Clackamas
Soil and Water Conservation District

January 15, 2016

Jon Unger
Grant Program Coordinator
Oregon Water Resources Department
725 Summer St. NE Suite A
Salem OR 97301

Dear Mr. Unger,

Please find enclosed our application for a Water Project Grant to support the Clackamas SWCD Water Conservation and Water Quality Project.

If funded, this grant will enable us to assist three agricultural producers in reducing their irrigation water use by 42% to 46% while making their operations more sustainable. This is a "win" for agricultural production and for natural resources.

Funding from this grant will also allow us to restore a section of Milk Creek by addressing a severely eroding streambank, restoring floodplain connectivity, re-establishing riparian shading through vegetation, and providing improved fish habitat. Milk Creek supports federally-listed Spring Chinook and Winter Steelhead and state-listed sensitive cutthroat trout.

We have found that our projects are most successful when they are conducted in partnership between the SWCD and the landowners -- particularly when the landowners have committed their own time and money to implement the recommended conservation practices and maintain them over time. When watershed councils, public agencies, and other stakeholders are included as well, the quality of the project increases even more. The projects we are proposing in this Water Project Grant application are high-value projects that have the active participation of the landowners as well as community and agency support. We are pleased to present this proposal to OWRD.

Thank you for your consideration.

Sincerely,

Tom Salzer

Tom Salzer, General Manager

221 Molalla Avenue, Suite 102, Oregon City, OR 97045
Ph: 503.210.6000; fax: 503.655.1188 conservationdistrict.org

Clackamas Soil and Water Conservation District

Water Project Grant Application 1/19/16:
Clackamas SWCD Water Conservation and Water Quality Project

List of Attachments

1. List of additional involved landowners: Our proposal involves four landowners. The Application has room to list contact information for two landowners. This attachment contains the contact information for the other two landowners.
2. Water Savings Estimator: Tipikin/Countryside Acres, LLC
3. Water Savings Estimator: J Frank Schmidt and Son Co./Crystal Springs Nursery
4. Water Savings Estimator: Kaser/Missouri Ridge Farm
5. Project location map titled "Clackamas SWCD Water Project Locations for Grant Proposal"
6. "Oregon Water Rights Map": focused on Gladtidings GWLA. The Countryside Acres, LLC irrigation efficiency project is located just north of this GWLA (as it appears on the map) between Bear Creek and Kaiser Creek.
7. Letter from landowner:: Countryside Acres, LLC (Kip Tipikin)
8. Letter from landowner: J. Frank Schmidt & Son Co. (J. Frank Schmidt III)
9. Letter from landowner: Missouri Ridge Farm, LLC (Fred and Ruth Kaser)
10. Letter from landowner: Hofmann (Steve and Karla Hofmann)
11. Alternatives Evaluation Memo, written by Waterways Consulting, Inc., for the in-stream design for the project on Milk Creek.
12. Letter of support: Molalla River Watch (Kay Patteson, Executive Director)
13. Letter of support: Pudding River Watershed Council (Anna Rankin, Council Coordinator)
14. Letter of support: Johnson Creek Watershed Council (Daniel Newberry, Executive Director)
15. Letter of support: USDA Natural Resources Conservation Service (Kimberly Galland and Kris Homma, District Conservationists)
16. Letter of support: Oregon Dept. of Agriculture (Ryan Beyer, Water Quality Specialist, Natural Resources Program Area)
17. Letter of support: Oregon Dept. of Environmental Quality (Karen Font Williams, Clackamas and Molalla Basin Coordinator)
18. Letter of support: East Multnomah Soil and Water Conservation District (Jay Udelhoven, Executive Director)
19. Email correspondence between CSWCD and the Legislative Commission on Indian Services
20. Email from CSWCD to The Confederated Tribes of Grand Ronde
21. Email from CSWCD to The Confederated Tribes of Siletz Indians
22. Email from CSWCD to The Confederated Tribes of Warm Springs
23. Email exchange between CSWCD and Oregon State Historic Preservation Office
24. Budget for the project (2 pages)

221 Molalla Avenue, Suite 102, Oregon City, OR 97045
Ph: 503.210.6000; fax: 503.655.1188 conservationdistrict.org

Additional landowners:

Clackamas SWCD water conservation and water quality project: OWRD Water Supply Development Account grant application

Involved Landowner #3: Missouri Ridge Farm, LLC (Fred and Ruth Kaser)

Address: 38111 S. Nowlens Bridge Rd.
Molalla, OR 97038
Phone: 503-873-5990
Email: fkaser@onlinenw.com

Involved Landowner #4: Steve and Karla Hofmann

Address: 26180 S. Milk Creek Circle
Mulino, OR 97035
Phone: 503-997-4223
Email: karla@rivercityglass.org

Water Savings Estimator for Irrigation System Planning and Ranking

NRCS Natural Resources Conservation Service OREGON

Applicant: Tipkin
County: Clackamas
Farm/Tract ID: Countryside Acres
Field ID:
Date: 10/13/15
Evaluator: J. Baker

Climatic Region: Region5 Willamette Valley

Crop Rotation	EXISTING Annual Net Irrig Reqt (in)	EXISTING Peak ET Rate (in/day)	PLANNED Annual Net Irrig Reqt (in)	PLANNED Peak ET Rate (in/day)
Year 1: Berries	12.3	0.16	12.3	0.16
Year 2: Berries	12.3	0.16	12.3	0.16
Year 3: Berries	12.3	0.16	12.3	0.16
Year 4: Berries	12.3	0.16	12.3	0.16
Year 5: Berries	12.3	0.16	12.3	0.16
Average:	**12.3**		**12.3**	
Alternative NIR Value:				

Water right (ac-in/ac):

Application System

Application System Predominant Soil: Silt Loam
Existing Application System: Big Gun > 15 yr
Planned Application System: Microirrigation

Conveyance System

Conveyance System Predominant Soil: Silt Loam
Existing Conveyance System: Pipeline
Planned Conveyance System: Pipeline

IWM

Planned Level of IWM: Intense

Estimated Water Savings

Estimated EXISTING water use: 24.3 acre-in/acre
Estimated PLANNED water use: 13.1 acre-in/acre
Annual Water Savings Estimate: 11.2 acre-in/acre
Annual Water Savings Estimate: 46.0%
Total Annual Water Savings Acres: 94
Estimated savings for this field **ONLY**: 87.6 acre-ft

Quality Criteria

	Existing System	Planned System
System Efficiency:	50%	94%
Quality Criteria Potential Efficiency:	61%	94%
Quality Criteria Met?	**Yes**	**Yes**

Water Savings Estimator for Irrigation System Planning and Ranking

NRCS Natural Resources Conservation Service OREGON

Applicant: J Frank Schmidt
County: Clackamas
Farm/Tract ID: Crystal Springs
Field ID:
Date: 11/9/15
Evaluator: J. Baker

Climatic Region: Region5 Willamette Valley

Crop Rotation	EXISTING Annual Net Irrig Reqt (in)	EXISTING Peak ET Rate (in/day)	PLANNED Annual Net Irrig Reqt (in)	PLANNED Peak ET Rate (in/day)
Year 1: Pasture	20.3	0.23	20.3	0.23
Year 2: Pasture	20.3	0.23	20.3	0.23
Year 3: Pasture	20.3	0.23	20.3	0.23
Year 4: Pasture	20.3	0.23	20.3	0.23
Year 5: Pasture	20.3	0.23	20.3	0.23
Average:	**20.3**		**20.3**	
Alternative NIR Value:				

Water right (ac-in/ac):

Application System

Application System Predominant Soil: Silty Clay Loam
Existing Application System: Hand/Wheel Line > 15 yr
Planned Application System: Microirrigation

Conveyance System

Conveyance System Predominant Soil: Silty Clay Loam
Existing Conveyance System: Pipeline
Planned Conveyance System: Pipeline

IWM

Planned Level of IWM: Intense

Estimated Water Savings

Estimated EXISTING water use: 37.2 acre-in/acre
Estimated PLANNED water use: 21.7 acre-in/acre
Annual Water Savings Estimate: 15.6 acre-in/acre
Annual Water Savings Estimate: 41.8%
Total Annual Water Savings Acres: 70
Estimated savings for this field **ONLY**: 90.7 acre-ft

Quality Criteria

	Existing System	Planned System
System Efficiency:	54%	94%
Quality Criteria Potential Efficiency:	66%	94%
Quality Criteria Met?	**Yes**	**Yes**

Water Savings Estimator for Irrigation System Planning and Ranking

NRCS Natural Resources Conservation Service OREGON

Applicant: Kaser
County: Clackamas
Farm/Tract ID: Missouri Ridge Farm
Field ID: Phase III
Date: 11/9/15
Evaluator: J. Baker

Climatic Region: Region5 Willamette Valley

Crop Rotation	EXISTING Annual Net Irrig Reqt (in)	EXISTING Peak ET Rate (in/day)	PLANNED Annual Net Irrig Reqt (in)	PLANNED Peak ET Rate (in/day)
Year 1: Filberts	24.7	0.28	24.7	0.28
Year 2: Filberts	24.7	0.28	24.7	0.28
Year 3: Filberts	24.7	0.28	24.7	0.28
Year 4: Filberts	24.7	0.28	24.7	0.28
Year 5: Filberts	24.7	0.28	24.7	0.28
Average:	**24.7**		**24.7**	
Alternative NIR Value:				

Water right (ac-in/ac):

Application System

Application System Predominant Soil: Silt Loam
Existing Application System: Hand/Wheel Line > 15 yr
Planned Application System: Microirrigation

Conveyance System

Conveyance System Predominant Soil: Silt Loam
Existing Conveyance System: Pipeline
Planned Conveyance System: Pipeline

IWM

Planned Level of IWM: Intense

Estimated Water Savings

Estimated EXISTING water use: 45.3 acre-in/acre
Estimated PLANNED water use: 26.4 acre-in/acre
Annual Water Savings Estimate: 18.9 acre-in/acre
Annual Water Savings Estimate: 41.8%
Total Annual Water Savings Acres: 32
Estimated savings for this field **ONLY**: 50.5 acre-ft

Quality Criteria

	Existing System	Planned System
System Efficiency:	54%	94%
Quality Criteria Potential Efficiency:	66%	94%
Quality Criteria Met?	**Yes**	**Yes**

Countryside Acres, LLC

To whom it may concern.

We started farming 15 years ago and have a total of 150 acres. The majority is planted in different varieties of cane berries and a smaller portion is planted with blueberries. All of our farm land is irrigated.

We have been working with the Clackamas Soil and Water District (CSWCD) for the past several years and are planning on improving and enhancing irrigation water delivery systems and irrigation water management on the farm.

We get our water from wells that are on our property and are currently irrigating with big gun hard hose travelers. We are looking to convert this system over to a drip system for several reasons. Initially, we will see a labor saving in not having to constantly move and connect pipe and sprinkler systems throughout the operation. This labor savings will be used in other parts of our operation. Continually moving and setting up pipe can lead to wear and tear on gaskets and flanges, which also leads to leaking joints. Adding drip with buried mainline will eliminate irrigation water loss to leaks and allow us to put water exactly where it is intended to go rather than in areas where we don't need it like drive areas or field borders. This change will reduce the amount of water used to grow the crop as well as lower our pumping costs and electric bill. In addition, we will be able to fertilize our crops through the drip system, which will decrease our cost for fertilizer as we're maximizing the efficiency and delivery to the crop and eliminating waste.

Along with adding a drip system, we will also be implementing a soil moisture monitoring program. We will be installing soil moisture probes throughout the field to monitor and record soil moisture data so that we can improve timing of irrigation cycles. Irrigation timing will be based on plant need according to the moisture sensors. This will alleviate water losses due to over irrigation as well as eliminate any irrigation induced runoff. We will be submitting irrigation water management reports to Clackamas SWCD after every irrigation season.

We understand and agree that, as a condition of any grant support we may receive from the Clackamas SWCD (or other State or Federal agencies), we will be required to submit IWM reports for up to 3 years after installation of the system. We also understand that IWM reports are public record.

Furthermore, we agree to the Oregon Water Resources Grant proposal drafted by the CSWCD on our behalf for funding to install a drip irrigation system and irrigation water management plan as this grant will allow Countryside Acres, LLC to enhance our on farm management efficiencies and grow a better crop while providing funding needed to immediately begin reducing our impact on our water resources and the environment.

Countryside Acres, LLC
Kip Tipikin/owner

J. FRANK SCHMIDT & SON CO.

The Wholesale Tree Growers

P.O. Box 189 • Boring, Oregon 97009 • (503) 663-4128 • FAX (503) 663-2121 • www.jfschmidt.com

January 4, 2016

Clackamas Co. Soil & Water Conservation District
221 Molalla Ave, Suite 102
Oregon City, OR. 97045

J. Frank Schmidt and Son, Co is a leading producer of shade and flowering trees. We have been in business since 1946. During this time the company has increased production in Oregon from 10 acres to over 3,000 acres; including about 2,600 acres in production in Clackamas County. Conservation of natural resources and land stewardship has always been important to the company and its owners:

- Nearly 50 years ago, we changed our planting rotation to include a fallow year for cover cropping.
- We practice IPM at all stages of our production
- We have helped to set Best Management Practices for field and container irrigation, crop fertilization, and pest management through cooperative research programs with Oregon State University and other institutions.

For the past few years, we have been working with the Clackamas Soil and Water District (CSWCD) and National Resource Conservation Service (NRCS) on projects to improve irrigation system efficiency and Irrigation Water Management (IWM) on the farm.

We are currently working with CSWCD on a project to convert about 70 acres of production over to drip irrigation with a buried mainline. On this parcel, we get our water from an irrigation well. We also have a storage pond that captures drain tile water, which we reuse for crop irrigation. We currently irrigate using hand lines with rotary sprinklers. The sprinkler heads are placed onto 6' tall risers to overcome a height barrier with our crop. This increases evaporative losses from wind and decreases system uniformity, both of which work against saving water. We are looking to convert this system over to drip irrigation for several reasons. Initially, we will see a labor savings in not having to constantly move and connect pipe and sprinkler systems across the blocks, which will allow us to use this labor elsewhere. Continually moving and setting up pipe can wear gaskets and flanges, allowing for water to leak and reducing system efficiency. Adding drip with buried mainline will eliminate irrigation water loss to leaks and will allow us concentrate the water on the crop as opposed to areas where we don't need it, like roads and field borders. With the improved delivery of water to the crop, we will reduce the amount of water used by about 30%. In addition, we will be able to fertilize our crops through the drip system and reduce our fertilizer use by about 30%, and greatly reduce environmental impact.

Along with adding a drip system, we will implement a soil moisture monitoring program. We will install soil moisture sensors throughout the field to monitor and record soil moisture data so that we can improve timing and duration of irrigation events. The decision to irrigate will be based on plant need according to the moisture sensors. This will alleviate water losses due to over irrigation as well as eliminate any irrigation induced runoff. We will submit irrigation water management reports to Clackamas SWCD after every irrigation season.

We understand and agree that, as a condition of any grant support we may receive from the Clackamas SWCD (or other State or Federal agencies), we will be required to submit IWM reports for up to 3 years after installation of the system. We also understand that IWM reports are public record.

We would also like to offer our full support of the grant proposal submitted to Oregon Water Resources grant proposal, drafted by the CSWCD on our behalf, for funding to install a drip irrigation system and irrigation water management system. This grant will allow J. Frank Schmidt and Son, Co. to improve farm management efficiency, while growing a better crop, and immediately begin reducing our impact on our water resources and the environment.

Kind regards,

Jan Barkley

Jan Barkley
Executive Vice President
Owner

J. Frank Schmidt III

J. Frank Schmidt III
President and CEO
Owner

12/28/2015

To: Oregon Water Rescources Department

We bought this farm in 1962 and have grown row crops, grass seed and hazelnuts for the past 53 years on the 190 tillable acres on this farm. There was a 66 acre water right on the farm when we bought it and we applied for another 67 acres in 1962. All of the soil types on our farm tend to be droughty. We planted our oldest hazelnut orchard in 1980, 33 acres, and have been planting additional acreage since then. With the planned planting in 2016-17, we will have 120 acres total in hazelnuts. Hazelnuts are now are primary irrigated crop. This grant application is to be used for installing drip irrigation on the 33 acres we will be planting in 2016-17. Our farm borders Butte Creek and that is our source of irrigation water. Up until 2 years ago, we used handlines as our method of irrigating. In 2014, with financial assistance from the Clackamas County Soil and Water Conservation District, we began converting from handlines to drip irrigation. We installed drip lines on 55 acres in 2014 and in 2015 installed drip lines on the original 33 acre hazelnut planting. We also installed a fish screen on our pump intake pipe in 2015. Our labor savings have been significant. With handlines, it was taking about 3 man hours of labor for each 2.5 acre set. With our drip lines set up in roughly 20 acre blocks it takes about 2 man hours to check the tubes on 20 acres per set. The irrigation efficiency is just as dramatic. With handlines we were applying 2.5 acre inches of water per irrigation set, each time. This would be enough water for about 2 weeks before the soil was dry again. We were trying to irrigate all the orchards twice each summer for a total of 5 acre inches of water. Our orchards were still showing lots of moisture stress by the end of the summer. With our drip system we used slightly over 3 acre inches of water in 2015 but were able to spread that out over the whole season from mid-June until the end of August. Even as warm as the summer of 2015 was, the trees looked good at the end of summer. We have installed soil moisture monitoring blocks in each 20 acre block of orchard and by using these as guides we were able to irrigate when necessary and achieve this kind of efficiency. Our pumping costs were reduced in the same proportion. We will be submitting irrigation management reports to CCSWCD after every irrigation season.

Our relationship with the CCSWCD has been most satisfying. They have been quite helpful and great to work with in doing this irrigation project.

We understand and agree that, as a condition any grant support we may receive from the Clackamas SWCD (or other state or federal agencies), we will be required to submit IWM reports for up to three years after installation of the system. We also understand that IWM reports are public record. Furthermore, we agree to the Oregon Water Resources Grant proposal drafted by the CSWCD on our behalf for funding to install a drip irrigation system and irrigation water management plan as this grant will allow Missouri Ridge Farm LLC to enhance our farm management efficiencies and grow a better crop while providing funding needed to immediately begin reducing our impact on our water resources and the environment.

Missouri Ridge Farm LLC Fred Kaser Ruth Kaser

December 14, 2015

Jenne Reische
Riparian Specialist
Clackamas Soil and Water Conservation District
221 Molalla Ave., Suite 102
Oregon City, OR 97045

Dear Ms. Reische:

We are writing this letter to show our personal commitment to the restoration project that the Clackamas Soil and Water Conservation District propose to do on Milk Creek. We are the landowners of the parcels on which the work will be carried out.

The project includes improving the creek for water quality and fish habitat, addressing erosion on the streambanks, and restoring the riparian areas on our properties. We are very pleased with the assistance the District has been providing in helping us get our project accomplished.

We are aware that the District is applying for funding on our behalf from the Oregon Water Resources Department. We are also aware that if awarded funding from the Oregon Water Resources Department that monitoring results done in conjunction with the project are public record.

As landowners, we understand that we are expected to contribute to this project, too. We are willing to contribute approximately $15,000 in order to purchase needed materials for the project such as boulders, rootwads and native trees and shrubs. We are also willing to spend our own time and labor on the project when it is appropriate and feasible.

We are excited to do this project to improve habitat for fish and improve the water quality in the stream. We would love to see the numbers of salmon and steelhead that Milk Creek supported years ago. We wouldn't be able to do this project without the technical and financial assistance we are getting from the District. If the District is able to obtain the funding they are requesting, we'll be able to get this project done. Thank you for your consideration.

Sincerely,

Steve & Karla Hofmann

WATERWAYS CONSULTING, INC.

Ecological Restoration Design - Civil Engineering - Natural Resource Management

ALTERNATIVES EVALUATION MEMORANDUM

To: Jenne Reische, Clackamas Soil and Water Conservation District

From: John Dvorsky, Waterways Consulting, Inc.

Date: October 13, 2015

Re: Milk Creek Bank Stabilization Project – Alternatives Analysis

Introduction

Waterways Consulting, Inc. (Waterways) was retained by the Clackamas Soil and Water Conservation District (CSWCD) to provide preliminary engineering design and permitting assistance services for the stabilization of a section of stream bank along Milk Creek. The site is located outside the town of Mulino, approximately 600 feet downstream of South Graves Road Bridge crossing on private property. This portion of Milk Creek is relatively low gradient and meanders across a broad valley floor offset by a series of floodplain benches and terraces with land uses comprised of a mix of small to moderately sized farms interspersed with 1 to 5 acre single family homes. The streambed is composed of a mix of cobble, gravel, sand, and fines with bank material compromised predominately of finer material. The riparian corridor is narrow in most places and discontinuous.

Photo 1: Looking downstream at eroding bank and adjacent floodplain terrace.

The site consists of an actively eroding bank along the left bank of Milk Creek (looking downstream) that extends across two parcels of private property for a length of approximately 250 feet (Photo 1). The bank is approximately 8 feet high with erosion occurring into a floodplain terrace dominated by pasture

grasses. The terrace varies in width but averages approximately 100 feet. Based on the site visit that occurred in, the following goals and objectives were identified:

- Provide a site-specific fix for the identified area of erosion that will protect the site against future erosion,
- Integrate habitat enhancement elements into the proposed bank protection project including incorporation of large wood and native riparian vegetation, and
- Protect against off-property impacts by using transitional features.

Geomorphically, much of lower Milk Creek is prone to lateral erosion and channel widening due to a variety of factors including bar deposition associated with backwater effects from the myriad of road crossings, the fact that it appears to be in a widening phase following recent accelerated rates of incision, and the lack of bank stabilizing vegetation. Bed aggradation associated with high sediment delivery from upslope and upstream areas and the coarseness of the streambed relative to the fine material found along the banks has led to accelerated bank erosion, causing further widening as eroded bank material contributes to additional bar formation (Photo 2). Furthermore, past incision appears to have exposed hardpan outcrops in the bed of the channel creating additional disparity between the erodibility of the bed and the banks.

Photo 2: Coarse bar/riffle deposits encourage further channel widening and bank erosion.

The height of the banks, associated with past incision, and the high erodibility of the material that compose the banks, has led to lateral movement of the channel. The primary mechanism for bank erosion is successive erosion of the toe of the bank during moderate flood events, followed by block failure of the bank in locations where erosion has undermined the bank (Photo 3). This process is referred to as a composite bank failure and can be accelerated in locations where the bank height greatly exceeds the bankfull elevation and the dominant vegetation at the top of bank is primarily grass. Grasses tend to have shallow root systems, as compared to riparian trees and shrubs, limiting their effectiveness at stabilizing a vertical bank of more than 3-4 feet in height. At the project site, the eroding bank height is on the order of eight feet high.

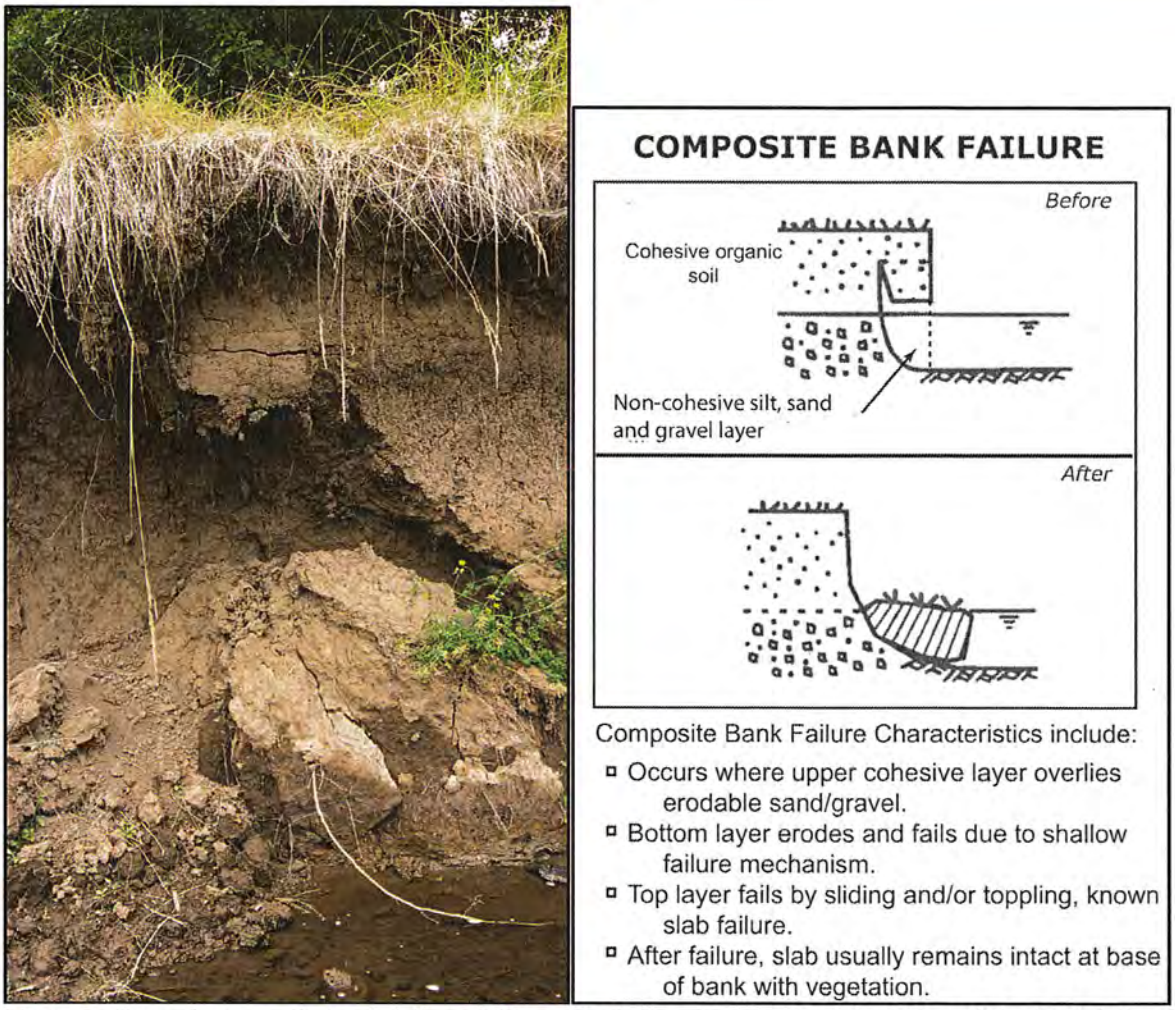


Photo 3: View of composite bank failure at the project site. A conceptual depiction of the bank failure mechanism is included.

To evaluate site conditions and develop the proposed project alternatives Waterways conducted a topographic survey of the site on July 22 – 24, 2015. Using these data, we have developed a range of design alternatives for addressing bank stability on the target properties. Based on site conditions and the goals and objectives of the project, the following four alternatives were developed:

Alternative 1 – Rock Toe and Encapsulated Soil Lifts: This alternative, shown in Figure 1, would repair and protect the bank for approximately 260 feet along the left bank. The proposed repair would consist of boulder toe protection along the entire lower portion of the bank and encapsulated soil lifts along the upper portion of the bank. Ten footer logs would be placed at the toe of the channel in front of the boulders and eleven logs, with rootwads attached, would be keyed into the bank and extend out into the channel. The soil lifts and adjacent floodplain would be planted with native riparian vegetation.

Alternative 2 – Alternative 1 Plus Log Jams: This alternative would incorporate all elements of Alternative 1 with the addition of two engineered log jams located at the upstream and

downstream ends of the bank stabilization treatment (Figure 1). This feature would enhance the habitat benefit of an existing scour hole at the upstream end, and would help to deflect stream flow away from this section bank and "smooth" the transition between the untreated and treated bank segments.

Alternative 3 – Rock Toe and 3H:1V Slope: This alternative, shown in Figure 2, would provide bank repair and protection in the same location as Alternative 1. Toe protection would be provided in the same manner as Alternative 1 but instead of building the upper portion of the bank with encapsulated soil lifts, the bank would be laid back at a 3:1 slope, protected with biodegradable erosion control fabric, and planted with native riparian vegetation. Toe logs and logs with rootwads attached would be installed in a similar manner to Alternative 1.

Alternative 4 – Alternative 3 Plus Log Jam: This alternative combines the left bank repair and protection described in Alternative 3 with the engineered log jam placement described in Alternative 2.

The alternatives described above are similar in their approach and they all include a boulder toe treatment that intends to protect against the primary erosion process described above (i.e. – composite bank failure). The primary difference is the treatment and stabilization of the upper portion of the bank profile. The treatment that incorporates encapsulated soil lifts reduces the overall volume of material excavated at the site by stabilizing the slope at a much steeper angle (1:1) while still allowing establishment of riparian vegetation. This approach stabilizes the slope through mechanical means via erosion control fabric that is used to wrap an amended soil treatment, thereby retaining more of the existing terrace. Generally this approach is more expensive because of the amount of natural fabric needed and the higher labor costs to construct the lifts. The alternative approach consists of the more traditional approach of laying back the vertical slope to a more stable angle (3:1). Given the height of the bank, this approach generates a considerable amount of material for off-haul. This approach can be expensive due to the need to dispose of the excess material in a suitable location. If the site is nearby and dumping fees are not charged the overall cost for this alternative is typically lower because the material excavation can occur fairly rapidly with the appropriate equipment.

For each of the proposed alternatives a preliminary cost estimate for construction was prepared. The estimate is based on Waterways' previous experience with projects of similar scope and scale. Several assumptions were also made given that the project is in the early stages of design. Those include the following:

- Surplus soil excavated from the project site will be moved to an adjacent property for upland disposal outside the 100 year floodplain.
- Willow cutting described in each conceptual design can be salvaged on site. All other plantings will be conducted by the SWCD and has been omitted from the cost estimate.
- All logs will be furnished by the contractor.
- Fish salvage prior to dewatering will be provided by ODFW.
- Engineering design and construction supervision is comparable between alternatives and was therefore omitted for cost comparison purposes.

Detailed estimates of construction costs are provided in Appendix A. A summary is provided in Table 1.

Table 1: Estimated Cost of Construction

Alternative	Description	Estimate Construction Cost	Estimated Construction Cost with 20% Contingency
1	Rock Toe and Encapsulated Soil Lifts	$104,448	$125,338
2	Alternative 1 Plus Log Jams	$110,223	$132,268
3	Rock Toe and 3:1 Slope	$80,043	$96,051
4	Alternative 3 Plus Log Jams	$85,818	$102,981

Although the construction costs provided are preliminary, they provide relative comparisons of costs between each proposed alternative. The difference in cost between Alternative 1 and Alternative 3 relates to the proposed treatment of the upper bank. Encapsulated soil lifts, which are specified in Alternative 1, provide a stronger bank initially, because the soil is wrapped in biodegradable coir fabric, and allow for a steeper bank profile (1:1). This treatment is often used when there is a desire to maintain as much property outside the channel as possible. The treatment proposed in Alternative 3 is much easier and cheaper to construct and will provide for a much more stable bank in the long-term, once vegetation is established, but reduces the width of the floodplain terrace to provide the long-term stability. The additive elements of the project proposed in Alternatives 2 and 4 improve habitat complexity and provide additional bank stabilization of the edges of the treatment area. We would recommend Alternative 4 as the preferred stabilization strategy given our understanding of the goals of the property owners and the associated costs of the different alternatives.

The next steps for the project will be to meet with the project stakeholders and select a preferred alternative. The preferred alternative would then be developed to a permit-ready set of engineering drawings (60% level of completion) along with a more refined engineer's cost estimate.

ALTERNATIVE #1

INSTALL ENCAPSULATED SOIL LIFTS AT A 1:1 SLOPE AND INSTALL TOE BOULDERS, FOSTER LOGS, AND HABITAT LOGS.

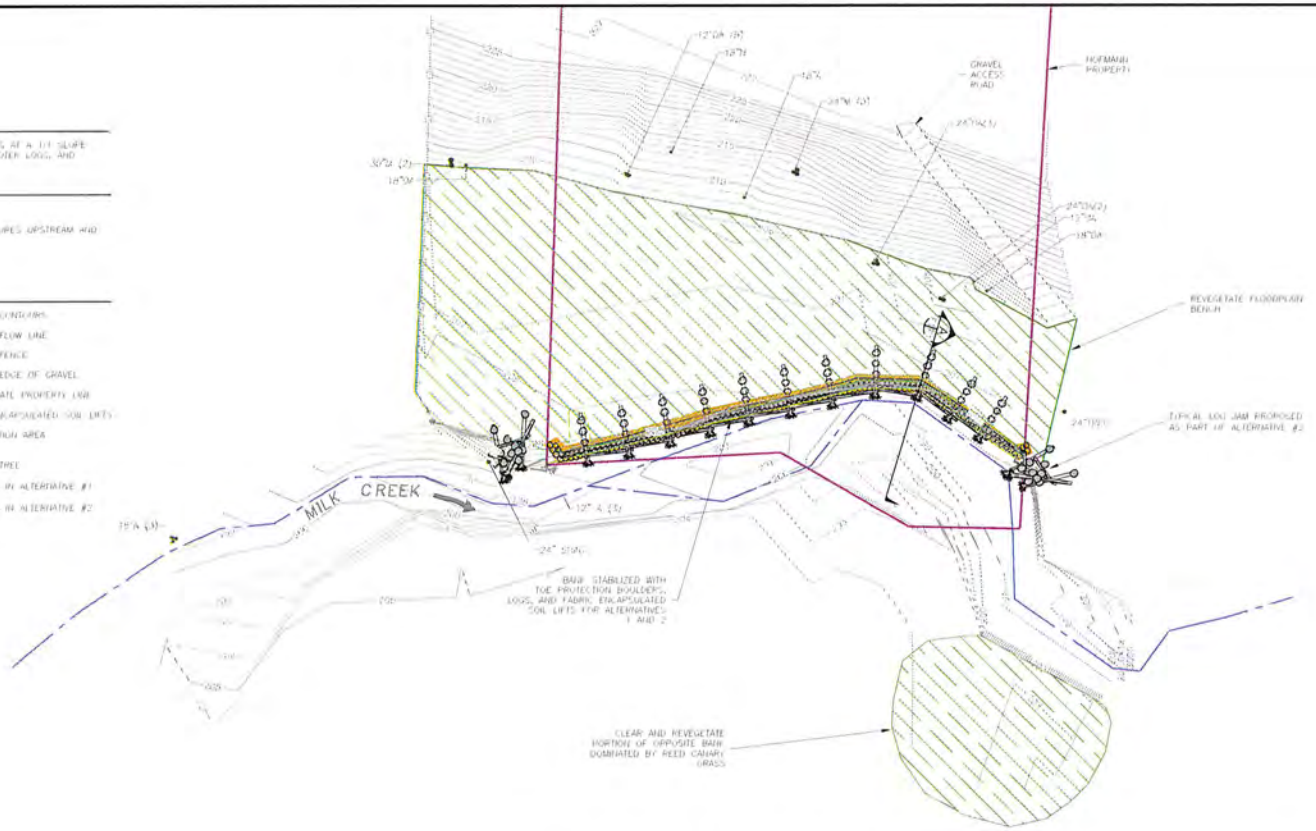
ALTERNATIVE #2

ALTERNATIVE #1 PLUS:

INSTALL ADDITIONAL LOG STRUCTURES UPSTREAM AND DOWNSTREAM OF LATERAL.

LEGEND

- EXISTING CONTOURS
- EXISTING FLOW LINE
- EXISTING FENCE
- EXISTING EDGE OF GRAVEL
- APPROXIMATE PROPERTY LINE
- FABRIC ENCAPSULATED SOIL LIFTS
- REVEGETATION AREA
- EXISTING TREE
- (1) ELEMENTS IN ALTERNATIVE #1
- (1,2) ELEMENTS IN ALTERNATIVE #2

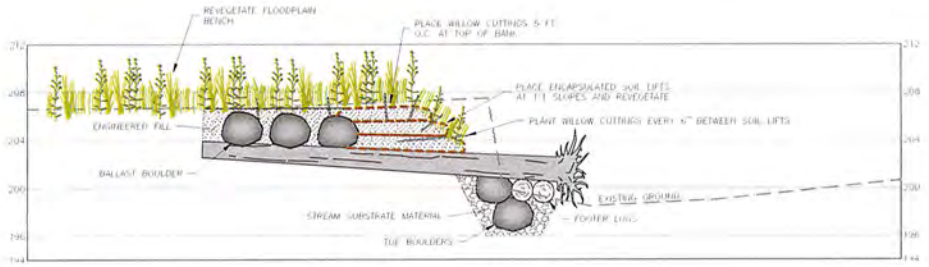


TREES

OA	=	OREGON ASH
M	=	MAPLE
A	=	ALDER
TREE	=	UNKNOWN SPECIES

ALTERNATIVE #1 AND ALTERNATIVE #2

SCALE: 1"=60'



MILK CREEK SECTION A

SCALE: 1" = 10'

WATERWAYS CONSULTING INC.
Santa Cruz, CA | waterways.com | Portland, OR

MILK CREEK BANK STABILIZATION PROJECT
ALTERNATIVE #1 AND ALTERNATIVE #2

BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES FOR REDUCED PLOTS

0 1"

FIGURE
1

ALTERNATIVE #3

CREATE BANK AT 3:1 AND INSTALL TOE BOULDERS, FOSTER LOGS, AND HABITAT LOGS.

ALTERNATIVE #4

ALTERNATIVE #3 PLUS

INSTALL ADDITIONAL LOG STRUCTURES UPSTREAM AND DOWNSTREAM OF LAYBACK.

LEGEND

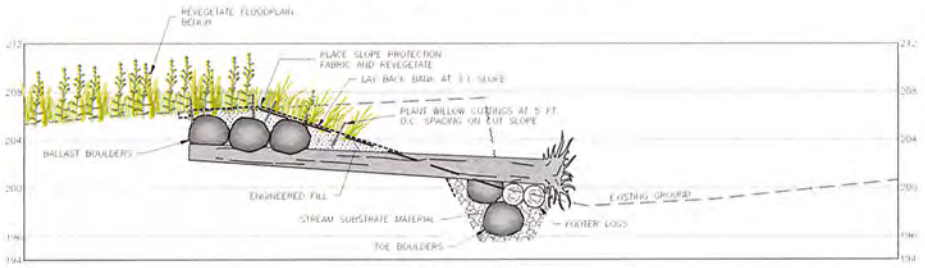
- EXISTING CONTOURS
- EXISTING FLOW LINE
- EXISTING FENCE
- EXISTING EDGE OF GRAVEL
- APPROXIMATE PROPERTY LINE
- SLOPE PROTECTION FABRIC
- REVEGETATION AREA
- EXISTING TREE
- ELEMENTS IN ALTERNATIVE #3
- ELEMENTS IN ALTERNATIVE #4

N

TREES

OA	=	OREGON ASH
M	=	MAPLE
A	=	ALDER
TREE	=	DBH (MAN SHEET 1)

ALTERNATIVE #3 AND ALTERNATIVE #4



MILK CREEK SECTION

SCALE: 1" = 10'

WATERWAYS CONSULTING INC.
Santa Cruz, CA | waterways.com | Portland, OR

MILK CREEK BANK STABILIZATION PROJECT
ALTERNATIVE #3 AND ALTERNATIVE #4

BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS

0 1"

FIGURE
2

APPENDIX A

PRELIMINARY COST ESTIMATES FOR CONSTRUCTION

MILK CREEK BANK STABILIZATION PROJECT

WATERWAYS CONSULTING, INC.

MILK CREEK BANK STABILIZATION
ALTERNATIVE ANALYSIS
ENGINEER'S ESTIMATE OF PROBABLE CONSTRUCTION COSTS

Job No: 14-082 8/28/2015

ALTERNATIVE #1 CONSTRUCTION COSTS

ITEM NO.	ITEM	ESTIMATED QUANTITY	UNIT	UNIT COST	TOTAL
1	MOBILIZATION	1	LS	$9,495	$9,495
2	CLEARING AND GRUBBING	1	LS	$5,000	$5,000
3	DEWATERING	1	LS	$10,000	$10,000
4	UNCLASSIFIED EXCAVATION	102	CY	$15	$1,523
5	STREAM SUBSTRATE MATERIAL	145	CY	$50	$7,242
6	TOE BOULDERS	200	CY	$75	$15,000
7	LOGS	1	LS	$20,575	$20,575
8	FABRIC ENCAPSULATED SOIL LIFT	1	LS	$34,877	$34,877
9	SEEDING	0.2	ACRE	$4,000	$736
				ALTERNATIVE #1 SUBTOTAL	$104,448
				CONTINGENCY (20%)	$20,890
				TOTAL	$125,338

ALTERNATIVE #2 CONSTRUCTION COSTS

ITEM NO.	ITEM	ESTIMATED QUANTITY	UNIT	UNIT COST	TOTAL
1-9	ALTERNATIVE #1 SUBTOTAL	1	LS	$104,448	$104,448
10	LOG JAMS	2	EA	$2,888	$5,775
				ALTERNATIVE #2 SUBTOTAL	$110,223
				CONTINGENCY (20%)	$22,045
				TOTAL	$132,268

ALTERNATIVE #3 CONSTRUCTION COSTS

ITEM NO.	ITEM	ESTIMATED QUANTITY	UNIT	UNIT COST	TOTAL
1	MOBILIZATION	1	LS	$7,277	$7,277
2	CLEARING AND GRUBBING	1	LS	$5,000	$5,000
3	DEWATERING	1	LS	$10,000	$10,000
4	UNCLASSIFIED EXCAVATION	565	CY	$15	$8,475
5	STREAM SUBSTRATE MATERIAL	145	CY	$50	$7,242
6	TOE BOULDERS	200	CY	$75	$15,000
7	LOGS	1	LS	$20,575	$20,575
8	SLOPE PROTECTION FABRIC	717	LS	$8	$5,738
9	SEEDING	0.2	ACRE	$4,000	$736
				ALTERNATIVE #3 SUBTOTAL	$80,043
				CONTINGENCY (20%)	$16,009
				TOTAL	$96,051

ALTERNATIVE #4 CONSTRUCTION COSTS

ITEM NO.	ITEM	ESTIMATED QUANTITY	UNIT	UNIT COST	TOTAL
1-9	ALTERNATIVE #3 SUBTOTAL	1	LS	$80,043	$80,043
10	LOG JAMS	2	EA	$2,888	$5,775
				ALATERNATIVE #4 SUBTOTAL	$85,818
				CONTINGENCY (20%)	$17,164
				TOTAL	$102,981

Molalla River WATCH
WATERSHED COUNCIL

P.O. Box 867 Molalla, Oregon 97038-0867 503-829-7858

riverwatch@molalla.net
www.molallariverwatch.org

Contact Executive Director Kay Patteson – 503-824-2195

December 29, 2015

Jenne Reische
Clackamas Soil & Water Conservation District
221 Molalla Ave. Suite 102
Oregon City, OR 97045

RE: Lower Milk Creek Floodplain and Stream Restoration project

Hello Jenne,

Molalla River Watch is pleased to partner with Clackamas Soil and Water Conservation District by providing assistance and in-kind support for the Lower Milk Creek Floodplain and Stream Restoration project. We anticipate partnering with you to conduct monitoring of the riparian and in-stream habitat as well as the educational community outreach we are planning together.

The Upper Willamette River Conservation and Recovery Plan identify the Molalla River and the Milk Creek sub-basin as a high priority for restoring stocks of ESA listed Upper Willamette River spring chinook and Upper Willamette River winter steelhead.

The implementation of the project to restore hydrologic connectivity to the eroded streambank will result in the cooling of the water temperature in the long-term, and also improve water quality and habitat for native winter steelhead, salmon, and cutthroat trout.

Sincerely,

Kay L. Patteson

Kay Patteson
Executive Director
Molalla River Watch, Inc.

Pudding River Watershed Council

Anna Rankin
Council Coordinator
190 Garfield Street
Woodburn, Oregon 97071
503-548-7159
Cleanpuddingriver@gmail.com

January 11, 2016

Jon Unger
Oregon Water Resources Department
Water Resources Grant Administrator
725 Summer St. NE Suite A
Salem OR 97301

Dear Mr. Unger:

The Pudding River Watershed Council writes in support of the proposal submitted by the Clackamas Soil and Water Conservation District. The PRWC is deeply concerned about water quality and water quantity within the Pudding River Watershed. Butte Creek has been recognized as having high quality fish and wildlife habitat that will benefit from the project proposed. The direct benefits result from improving instream flow and reducing the transmission of chemicals into the Butte Creek by way of excessive irrigation runoff.

The irrigation innovation proposal that addresses supply water drawn from groundwater in the Gladtidings area is not only an optimization that will result in water conservation, but it also helps establish a track record of private landowner engagement in the Pudding River Watershed. The PRWC will be better prepared to encourage more landowners to participate in conservation initiatives through examples of successful partnership projects such as these currently proposed by the CSWCD.

Thank you for your time and consideration.

Sincerely,

Anna Rankin

Anna Rankin
Council Coordinator

Johnson Creek
Watershed Council

January 13, 2016

Jon Unger
Grant Program Coordinator
Oregon Water Resources Department
725 Summer St. NE Suite A
Salem OR 97301

Dear Mr. Unger and the Grant Review Committee,

Johnson Creek Watershed Council's enthusiastically supports Clackamas Soil and Water Conservation District's application for a grant from the OWRD Water Supply Development Account. The District proposes to implement three irrigation efficiency projects and a riparian/in-stream restoration project.

One of the irrigation efficiency projects included in the proposal is located at a nursery that irrigates from a pond on mainstem Johnson Creek. The 35-45% reduction in water use that will occur at this nursery will keep more water in the creek, improve surface water quality, and help alleviate temperature issues that are critical for native fish habitat.

Johnson Creek is 303(d) listed from the mouth to the headwaters for the water quality parameters of temperature, bacteria (*e.coli*), and pesticides (DDT and dieldrin). Johnson Creek is home to Chinook salmon, Coho, steelhead, resident cutthroat, and rainbow trout. In addition, Pacific lamprey is considered by ODFW to be a Species of Concern in Johnson Creek.

Improving conditions for salmonids and other aquatic life is a priority for our Council. In particular, water savings during the irrigation season will help lower stream temperatures. A 2011 fish census survey by Multnomah County identified our headwaters tributaries and mainstem as critical cool water refugia. This project will thus help to reduce already high stream temperatures.

Grant funding from OWRD will benefit this local nursery's business operations and will provide habitat improvements for native fish populations. The result is a win-win situation for everyone. Restoring the watershed and improving water quality and fish habitat have been cornerstones of the Johnson Creek Watershed Council's work for many years.

I highly recommend funding for this grant proposal.

Sincerely,

Daniel G. Newberry

Daniel Newberry
Executive Director

USDA

United States Department of Agriculture

Natural Resources Conservation Service

221 Molalla Ave.
Suite 120
Oregon City, OR
97045
503-210-6031

Jon Unger
Grant Program Coordinator
Oregon Water Resources Department
725 Summer St. NE, Suite A
Salem, OR 97301

January 14, 2016

Dear Mr. Unger,

I am writing this letter in support of the Clackamas Soil and Water Conservation District's application for an OWRD grant for three irrigation efficiency projects and an in-stream and riparian restoration project. The Clackamas SWCD has a proven record of success in planning conservation implementation practices and providing technical assistance to landowners.

Due to the nature of our Conservation Implementation Strategy funding, NRCS has not had cost share funds available for irrigation projects in Clackamas County in the last few years. NRCS fully supports the installation of irrigation improvement practices, including drip irrigation systems, Irrigation Water Management, pumping improvements, and VFDs (variable frequency drives). A grant from OWRD will enable Clackamas SWCD to provide funding assistance to three solid agricultural producers who wish to install needed irrigation improvements.

In addition, practices in and along streams to reduce soil erosion, improve floodplain connectivity, and support fish and wildlife habitat – such as Clackamas SWCD plans to do on Milk Creek -- are supported by NRCS.

We have partnered with Clackamas SWCD on numerous projects, and we work well together serving landowners. This grant from OWRD will enable the SWCD to supplement the conservation practices NRCS stands for, and will fill a current funding gap.

I hope you will give consideration to this grant proposal.

Thank you for your consideration,

K. Galland

Kimberly Galland, District Conservationist
Multnomah County NRCS signing on behalf of, and in agreement with:
Kris Homma, District Conservationist
Oregon City NRCS

Oregon
Kate Brown, Governor

Department of Agriculture
635 Capitol St NE
Salem, OR 97301-2532

January 11, 2016

Jon Unger
Oregon Water Resources Department
Water Resources Grant Administrator
725 Summer St. NE Suite A
Salem, OR 97301

Re: Clackamas SWCD Irrigation Efficiency and Riparian Restoration Proposals

Dear Mr. Unger:

The purpose of this letter is to express my support for the Clackamas Soil and Water Conservation Districts (CSWCD) irrigation efficiency and riparian restoration grant proposals. The projects are undoubtedly needed and important for Clackamas County and the agricultural community in the Willamette Valley. The projects will increase water quality while also providing an invaluable example for other agricultural producers to follow. The CSWCD have consistently proved to be the leader in conservation for Clackamas County and have a long history of being incredibly competent and dependable.

The Oregon Department of Agriculture's Water Quality Program supports this proposal because it directly addresses key challenges faced by agriculture in the Willamette Valley. Conversion to micro-irrigation systems will reduce water consumption resulting in more in-stream water for other beneficial uses. The riparian restoration project will provide shade, stabilize eroding streambanks, and filter overland flow of pollutants which all result in improved water quality. In addition, the proposed projects directly meet the goals of the Clackamas Agricultural Water Quality Management Area Plan.

Thank you for your time and considerations and I commend the landowners and the Clackamas SWCD for protecting agriculture and water quality.

Sincerely,

Ryan Beyer, Water Quality Specialist
Natural Resources Program Area
Oregon Department of Agriculture
(503) 986-4696
rbeyer@oda.state.or.us

Oregon
Kate Brown, Governor

Department of Environmental Quality
Northwest Region Portland Office/Water Quality
700 NE Multnomah Street, Suite 600
Portland, OR 97232
(503) 229-5263
FAX (503) 229-6957
TTY 711

January 12, 2016

Mr. Jon Unger
Oregon Water Resources Department
Water Resources Grant Administrator
725 Summer St. NE Suite A
Salem OR 97301

Re: Clackamas Irrigation Efficiency and Riparian/In-stream Restoration Project

Mr. Unger:

I am writing to support the Clackamas Soil and Water Conservation District application to the Water Supply Development grant program. The District proposes to complete three irrigation efficiency projects and one riparian restoration project in the Molalla-Pudding Subbasin and Johnson Creek watershed. The water conservation and riparian restoration portions of this proposal are both likely to provide environmental public benefits by reducing stream temperature, increasing in-stream flow and groundwater supply, and reducing bank erosion.

Streams in the Molalla-Pudding Subbasin and Johnson Creek watershed do not meet water quality standards for temperature and bacteria. Greater surface flow and potentially increased groundwater baseflow will both help ameliorate high stream temperatures in late summer and early fall, as will increased riparian shading. Bank stabilization will help to reduce erosion and sedimentation to Milk Creek, potentially reducing bacteria contamination and improving spawning and rearing habitat for endangered fish.

I have worked with the technical and financial staff at the Clackamas SWCD for many years on multiple projects. Their work is exemplary, thorough, and timely and has always met contractual requirements.

I fully support the Clackamas SWCD's application to the Water Supply Development Grant program.

Sincerely,

Karen F. Williams

Karen Font Williams
Clackamas and Molalla Basin Coordinator
(503) 229 - 6254

January 14, 2016

Mr. Jon Unger
Water Resources Grant Administrator
Oregon Water Resources Department
725 Summer St. NE, Suite A
Salem, OR 97301

Re: The Clackamas SWCD's Water Project Grant Proposal

Dear Mr. Unger:

I am writing this letter to demonstrate the East Multnomah Soil and Water Conservation District's (EMSWCD's) support for the Clackamas Soil and Water Conservation District's (CSWCD's) application for funding. The EMSWCD is a local, non-regulatory government agency that works east of the Willamette River centerline in Multnomah County. Our mission is to help people care for land and water. In the rural areas of our district, we partner with agricultural landowners to help them protect water quantity and quality.

The CSWCD's proposed project will be on a 70-acre nursery in Boring, Oregon, which straddles the Clackamas-Multnomah County border. The project's outcomes will thus benefit residents and resources in two soil and water conservation districts because the project will be in CSWCD's and EMSWCD's service areas. The project especially excites us due to the irrigation conversion and precision management elements, which will reduce impacts on the irrigation water source (Johnson Creek). Both SWCDs have worked with this nursery, and we see this project as a major milestone for improving water quantity in Johnson Creek and for demonstrating the use of soil moisture monitoring technologies at one of the most prominent nurseries in our area.

The types of improvements in all three irrigation elements of the project are very costly, and it can take many years for a farm business to see a return on that investment through cost savings. Through the combination of drip irrigation and soil moisture monitoring, this project is estimated to reduce water use by an impressive 35%. We encourage you to fund this important project.

Sincerely,

Jay Udelhoven

Jay Udelhoven
Executive Director

5211 NORTH WILLIAMS AVENUE, PORTLAND, OR 97217
T: 503-222-7645 | HTTP://WWW.EMSWCD.ORG

Lisa Kilders

From: Quigley Karen M
Sent: Monday, December 28, 2015 11:31 AM
To: Lisa Kilders
Subject: RE: OWRD grant

Hello Lisa,
For all these projects in Clackamas county you need to consult with three Tribes who have treaty/traditional areas of interest in this location:
David Harreslon, Confederated Tribes of Grand Ronde david.harrelson@grandronde.org
Robert Kentta, at Confederated Tribes of Siletz rkentta@ctsi.nsn.us
Kathleen Sloan, Confederted Tribes of Warm Springs, kathleen.sloan@ctwsbnr.org

Karen Quigley, Executive Director
karen.m.quigley@state.or.us
Legislative Commission on Indian Services

Lisa Kilders

From: Lisa Kilders
Sent: Monday, December 28, 2015 10:01 AM
To: 'karen.m.quigley@state.or.us'
Subject: OWRD grant

Hello,
Our Soil and Water Conservation District is applying for an Oregon Water Resources Department grant to fund three irrigation efficiency projects and one riparian and in-stream restoration project. The instructions in the grant application are to contact your agency to request a list of the Tribes that would be affected by the project.

I am not sure what information you need to develop this list, but I will give you addresses if that helps.
31900 S Dryland Rd Molalla OR
8501 SE 327th Ave Boring OR
38111 S Nowlens Bridge Rd, Molalla
Our riparian/instream restoration project is ½ mile upstream of the Hwy 213 crossing of Milk Creek in Mulino, OR.

Please let me know what additional information you need.
Thank you so much!
Lisa

Lisa Kilders
Information and Outreach Coordinator
Clackamas Soil and Water Conservation District
221 Molalla Ave Suite 102
Oregon City, OR 97045
503-210-6002
FAX: 503-655-1188

Lisa Kilders

From: Lisa Kilders
Sent: Wednesday, December 30, 2015 2:20 PM
To: 'david.harrelson@grandronde.org'
Subject: OWRD grant application

Hello David,
Clackamas Soil and Water Conservation District is in the process of submitting an application for funding to the Oregon Water Resources Department. Our grant proposal addresses three irrigation efficiency projects and one riparian/instream restoration project.
In this process we were directed to contact Karen Quigley from the Legislative Commission on Indian Services to receive the list of Tribes who may be affected by our projects. Karen has provided that list and you were listed as the contact person for the Grand Ronde Tribe.

The irrigation efficiency projects will convert the water delivery systems from big gun to drip. Two projects use water withdrawn from streams, one is from a well. The riparian project will address a severely eroding streambank. We will be sloping back the bank, reconnecting the floodplain and include large wood for fish habitat. We will have a cultural resources review completed for each project.

The locations of the projects are listed below.

- 31900 S Dryland Rd Molalla OR
- 8501 SE 327th Ave Boring OR
- 38111 S Nowlens Bridge Rd, Molalla
- Our riparian/instream restoration project is ½ mile upstream of the Hwy 213 crossing of Milk Creek in Mulino, OR.

I do not know if you need any additional information, but I would imagine that until we know if we are funded that this is probably just a formality. We will be in touch if we receive the good news that we are successful in securing the grant.

Please let me know if you have any questions or need any additional information from us.

Thank you for your time and have a very Happy New Year!
Lisa

Lisa Kilders
Information and Outreach Coordinator
Clackamas Soil and Water Conservation District
221 Molalla Ave Suite 102
Oregon City, OR 97045
503-210-6002
FAX: 503-655-1188

21

Lisa Kilders

From: Lisa Kilders
Sent: Wednesday, December 30, 2015 2:24 PM
To: 'rkentta@ctsi.nsn.us'
Subject: OWRD grant submission

Hello Robert,
Clackamas Soil and Water Conservation District is in the process of submitting an application for funding to the Oregon Water Resources Department. Our grant proposal addresses three irrigation efficiency projects and one riparian/instream restoration project.
In this process we were directed to contact Karen Quigley from the Legislative Commission on Indian Services to receive the list of Tribes who may be affected by our projects. Karen has provided that list and you were listed as the contact person for Confederated Tribes of Siletz.

The irrigation efficiency projects will convert the water delivery systems from big gun to drip. Two projects use water withdrawn from streams, one is from a well. The riparian project will address a severely eroding streambank. We will be sloping back the bank, reconnecting the floodplain and include large wood for fish habitat. We will have a cultural resources review completed for each project.

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I do not know if you need any additional information, but I would imagine that until we know if we are funded that this is probably just a formality. We will be in touch if we receive the good news that we are successful in securing the grant.

Please let me know if you have any questions or need any additional information from us.

Thank you for your time and have a very Happy New Year!
Lisa

Lisa Kilders
Information and Outreach Coordinator
Clackamas Soil and Water Conservation District
221 Molalla Ave Suite 102
Oregon City, OR 97045
503-210-6002
FAX: 503-655-1188

Lisa Kilders

From: Lisa Kilders
Sent: Wednesday, December 30, 2015 2:26 PM
To: 'kathleen.sloan@ctwsbnr.org'
Subject: OWRD grant submission

Hello Kathleen,
Clackamas Soil and Water Conservation District is in the process of submitting an application for funding to the Oregon Water Resources Department. Our grant proposal addresses three irrigation efficiency projects and one riparian/instream restoration project.
In this process we were directed to contact Karen Quigley from the Legislative Commission on Indian Services to receive the list of Tribes who may be affected by our projects. Karen has provided that list and you were listed as the contact person for Confederated Tribes of Warm Springs.

The irrigation efficiency projects will convert the water delivery systems from big gun to drip. Two projects use water withdrawn from streams, one is from a well. The riparian project will address a severely eroding streambank. We will be sloping back the bank, reconnecting the floodplain and include large wood for fish habitat. We will have a cultural resources review completed for each project.

The locations of the projects are listed below.

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- Our riparian/instream restoration project is ½ mile upstream of the Hwy 213 crossing of Milk Creek in Mulino, OR.

I do not know if you need any additional information, but I would imagine that until we know if we are funded that this is probably just a formality. We will be in touch if we receive the good news that we are successful in securing the grant.

Please let me know if you have any questions or need any additional information from us.

Thank you for your time and have a very Happy New Year!
Lisa

Lisa Kilders
Information and Outreach Coordinator
Clackamas Soil and Water Conservation District
221 Molalla Ave Suite 102
Oregon City, OR 97045
503-210-6002
FAX: 503-655-1188

Lisa Kilders

From: GRIFFIN Dennis * OPRD
Sent: Thursday, December 31, 2015 12:18 PM
To: Lisa Kilders
Subject: RE: OWRD grant submission

Lisa,

Later would be fine. Not knowing anything about the projects I was simply reaching out to discover more. If we will be contacted later during the actual project development stage, that time would be fine. I will tell Robert that contact with our office will come later so that he is not concerned that something is missing in the process. Have a great New Year!

\ Dennis /

Dennis Griffin, Ph.D, RPA
State Archaeologist
Oregon State Historic Preservation Office
(503)986-0674
Dennis.Griffin@oregon.gov

Please note: My address has changed and it is now @Oregon.gov rather than the earlier @state.or.us.

From: Lisa Kilders [mailto:lkilders@conservationdistrict.org]
Sent: Thursday, December 31, 2015 11:43 AM
To: GRIFFIN Dennis * OPRD
Subject: RE: OWRD grant submission

Hello Dennis!
I would be happy to do so, but I won't be able to get that information from our planners until next week.
I do have a question. We are only applying for a grant to install these projects, so do you want this information now or after we find out if we get the grant? I don't want to take up your time unnecessarily. We normally would go through a cultural review when we do projects such as these at the time we go to actual implementation.

Please let me know how you would like to proceed.
Happy New Year!
Lisa Kilders
503-210-6000

From: GRIFFIN Dennis * OPRD [mailto:Dennis.Griffin@oregon.gov]
Sent: Thursday, December 31, 2015 11:39 AM
To: lkilders@conservationdistrict.org
Subject: RE: OWRD grant submission

Robert Kentta from the Siletz Tribe contacted us to see if we had any concerns about the proposed three irrigation projects that your office contacted him about. I am afraid that our office has no idea where these projects are being proposed nor the degree of ground disturbance that they will involve. Can you provide us with information about these projects, along with a complete legal description (township, range and section) and a USGGS map of each so that we can assess their potential to affect any known archaeological properties? Many thanks!

\ Dennis /

Dennis Griffin, Ph.D, RPA
State Archaeologist
Oregon State Historic Preservation Office
(503)986-0674
Dennis.Griffin@oregon.gov

Please note: My address has changed and it is now @Oregon.gov rather than the earlier @state.or.us.

From: Lisa Kilders <lkilders@conservationdistrict.org>
Date: December 30, 2015, 2:23:31 PM PST
To: rkentta@ctsi.nsn.us
Subject: OWRD grant submission

Hello Robert,
Clackamas Soil and Water Conservation District is in the process of submitting an application for funding to the Oregon Water Resources Department. Our grant proposal addresses three irrigation efficiency projects and one riparian/instream restoration project.
In this process we were directed to contact Karen Quigley from the Legislative Commission on Indian Services to receive the list of Tribes who may be affected by our projects. Karen has provided that list and you were listed as the contact person for Confederated Tribes of Siletz.

The irrigation efficiency projects will convert the water delivery systems from big gun to drip. Two projects use water withdrawn from streams, one is from a well. The riparian project will address a severely eroding streambank. We will be sloping back the bank, reconnecting the floodplain and include large wood for fish habitat. We will have a cultural resources review completed for each project.

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I do not know if you need any additional information, but I would imagine that until we know if we are funded that this is probably just a formality. We will be in touch if we receive the good news that we are successful in securing the grant.

Please let me know if you have any questions or need any additional information from us.

Thank you for your time and have a very Happy New Year!
Lisa

Lisa Kilders
Information and Outreach Coordinator
Clackamas Soil and Water Conservation District
221 Molalla Ave Suite 102
Oregon City, OR 97045

503-210-6002
FAX: 503-655-1188

BUDGET FOR OWRD GRANT APPLICATION -- page 1

Date: 1/15/16

Applicant's Name: Clackamas Soil and Water Conservation District
Cooperator's Name: 3 irrigation projects combined (CA, JFS, MRF), plus Milk Creek riparian/in-stream project at Hofmann property
Name of Practice(s): Irrigation system enhancments (drip), plus IWM, at 3 project sites. Riparian/in-stream restoration at Lower Milk Creek site.

Expense Category	No. of Units	Unit Cost	Cooperator Share: (Cash and In-Kind)	CSWCD Funds, Other Grants to CSWCD	OWRD Grant Funds	Total	Description: work tasks, items to be purchased, who will do the work?
PRE-INSTALLATION (Permits, surveys, design, engineering, etc.)							
Countryside Acres	**0.0**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	Irrigation system (micro-irrigation) design, design review, cultural resources review (if needed) will occur before OWRD grant period begins.
J Frank Schmidt	**0.0**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	
Missouri Ridge Farm	**0.0**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	
Hofmann (Milk Creek landowner)	**0.0**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	Engineered design, survey, permit assistance, cultural resources review will be completed before OWRD grant period begins, so is not shown. Estimated cost: $36,765.
SERVICES (Cooperator labor, Partner svcs, contracted crew, equip. operator, etc.)							
CA: Cooperator general labor	700.0	$20.00	$14,000.00	$0.00	$0.00	$14,000.00	LO assist w/installation of pipe, drip lines, etc
CA: Cooperator equipment operator	125.0	$50.00	$6,250.00	$0.00	$0.00	$6,250.00	Labor backfilling w/backhoe
CA: Contractor: excavation & installation	1.0	$22,000.00	$0.00	$0.00	$22,000.00	$22,000.00	Excavation, pipeline installation: Rob Miller verbal quote
CA: moisture sensor reading & report	18.0	$45.00	$810.00	$0.00	$0.00	$810.00	Agronomist will read sensors weekly (May-Sept) and draft report for Cooperator to make needed changes throughout the season.
CA: CSWCD planner time	16.0	$38.00	$0.00	$608.00	$0.00	$608.00	CSWCD staff: in-kind for the project
CA: mileage	100.0	$0.54	$0.00	$54.00	$0.00	$54.00	CSWCD vehicle mileage: in-kind for the project
Countryside Acres labor subtotal			**$21,060.00**	**$662.00**	**$22,000.00**	**$43,722.00**	
JFS: general labor	100.0	$15.00	$1,500.00	$0.00	$0.00	$1,500.00	Labor for install
JFS: tractor operator	50.0	$75.00	$3,750.00	$0.00	$0.00	$3,750.00	Labor for install
JFS: contractor: excavation & installation	1.0	$15,000.00	$15,000.00	$0.00	$0.00	$15,000.00	Rob Miller bid for pipe excavation, installation
JFS: moisture sensor reading & report	3.0	$1,080.00	$3,240.00	$0.00	$0.00	$3,240.00	Sensor install, monitoring, reporting (3 irrigation seasons) done by Cooperator
JFS: CSWCD planner time	16.0	$38.00	$0.00	$608.00	$0.00	$608.00	CSWCD staff: in-kind for the project
JFS: mileage	100.0	$0.54	$0.00	$54.00	$0.00	$54.00	CSWCD vehicle mileage: in-kind for the project
JF Schmidt labor subtotal			**$23,490.00**	**$662.00**	**$0.00**	**$24,152.00**	
MRF: Cooperator labor	90.0	$20.00	$1,800.00	$0.00	$0.00	$1,800.00	Dig trench, install mainline and laterals
MRF: Cooperator labor	100.0	$20.00	$2,000.00	$0.00	$0.00	$2,000.00	Install sub-mainlines and drip line
MRF: Cooperator labor	16.0	$20.00	$320.00	$0.00	$0.00	$320.00	Install booster pump
MRF: moisture sensor reading & report	60.0	$20.00	$1,200.00	$0.00	$0.00	$1,200.00	Sensors will be monitored daily by Cooperator.
MRF: CSWCD planner time	16.0	$38.00	$0.00	$608.00	$0.00	$608.00	CSWCD staff: in-kind for the project
MRF: mileage	100.0	$0.54	$0.00	$54.00	$0.00	$54.00	CSWCD vehicle mileage: in-kind for the project
Missouri Ridge Farm labor subtotal			**$5,320.00**	**$662.00**	**$0.00**	**$5,982.00**	
Milk Creek: construction mobilization	1.0	$7,277.00	$0.00	$0.00	$7,277.00	$7,277.00	Contractor: for the job
Milk Creek: clearing	1.0	$5,000.00	$0.00	$1,500.00	$3,500.00	$5,000.00	Contractor: for the job
Milk Creek: dewatering the creek	1.0	$10,000.00	$0.00	$2,000.00	$8,000.00	$10,000.00	Contractor: for the job
Milk Creek: excavation	565.0	$15.00	$0.00	$0.00	$8,475.00	$8,475.00	Contractor: excavate 565 cubic yards
Milk Creek: install log jams	2.0	$2,888.00	$0.00	$0.00	$5,776.00	$5,776.00	Contractor: install 2 log jams
Milk Creek: planting	1.0	$2,000.00	$1,000.00	$1,000.00	$0.00	$2,000.00	Install all plants. CSWCD & Landowner in-kind.
Milk Creek: project oversight	120.0	$38.00	$0.00	$4,560.00	$0.00	$4,560.00	CSWCD staff: in-kind for the project
Milk Creek: construction oversight	60.0	$45.00	$0.00	$2,700.00	$0.00	$2,700.00	Contracted SWCD staff: in-kind for the project
Milk Creek: fish salvage	1.0	$1,000.00	$0.00	$1,000.00	$0.00	$1,000.00	ODFW in-kind for the project
Milk Creek: mileage	1000.0	$0.54	$0.00	$540.00	$0.00	$540.00	CSWCD vehicle mileage: in-kind for the project
Milk Creek: monitoring	80.0	$38.00	$0.00	$3,040.00	$0.00	$3,040.00	CSWCD staff: in-kind for the project
Milk Creek riparian/in-stream project labor subtotal			**$1,000.00**	**$16,340.00**	**$33,028.00**	**$50,368.00**	

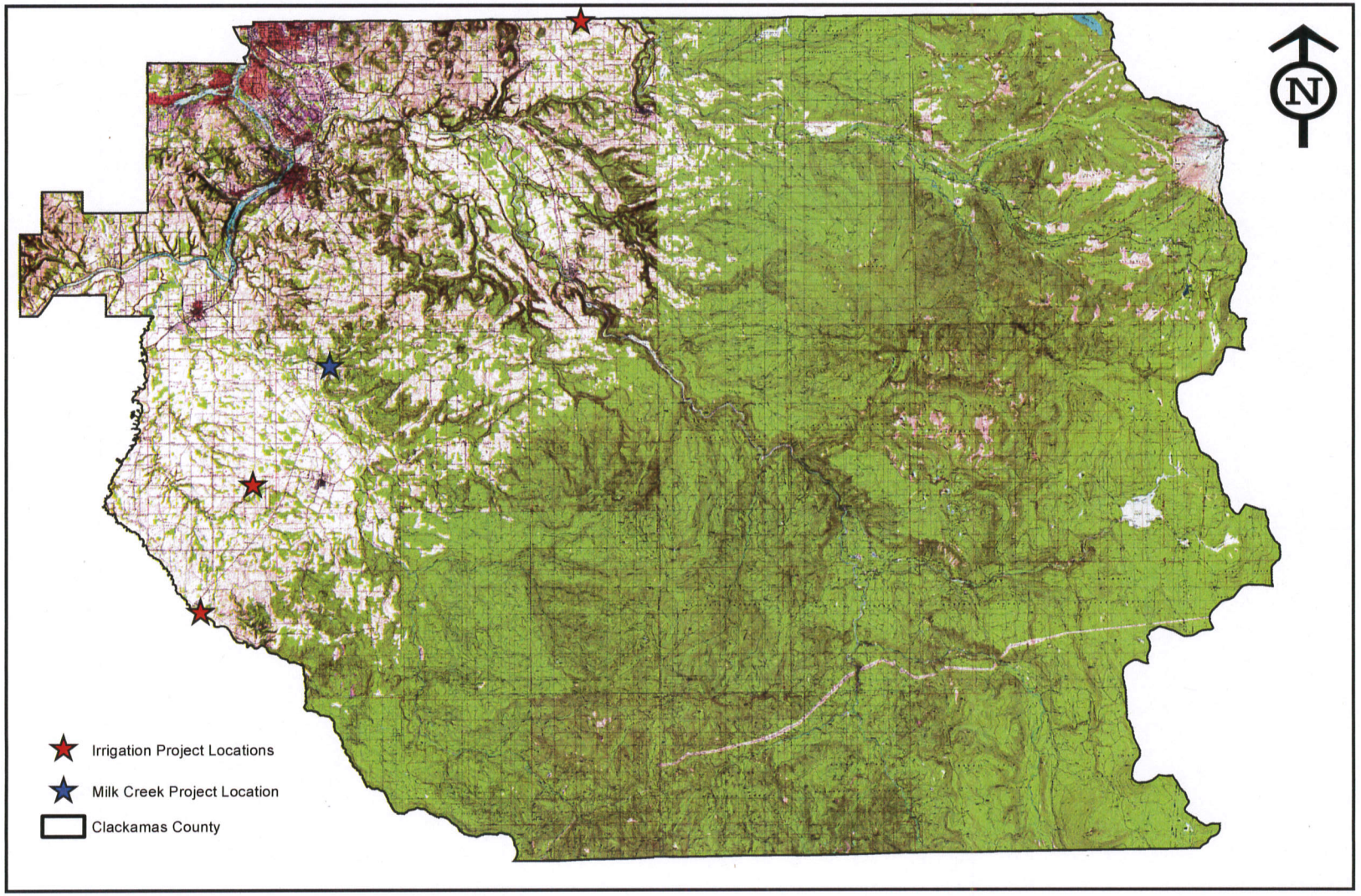
BUDGET FOR OWRD GRANT APPLICATION -- page 2

Date: 1/13/16

Applicant's Name: Clackamas Soil and Water Conservation District
Cooperator's Name: 3 irrigation projects combined (CA, JFS, MRF), plus Milk Creek riparian/in-stream project at Hofmann property
Name of Practice(s): Irrigation system enhancments (drip), plus IWM, at 3 project sites. Riparian/in-stream restoration at Lower Milk Creek site.

Expense Category	No. of Units	Unit Cost	Cooperator Share: (Cash and In-Kind)	CSWCD Funds, Other Grants to CSWCD	OWRD Grant Funds	Total	Description: work tasks, items to be purchased, who will do the work?
SUPPLIES (Fencing, pipes, gravel, logs, plants, etc.)							
CA: Drip system parts and supplies	1.0	$104,819.00	$17,906.00	$0.00	$86,913.00	$104,819.00	Bid from Ernst. Includes pipeline, appurtenances, etc)
CA: Moisture sensors	20.0	$65.00	$1,300.00	$0.00	$0.00	$1,300.00	Watermark sensors installed at 2 depths and 10 locations (price includes installation)
Countryside Acres parts subtotal			**$19,206.00**	**$0.00**	**$86,913.00**	**$106,119.00**	**CA: Approx. 9,660 ft of PVC and 451,000 ft of drip line. IWM area = 94 acres.**
JFS: Drip tape/hose	1.0	$29,240.00	$10,000.00	$0.00	$19,240.00	$29,240.00	Bid - Fischer's Supply
JFS: Mainline	1.0	$52,489.00	$10,000.00	$0.00	$42,489.00	$52,489.00	Pipe, fittings, manifolds, glue, appurts. Bid from Fischer's Supply
JFS Filter Station	1.0	$22,859.00	$5,000.00	$0.00	$17,859.00	$22,859.00	All equipment and appurts. Bid from Fischer's Supply
JFS: 60 HP pump station	1.0	$23,457.00	$0.00	$0.00	$23,457.00	$23,457.00	60HP pump, pump panel, appurts. Bid from Fischer's Supply
JFS: chlorinator - chemigation	1.0	$7,168.00	$0.00	$0.00	$7,168.00	$7,168.00	Parts and appurts included -- bid from Fischer's Supply
JFS: Moisture sensors	8.0	$650.00	$5,200.00	$0.00	$0.00	$5,200.00	Sensor stations in 3 locations of this farm
J Frank Schmidt parts subtotal			**$30,200.00**	**$0.00**	**$110,213.00**	**$140,413.00**	**JFS: Approx. 7,880 ft of PVC and 747,000 ft of drip tape. IWM area = 75 acres.**
MRF: Irrigation system parts and appertenances	1.0	$17,030.00	$0.00	$0.00	$17,030.00	$17,030.00	Mainline, laterals, headers, drip line, etc. Bid from Fisher's Supply
MRF: Booster pump parts	1.0	$4,700.00	$0.00	$0.00	$4,700.00	$4,700.00	Booster pump may be needed to push water up to field from Butte Creek. Includes pump and parts. Bid from Fisher Supply.
MRF: Back fill sand - 9 Loads	1.0	$5,130.00	$0.00	$0.00	$5,130.00	$5,130.00	10 yard loads from Canby Sand & Gravel
MRF: Booster pump base	1.0	$200.00	$200.00	$0.00	$0.00	$200.00	Concrete & steel
MRF: Pressure blocks	1.0	$200.00	$0.00	$0.00	$200.00	$200.00	Concrete
MRF: 6" mainline	1.0	$4,528.00	$4,528.00	$0.00	$0.00	$4,528.00	On hand: 1600 ft purchased 12/2015 from Fisher's Supply
MRF: Moisture sensors	4.0	$60.00	$240.00	$0.00	$0.00	$240.00	Soil moisture sensors only
Missouri Ridge Farm parts subtotal			**$4,968.00**	**$0.00**	**$27,060.00**	**$32,028.00**	**MRF: Approx 3,680 ft of PVC and approx. 48,000 ft of drip line. IWM area = 32 acres.**
Milk Creek: boulders	200.0	$75.00	$5,000.00	$5,000.00	$5,000.00	$15,000.00	200 cubic yards
Milk Creek: rootwads	20.0	$1,000.00	$10,000.00	$5,000.00	$5,000.00	$20,000.00	20 rootwads
Milk Creek: erosion control fabric	717.0	$8.00	$0.00	$3,000.00	$2,736.00	$5,736.00	717 square feet
Milk Creek: rock	145.0	$50.00	$0.00	$3,000.00	$4,250.00	$7,250.00	145 cubic yards
Milk Creek: plants	2000.0	$2.00	$0.00	$4,000.00	$0.00	$4,000.00	2,000 plants at $2.00 each
Milk Creek: native grass seed	50.0	$15.00	$0.00	$750.00	$0.00	$750.00	50 lb
Milk Creek: outreach mat'ls & postage	500.0	$0.75	$0.00	$375.00	$0.00	$375.00	500 letters/postcards
Milk Creek riparian/in-stream project materials subtotal			**$15,000.00**	**$21,125.00**	**$16,986.00**	**$53,111.00**	
EQUIPMENT (Cost of rental, use of Cooperator's equip, etc.)							
CA: Rent equipment	0.0	$0.00	$0.00	$0.00	$0.00	$0.00	
CA: Use of Cooperator's equipment	0.0	$0.00	$0.00	$0.00	$0.00	$0.00	
Countryside Acres equip subtotal			**$0.00**	**$0.00**	**$0.00**	**$0.00**	
JFS: Rent equipment	0.0	$0.00	$0.00	$0.00	$0.00	$0.00	
JFS: Use of Cooperator's equipment	0.0	$0.00	$0.00	$0.00	$0.00	$0.00	
J Frank Schmidt equip subtotal			**$0.00**	**$0.00**	**$0.00**	**$0.00**	
MRF: Ditch Witch trencher rental	2.0	$800.00	$0.00	$0.00	$1,600.00	$1,600.00	Excavate line for mainline and laterals. 2 week rental
MRF: Bobcat excavator rental	2.0	$1,100.00	$0.00	$0.00	$2,200.00	$2,200.00	Fill trench, move material, 2 week rental
Missouri Ridge Farm equip subtotal			**$0.00**	**$0.00**	**$3,800.00**	**$3,800.00**	
Milk Creek riparian/in-stream project equipment subtotal	0.0	$0.00	**$0.00**	**$0.00**	**$0.00**	**$0.00**	
TOTALS:							
Countryside Acres Total			**$40,266.00**	**$662.00**	**$108,913.00**	**$149,841.00**	
J Frank Schmidt Total			**$53,690.00**	**$662.00**	**$110,213.00**	**$164,565.00**	Does not include costs incurred before OWRD grant period
Missouri Ridge Farm Total			**$10,288.00**	**$662.00**	**$30,860.00**	**$41,810.00**	
Milk Creek riparian/in-stream project Total			**$16,000.00**	**$37,465.00**	**$50,014.00**	**$103,479.00**	Does not include engineered design, permits, and cultural resource review: costs incurred before OWRD grant period
Total Cash and In-Kind			**$120,244.00**	**$39,451.00**	**$300,000.00**	**$459,695.00**	
Percentage of Total Cost			**26.16%**	**8.58%**	**65.26%**	**100.00%**	

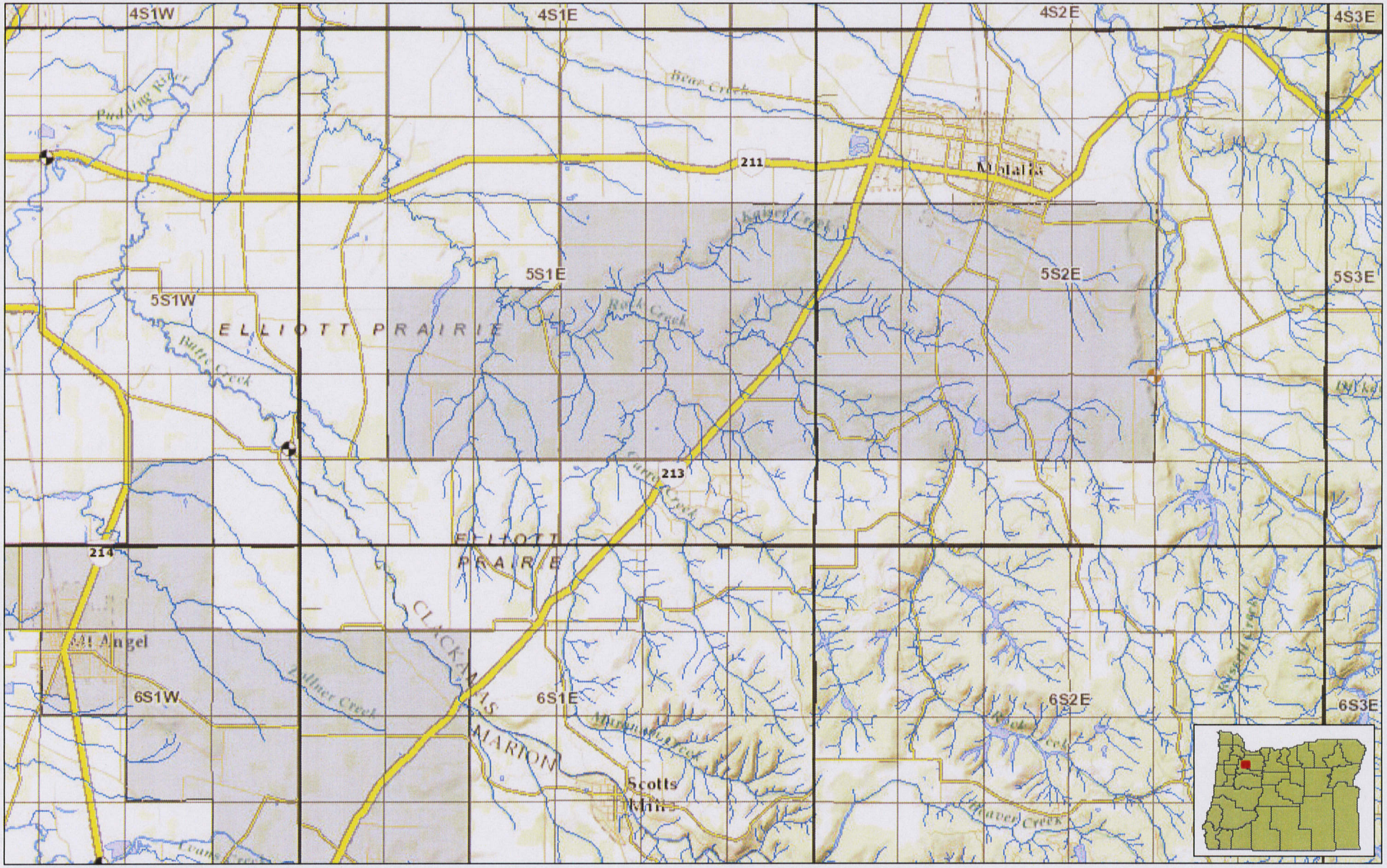
Clackamas SWCD Water Project Locations for Grant Proposal



Oregon Water Rights Map

November 10, 2015

Oregon Water Resources Department
725 Summer St NE, Suite A, Salem, OR 97301
(503)986-0900



Water Rights by Type

Point of Diversion
Place of Use
Storage Water
Surface Water
Groundwater

Water Rights by Use

Recreation
Fish
Wildlife
Instream
Misc.
Agriculture
Livestock
Irrigation
Mining
Power
Commercial
Domestic

By Primary/Supplemental

Primary
Supplemental

1:144,448

0 1.25 2.5 5 mi
0 2 4 8 km

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