than 150 landowners, including the control of non-natives and the planting of 130,000 native trees, shrubs and cuttings along 50 miles of streams and rivers; encompassing over 250 acres. The BYPP is an ongoing effort attempting to address riparian degradation at a watershed scale.

BYPP is a voluntary assistance program that aims to enhance the water quality and habitat value of rivers and streams through implementation of voluntary riparian restoration projects on rural residential and agricultural properties in various watersheds throughout Tillamook County. The program develops site-specific riparian restoration plans for participating landowners. The BYPP provides noxious weed control, planting of a diverse mix of native riparian trees and shrubs, fencing, and maintains and monitors the sites. Through the establishment of native trees and shrubs within the riparian areas, the BYPP aims to facilitate long term improvements in water quality through decreased water temperatures, decreased sedimentation and decreased bacterial input originating from neighboring point and non-point sources. These sources include, but are not limited to agricultural, commercial, residential, and recreational activities in the respective watersheds. Through outreach and on-the-ground restoration the BYPP program raises a broader awareness of water quality issues and the importance of ecosystem health among Tillamook County residents. In the year to come with the funding requested from DEQ, the BYPP program will restore approximately 5.6 acres of riparian area including two years of follow up maintenance to ensure plant success and removal of exotic plants, and then will continue the maintenance of 6 restoration sites totaling 7.8 acres planted prior to the grant period in the summer of 2017. In total, the requested funds will address a total of 13.4 acres of riparian restoration.

V. Watershed Plan/Areawide Strategy

In addition to TEP's BYPP riparian restoration efforts, TEP has several monitoring programs that track the levels of pollutants in the BYPP project area. TEP's Volunteer Monitoring Program, which began in 1997, relies on local citizens to collect water samples to measure bacteria levels. TEP, as well as its partners like State and Federal agencies, use the large data set collected by volunteers to make decision and document improvement. TEP has seen improvement in many of our streams though this monitoring effort. While it is often difficult to tie these improvements to a single BYPP planting site, there is no question that BYPP's watershed scale riparian restoration efforts are contributing to these exciting improvements. TEP also has two other monitoring programs that measure temperatures and dissolved oxygen in rivers and streams as well as the estuaries in its study area. These programs allow TEP to keep our finger on the pulse of our streams and bays and ensure we are continuing to improve water and habitat quality for the residents of Tillamook County, and the ecosystems we depend on for our livelihood.

VI. Desired Environmental Outcomes

By restoring degraded riparian ecosystems the BYPP program is directly addressing a number of critical environmental issues that pertain to water quality and overall stream health. The issues being addressed by BYPP include, but are not limited to, pollutant loading, excessive temperatures, unnatural bank erosion, limited organic inputs (LWD, detritus), and habitat quality and complexity.

To monitor the progress of restoration sites BYPP is using a SunEye 210 device to calculate the increase in % shade over time. In addition, the BYPP project manager calculates the percent survival of native plantings to determine if plantings have been successful, which also allows for adaptive management of sites moving forward in their ecological development. And finally before and after photos are captured at strategic locations at all project sites.

VII. Phasing Considerations

BYPP is moving into its 15th year of restoring riparian areas to improve water and habitat quality, and ultimately the quality of life for Tillamook County residents. Because BYPP is aiming at restoring riparian corridors at a watershed scale the BYPP program is an ongoing project. BYPP will continue to seek funding and willing landowners in future years until the data shows that the environmental improvements we are aiming for have been achieved at the watershed scale.

VIII. Project Partners, Sources of Matching Funds and Estimated Total Project Cost

BUDGET

	319 Grant Funding	Match Funding (non-federal)	Total
Personal Services	$18,280	$13,400	$31,680
Equipment			
Services/Supplies	$1,200		$1,200
Travel			
Subcontracts			
Select ONE: Administrative Allowance (up to 10% of grant) or Indirect Cost	$520		$520
Total	$20,000		$33,400

I. Proposal Title

Pesticide Stewardship Program 2016

II. Contact Information

Julia Crown

811 SW 6th Ave
Portland, OR 97204
503.229.5076

III. Project Location

Multi – basin project

IV. Project Summary

The 2016 319 grant (up to $50,000) will be used to pay contractor, Clean Harbors, to collect and properly dispose of legacy and current use waste pesticides through the Pesticide Stewardship Partnership (PSP). These events are one of three main components of the Pesticide Stewardship Partnership. The PSP holds waste collection events around the state to remove un-usuable pesticides from the watershed. Based on our experience in supporting these activities, we expect an increased demand for collecting and safely disposing of agricultural chemicals. Our largest waste collection event generated 39,218 pounds of waste pesticides by 54 participants and cost $55,666.

Local watershed councils and soil and water conservation districts endorse and often support the collection events with their time by advertising, distributing flyers, publicizing, creating and distributing accompanying educational materials, attending the events, and checking in participants. We will be gathering the required match from partners participating directly in these events. Oregon Department of Agriculture will co-fund the collection events.

VIII. Project Partners, Sources of Matching Funds and Estimated Total Project Cost

BUDGET

	319 Grant Funding	Match Funding (non-federal)	Total
Total	24,475	16,317	40,792