

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5048	Project Type:	Education
Project Name:	Integrated Southeastern Oregon Watershed Education and Outreach		
Applicant:	OSU Malheur Experiment Station		
Basin:	OWYHEE-MALHEUR	County:	Malheur
OWEB Request:	\$45,851.00	Total Cost:	\$67,701.00

Application Description

This project combines various educational efforts in Malheur County through various well-targeted activities including field days, workshops, brochures and website materials. The project will reach many audiences from grade school, high school to producers. The Malheur Experiment Station (MES) is coordinating efforts with the Owyhee and Malheur Watershed Councils and the Malheur SWCD to provide educational tools and opportunities for varied audiences. The Malheur region has acute watershed health needs related to irrigation-induced erosion, invasive weeds, inefficient water use and other issues. MES provides targeted research and information to assist producers in converting from flood to sprinkler irrigation.

Funds are sought to assist with the Summer Farm Festival and Malheur Field Day, a one-day workshop held in July that targets approximately 270 participants from the Malheur and Owyhee basins. An irrigation workshop, held in December, has approximately 100 participants. The need for these programs was identified by producers seeking to improve irrigation practices while reducing sediment and overland flow. Much of the irrigated agriculture in Malheur County is highly intensive and approximately 85% uses surface-furrow irrigation. The Malheur Field Day provides on-the-ground demonstration of drip and sprinkler irrigation, irrigation scheduling to reduce water application, the use of polyacrylamide (PAM) and explains various best management practices (BMP's). A weed workshop with the Jordan Valley Coordinated Weed Management Area (CWMA) is planned for Jordan Valley ranchers to address noxious weed issues.

The Owyhee Watershed Field Day for 5th graders is a watershed education day for students from the Owyhee and Malheur basin and has approximately 700 participants. Students are provided an introduction to their watershed and an awareness of the interacting aspects of watershed at an early, impressionable age. Groups of students visit a series of stations on water quality, erosion, irrigation, recreation, wildlife, macroinvertebrates, geology, livestock and others at the Owyhee Dam annually in late April or early May. This successful effort has been ongoing for almost 10 years. Additionally, a hydrology camp for high school juniors is held at the Agricultural Research Station (ARS). Students learn the importance of watersheds and their role in water storage, irrigation, wildlife and aquatic species. Students take a snow cat and participate in snow measurements, including snow-water equivalent and look at the ongoing research at ARS.

MES will also prepare three new brochures on BMP's topics including conserving phosphorus, reducing nitrogen and surge irrigation. Brochures (1,000 copies) will be printed and available at training sessions, local agency offices and online. College students will help write the brochures. In addition, MES staff will assist with the Mid-Snake River Vegetation Database and website that provides information on 400 plant species in the Malheur County area. The site receives 2,500 plus unique visitors daily where new information on native plants and noxious weeds is frequently revised. The site also has brochures and reports produced by MES, which has 700 plus unique visitors per day downloading an average of five to six reports each.

OWEB funds are sought for in-house personnel (28%), contracted services (17%), travel (4%), supplies (19%), production (19%), equipment (4%) and administration (9%). Cost-share partners include the Owyhee Watershed Council, Malheur Watershed Council and the Malheur SWCD.

REVIEW PROCESS

Regional Review Team Evaluation

The project is multi-faceted with many various activities. The MES provides a variety of activities and education outreach to virtually all ages and many audiences. The outreach and research is excellent and very complementary with other efforts. There has been significant improvement in irrigation efficiency as a result of the workshops and brochures produced at the MES. Information is distributed through many activities and is very cost-effective. The ongoing projects show positive communication and coordination. Previous applications were for projects or events held by the MES. This application included events for the Owyhee Watershed Council, fairly low- requested amounts that prevented the submission of multiple education applications. Many of the aspects of project - the field days, hydrology camp and workshops - are modest requests from \$500 to \$4500.

The database is maintained very well and an excellent continuing effort. Field Days now include the rural-urban community and the event called "Farm Festival" days. The budget did not break out unit costs and it was unclear how the overall budget was derived. The team wanted to see a further clarification. Subsequent to the review team meeting, OWEB staff received a revised budget with the unit costs more detailed. Overall, the team felt that this excellent effort should continue to be funded and recommended it this grant cycle.

Regional Review Team Recommendation to Staff

Fund.

Regional Review Team Priority

1 of 2

Distribution of Recommended Award Amounts

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
			\$45,851.00

Staff Recommendation to the Board

Because OWEB lacks sufficient available 2009-2011 non-capital funding to meet the Board's non-capital funding target in March, staff recommends the Board award funds at its June Board meeting dependent on OWEB's 2011-2013 budget.

Staff Recommended Award

Capital Amount	EM Portion	PE Portion	Non-Capital Amount

Total Recommended Board Award

\$ 0.00

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5063	Project Type:	Education
Project Name:	Analyzing Juniper for Canopy Cover		
Applicant:	Harney SWCD		
Basin:	LAKES	County:	Harney
OWEB Request:	\$20,000.00	Total Cost:	\$27,152.00

Application Description

Harney SWCD is proposing to work with Hines Middle School and an urban school in Wilsonville to share watershed-related information over the internet. The targeted audience is the students of Hines Middle School (HMS) with an estimated participation of 240 students. In addition to the affected students, the project will indirectly reach fellow teachers within the Harney basin community, local citizens through publications and non-agricultural oriented students from Inza R. Wood Middle School (WMS) located in Wilsonville. The project will assist in meeting the need for students to experience watershed-related activities. Students will be introduced to careers relevant to natural resource concerns in Harney County. The project was the result of a High Desert Partnership (HDP) meeting as they proposed to develop additional science-based curriculum. The HDP seeks to bring people together to address challenges facing southeast Oregon.

The project will increase awareness by educating students about watershed components, watershed health indicators and factors endangering the watershed health. Students will be involved in creating experience - sharing and outreach materials. Measurable results will be visual inspection of video-sharing website, blogs, newspaper articles, usable data, as well as journal entries, and formal and informal assessments. There are two locations for the field activities. One location is the Northern Great Basin Experimental Range administered by Eastern Oregon Agricultural Research Center (EOARC) and Oregon State University (OSU) near Riley. EOARC focuses efforts on rangeland ecology, wildland restoration, forage crops and alternative livestock systems. The effects of juniper on watershed and uplands are also a significant part of their research. The other site is at Hotchkiss Cattle Company on Silver Creek. One of the goals of the Harney Basin Agricultural Water Quality Plan is to tell success stories of restoration work and good stewardship to Oregon's non-agricultural communities. A subcommittee was formed to develop the goals agreed to and involve non-agricultural youth in any watershed educational project.

OWEB funds are requested for project management (10%), travel (4%), equipment (41%), supplies/materials (39%) and administration (6%). Cost-share partners are EOARC and Department of Education.

REVIEW PROCESS

Regional Review Team Evaluation

The team felt it is very important to get the students and parents involved with this activity. There are many local participants from various parts of the community involved with this project. The HDP has come together to be a consensus-building partnership and will be actively involved. The overall request from OWEB is fairly modest and is mostly equipment-related expenses that comprise 80% of budget. The submitted application had good detail and was well written.

The project's main focus is on juniper. Some team members questioned if that was too limited. However, it was stated that a significant amount of the research at EOARC concerns juniper-related issues and those scientists are assisting with the volunteer effort. Also, many urban students as well as residents are not aware

of the interaction with juniper and the desert environment. This would be a good introduction for both the urban students as well as the rural students who may be unaware of the impact that juniper has on their watershed. Some team members felt that the emphasis on canopy cover might be too focused. However, it was determined that would be a good starting point. In addition, the students will be collecting a lot of data and the instructors will be teaching the students how to analyze the collected data, which is a very positive step. It was also questioned whether the proposed project would be too advanced for 5th graders. Other reviewers stated they have worked with similar grades and believe that this depends on the teachers and the methods used. Other reviewers stated that they have seen grades 5 and up that are pretty progressive and advanced by the end of the class. Teachers have to teach at a basic level and that remains a concern that it may be too advanced. Overall, the team felt that the project will provide substantial educational benefits to both the students in Harney County and those in Wilsonville and is ready for funding this grant cycle.

Regional Review Team Recommendation to Staff

Fund.

Regional Review Team Priority

2 of 2

Distribution of Recommended Award Amounts

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
			\$20,000.00

Staff Recommendation to the Board

Fund.

Staff Recommended Award

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
			\$20,000.00

Total Recommended Board Award

\$20,000.00

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5064	Project Type:	Education
Project Name:	Harney County Weed Board Weed Survey		
Applicant:	Harney WC		
Basin:	LAKES	County:	Harney
OWEB Request:	\$14,152.00	Total Cost:	\$19,627.00

Application Description

The Harney County Weed Control District is proposing to survey all landowners and managers in Harney County. The purpose of the survey is to help identify where specific weeds are located in Harney County. It will assist the Weed Control District to better utilize limited program and grant funds. The Weed Control District is proposing to mail a weed survey to all 3,702 mailing addresses in Harney County. This will include 2,412 surveys mailed to the more urban residents of Burns and Hines and 1,290 surveys mailed to rural residents of Drewsey, Crane, Riverside, Princeton, Diamond, Frenchglen and other small communities. The need for the survey was determined by the lack of knowledge that the Weed Program has of the types of noxious weeds and their acres present on private property. The survey will include specific questions for diffuse and spotted knapweed, yellow starthistle, Mediterranean sage, black henbane and perennial pepperweed. The Weed Control District also believes that many people are not aware of control options and the various educational events that they, and other partners, sponsor. The Cooperative Weed Management Area (CWMA) partners anticipate that the survey will provide an opportunity to educate landowners and are interested in knowing how to better reach them. It is intended to use the information gathered in the survey to provide educational material useful to landowners. Returned responses will help the Weed Control District know the location of targeted weeds.

Surveys will be mailed in April. A postcard to remind the landowner to return the survey will be sent one week later. In addition, follow-up phone interviews to 300 residents will occur two weeks after the initial survey is sent. The Harney County Weed Board (Weed Board) will provide contact information on the survey form for questions and assistance. When the surveys are returned, the Weed Board, Harney Watershed Council and OSU Extension will tabulate and enter the information into an Access database. Then the data will be analyzed and distributed to various partners. Information will help direct the weed program in Harney County to provide better weed and education resource materials. The final report will be posted on the Harney County web page and available as a PDF file. Presentations to nine different organizations with the survey results are anticipated.

OWEB funds are requested for project management (16%), in-house personnel (28%), postage (29%), printing (18%) and administration (9%). Cost-share partners are OSU Extension, Harney County Weed Control District, Burns BLM and the Harney Watershed Council.

REVIEW PROCESS

Regional Review Team Evaluation

This effort appears to be a good start to obtaining much-needed information regarding the location, distribution and severity of the noxious weed problem. Due to its large geographic size and small population, Harney County lacks the resources to develop a fully integrated weed management program. Information collected from the survey will assist the Weed Control District to target weed management activities. The survey is a preliminary start to collecting important information on where populations of significant noxious weeds are located.

The team felt that the project design as well as the survey letter needed improvement. Also, there was a target date of April to send out the survey letter, which would be premature for the grant cycle. The team questioned the follow-up rate on returned surveys. Some team members felt that only a 50 percent or less return rate would be feasible.

The team thought that a map showing the approximate location of the some of the targeted species would have been helpful. The team also felt that the zones were too large. Also, due to the large size of the ranches in the area, it would be difficult to determine where the infestations are located on those ranches without GPS or other more precise mapping capability. Also, it was stated that the returned surveys would probably include information on neighbors, but not necessarily on the individual ranch. After the survey is returned, then the Weed Board will do follow-up phone calls. The team felt that many individuals would not respond if they have caller ID, have unlisted cell phone numbers or no longer have a land line. It was questioned how reliable the information obtained would be, but also stated that this is the first step as part of a larger plan. Once the information is collected, what will the Weed Board do with it? What does the information really mean and is it reliable? If the majority of addresses are for the urban areas will this be the best way to determine weed locations? It was also stated that this was more to educate the Weed Board rather than the public.

While the team felt that there are potential benefits to this effort, it warrants further planning. The applicant needs to determine whether they are seeking more technical assistance in surveying actual sites or trying to educate the public. They may want to discuss their efforts first with another weed organization such as Tri-County Coordinated Weed Management Area (CWMA) in Baker City to help design a more focused effort. While the review team does not feel that the project is ready for funding this grant cycle, they encourage the applicant to continue and refine their efforts.

Regional Review Team Recommendation to Staff

Do Not Fund.

Staff Recommendation to the Board

Do Not Fund.

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5031	Project Type:	Monitoring
Project Name:	Grande Ronde Basin Stream Flow Gauging Stations Operations		
Applicant:	Grande Ronde Model WS Program		
Basin:	GRANDE RONDE	County:	Union
OWEB Request:	\$74,965.00	Total Cost:	\$197,585.00

Application Description

The Grande Ronde Model Watershed (GRMW) is proposing to continue monitoring 12 streamflow gauges throughout Union and Wallowa counties. There are five gauges in Wallowa County including Bear Creek near Wallowa, two on the Lostine River and two on the Wallowa River both near Enterprise and below Water Canyon where flows exit the system. There are seven gauges in Union County including below Clear Creek, two in the Meadow Creek area near Starkey, Five Points at Hilgard, North Fork Catherine Creek near Medical Springs, Catherine Creek at Union and Grande Ronde River near Perry.

The project continues the operation, maintenance, record production and review of the twelve gauges in the Grande Ronde basin. The project intends to produce the highest quality data possible achieved through a production partnership between GRMW and Oregon Water Resources Department (OWRD). OWRD will complete all work under contract with the GRMW. The U.S. Geological Survey (USGS) who previously participated in data collection will no longer be a production partner, and OWRD will be taking over those responsibilities at a reduced cost in Wallowa County. OWRD now has the ability to post near real-time flow data on their website also eliminating the need for this service from USGS.

Flow data is used to assist irrigation water management (IWM) for both irrigators and OWRD as well as for local tribes, ODFW, SWCDs and other entities. The flow data will be used as well for conservation project development and to correlate existing and ongoing atmospheric data. Flow data will also be used for basin-wide management plans to determine cumulative effects response to conservation including TMDLs, SB1010, forest plans, the Grande Ronde Subbasin Plan and agency action plans. In addition, five U.S. Forest Service (USFS) gauges characterize hydrographs for long-term monitoring of management activities on streamflow. Quality assurance/quality control (QA/QC) includes duplicate flow measurements; peer review of provisional flows records and final records; duplicate electronic and paper copies of raw and final data and periodic survey of known elevation control points correlated with state-measuring device. OWRD staff hydrologists will conduct all data collection and QA/QC.

OWEB funds are requested for project management (8%), contracted services (83%) and administration (9%). Cost-share partners include Bonneville Power Administration and the USFS.

REVIEW PROCESS

Regional Review Team Evaluation

This project has been ongoing since 1997 through OWEB (then GWEB) and will continue the maintenance, review, production of the operations of the identified streamflow gauging stations. OWRD will assume the management of some of the stations. There is a long-term need for the collected data and it is critical for various project designs. Gauges are located strategically throughout the Grande Ronde basin to characterize the basin as whole and provide some interesting comparisons. Most of the cost-share is provided by BPA with some contribution from the USFS La Grande Ranger District.

The information provides an important data set used by many groups and stakeholders. There is substantial benefit in maintaining gauges for consistent data which is very valuable. An interruption of the data collections would be detrimental for various management purposes as consistent data for data sets and use by others in their project planning would be lost. Data collected is used by various fisheries managers as well as OWRD for irrigation management. Some stations have been collecting data for 100 years. The applicant has previously prioritized essential gauging stations and closed some stations that were not providing critical data a few years ago. There are benchmark stations going back to 1910 and have the longest term dataset value. Overall, the team felt that this positive effort should continue to be funded by OWEB.

Regional Review Team Recommendation to Staff

Fund Reduced.

Regional Review Team Priority

1 of 3

Distribution of Recommended Award Amounts

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
			\$72,715.00

Staff Recommendation to the Board

Because OWEB lacks sufficient available 2009-2011 non-capital funding to meet the Board’s non-capital funding target in March, staff recommends the Board award funds at its June Board meeting dependent on OWEB’s 2011-2013 budget. At that time, staff would recommend Fund Reduced. Remove the office manager portion in project management by \$2,250 since that is part of fiscal administration.

Staff Recommended Award

Capital Amount	EM Portion	PE Portion	Non-Capital Amount

Total Recommended Board Award

\$ 0.00

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5046	Project Type:	Monitoring
Project Name:	Warm Springs Irrigation District: Prioritizing WQ Improvement Projects		
Applicant:	Malheur SWCD		
Basin:	OWYHEE-MALHEUR	County:	Malheur
OWEB Request:	\$22,500.00	Total Cost:	\$107,855.00

Application Description

The lower Malheur River flows through northern Malheur County and enters the Snake River at Ontario. The lower Malheur is 303(d) listed for toxics, chlorophyll a and bacteria by DEQ. Bully Creek and Willow Creek, both listed for chlorophyll a and bacteria, drain into the Malheur near Vale. In addition, the Snake River TMDL (2004) requires an (87%) reduction in total phosphorous load to the Snake River from the Malheur. Phosphorous mainly enters the Malheur adsorbed to soil particles released by irrigation-induced erosion. This portion of Malheur County is also part of the designated Groundwater Management Area. The Malheur basin TMDL, finalized in September 2010, focuses on reducing phosphorus, sediment and *E. coli* in irrigation water in the lower Malheur River System. This portion of Malheur County is heavily agricultural with approximately 143,000 mostly furrow-irrigated acres served primarily by Vale-Oregon (VOID), Owyhee (OID) and Warm Springs (WSID) Irrigation Districts.

WSID serves 20,000 plus acres along the Malheur River along the lowest stretches of Bully and Willow Creek. Water delivered to WSID is from the Warm Springs Reservoir via the Malheur River and from a complex system of tailwater from VOID and OID drains. Tailwater from Warm Springs ID drains into the Malheur River, Bully Creek and Willow Creek via 20 drains and is part of the irrigation water supplied to farmers.

Malheur SWCD has been monitoring over 30 agricultural drains monthly since 2002. However, only four drains sampled are located in the WSID. The applicant will monitor 20 additional drains semi-monthly in the WSID. Parameters to be monitored include *E. coli*, nitrates, nitrites, TKN, total ortho phosphorous, total suspended solids and flow measurements using DEQ 319 funds. In addition, they will determine priority drainage basins based on water quality data and basin delineation. The monitoring data will serve as a baseline for future trends and effectiveness monitoring as irrigation improvement projects are implemented.

DEQ has also approved a proposal to map the WSID drainage basins and collect water quality from 40 locations in 2011. Funding for data analysis was originally anticipated from the Bureau of Reclamation (BOR). However, subsequent to the 319 deadline, BOR informed Malheur SWCD that there were insufficient funds to perform the analysis, but that they would analyze the data if alternative funding was obtained.

OWEB funds are requested for contracted services to analyze the water quality samples (98%) and administration (2%). Cost-share partners include the WSID, VOID, OID, Malheur SWCD, DEQ 319 and ODA.

REVIEW PROCESS

Regional Review Team Evaluation

The application was well written and complements the ongoing agricultural drain monitoring project. Prior to the review, the applicant successfully obtained additional funds and reduced the amount of their request to

\$16,159. By using DEQ funds, the agricultural drain monitoring effort in the Malheur basin is greatly enhanced. There is a significant amount of tailwater from the VOID. By including the WSID drains in the monitoring, managers will be able to prioritize restoration opportunities.

Having WSID participate in the agricultural drain monitoring effort is positive as that irrigation district has not been as proactive as the other Malheur County irrigation districts. The project will provide the information that WSID needs to determine the water budget. There is a significant problem with sediment movement and sediment loads. However, there is no clear delineation where the water is coming from and who is contributing to the flow into the drain. This will help provide the information and prioritize needs. Prior monitoring efforts by the Malheur SWCD have led to excellent restoration projects and the team anticipates that will continue with this effort. Data collected should also help to prioritize future projects. The team was very supportive of this effort and recommended it for funding this grant cycle.

Regional Review Team Recommendation to Staff

Fund Reduced.

Regional Review Team Priority

2 of 3

Distribution of Recommended Award Amounts

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
			\$16,159.00

Staff Recommendation to the Board

Because OWEB lacks sufficient available 2009-2011 non-capital funding to meet the Board’s non-capital funding target in March, staff recommends the Board award funds at its June Board meeting dependent on OWEB’s 2011-2013 budget. At that time, staff would recommend Fund Reduced.

Staff Recommended Award

Capital Amount	EM Portion	PE Portion	Non-Capital Amount

Total Recommended Board Award

\$ 0.00

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5050	Project Type:	Monitoring
Project Name:	Snake River/Hells Canyon TMDL Agriculture Drain Monitoring, Phase 4 and Report		
Applicant:	Malheur SWCD		
Basin:	OWYHEE-MALHEUR	County:	Malheur
OWEB Request:	\$93,335.00	Total Cost:	\$161,688.00

Application Description

Agricultural drains in Malheur County contribute to impaired water quality in the Malheur basin and to the high TMDL numbers. Identifying the drains that are the largest contributor of poor water quality has relied on data collected that showed only the concentration of nutrients and sediment in the water. The Malheur SWCD (SWCD) is proposing to monitor 26 drain sites on 21 drains for nitrates/nitrites, ortho-phosphorous, total phosphorous, *E. coli*, pH, total suspended solids, turbidity and flow volume. Flow data will show the total pounds of nutrients that are deposited in each drain and subsequently end up in the Snake River.

There are approximately 230,000 acres of irrigated agriculture in northern Malheur County that drain into the Snake River. Since 2002, the Malheur SWCD has been sampling the 21 drains. However, none of the drain data has been formally analyzed and tabulated. The data has been housed at the SWCD as well as stored at DEQ. The applicant is proposing to link all the drainage data collected since 2002 into a GIS database. ODA's GIS analyst will assist with this process. Once in the database, SWCD staff will generate maps to help analyze data and make recommendations for future monitoring. ODA staff will help analyze data and prepare a monitoring report that includes background, methods, results, conclusions and recommendations for future monitoring. The information will be used by the SWCD and its conservation partners - irrigation districts and watershed councils - to develop a strategic water quality monitoring plan for northern Malheur County. It will help resource managers to allocate funding to sites with the greatest need and positive impact on water quality.

OWEB funds are requested for salary (83%), travel (7%), supplies (1%) and administration (9%). Participating partners include Owyhee, Vale, Warm Springs and South Board of Control Irrigation Districts.

REVIEW PROCESS

Regional Review Team Evaluation

This would be the fourth time funded by OWEB. Data collected previously helped the Owyhee Watershed Council, Malheur Watershed Council and Malheur SWCD prioritize and implement restoration projects by ascertaining areas of impaired water quality. Adding flow data will further enhance this monitoring effort and is an important part of the analysis. This effort helps to successfully track the progress of restoration projects.

This area has very high phosphorus and the data collected is essential as part of the overall TMDL monitoring. The data is collected effectively and is good quality. However, previously collected data from any specific drain and comparative analysis between drains was difficult to do as there was insufficient staff time. Linking the drainage data collected into a GIS database will facilitate a systematic approach for project managers to identify high priority projects. In addition, they will be able to have additional overlay of other factors such as crop type, irrigation methods or other factors.

There was a question regarding the number of years that data collection is needed and stated that the amount of data collected to date is insufficient to make comparative analysis or draw relevant conclusions. Current data needs to be collected and analyzed with previous collected data. Three years of data is too limited given the significant changes in crop types that have occurred over the last few years, which makes analysis much more complicated today. A different skill set is needed including GIS with a statistical background in order to obtain a thorough analysis. This analysis typically cannot be done with personnel who only have monitoring expertise Overall the team felt that this is an important effort to continue to monitor and is ready for funding this grant cycle.

Regional Review Team Recommendation to Staff

Fund.

Regional Review Team Priority

3 of 3

Distribution of Recommended Award Amounts

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
			\$93,335.00

Staff Recommendation to the Board

Because OWEB lacks sufficient available 2009-2011 non-capital funding to meet the Board’s non-capital funding target in March, staff recommends the Board award funds at its June Board meeting dependent on OWEB’s 2011-2013 budget.

Staff Recommended Award

Capital Amount	EM Portion	PE Portion	Non-Capital Amount

Total Recommended Board Award

\$ 0.00

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5058	Project Type:	Monitoring
Project Name:	Powder Basin Monitoring Program - Pilot Project		
Applicant:	Powder Basin WC		
Basin:	POWDER	County:	Baker
OWEB Request:	\$33,942.00	Total Cost:	\$74,659.00

Application Description

The Powder Basin Watershed Council (PBWC) is seeking funds to begin monitoring in the Powder Basin. There is water quality data on public land collected by the USFS and BLM. However, there are extensive data gaps in private, local and state lands. All monitoring data in this basin is independent and generally not summarized into a usable format. PBWC is proposing a two-year volunteer monitoring program working collaboratively with local, federal and state agencies. The project will serve as a pilot to begin a long-term monitoring effort for the basin. PBWC's main goal is to engage stakeholders in a productive monitoring project and help them understand the importance of their watershed and encourage future stewardship. The second goal is to obtain relevant quality assurance/quality control (QA/QC) approved watershed condition data by stakeholders in the basin.

Many reaches of the Powder and its tributaries are listed as "impaired" for temperature, dissolved oxygen and sediment on DEQ's 2004/2006 Integrated 303(d) Report. During PBWC's Strategic Planning effort in 2010, the council identified two points including ways to engage stakeholders in "on-the-ground" activities and objective information to identify restoration needs that require action on a grassroots level. In order to meet those concerns, PBWC decided to engage stakeholders in monitoring their watersheds. The goal of this long-term program is to provide objective credible data to decision makers in the Powder Basin and engage stakeholders in monitoring their watersheds.

PBWC proposes to collect data at 25 stations. Water quality data will be collected at 10 locations including 7-day maximum water temperature, dissolved oxygen, pH, conductivity and turbidity. At all 25 stations, volunteers will seasonally photo monitor stream channel, streambank and riparian vegetation conditions. All data will be collected to meet DEQ's protocol to incorporate into future TMDL analyses. Monitoring objectives will target PBWC's restoration goals of evaluating progress towards environmental benchmarks, address parameters limiting to watershed function; identify trends in habitat conditions, plan strategically for prioritizing instream and riparian projects and ascertain how to best coordinate a monitoring program that ensure a sustainable, cooperative program covering the entire Powder Basin.

OWEB funds are requested for project management – monitoring coordinator (44%), in-house personnel (4%), contracted services (5%), travel-mileage (12%), supplies/equipment (22%), printing (3%) and administration (9%). Cost-share partners include DEQ, monitoring volunteers, BLM and PBWC.

REVIEW PROCESS

Regional Review Team Evaluation

The team felt that this was a positive step for the PBWC. The education and stewardship focus of the proposal are also positive and the application appeared to be well rounded. PBWC developed this project from their strategic monitoring session which is very positive. The monitoring would also engage stakeholders in the TMDL process that DEQ is starting in the Powder. The monitoring parameters chosen would be very informative to the TMDL.

However, the team had many questions on the project. It did not seem like the volunteers were identified. If they are not identified, then how was the mileage rate determined? Also, it was not clear how the information would go back to the stakeholders. Winter photo points would not seem useful. The team also questioned if there was a plan for long-term funding. The budget for equipment was not clear and confusing.

It was not clear from the map where the monitoring sites are located and if these sites are ones where monitoring is “permitted” or convenient versus sites most critical for measurements. The team would like to see the actual monitoring locations depicted on a better map. It was also stated that DEQ will not provide any equipment without a monitoring plan. However, the plan does not seem to be developed yet at this time. A future monitoring plan will include the actual sites. Also, the team felt that 10 hours per week to coordinate this activity may be insufficient. The team had positive comments on the proposed project, but felt that funding it at this time was premature. There are many questions that need to be answered including monitoring locations, access to the sites, volunteers, parameters included in the monitoring and others. Considerable coordination with the landowners needs to occur first in order to gain their trust. The project is not ready for funding this grant cycle.

Regional Review Team Recommendation to Staff

Do Not Fund.

Staff Recommendation to the Board

Do Not Fund.

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5032	Project Type:	Restoration
Project Name:	A Smull Buncha Bloomin' Juniper Bank Stabilization		
Applicant:	Burnt River SWCD		
Basin:	POWDER	County:	Baker
OWEB Request:	\$57,440.00	Total Cost:	\$76,700.00

Application Description

Located in Baker County between river mile (RM) 27 and 28 near Durkee, the Burnt SWCD is proposing to stabilize 3,000 feet of the Burnt River with juniper riprap. In the irrigated farmland along the Burnt River, there are several sections of stream sloughing off and depositing large amounts of sediment into the Burnt River adversely affecting water quality. Burnt SWCD has installed several juniper riprap stabilization projects over the last several years which have successfully stabilized and vegetated stretches of the Burnt River. The Burnt watershed, with over 700,000 acres, is comprised of forested uplands in the higher elevations; juniper-invaded sagebrush-grass rangelands at mid-elevations and lower elevations bottomlands are gently sloped and typically irrigated agriculture producing wild grass hay, alfalfa hay and pasture. Unity Reservoir, upstream at RM 77, has significant impact on the river below the dam. The reservoir's capacity is not sufficient to control all flooding and several high-water events caused severe bank erosion. The periodic high-flow events have a devastating effect on streambank stability in this system.

Burnt SWCD is proposing to install 500 feet of juniper structures on the Bloomer property; 1,500 feet on the Smull property and 1,000 feet of juniper structures on the Bunch property. Previously, for every 1,000 feet of juniper bank stabilization, approximately 100 large juniper trees are needed for every 1,000 feet or about 300 large juniper trees for 3,000 feet of treatment for this project. Currently, juniper stocking rates are 250 to 300 trees per acre throughout the treatment area. In addition, 190 willow clumps will be installed over the three properties and 50 acres of juniper harvested with a chainsaw. Grass seeding on 20 acres will be spread on disturbed sites at a rate of 15 pounds per acre. Before juniper trees are installed, the banks will be excavated and willow clumps with the roots placed below the low-water mark to ensure that the roots will be continually moist. Willow clumps are placed below the juniper to protect the willows from wildlife and livestock browsing. Juniper are placed over willow clumps and onto the streambank with the base end in the air. Juniper are overlapped to prevent water washing around the structures and into the bank which could erode more soil.

Proper grazing management, willow establishment, and juniper riprap will help stabilize these areas, minimizing the amount of sediment entering the stream. Watershed benefits include improved water quality, plant diversity, riparian vegetation, and wildlife habitat and stabilization of at-risk streambanks.

OWEB funds are requested for project management (2%), contracted services (88%), supplies/materials (4%) and administration (5%). Cost-share partners include ODA, Burnt SWCD and the landowners.

The proposed project has a direct relationship with OWEB's basin priorities for the lower Burnt and addresses riparian/floodplain, altered habitat structure, bacterial input, and altered thermal and sediment regimes. Practices complement the goals stated in the *Burnt River/Brownlee Agricultural Water Quality Management Plan* (2003).

REVIEW PROCESS

Regional Review Team Evaluation

This practice has been proven in the Burnt River and is a fairly inexpensive treatment for bank stabilization. It is far superior to rock riprap from an environmental perspective. Farther upstream in the Hereford area, the juniper riprap project had positive results with excellent revegetation and stabilized banks. Burnt SWCD in conjunction with ODA studied the juniper riprap projects in 2006. The juniper riprap was shown to dissipate considerable stream energy with a desirable bankslope achieved after a certain time period. The willows fill in at the base of the juniper riprap and provide additional stream shading as well as riparian vegetation and habitat for many aquatic and avian species.

Some of the team members visited the site prior to the OWEB meeting. They questioned if bank shaping was needed. At the site visit it was stated that in some cases the lip of the streambank may need to be removed. The need for fencing was also questioned and stated that the juniper riprap on the upper Burnt was not fenced and vegetation recovered well without it. Also, landowner agreements will require maintenance of the structures including replacing juniper and replanting willows if needed. Overall, the team felt that the project has positive watershed benefits by improving water quality, streambank conditions, riparian and upland vegetation and wildlife habitat. There are substantial watershed benefits to warrant funding this grant cycle.

The review team questioned whether DSL permits may be needed for this project and urged the applicant to confirm whether the project is exempt under DSL's rules or requires permits. Under OWEB requirements, funding cannot be released until required permits are obtained.

Ecosystem Process and Function

Stabilizing the streambanks will eliminate erosion and sediment input to the Burnt River and will improve water quality. Riparian and upland vegetative conditions will also be improved. The project will improve wildlife habitat.

Regional Review Team Recommendation to Staff

Fund with Conditions. Provide a long-term juniper management plan with the final project completion report.

Regional Review Team Priority

7 of 17

Distribution of Recommended Award Amounts

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$57,440.00			

Staff Recommendation to the Board

Fund with Conditions. The grant agreement will require the applicant to submit a long-term juniper management plan with the final project completion report, and will require the applicant to determine whether the project is exempt under DSL rules, and if so, follow the DSL exemption notice rules.

Staff Recommended Award

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$57,440.00			

Total Recommended Board Award

\$57,440.00

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5033	Project Type:	Restoration
Project Name:	Rock Creek Riparian Restoration		
Applicant:	Baker Valley SWCD		
Basin:	POWDER	County:	Baker
OWEB Request:	\$8,118.00	Total Cost:	\$16,282.00

Application Description

The project is located on Rock Creek, west of Haines on the Anthony Lake Highway. This section of the creek has been used as a water gap. Since it is the only current water source, livestock access results in increased erosion, lack of sufficient riparian vegetation and sediment input into Rock Creek. Rock Creek was listed as proposed bull trout habitat for the Powder River basin in 2010 by USFWS. Rock Creek is also on DEQ's 303(d) list for sediment, temperature dissolved oxygen, flow modifications, pH and phosphates. ODA conducted a "greenline survey" which indicated 100 percent bare ground, 85 percent tree cover comprised of 7 to 10 existing medium to large-diameter willow and no young willow recruits. To improve the riparian conditions, the applicant proposes to install 500 feet of five-strand, barbed-wire fence; two 16-foot gates; four frost-free Ritchie ball troughs placed on concrete pads; 350 feet of pipe to service the troughs; 20 to 30 willow clumps; 50 to 70 willow cuttings and 12 to 15 pounds of grass seed spread throughout the disturbed areas to prevent weed infestation. Watershed benefits include improved water quality, riparian habitat and vegetation and critical wildlife habitat.

Cost-share partners include the landowner, Baker SWCD and ODA. OWEB funds are requested for project management (2%), contracted services (71%), fencing (12%) and administration (6%).

Project implementation addresses the *Oregon Conservation Strategy* that identifies bull trout as a Strategy Species and Freshwater Aquatic Habitat listed as a strategy habitat. The project also follows the *Powder River Agricultural Water Quality Management Plan* as water quality, temperature and habitat complexity will all be improved. The proposed project has a direct relationship with OWEB's basin priorities for the Powder and addresses riparian/floodplain issues, altered habitat structure, inputs of bacteria and altered thermal and sediment regimes.

REVIEW PROCESS

Regional Review Team Evaluation

Some team members were familiar with this project site. There are high bacteria numbers in this area of Rock Creek. The project is a fairly small request with a straightforward remedy to fix the problem. Implementation should result in a quick recovery to Rock Creek. The landowner has already done some improvements and these should complete the restoration effort.

The project had very low overhead and has significant potential watershed benefit. The team felt that there is significant ecological merit, and it is ready for funding this grant cycle.

Ecosystem Process and Function

By eliminating livestock access to the stream, erosion and sediment input to Rock Creek and the nearby Powder River will be significantly reduced. Riparian and upland vegetative conditions will be improved. The project will improve water quality and wildlife habitat.

Regional Review Team Recommendation to Staff

Fund.

Regional Review Team Priority

3 of 17

Distribution of Recommended Award Amounts

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$8,118.00			

Staff Recommendation to the Board

Fund.

Staff Recommended Award

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$8,118.00			

Total Recommended Board Award

\$8,118.00

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5034	Project Type:	Restoration
Project Name:	Smith Ditch Water Delivery Improvement Project Phase I		
Applicant:	Baker Valley SWCD		
Basin:	POWDER	County:	Baker
OWEB Request:	\$629,000.00	Total Cost:	\$4,264,000.00

Application Description

Smith Ditch beginning at river mile (RM) 120.8, located near Baker City, is approximately 20 miles long and provides Powder River water to 21 landowners irrigating 2,230 acres of cropland. The 102-year-old ditch has significant seepage and evaporative water loss. It has also failed several times, most recently in 2003 when it flooded a section of Baker City. Other failures deposited thousands of cubic yards of sediment into the Powder River, adversely affecting water quality. The diversion structure is unscreened and does not meet current fish passage requirements. Water users currently divert up to 63 cubic feet per second (cfs), but due to ditch loss receive approximately 30 cfs. The recent OWEB funded technical assistance grant (209-5093) indicated that by piping the ditch and eliminating water loss, 1.2 billion gallons of water annually would be available for other irrigation or left instream for fisheries and wildlife benefits.

The proposed solution is to pipe the entire ditch in a different location and replace the existing diversion with a structure meeting current fish passage and screening standards. The new pipeline will shorten the length of the system by 2.1 miles. However, due to the large overall cost of piping the entire ditch, the SWCD proposes to implement the project in three phases. Phase 1 would install 14,650 of 54-inch medium pressure plastic pipe; 1,400 feet of 54-inch lined and coated steel pipe; 1,200 feet of 8-inch PVC and 750 feet of 4-inch PVC. Disturbed areas will be seeded with a NRCS approved mix. Watershed benefits include improved water quality, quantity, instream habitat and fisheries habitat.

OWEB funds are requested for project management (59%), engineering (40%) and administration (1%). Cost-share partners include the Smith Ditch Improvement Company, USFWS, ODFW, Bureau of Reclamation (BOR), City of Baker City, Baker County, ODOT, NRCS and Baker Valley SWCD.

Implementation follows the *Oregon Conservation Strategy* that lists bull trout as a Strategy Species and Freshwater Aquatic Habitat listed as a Strategy Habitat. Improving water quality in this stretch of the Powder River can potentially benefit bull trout and redband trout by increasing the amount of available habitat that meets their life history needs. Improving water quality and quantity also addresses the *Powder River Agricultural Water Quality Management Plan* and the *USFWS Bull Trout Recovery Plan*.

REVIEW PROCESS

Regional Review Team Evaluation

The Baker SWCD and an engineer from Anderson-Perry took some of the team members on a tour of the proposed project prior to the meeting. All agreed that the current ditch configuration results in significant evaporative and seepage loss and piping the ditch will provide significant watershed benefits. The project is a huge endeavor for the SWCD and local community to address, especially given the overall total project cost which is several million dollars. There is widespread support for the project from the local community, agencies and organizations. In addition to water and habitat impairment, ditch failure is a major public safety issue. OWRD has researched all the water rights and provided the SWCD with the data. There are no rights older than 1905-06 timeframe.

When the budget was originally submitted to OWEB, a majority of the requested funds was non-capital as the SWCD was seeking implementation funds from BOR and NRCS. Prior to the meeting, the applicant provided OWEB with a revised budget requesting capital funds. The applicant was concerned that other funding entities would not pay permitting, design or construction oversight and, therefore, requested those funds primarily from OWEB. However, OWEB would not be able to fund the project if the request was all non-capital, due to insufficient available funds. Under Measure 66, non-capital funds are the most limited, and are particularly limited at the end of a biennium.

While the team was very supportive of the overall concept, it seemed that significant detail was missing from the application. Since this is a high-dollar request, having a detailed list of alternatives and the costs of those alternatives is essential to more thoroughly review the application. One alternative is to move the point of diversion further downstream on the Powder and then pump the water into a pipe from that location. This would reduce the overall length of the pipeline. However, it was stated that those pumping costs were prohibitive. More information about how much the pumping costs are and the reasons why they are prohibitive, compared to the costs of the chosen alternative, needs to be provided so that the team can be apprised of all the alternatives. More detail on why other alternatives were not chosen would also be beneficial. Also, a map depicting only Phase 1 would have been less confusing than showing the entire proposed pipeline.

The engineering cost seems very high. However, the entire pipeline needs to have the engineering completed even if the project is phased. The previous technical assistance grant was able to produce preliminary designs only. The SWCD requested very minimal administration and will also provide significant contribution to the project, which was very positive. Given the significant cost, the team felt that a portion of the water savings needs to remain instream for fisheries and other aquatic resources. A water budget would need to be made to clearly ascertain what the savings would be as some of the seepage loss does end up being used by other irrigators. It would be helpful if there is an estimate of what potential savings might be. Providing fish passage at the point of diversion has significant fisheries benefits.

While the team agreed this project can potentially provide significant watershed benefits, more detail in a future application addressing alternatives, costs and the potential instream water savings is needed. If resubmitted, a future application should also better describe whether the engineering cost is for Phase 1 or all three phases (e.g., is it design only, or does it include project management?); and clarify whether the AWEP funding is for Phase 3. It is not ready for funding this grant cycle.

Regional Review Team Recommendation to Staff

Do Not Fund.

Staff Recommendation to the Board

Do Not Fund.

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5036	Project Type:	Restoration
Project Name:	Upper Grande Ronde Invasive Weed Control		
Applicant:	Tri-County Coop Weed Management Area		
Basin:	GRANDE RONDE	County:	Union
OWEB Request:	\$40,000.00	Total Cost:	\$149,000.00

Application Description

The Upper Grande Ronde Invasive Weed Control Program focuses on the treatment of leafy spurge, spotted knapweed, yellow starthistle and meadow hawkweed. Targeted weeds are located throughout Union County from Starkey to Elgin. Tri-County Cooperative Weed Management Areas (CWMA) seeks to protect and preserve the lands and resources in the tri-county area from the degrading impacts of exotic, invasive and noxious weeds. Historically, upland areas in the Grande Ronde basin have been dominated by bluebunch wheatgrass and Idaho fescue growing in shallow to moderately deep silt loams over clay and bedrock.

Noxious weeds, which are very shallow-rooted, displace native vegetation resulting in overland flow, increased runoff and sediment. Wildlife habitat is also negatively affected as forage and seed opportunities decline. Project components include biological control agents for spurge, starthistle and knapweed on approximately 2,000 acres. Planned herbicide treatments include Milestone™, Plateau™, and Transline™. Proposed seed composition will include bluebunch wheatgrass, Great Basin wildrye, Idaho fescue, Sherman big blue, intermediate wheatgrass, Siberian wheatgrass, yarrow and small burnett. CWMA monitors treatment sites up to five years to document success, native seed establishment, necessary follow-up treatment and to collect data for photo surveys, plot surveys and mapping records. Watershed benefits include improved native vegetation, upland and riparian habitat, and infiltration since native plants provide more complex root structure.

OWEB funds are requested for project management contracted services (51%), in-house personnel (13%), materials (18%) and administration (9%). The landowners will provide the installation and rock. Cost-share partners include Union County, USFS, ODFW, BLM, Grande Ronde Model Watershed Program and the Oregon State Weed Board

The *Grande Ronde Subbasin Plan* lists as an objective implementing an integrated noxious weed management program including survey, prevention, education, treatment and revegetation. Invasive species are prioritized as “Moderate Impact” by the OWEB Restoration Priorities. Erosion is a secondary impact of invasive species and considered high risk to aquatic habitat. The *Oregon Conservation Strategy* (2006) lists the Upper Grande Ronde Weed Control Project’s entire target weed list as “invasive species currently considered to be the primary causes of species becoming threatened or endangered”.

REVIEW PROCESS

Regional Review Team Evaluation

This effort has been funded previously and had positive review by the team. The focus for the CWMA’s efforts is specific weeds having the greatest potential for significant environmental degradation. Those weeds are also targeted in certain geographic areas. Having the participating landowners already identified in a noxious weed effort reflects an organization more strategic in its approach. It is evident that the applicant spent considerable coordination between various entities, agencies and private landowners. The CWMA has been doing good work across the landscape for a long time. The team was impressed with the

quality of the application. The applicant provided the recommended herbicide, application rate and schedule for each target species for both upland and riparian applications. In addition, there were good maps and excellent before and after photos from previous treatments attached.

The team would like to see more landowner contribution in future applications since they are utilizing the forage. There are opportunity costs from the landowners that are not articulated which would increase the cost-share. The team also noted they would have liked to see a cost breakout in the budget rather than a lump sum. Overall, the team felt that his project has high ecological merits and is a well-coordinated effort. It is ready for funding this grant cycle.

Ecosystem Process and Function

Treating noxious weeds and reestablishing the sites with native grasses will significantly reduce soil erosion that annually contributes tons of sediment into the Grande Ronde River. In addition, improved vegetation will enhance habitat for a variety of wildlife.

Regional Review Team Recommendation to Staff

Fund.

Regional Review Team Priority

4 of 17

Distribution of Recommended Award Amounts

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$40,000.00			

Staff Recommendation to the Board

Fund.

Staff Recommended Award

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$40,000.00			

Total Recommended Board Award

\$40,000.00

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5037	Project Type:	Restoration
Project Name:	Charmin Water Quality Project		
Applicant:	Owyhee WC		
Basin:	OWYHEE-MALHEUR	County:	Malheur
OWEB Request:	\$42,667.00	Total Cost:	\$112,831.00

Application Description

Located nine miles northwest of Adrian, Owyhee WC is proposing to convert 61 acres from furrow-flood irrigation to sprinkler-pivot. The field is planted to various row crops including alfalfa, corn, sugar beets, potatoes, and others with the rows running perpendicular to the drain accelerating the erosion rate. The property is split in half by the drain with slopes of 2 to 8 percent. The open-ditch delivery system results in water loss of 30% from evaporation and seepage. Currently, excess runoff flows into the 301 drain that reaches the lower Owyhee River. Based on the 2-8 percent slopes of the fields, soil loss is estimated at approximately 15 tons per acre per year or over 915 tons of sediment annually from this farm. Water quality standards for phosphorus in the Mid-Snake TMDL are set at 0.07mg/L.

The project proposes to install 1,300 feet of 8-inch mainline to replace gated pipe and cement ditch to provide pressurized gravity flow and 2,360 feet of 12-inch pipe to convert an open drain to pipe. A 1,227-foot Zimmatic™ pivot will be installed. Pivots will use 25 percent less water than the current furrow irrigation.

OWEB funds are requested for project management (4%), materials - pipe, bubblers, pumps (76%) and administration (9%). The landowner is the cost-share partner.

Implementation addresses the *Owyhee Subbasin Plan* (2004) by reducing sediment and improving water quality; the *Owyhee Agricultural Water Quality Management Plan* (2003) which suggests practices that include irrigation water management and conversion from furrow irrigation to sprinklers; the *Mid-Snake-Succor Creek TMDL* that also addresses converting from furrow irrigation to sprinklers to reduce sediment, nutrient and phosphorous and it addresses the *Lower Owyhee Assessment* (2007).

REVIEW PROCESS

Regional Review Team Evaluation

The team agreed that this project would provide significant water quality benefits as it continues the effort in the Owyhee basin to address irrigation-induced erosion and sediment loss. Growing corn on steeper slopes creates significant excess runoff. Under the current irrigation configuration, corrugate rows run perpendicular to the drain which increases the erosion rate. Converting from flood to sprinkler will significantly help to ameliorate the runoff and will facilitate contour plowing. This project complements several other recently implemented projects in the Owyhee basin. The project follows and implements several plans including two TMDL's with significant reductions in sediment transport.

The corners of the field will most likely be covered by other type of sprinkler system. The applicant will need to provide evidence of a water right transfer from the Owyhee Irrigation District (OID) to ensure that the correct acres are under the water right once the pivot is installed. If the water right will not be used, OID can do a transfer. Implementation continues the water quality improvement work in the Malheur and Owyhee basins.

The team noted that the budget is solid and includes good cost share. This type of project is a high priority in the lower Owyhee basin. There is significant ecological merit to warrant funding this grant cycle.

Ecosystem Process and Function

Implementation of efficient irrigation systems will minimize erosion, reduce transport of farm chemicals to the Owyhee River, improve water quality, and address limited water availability. The project addresses irrigation-induced erosion caused by furrow irrigation.

Regional Review Team Recommendation to Staff

Fund with Conditions. Provide a copy of the water right transfer - if needed - with the final project completion report.

Regional Review Team Priority

8 of 17

Distribution of Recommended Award Amounts

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$42,667.00			

Staff Recommendation to the Board

Fund with Conditions. Provide a copy of the water right transfer - if needed - with the final project completion report.

Staff Recommended Award

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$42,667.00			

Total Recommended Board Award

\$42,667.00

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5038	Project Type:	Restoration
Project Name:	Chalk Butte Water Quality		
Applicant:	Owyhee WC		
Basin:	OWYHEE-MALHEUR	County:	Malheur
OWEB Request:	\$23,345.00	Total Cost:	\$79,039.00

Application Description

Located 13 miles northwest of Adrian, Owyhee Watershed Council (OWC) is proposing to convert 69 acres of an 80 acre field from furrow-flood irrigation to sprinkler-pivot. The field is planted to corn and sorghum with the rows running perpendicular to the drain accelerating the erosion rate. The 5 to 8 percent sloped property, which is below the North Canal, is split in half by the 304 drain. An open-ditch delivery system results in water loss of 30% from evaporation and seepage. Excess runoff flows into the 304 drain that reaches the Old Owyhee Canal, the Malheur River and ultimately enters the Snake River. Based on the 5-8 percent slopes of the fields, soil loss is estimated at approximately 10 to 15 tons per acre per year or over 1,200 tons of sediment annually from this farm. Currently, the west and north ends of the field are irrigated with gated pipe and the south end by the cement ditch. In the past, a cement ditch encompassed the outer perimeter that is now irrigated with gated pipe. The field has eroded to 4 feet below the lip of the cement ditch and 2 feet below the cement ditch on the south end, indicating the amount of erosion that has occurred over the last several years. Monitoring from 2009 of this drain indicated that 41 tons of nitrogen, 4 tons of phosphorous and 6,142 tons of total suspended solids flow from it to the Old Owyhee Canal. Water quality standards for phosphorus in the Mid-Snake TMDL are set at 0.07mg/L.

The project proposes to install 1,340 feet of 8-inch mainline replacing gated pipe and a cement ditch and a 924-foot Zimmatic™ pivot. Pivots will use 25 percent less water than the current furrow irrigation. The remaining 11 acres not covered by the pivot will be irrigated with big guns.

OWEB funds are requested for project management (2%), contracted services (12%), materials - pipe, bubblers, pumps (76%) and administration (9%). The landowner is the cost-share partner.

Implementation addresses the *Owyhee Subbasin Plan* (2004) by reducing sediment and improving water quality; the *Owyhee Agricultural Water Quality Management Plan* (2003) which suggests practices that include irrigation water management and conversion from furrow irrigation to sprinklers; the *Mid-Snake-Succor Creek TMDL* that also addresses converting from furrow irrigation to sprinklers to reduce sediment, nutrient and phosphorous and it also addresses the *Lower Owyhee Assessment* (2007).

REVIEW PROCESS

Regional Review Team Evaluation

This project is very similar to 211-5037 and also has similar slopes and a drain bisecting the field. The team agreed that this project would provide significant water quality benefits as it continues the effort in the Owyhee basin to address irrigation-induced erosion and sediment loss. Growing corn on steeper slopes creates significant excess runoff. Currently, corrugate rows run perpendicular to the drain which increases the erosion rate. Converting from flood to sprinkler will significantly help to ameliorate the runoff and will facilitate contour plowing.

The team had a general question regarding management of the pivot. It was stated that under a gravity system, pivots may run more than necessary potentially leading to over application of water and reduced yield. Under a pump system, the flow is more constant. It may take landowners a few years to ascertain how to best manage the pivot. It was recommended that landowners attend the irrigation workshop such as those sponsored by the Malheur Experiment Station to optimally apply water.

Requested funding from OWEB was modest and there was significant cost-share from the landowner. Agri-lines of Parma designed this project as well as several others for the OWC. The applicant will need to provide evidence of a water right transfer from the Owyhee Irrigation District (OID). Implementation continues the water quality improvement work in the Malheur and Owyhee basins. This type of project is a high priority in the lower Owyhee basin. There is significant ecological merit to warrant funding this grant cycle.

Ecosystem Process and Function

Implementation of efficient irrigation systems will minimize erosion, reduce transport of farm chemicals to the Owyhee River, improve water quality, and address limited water availability. The project addresses irrigation-induced erosion caused by furrow irrigation.

Regional Review Team Recommendation to Staff

Fund with Conditions. Provide a copy of the water right transfer - if needed - with the final project completion report.

Regional Review Team Priority

6 of 17

Distribution of Recommended Award Amounts

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$23,345.00			

Staff Recommendation to the Board

Fund with Conditions. Provide a copy of the water right transfer - if needed - with the final project completion report.

Staff Recommended Award

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$23,345.00			

Total Recommended Board Award

\$23,345.00

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5039	Project Type:	Restoration
Project Name:	Upper Cow Hollow Water Quality		
Applicant:	Owyhee WC		
Basin:	OWYHEE-MALHEUR	County:	Malheur
OWEB Request:	\$28,747.00	Total Cost:	\$113,231.00

Application Description

The Upper Cow Hollow Water Quality project is located approximately 2 miles south of the Chalk Butte project and 13 miles northwest of Adrian. Owyhee Watershed Council (OWC) proposes to convert 52 acres of furrow-flood irrigation to sprinkler-pivot. The field is rotated with corn and sorghum with the rows running perpendicular to Cow Hollow Creek, one of the five major drainages that flow into the lower Owyhee. The accelerated runoff flows into Cow Hollow and then into the lower Owyhee. Based on the 12 percent slopes of the field, soil loss is estimated at approximately 10 to 15 tons per acre per year or over 780 tons of sediment annually from this farm. Open-ditch delivery systems result in water loss of 30 percent from evaporation and seepage. Water quality standards for phosphorus in the Mid-Snake TMDL are set at 0.07mg/L.

The project proposes to install 2,100 feet of 8-inch mainline; 980 feet of 6-inch mainline to provide pressurized gravity flow; one 814-foot pivot to irrigate 29 acres and one 500-foot pivot to irrigate 23 acres.

OWEB funds are requested for project management/mileage (4%), materials - pipe, bubbler and permanent pumps (86%), administration (9%) and monitoring. The landowner is the cost-share partner.

Implementation addresses the *Owyhee Subbasin Plan* (2004) by reducing sediment and improving water quality; the *Owyhee Agricultural Water Quality Management Plan* (2003) which suggests practices that include irrigation water management and conversion from furrow irrigation to sprinklers; the *Mid-Snake-Succor Creek TMDL* that also addresses converting from furrow irrigation to sprinklers to reduce sediment, nutrient and phosphorous and it also addresses the *Lower Owyhee Assessment* (2007).

REVIEW PROCESS

Regional Review Team Evaluation

This project is very similar to the both Charmin and Chalk Butte projects (211-5037 and 211-5038), but these slopes are much steeper. A few years ago, OWC successfully implemented a large project in Cow Hollow Creek that installed over 15,000 feet of PVC in an earthen lateral, enabling six landowners to have a pressurized-gravity irrigation delivery system. This facilitated the conversion from furrow to sprinkler irrigation on 450 acres of steeply irrigated cropland. Irrigation-induced erosion from furrow irrigation is the major anthropogenic input of sediment and nutrients in the Snake Basin.

The team agreed that this project would provide significant water quality benefits as it continues the effort in the Owyhee basin to address irrigation-induced erosion and sediment loss. Growing corn on steeper slopes creates significant excess runoff. The request from OWEB is 25 percent of the overall budget and the landowner cost-share is significant for the pivots. The applicant and Owyhee Irrigation District will need to notify the OWRD to transfer any water rights. Due to the steepness of the slopes, this project is a higher priority than the previous projects. Project implementation continues the water quality improvement work in the Malheur and Owyhee basins. There is significant ecological merit to warrant funding this grant cycle.

Ecosystem Process and Function

Implementation of efficient irrigation systems will minimize erosion, reduce transport of farm chemicals to the Owyhee River, improve water quality and address limited water availability. The project addresses irrigation-induced erosion caused by furrow irrigation.

Regional Review Team Recommendation to Staff

Fund with Conditions. Provide a copy of the water right transfer with the irrigation district - if needed - with the final project completion report.

Regional Review Team Priority

5 of 17

Distribution of Recommended Award Amounts

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$28,747.00			

Staff Recommendation to the Board

Fund with Conditions. Provide a copy of the water right transfer with the irrigation district - if needed - with the final project completion report.

Staff Recommended Award

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$28,747.00			

Total Recommended Board Award

\$28,747.00

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5040	Project Type:	Restoration
Project Name:	Heritage Water Quality Improvement		
Applicant:	Owyhee WC		
Basin:	OWYHEE-MALHEUR	County:	Malheur
OWEB Request:	\$22,056.00	Total Cost:	\$29,101.00

Application Description

Owyhee Watershed Council (OWC) proposes to improve the irrigation delivery system on a farm located five miles northwest of Adrian. The new landowner wants to reduce the amount of erosion and runoff from his field. The property has an earthen irrigation delivery ditch that runs parallel to an earthen lateral in very close proximity. The earthen lateral is situated above a major drainage ditch. The property is at the end of an irrigation delivery system that lacks a headgate to regulate the inflow, especially during heavy flows and major storm events. During high flow events, the earthen lateral will blow out sending significant sediment into the drain below. Malheur SWCD has been sampling this drain for various water quality parameters for several years. The other issue is that currently there is no method to regulate water entering the farm or to regulate the flow in the lateral as it enters the drain.

To alleviate the excess water, the applicant proposes to install a headgate to regulate the water inflow, a weed rack and 1,780 feet of 15-inch pipe to replace the earthen delivery ditch. In the earthen lateral, an orifice box with a headgate and flowmeter will be installed at the end of the lateral and a headwall for the drainage system. The project will improve irrigation efficiency, water quality and water management.

OWEB funds are requested for project management (5%), contracted services – connect the pipe (8%), materials – pipe, headgate and weed rack (76%), administration (5%) and monitoring (2%). The landowner will do the earthwork and backfill the trench. Owyhee Irrigation District (OID) will install the orifice box and headwall.

Implementation addresses the *Owyhee Subbasin Plan* (2004) by reducing sediment and improving water quality; the *Owyhee Agricultural Water Quality Management Plan* (2003) which suggests practices that include irrigation water management and addresses the *Lower Owyhee Assessment* (2007) which identifies improving irrigation systems as a high priority for improving local water quality. The project follows the *Snake River-Hells Canyon TMDL* that discusses problems associated with nutrient loading and potential impact of irrigation management.

REVIEW PROCESS

Regional Review Team Evaluation

The project continues the ongoing effort of the Owyhee Watershed Council to improve water quality to the Owyhee River. Antiquated irrigation delivery systems and a series of drains contribute to excess runoff and high levels of sediment in the Owyhee and Snake Rivers. The overall budget request is modest. The project complements a recently implemented small grant.

The project was previously submitted but not recommended for funding as it was not well described and confusing. Some of the previous questions were answered with the new application. Since the delivery ditch, lateral and drain were all in very close proximity, it was difficult to understand the proposed solution. The on-farm delivery ditch, adjacent to the lateral, will be replaced. The lateral cannot be piped since it

collects large volumes of water during high-flow events. OID will install the orifice box and headwall in the lateral, which will greatly reduce the potential for the lateral failing and depositing large amounts of sediment into the adjacent drain. The measuring device in the lateral and headgate will help to control the flow. The team agreed that the application was improved from the last submission. The project will have water quality benefits. By installing a pipeline in the delivery ditch, the landowner will be able to convert to sprinklers in the future as financial resources permit. The resource benefits associated with this project are smaller than other projects submitted from the OWC. The main benefit for this project is addressing the erosion associated with the lateral. However, the team felt that there are sufficient watershed benefits to warrant funding this grant cycle.

Ecosystem Process and Function

Eliminating earthen conveyance ditches will significantly reduce soil erosion runoff that annually contributes significant sediment and other pollutants to the Owyhee River. This project addresses altered watershed functions affecting water quality.

Regional Review Team Recommendation to Staff

Fund with Conditions. Provide a copy of the water right transfer with the irrigation district - if needed - with the final project completion report.

Regional Review Team Priority

17 of 17

Distribution of Recommended Award Amounts

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$22,056.00			

Staff Recommendation to the Board

Fund with Conditions. Provide a copy of the water right transfer with the irrigation district - if needed - with the final project completion report.

Staff Recommended Award

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$22,056.00			

Total Recommended Board Award

\$22,056.00

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5041	Project Type:	Restoration
Project Name:	Klamath Irrigation Runoff Elimination		
Applicant:	Owyhee WC		
Basin:	OWYHEE-MALHEUR	County:	Malheur
OWEB Request:	\$27,446.00	Total Cost:	\$87,391.00

Application Description

Owyhee Watershed Council (OWC) proposes to convert 40 acres of furrow irrigation located six miles north of Adrian. Irrigation runoff from this field, with slopes of 2 percent, flows into the 301 drain at the south end of the field and then into the lower Owyhee River less than 600 feet away. These soils are very powdery and alkaline creating a low infiltration rate. The 301 drain carries tailwater from multiple farms that have steeper slopes of 2 percent to 8 percent. In 2009, water sampling of that drain indicated that 82 tons of nitrogen, 3 tons of phosphorous, and 4,085 tons of total suspended solids were annually deposited into the Owyhee River. Open-ditch delivery systems result in water loss of 30 percent from evaporation and seepage. Water quality standards for phosphorus in the Mid-Snake TMDL are set at 0.07mg/L. Converting 40 acres of furrow irrigated cropland with highly erodible soils will minimize irrigation-induced erosion from entering the Owyhee River, which is DEQ 303(d) listed for fecal coliform, chlorophyll a, and nutrients.

The project proposes to install 660 feet of 8-inch mainline to replace the earthen ditch; install a pump, bubbler and a 982-foot Zimmatic™ pivot. OWEB funds are requested for project management/mileage (4%), materials-pipe, bubbler and permanent pumps (86%), administration (9%) and monitoring (1%). The landowner is the cost-share partner.

Implementation addresses the *Owyhee Subbasin Plan* (2004) by reducing sediment and improving water quality; the *Owyhee Agricultural Water Quality Management Plan* (2003) which suggests practices that include irrigation water management and conversion from furrow irrigation to sprinklers; the *Mid-Snake-Succor Creek TMDL* that also addresses converting from furrow irrigation to sprinklers to reduce sediment, nutrient and phosphorous and it also addresses the *Lower Owyhee Assessment* (2007).

REVIEW PROCESS

Regional Review Team Evaluation

While this project is similar to the other OWC projects, it is in close proximity to the Owyhee River. Compared to previous projects, the slope is gentler, but the soil more alkaline. Drain 301 carries tailwater from upper farms that have much steeper slopes and therefore have significant amount of sediment. The Malheur SWCD's Ag Drain monitoring has assisted OWC in helping them to prioritize which projects have the greatest need from a water quality standpoint. The current irrigation system is contributing significant amounts of sediment and tailwater. By converting to a pivot system, the landowner will be able to greatly reduce runoff and improve water quality. In addition, this project complements several other OWEB funded efforts recently implemented projects on this drain 301. Future agricultural drain monitoring of this particular drain should show an improvement in water quality.

The application needed detail regarding how the "corners" - where the pivot will not reach - will be managed. Other projects have put those areas into wildlife habitat or have used big guns for irrigation. Future applications need to provide that information to help the team better evaluate and rank projects. The team also recommended that a portion of the bridges be part of the cost-share and reduced the award amount

accordingly. This type of project is a high priority in the lower Owyhee basin. There is significant ecological merit to warrant funding this grant cycle.

Ecosystem Process and Function

Implementation of efficient irrigation systems will minimize erosion, reduce transport of farm chemicals to the Owyhee River, improve water quality and address limited water availability. The project addresses irrigation-induced erosion caused by furrow irrigation.

Regional Review Team Recommendation to Staff

Fund Reduced with Conditions. Reduce the award to \$22,562; reduce cost-share of the pivot bridges by \$4,440. Provide a copy of the water right transfer with the irrigation district - if needed - with the final project completion report.

Regional Review Team Priority

13 of 17

Distribution of Recommended Award Amounts

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$22,562.00			

Staff Recommendation to the Board

Fund Reduced with Conditions. Reduce the award to \$22,562; reduce cost-share of the pivot bridges by \$4,440. Provide a copy of the water right transfer with the irrigation district - if needed - with the final project completion report.

Staff Recommended Award

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$22,562.00			

Total Recommended Board Award

\$22,562.00

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5042	Project Type:	Restoration
Project Name:	Jordan Creek Water Quality Improvement		
Applicant:	Owyhee WC		
Basin:	OWYHEE-MALHEUR	County:	Malheur
OWEB Request:	\$85,664.00	Total Cost:	\$258,914.00

Application Description

A ranch near Arock, north of Rome, has irrigated hay meadows and grain fields that border Jordan Creek. The current irrigation delivery system diverts over 300 inches of water and needs 4.5 miles of open ditch to irrigate 113 acres. Portions of the ditch are on very steep slopes which flow off a hill and created severe erosion with the sediment being deposited into Jordan Creek. Due to highly erodible soils and large volumes of water moving over the field, there is a high level of irrigation-induced erosion even though the fields are hay meadows. Tailwater flows directly into Jordan Creek. Due to the current flood irrigation and poor delivery system, excessive amounts of sediment and nutrients are contributing to poor water quality. By eliminating 4.5 miles of open ditch and improving the irrigation efficiency, 27 additional acres can be irrigated.

To reduce the amount of erosion from the very steep and erodible delivery system, Owyhee Watershed Council proposes to convert the irrigation from flood to sprinkler. Project components include installing mainline pipe: 1,800 feet of 15-inch; 1,240 feet of 12-inch; 3,300 feet of 8-inch, and 3,900 feet of 6-inch to replace the earthen ditch. In addition, a 1,395-foot and a 522-foot pivot will be installed along with three wheel lines totaling 2,920 feet. Converting 140 acres from flood irrigation to sprinkler irrigation will minimize irrigation-induced erosion flowing into Jordan Creek

OWEB funds are requested for project management (2%), mileage (1%), materials - pipe and fittings (88%) and administration (9%). The landowner, B & S Cattle Company, will install all the piping and purchase the pivots and wheel lines.

Implementation addresses the *Owyhee Subbasin Plan* (2004) by reducing sediment and improving water quality; the *Owyhee Agricultural Water Quality Management Plan* (2003) which suggests practices that include irrigation water management and conversion from furrow irrigation to sprinklers and the *Mid-Snake-Succor Creek TMDL* that also addresses converting from furrow irrigation to sprinklers to reduce sediment, nutrient and phosphorous.

REVIEW PROCESS

Regional Review Team Evaluation

The project can potentially save a significant amount of water as well as reduce the amount of erosion caused by the delivery system. In addition, it will eliminate 4.5 miles of earthen ditch. Portions of the ditch on steep slopes, moved and have created huge gullies. There are redband trout in Jordan Creek as well as high concentrations of mercury. Improving water quality in this section of Jordan Creek will have positive benefits on fisheries.

While the team felt that there are a lot of positive watershed benefits to this project, there were many unanswered questions. It appears they are expanding the water right from 118 to 140 acres. If the additional

acres are taken from another location, then a water right transfer from Antelope Reservoir would be needed. Otherwise, there may not be any water rights available for the additional acres. Also, the stated amount of water, 300 inches, seems like it is over what is normally allowed for acres this size.

The team noted that having gravity flow on 12-inch and 15-inch pipe is risky and that the pipe may be too large. It was questioned if the project designer meant to use 300-acre feet instead of 300 inches. A map showed that they propose to use 110 inches in the future. However, that is the amount that they already should be using currently. The team was confused by using the terms inches, cfs and acre-feet simultaneously. Also, the team needs assurance that the project “is” designed to NRCS standards rather than “will be”. Information on how the “corners” where the pivots cannot reach need to be included. While the team believes there are potential watershed benefits, the project is not ready for funding this grant cycle. A future application needs to clearly articulate that it follows NRCS design standards; provide assurance of the proper pipe size given the steepness of slope; clarify the water right for the additional acres; use the same units of measurement to describe how much water is used now and how much is estimated to be used/saved in the future; include a measuring device and provide a better map with a legend. The project is not ready for funding this grant cycle.

Regional Review Team Recommendation to Staff

Do Not Fund.

Staff Recommendation to the Board

Do Not Fund.

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5043	Project Type:	Restoration
Project Name:	Lytle Irrigation-Induced Erosion Elimination		
Applicant:	Owyhee WC		
Basin:	OWYHEE-MALHEUR	County:	Malheur
OWEB Request:	\$115,028.00	Total Cost:	\$292,040.00

Application Description

A farm located on East Cow Hollow Creek, approximately 11 miles northwest of Adrian, currently furrow irrigates 230 acres of corn, sugar beets and other row crops. Irrigation runoff flows directly into East Cow Hollow Creek located at the toe of the property which has 5 percent to 8 percent slopes. By converting the 230 acres to pivots and big guns, runoff can be eliminated and water quality to the Owyhee River improved. The furrows run perpendicular to East Cow Hollow Creek transporting large amounts of runoff. The accelerated runoff then flows into main Cow Hollow, one of the five major drainages of the lower Owyhee River. Based on 8 percent slope, soil loss is estimated at approximately 10 to 15 tons per acre per year or over 3,450 tons of sediment annually from this farm. Open-ditch delivery systems result in evaporative and seepage water loss of 30 percent.

The project proposes to install 5,220 feet of 12-inch pipe to replace the earthen delivery ditch; install 2,140 feet of 10-inch and 2,080 feet of 6-inch mainline for four pivots that will irrigate 200 acres. In addition, 10,340 feet of 4-inch mainline will service six big guns irrigating 30 acres.

OWEB funds are requested for project management/mileage (1%), contracted services - dig and lay pipe (20%), materials – pipe, fittings and permanent pumps (73%), administration (5%). The landowner will purchase the pivots.

Implementation addresses the *Owyhee Subbasin Plan* (2004) by reducing sediment and improving water quality; the *Owyhee Agricultural Water Quality Management Plan* (2003) which suggests practices that include irrigation water management and conversion from furrow irrigation to sprinklers; the *Mid-Snake-Succor Creek TMDL* that also addresses converting from furrow irrigation to sprinklers to reduce sediment, nutrient and phosphorous and it also addresses the *Lower Owyhee Assessment* (2007).

REVIEW PROCESS

Regional Review Team Evaluation

This project is very similar to other submitted water quality projects but has more acres and pivots. The Owyhee Watershed Council (OWC) has actively implemented these types of projects in the basin for many years. OWC successfully implemented in Cow Hollow Creek that installed over 15,000 feet of PVC in an earthen lateral, enabling six landowners to install a pressurized gravity-irrigated delivery system. This facilitated the conversion from furrow to sprinkler irrigation on 450 acres of steeply irrigated cropland.

The application was somewhat confusing since the total treated acres were not clearly depicted on the map. It seemed that fewer acres would be irrigated, but that was not the case. Acreage covered by the big guns was not clearly depicted and the applicant only showed the acres irrigated by the pivots. In the future, a more detailed map including a legend, scale, location of drainages and total irrigated acres needs to be provided. Prior coordination with Owyhee Irrigation District (OID) was beneficial as it showed OID's concurrence with the feasibility and proposed design. Reviewers appreciated that the application states that

the design meets the standards and explains that OID had reviewed the project. The team agreed that this project will provide significant water quality benefits as it continues the effort in the Owyhee basin to address irrigation-induced erosion and sediment loss. The applicant and OID will need to notify OWRD of any change in irrigated acres when the project is completed. Project implementation continues the water quality improvement in the Malheur and Owyhee basins. There is significant water quality merit to warrant funding this grant cycle.

Ecosystem Process and Function

Implementation of efficient irrigation systems will minimize erosion, reduce transport of farm chemicals to the Owyhee River, improve water quality and address limited water availability. The project addresses irrigation-induced erosion caused by furrow irrigation.

Regional Review Team Recommendation to Staff

Fund with Conditions. Provide a copy of the water right transfer with the irrigation district - if needed - with the final project completion report.

Regional Review Team Priority

10 of 17

Distribution of Recommended Award Amounts

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$115,028.00			

Staff Recommendation to the Board

Fund with Conditions. Provide a copy of the water right transfer with the irrigation district - if needed - with the final project completion report.

Staff Recommended Award

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$115,028.00			

Total Recommended Board Award

\$115,028.00

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5044	Project Type:	Restoration
Project Name:	Kindschy Juniper Control		
Applicant:	Malheur SWCD		
Basin:	OWYHEE-MALHEUR	County:	Malheur
OWEB Request:	\$108,284.00	Total Cost:	\$141,845.00

Application Description

The Kindschy Ranch is located in the northwestern corner of Malheur County and eastern Grant County. It is in a higher annual precipitation range of 9 to 14 inches with the primary native vegetation comprised of Wyoming big sagebrush, bluebunch wheatgrass and Idaho fescue. Juniper encroachment decreases watershed health with the destruction of understory vegetation leading to overland flow, soil erosion, increased stream sedimentation and decreased stream flows. Juniper has invaded western sage grouse habitat, forcing them to find other areas for survival. Sage grouse leks were identified in this watershed. Fledgling sage grouse survive on a diet of grass and forb seeds. Maintaining a healthy upland native plant community will enhance sage grouse habitat and foraging opportunities. The Irish Spring fire affected the area in 2007. By siting this project in the vicinity of the burned area, a large mosaic area can be achieved for improved upland habitat.

Project components include juniper cutting using a chainsaw on 400 acres and felled contour across the landscape. Since the slopes are as high as 40 percent, all juniper removal will be done by hand. Juniper expressing old-growth characteristics will not be cut. After a minimum of one year, a winter burn will be done in a mosaic pattern to avoid scorching the soil and damaging native vegetation. Prior to the prescribed burn boles will be removed for firewood or fence posts as much as possible to reduce fire intensity and the potential for creating hydrophobic soils. Native grasses and forbs should naturally reseed in most areas and seeding is planned on approximately 250 acres. NRCS will assist with a grazing plan and selecting the certified native plant and vegetation mix where reseeding is slow. A grazing plan, including temporary rest and deferment, will be implemented. A prescribed burn in the next 6-7 years to control juniper regeneration is planned. Watershed benefits include decreased wildfire potential, increased wildlife habitat especially for sagegrouse, increased water storage, decreased erosion and increased upland vegetation.

OWEB funds are requested for project management (2%), in-house personnel (3%), contracted services - juniper removal (74%), materials - seed (12%) and administration (9%). Cost-share partners are the landowner, ODFW, NRCS and Malheur SWCD.

Project objectives follow goals outlined in the *Malheur Basin Action Plan*, Goal 1 to achieve properly functioning conditions in streams and waterways, the *Malheur Basin Agricultural Water Quality Management Plan* and the *Snake Basin TMDL*. Limiting factors include sediment, riparian conditions and shade. Project implementation will address these factors. In addition, the project helps to implement the *Oregon Conservation Strategy* to enhance greater sage grouse habitat.

REVIEW PROCESS

Regional Review Team Evaluation

This project complements several previous juniper-removal projects located in the upper Malheur watershed from the Ironside area to the Beulah Reservoir and continues that effort. According to ODFW, this is a very high priority area for sage grouse leks. The property has higher sites, deeper soils with aspen and mountain-

mahogany components, both Oregon Conservation Strategy species. While not noted in the application, the PowerPoint provided by the applicant highlighted these components. The applicant did not mention piling juniper debris around the aspen stand as done in previous projects. Aspen and mountain mahogany protection needs to part of the overall restoration effort.

It was questioned why the seed cost per acre was the same for both seed and labor. The team felt that with the deeper soils and higher sites much of the native vegetation would recover naturally and therefore recommended reducing the amount of seed. A more descriptive map showing topography and stage 3 areas would be beneficial in future applications. Also, the application stated that the project is outside the ODF's Protection District. It was recommended to file a Notification of Operations anyway so that ODF can verify. The applicant proposes a winter burn and team agrees that late fall or winter burning is optimal. Spring burning increases the potential for weed spread and also can cause high native plant mortality. However, if the burn is too early in the fall, containment can be problematic. Therefore, the winter burn is the most optimal. Overall, the team felt that this project will continue the positive watershed enhancement work in the upper Malheur basin and will improve sage grouse habitat. There is significant ecological merit to warrant funding this grant cycle.

Ecosystem Process and Function

Removing juniper will lead to decreased erosion and overland flow by increasing infiltration and water storage. Upland and riparian vegetation and water quality will improve to the Malheur basin drainage. This project addresses altered watershed function affecting water quality and improving sage grouse habitat. The aspen component is critical to many wildlife species.

Regional Review Team Recommendation to Staff

Fund Reduced with Conditions. Reduce awarded to \$102,284. Reduce seed and administration. Provide a long-term juniper management plan with the final project completion report.

Regional Review Team Priority

11 of 17

Distribution of Recommended Award Amounts

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$102,284.00			

Staff Recommendation to the Board

Fund Reduced with Conditions. Reduce seed and administration. Provide a long-term juniper management plan with the final project completion report. Pile felled juniper around aspen stands to protect from browsing ungulates.

Staff Recommended Award

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$102,284.00			

Total Recommended Board Award

\$102,284.00

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5045	Project Type:	Restoration
Project Name:	Beulah Juniper Control		
Applicant:	Malheur SWCD		
Basin:	OWYHEE-MALHEUR	County:	Malheur
OWEB Request:	\$84,935.00	Total Cost:	\$124,865.00

Application Description

Butler Ranches, north of Beulah Reservoir in northwestern Malheur County, has significant juniper encroachment. This project proposed to treat 760 acres of juniper now occupying historic sagebrush-steppe rangelands. Sage grouse leks were identified in this watershed.

Project components include juniper removal using a chainsaw - on slopes greater than 15% - on 290 acres with the slash lopped and scattered. Slopes less than 15 percent will be mechanically treated with a dozer and the slash machine piled on 470 acres. Native grasses and forbs should naturally reseed. Reseeding is planned on 400 acres where revegetation is sparse. Proposed seed mix includes bluebunch wheatgrass, Sherman's big bluegrass, Sandberg's bluegrass, intermediate wheatgrass, small burnett and alfalfa. The landowner will implement a prescribed burn in the next 6-7 years to control juniper regeneration.

NRCS will assist with a grazing plan and on the certified native plant and vegetation mix for areas where reseeding is slow. A grazing plan, including temporary rest and deferment, will be implemented. ODFW will provide advice on best management practices for upland wildlife species concentrating on sage grouse. Watershed benefits include improved upland vegetation, decreased soil erosion and stream sedimentation, improved water quality, infiltration and wildlife habitat. Riparian vegetation along the Little Malheur River will improve.

OWEB funds are requested for project management (3%), in-house personnel (3%), mileage (2%), contracted services - juniper removal (60%), materials - seed (24%) and administration (9%). Cost-share partners are the landowner, ODFW, NRCS and Malheur SWCD. The landowner will provide juniper cutting, seeding and burning.

Project objectives follow goals outlined in the *Malheur Basin Action Plan*, Goal 1 to achieve properly functioning conditions in streams and waterways, the *Malheur Basin Agricultural Water Quality Management Plan* and the *Snake Basin TMDL*. Limiting factors include sediment, riparian conditions and shade. Project implementation will address these factors.

REVIEW PROCESS

Regional Review Team Evaluation

This project complements several previous juniper removal projects located in the upper Malheur watershed from the Ironside area to the Beulah Reservoir and continues that effort. Positive effects to the Little Malheur River are noted anecdotally by local landowners.

While this project would continue past efforts by the Malheur SWCD, it is situated closer to concentrated Medusahead rye infestations. The team is concerned that future burning would further spread that infestation. In addition, concerns were raised that mechanical piling would create disturbance islands more susceptible to further weed spread. The team feels that this project needs to be more comprehensive and

address the Medusahead issue and not potentially further its spread. Perhaps a weed control component could be added in a future application.

The applicant also needs a more detailed project map(s) with topography, harvest areas depicted by method (hand-treated and machine-treated) and an approximate location of the various juniper stages. A better more detailed prescription of the treatment and a more detailed inventory are also needed. While there are merits to the project, the team agrees additional information is needed before funding can be recommended.

Regional Review Team Recommendation to Staff

Do Not Fund.

Staff Recommendation to the Board

Do Not Fund.

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5047	Project Type:	Restoration
Project Name:	Dearing Juniper Control Phase I		
Applicant:	Malheur SWCD		
Basin:	OWYHEE-MALHEUR	County:	Malheur
OWEB Request:	\$80,823.00	Total Cost:	\$123,889.00

Application Description

Dearing Ranch is located in the Clover Creek drainage in northwestern Malheur County. This is the first phase of a planned multi-phased project to treat 2,400 acres of juniper. This first phase will treat 600 acres along Smith Creek, a tributary of Clover Creek and the Bully Creek drainage. It is adjacent to a completed juniper removal project on Clover Creek. Declining populations of native vegetation of sagebrush, fescues, bluegrasses and ryegrass caused by juniper invasion is adversely affecting the feeding habits of fledgling sage grouse that survive on a diet of grass and forb seeds. Juniper encroachment creates a decrease in watershed health with the destruction of understory vegetation leading to overland flow, soil erosion, increased stream sedimentation and decreased stream flows. Maintaining a healthy upland native plant community will enhance sage grouse habitat and foraging opportunities.

Project components include juniper cutting using a chainsaw on 290 acres on slopes over 15 percent with the slash lopped and scattered. On slopes less than 15 percent, machine cut and piling is proposed for 310 acres. Native grasses and forbs should naturally reseed in most areas and seeding is planned on approximately 250 acres. NRCS will assist with a grazing plan and selecting the certified native seed and plant materials. Reseeding on 400 acres will occur where needed. Juniper expressing old-growth characteristics will not be cut. After a minimum of one year, a winter burn will be done in a mosaic pattern to avoid scorching the soil and damaging native vegetation where reseeding is slow. A grazing plan, including temporary rest and deferment, will be implemented. A prescribed burn in the next six to seven years to control juniper regeneration is planned. Watershed benefits include decreased wildfire potential, increased wildlife habitat especially for sagegrouse, increased water storage, decreased erosion and increased upland vegetation.

OWEB funds are requested for project management (2%), in-house personnel (3%), contracted services - juniper removal (74%), materials - seed (12%) and administration (9%). Cost-share partners are the landowner, ODFW, NRCS and Malheur SWCD.

Project objectives follow goals outlined in the *Malheur Basin Action Plan*, Goal 1 to achieve properly functioning conditions in streams and waterways, the *Malheur Basin Agricultural Water Quality Management Plan* and the *Snake Basin TMDL*. Limiting factors include sediment, riparian conditions and shade. Project implementation will address these factors. In addition, the project helps to implement the *Oregon Conservation Strategy* to enhance sage grouse habitat.

REVIEW PROCESS

Regional Review Team Evaluation

This project complements several previous juniper removal projects located in the upper Malheur watershed. The team believes that the applicant has substantial experience with juniper removal. The submitted photos depict the problem. A better map with the approximate location of the various stages, elevation, inventory and recommended treatment areas would be beneficial. The team expressed concern about the machine treatment and potential ground disturbance that may increase the spread of noxious weeds. The application

stated operations would be limited to when soils are frozen, snow-covered and not wet to avoid soil compaction. However, that does not specifically address noxious weed spread by ground disturbance. The team needs more assurance that machine work will not spread noxious weeds, especially Medusahead, and does not recommend funding this part of the application. The team agreed that the hand treatment of lop and scatter on 290 acres will not spread weeds and is positive. The team agrees that more natural regeneration will occur than is anticipated and recommends reducing the amount of seed. A future application for the 310 acres of machine treatment needs more detail on the method to avoid spreading of noxious weeds, a better map and detail on the plant community. Overall, the team felt that the hand treatment portion of the project has ecological merit and should be funded this grant cycle.

Ecosystem Process and Function

Removing juniper will lead to decreased erosion and overland flow by increasing infiltration and water storage. Upland and riparian vegetation and water quality will improve to the Malheur basin drainage. This project addresses altered watershed function affecting water quality and wildlife habitat. The aspen component is critical to many wildlife species.

Regional Review Team Recommendation to Staff

Fund Reduced with Conditions. Fund the hand treatment on 290 acres only. Reduce the amount of seed. Check with ODF on a Notification of Operations. Provide a long-term juniper management plan with the final project completion report.

Regional Review Team Priority

16 of 17

Distribution of Recommended Award Amounts

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$40,838.00			

Staff Recommendation to the Board

Fund Reduced with Conditions. Fund the hand treatment on 290 acres only. Reduce the amount of seed. Check with ODF on a Notification of Operations. Provide a long-term juniper management plan with the final project completion report.

Staff Recommended Award

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$40,838.00			

Total Recommended Board Award

\$40,838.00

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5049	Project Type:	Restoration
Project Name:	Bully Creek Water Quality Improvement		
Applicant:	Malheur WC		
Basin:	OWYHEE-MALHEUR	County:	Malheur
OWEB Request:	\$176,311.00	Total Cost:	\$320,633.00

Application Description

The Malheur Watershed Council proposes to convert a flood-irrigated property, located two miles west of Vale, to sprinkler irrigation. The entire 189-acre parcel is flood-irrigated with delivery through open-earthen ditches, gated pipe and siphon tubes. Open ditches can result in evaporative and seepage loss of 20 to 40 percent. Excess water needs to be turned into the ditch to compensate for the water loss in order for the permitted amount to reach the field. Bully Creek, a major tributary of the Malheur River, runs through the entire property with tailwater flowing directly to Bully Creek. Irrigation wastewater contributes fertilizer residue and sediment into the creek and flood irrigation causes significant soil erosion. The landowner rotates various row crops including corn, onions, sugar beets and potatoes. This project will convert 143 acres from flood irrigation to pivots and 43 acres converted to sprinklers later. The remaining 3 acres will be used for equipment and hay storage.

Project components include installing two pump stations – one for the two pivots and one for the pumpback station; trench 6,420 feet from the pump station to two pivots; install 2,240 feet of 12-inch pipe for one pivot; 4,180 feet of 10-inch pipe and 6,200 feet of 8-inch pipe. Approximately 1,100 cubic yards will be excavated for the pumpback pond.

OWEB funds are requested for project management (1%), contracted services - trenching, electrical and pond excavation (36%), materials - pipe, fittings, pumps (56%) and administration (7%). The landowner is the cost-share partner.

Implementation addresses the *Malheur Subbasin Plan* (2004) by reducing sediment and improving water quality; the *Malheur River Agricultural Water Quality Management Plan* (2005) which suggests practices that include irrigation water management and conversion from furrow irrigation to sprinklers and the *Snake River-Hells Canyon TMDL* with a priority to reduce sediment and phosphorous.

REVIEW PROCESS

Regional Review Team Evaluation

This project is very similar to the other irrigation conversion projects in Malheur County that are addressing water quality issues. The Malheur TMDL identifies Bully Creek as one of the most significant sources of sediments and nutrients, and the largest source of bacteria; and implementing this type of project addresses TMDL issues. The team agreed that this project can potentially provide significant water quality benefits.

While the team felt the project has potential, they raised several questions. The map did not clearly depict the area that the pivots and pumpback cover. A better map is needed to understand the overall project. The pumpback is for areas not covered by the pivots. However, the location of both pivots and the pumpback on the map was not clearly depicted. The team wondered what the ecological benefits would be from the pumpback system since the pivot system should be reducing runoff and erosion. It was stated that the pumpback would cover acres not covered by the pivot to control runoff and apply it as irrigation water.

The team wondered why there is runoff if irrigation is properly managed. With the gentle slopes of the property, it would seem that the runoff should not be as significant as it would be on steeper slopes. In addition, a vegetative buffer or filter strip on the edge of Bully Creek, which runs through the entire two miles of the parcel needs to be included with the project to optimize watershed benefits. The team noted that the project seemed expensive for the distance and felt that part of the pipe installation should be provided by the landowner. While the team agrees that there are potential water quality benefits, they felt it was not ready for funding this grant cycle. If a future application is submitted, it should discuss management of irrigation and potential alternatives to the proposed pipe configuration, for example, can the entire site be converted to sprinkler?

Regional Review Team Recommendation to Staff

Do Not Fund.

Staff Recommendation to the Board

Do Not Fund.

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5051	Project Type:	Restoration
Project Name:	Fletcher Gulch Water Quality Improvement		
Applicant:	Malheur SWCD		
Basin:	OWYHEE-MALHEUR	County:	Malheur
OWEB Request:	\$516,777.00	Total Cost:	\$952,734.00

Application Description

The Malheur SWCD and the landowners on Fletcher Gulch are proposing to replace a 9,800-foot earthen lateral located five miles northwest of Adrian. The current lateral is an earthen ditch approximately 4 to 5 feet wide and is widening from higher flows. Fletcher Gulch serves agricultural producers on 970 acres who raise corn, grains, beans, potatoes and sugar beets. Crops are furrow-irrigated on fairly steep slopes resulting in very significant erosion. Tailwater flows into the Old Owyhee drain and then into the Malheur River and onto the Snake River. These soils are highly alkaline, reducing water infiltration capacity thereby increasing runoff. Erosion rates are estimated at 10-15 tons per acre per year or 14,550 tons for the area that this lateral services.

Agricultural laterals and drains in Malheur County contribute to impaired water quality through increased erosion, sediment and bacterial inputs. Earthen ditches also contribute to water loss through evaporation and seepage. The Malheur SWCD has been sampling 35 agricultural drains and irrigation laterals that flow into the Snake River. Information collected from these sites indicates that because of the irrigation and farming practices, significant amounts of sediment and agricultural contaminates flow from these laterals and drains. In many instances, this effort is in conjunction with NRCS' Environmental Quality Incentive Program (EQIP).

Installation of a pressurized pipe will enable landowners to convert to a gravity-sprinkler system. With the system in place, estimated annual energy savings are expected to be 265,576 kilowatt hours per year and will reduce the carbon footprint. The piped lateral will save 164 acre-feet from evaporative and seepage loss. In addition, pivots utilize about 25 percent less water.

Malheur SWCD proposes to pipe 9,800 feet pipe (8-inch to 27-inch diameter) of lateral and provide a gravity-flow system for installation of wheel lines, sprinklers or pivots. Other project components include various valves, flanges and reducers, one self-cleaning screen, an automated headgate, two pivots, one linear pivot and handlines. Watershed benefits include reducing sediment, phosphorous, nutrients, bacteria, turbidity and water usage.

OWEB funds are requested for project management/engineering (1%), materials - pipe and fittings (97%) and administration (2%). Partners include the landowners, Malheur SWCD, BOR, NRCS and the Owyhee Irrigation District (OID).

The project implements the *Owyhee River Basin Agricultural Water Quality Management Plan (AQMP)*, the Northwest Power Conservation Council's *Owyhee Subbasin Plan*, the *Snake River-Hells Canyon TMDL* and the *Lower Owyhee Assessment* by addressing irrigation-induced erosion.

REVIEW PROCESS

Regional Review Team Evaluation

The Malheur SWCD received a technical assistance grant two years ago to complete the engineering for this pipeline. Some of the landowners are ready to convert to pivots. The soils are highly erodible and very alkaline. By converting to pivots and installing the laterals, sediment transport will virtually be eliminated. Evaporative ditch loss will be eliminated and irrigation delivery and efficiency improved. The project has

very positive water quality benefits. The area is identified by DEQ as one of the highest priorities for converting flood irrigation to sprinklers.

The application was previously submitted, but lacked essential detail to warrant funding. The team feels that this application provided that detail. It was positive that the engineers reviewed and approved a design and the application clearly explained the status of the design. A technical assistance grant was received for the preliminary design work. OID has agreed to install the lateral, screen and automated headgate, indicating their contribution is much more substantial now. It was also noted that the water right may need adjustment because the ditch will be filled in and may be cropped. OID needs to be sure that the water rights are adjusted after the project is completed. In addition, the ditch will need to be seeded to avoid weed infestation. Overall, the team felt that this is an excellent project with many watershed benefits and should be funded this grant cycle.

Ecosystem Process and Function

Implementation of efficient irrigation systems will minimize erosion, reduce transport of farm chemicals to the Owyhee River, improve water quality and address limited water availability. The project addresses irrigation-induced erosion caused by furrow irrigation.

Regional Review Team Recommendation to Staff

Fund Increased with Conditions. Note in the final project completion report if water rights were adjusted by OID. Add nine flow meters.

Regional Review Team Priority

14 of 17

Distribution of Recommended Award Amounts

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$528,677.00			

Staff Recommendation to the Board

Fund Increased with Conditions. Note in the final project completion report if water rights were adjusted by OID. Add nine flow meters and increase award by \$11,900.00

Staff Recommended Award

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$528,677.00			

Total Recommended Board Award

\$528,677.00

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5052	Project Type:	Restoration
Project Name:	Three P's Addition Restoration		
Applicant:	Malheur SWCD		
Basin:	OWYHEE-MALHEUR	County:	Malheur
OWEB Request:	\$215,916.00	Total Cost:	\$273,486.00

Application Description

The Malheur SWCD proposes to increase a constructed wetland in the Big Bend area south of Adrian on the east side of the Snake River. A previously funded OWEB project, installed approximately 10 years ago, constructed a three cell, 13-acre wetland to filter a portion of the Allen Drain before it enters the Snake River. This segment of the Snake River is on the 303(d) list for bacteria, dissolved oxygen, mercury, nutrients, pH, sediment and temperature. The current wetland is too small to filter all of the drain. The project proposes to add 5 acres with two settling ponds and three open ponds. Migratory bird populations currently use the existing constructed wetland and by increasing its size additional wildlife habitat will be created.

Project components include excavating and constructing five ponds, each 80feet by 80feet; installing a bubbler, four outlet structures and 16,390 wetland plants. OWEB funds are requested for project management (1%), contracted services - excavation, engineering, earthwork (79%), materials - bubbler, plants, check structures (13%) and administration (7%). The landowner is the cost-share partner.

Implementation addresses the *Owyhee Subbasin Plan* (2004) by reducing sediment and improving water quality and the *Owyhee Agricultural Water Quality Management Plan* (2003) which also addresses improving water quality.

REVIEW PROCESS

Regional Review Team Evaluation

The technical assistance grant awarded in 2010 did not request sufficient funds and was limited in terms of descriptions and designs. An engineer originally contracted to design the wetland moved out of state. The previously funded wetland functions well and this enhances both the capacity for catching sediment and will increase wildlife habitat benefits by enlarging the size by almost 40%.

The team agreed that there is excellent potential for the project to have significant water quality and wildlife benefits. However, given the substantial amount of the request, more detail is essential. The team wondered whether the new wetland would be large enough to treat all the drain water. Important data to provide includes the amount diverted and filtered to the existing wetland; amount of water to be diverted into the proposed wetland; size of the Allen Drain watershed and any proposed or current water quality or effectiveness monitoring. Since the project is filtering sediment and wastewater from higher in the system in the Big Bend Irrigation District, is there any further maintenance or participation from the district? The team would like to see contributions from the irrigation district and upstream landowners. While the team agrees that the project potentially has significant watershed benefits, it is not ready for funding this grant cycle. If an application is resubmitted, it should answer the review team's questions, provide more budget detail and explain how the funds will be used. For example, the application claimed a student education program as match, but did not provide any information about what that program is or what students are doing.

Regional Review Team Recommendation to Staff

Do Not Fund.

Staff Recommendation to the Board

Do Not Fund.

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5053	Project Type:	Restoration
Project Name:	Blackburn Pump-back		
Applicant:	Malheur SWCD		
Basin:	OWYHEE-MALHEUR	County:	Malheur
OWEB Request:	\$24,873.00	Total Cost:	\$31,123.00

Application Description

Located in the Willow Creek area west of Vale in Malheur County, this project addresses irrigation-induced erosion from furrow irrigation and excess sediment and nutrient transport to Willow Creek. Water quality is the primary limiting factor for the Malheur Basin with the Malheur River having the second worst water quality in the state. The current furrow-irrigation system produces runoff contaminated with sediment, nutrients and *E. coli*. Tailwater flows into Willow Creek and then into the Malheur River. The Malheur SWCD is proposing to develop a pumpback system to improve water quality.

Runoff water from 40 acres will be collected in a pond and then “pumped back” to the top of the field to be used again, eliminating tailwater entering Willow Creek. Project components include constructing a 9-foot deep, 60-feet by 90-feet holding pond; installing 1,240 feet of 8-inch mainline to the existing mainline in the field, installing a 10-HP pump with screen and electrical controls. Watershed benefits include improved water quality and conservation of topsoil.

OWEB funds are requested for project management (6%), contracted services - pipe installation and pond construction (51%), materials (34%), administration (8%) and monitoring (1%). The landowner, NRCS and Malheur SWCD are cost-share partners.

Implementation addresses the *Malheur Subbasin Plan* (2004) by reducing sediment and improving water quality the *Malheur Basin Agricultural Water Quality Management Plan* (2001) which suggests practices including irrigation water management and improved irrigation methods.

REVIEW PROCESS

Regional Review Team Evaluation

This application was previously submitted but not recommended for funding because it lacked essential detail. It is very similar to many other projects recently implemented in the Willow Creek drainage and will improve water quality and eliminate excess runoff. It continues the positive effort in the Malheur basin, especially in the Willow Creek drainage, and to date 15 pumpback systems have been installed. The application, however, still lacks essential detail.

The application was improved from the last submission and some of the previous questions were answered, but there is still confusion. The applicant’s statement that 44 acres of runoff can be used on the landowner’s entire 114 acres seems illogical. Perhaps that is a water right issue or they are supplementing other irrigation water, but that needs to be clearly articulated to avoid confusion. The team questioned then if excess water is being over applied. The map was improved since the last submission, but it still needs more detail for the team to make a recommendation. The hand-drawn lines were difficult to follow. It was questioned if drainwater from the house was also being captured. There are potential benefits from zero runoff. However the team cannot recommend the project without more essential detail. The project is not ready for funding this grant cycle.

Regional Review Team Recommendation to Staff

Do Not Fund.

Staff Recommendation to the Board

Do Not Fund.

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5054	Project Type:	Restoration
Project Name:	Brian Wolfe Restoration Project		
Applicant:	Malheur SWCD		
Basin:	OWYHEE-MALHEUR	County:	Malheur
OWEB Request:	\$30,603.00	Total Cost:	\$39,228.00

Application Description

Located in the Willow Creek area two miles northwest of Vale in Malheur County, this project addresses irrigation-induced erosion from furrow irrigation and excess sediment and nutrient transport to Willow Creek. Water quality is the primary limiting factor for the Malheur Basin with the Malheur River having the second worst water quality in the state. The current furrow-irrigation system produces runoff contaminated with sediment, nutrients and *E. coli*. Tailwater flows into Willow Creek and then into the Malheur River. Currently, the landowner is irrigating from open ditches on 107 acres on 5 to 10 percent slopes. Open-ditch delivery systems result in water loss of 30 percent from evaporation and seepage. Water quality standards for phosphorus in the Mid-Snake TMDL are set at 0.07mg/L. Converting 107 acres of furrow irrigated cropland with highly erodible soils will minimize irrigation-induced erosion from entering the Malheur River, which is DEQ 303 (d) listed. The project will bury a mainline from the recently funded lateral 230 to provide pressurized gravity irrigation.

Project components include installing 1,080 feet of 8-inch and 2,150 feet of 6-inch mainline and electrical wire from lateral 230 to the proposed pivot and three wheel lines. OWEB funds are requested for project management (2%), materials – pipe, electrical, (89%) and administration (9%). The landowner, NRCS and Malheur SWCD are cost-share partners.

Implementation follows the *Malheur River Agricultural Water Quality Management Plan* (2005) to increase the adoption of effective management practices to improve water quality. The NWPCC's *Malheur River Subbasin Plan* recommends reducing soil loss and associated pollutants from irrigated croplands and to improve irrigation efficiency.

REVIEW PROCESS

Regional Review Team Evaluation

This application will be the first mainline to be connected to Lateral 230 funded by OWEB (210-5049). It is currently being installed. The project is a good effort and will reduce sediment delivery to Willow Creek. The landowner is installing the pipe as part of the cost-share.

Converting from flood irrigation to sprinkler continues the effort in the Willow Creek basin with the Vale Oregon Irrigation District (VOID) to reduce sediment and nutrient transport. It appears from the map that the top of the lateral will now be farmed and most likely does not have a water right. It is possible that the water right can be transferred from other areas of the farm that are not now irrigated. The applicant will need to verify with OWRD that an appropriate water right was transferred. While more detail on the pivot would have been better, overall the team felt that there are sufficient watershed benefits to warrant funding this grant cycle.

Ecosystem Process and Function

Implementation of efficient irrigation systems will minimize erosion, reduce transport of farm chemicals to the Malheur River, improve water quality and address limited water availability. The project addresses irrigation-induced erosion caused by furrow irrigation.

Regional Review Team Recommendation to Staff

Fund with Conditions. Provide a copy of the water right transfer from VOID - if required - with the final project completion report.

Regional Review Team Priority

15 of 17

Distribution of Recommended Award Amounts

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$30,603.00			

Staff Recommendation to the Board

Fund with Conditions. Provide a copy of the water right transfer from VOID - if required - with the final project completion report. Install a flowmeter.

Staff Recommended Award

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$30,603.00			

Total Recommended Board Award

\$30,603.00

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5055	Project Type:	Restoration
Project Name:	Little Creek Diversion Dam #1 Replacement		
Applicant:	Union SWCD		
Basin:	GRANDE RONDE	County:	Union
OWEB Request:	\$272,523.00	Total Cost:	\$370,440.00

Application Description

Little Creek is a major tributary to Catherine Creek near Union. Little Creek drains approximately 24,000 acres with average flows of 13 cfs and a low flow of .5 cfs. Recorded flood stage flow was 1,200 cfs. There are seven unscreened diversions on Little Creek impeding fish passage. This first diversion is one mile upstream from the Catherine Creek, which is high priority water quality and habitat for ESA-listed spring Chinook salmon, steelhead and bull trout. By removing the first diversion on Little Creek, two miles of habitat will be opened. Historically, steelhead and possibly spring Chinook salmon used Little Creek as spawning and rearing habitat.

The applicant proposes to remove the existing 4-foot high, 20-foot wide concrete structure dam and install a lay-down stanchion diversion structure. Proposed project components include a fish ladder and screen; re-graded stream channel to the appropriate grade with native materials; step-pool fish ladder; re-graded water gap; and planting 450 willow whips. Watershed benefits include improved fish passage, decreased sediment input, improved bank stabilization and water quality, riparian vegetation and fisheries habitat.

OWEB funds are requested for project management (2%), in-house personnel (1%), contracted services – dewatering, irrigation headwork, channel regarding and mobilization (90%), plant material (10%) and administration (8%). Cost-share partners include the Bureau of Reclamation (BOR) and Union SWCD.

Implementation follows the *Upper Grande Ronde Basin Agriculture Water Quality Management Plan* as it addresses water quality and improved riparian vegetation and conditions.

REVIEW PROCESS

Regional Review Team Evaluation

The application was well written and provided much detail. The list of possible alternatives was clearly described as was the existing condition. According to ODFW, it is a good steelhead stream but the runs have been diminished greatly and steelhead spawning is spotty. Little Creek has challenges due to variability of flows and over allocation. It is important to reestablish the stream for steelhead, Chinook and bull trout.

The team recognized the importance of removing irrigation diversion fish barriers and providing passage to ESA species. However, with six other diversions in the Little Creek drainage to be removed eventually, the total cost is extremely expensive. The applicant and BOR also recognized the costly expense of the fishway - \$116,620 - prior to the RRT meeting and now have a less-costly alternative. When the design was initiated, the BOR was under requirements for FERC (Federal Energy Relicensing Commission) relicensing. CH2M Hill provided the initial design. The fishway does not need to meet the more stringent requirement and therefore a modified less expensive alternative can be used, substantially reducing the requested OWEB amount. Since this is the first phase of several diversions, it is imperative to have an ODFW/NOAA-approved design that is as cost-effective as possible. The project has a lot of support from many agencies. The team also felt that the amount of fiscal administration requested is excessive and needs to be reduced.

Overall, the team was impressed with the project and felt it has significant ecological merit to warrant funding this grant cycle.

Ecosystem Process and Function

This project addresses altered fisheries habitat and watershed function affecting water quality and fisheries habitat. Project implementation will improve water quality, fisheries, riparian and aquatic habitat in Little Creek and Catherine Creek drainages for ESA-listed bull trout and steelhead.

Regional Review Team Recommendation to Staff

Fund Reduced.

Regional Review Team Priority

2 of 17

Distribution of Recommended Award Amounts

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$230,000.00			

Staff Follow-Up to the Regional Team Review

The applicant determined subsequent to the review team meeting that a reduction of over \$40,000 is appropriate.

Staff Recommendation to the Board

Fund Reduced.

Staff Recommended Award

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$230,000.00			

Total Recommended Board Award

\$230,000.00

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5056	Project Type:	Restoration
Project Name:	BMV Spur Ditch Elimination		
Applicant:	Wallowa SWCD		
Basin:	GRANDE RONDE	County:	Wallowa
OWEB Request:	\$107,123.00	Total Cost:	\$263,758.00

Application Description

Prairie Creek watershed is approximately 15,000 acres of irrigated cropland and pasture with irrigation water stored in Wallowa Lake near Joseph. Located three miles east of Joseph, this project proposes to remove 18,280 feet of open-earthen ditch providing irrigation water to 550 acres of cropland on five ownerships and replace it with 12,740 feet of mainline. There are two spurs ditches that divert water from the Silver Lake Ditch. The first spur diverts water and flows through one landowner where it then supplies water to three irrigation pumps and returns water to Prairie Creek. The second spur crosses the Imnaha Highway, flows north to supply water to two irrigation pumps and then returns to the Farmers' Ditch. Because of the length of the ditches, excess water is diverted in order to supply a steady stream of water to the pumps with the remaining water dumped into Prairie Creek and the Farmers' Ditch. By installing a pipe in lieu of a ditch, consistent water volume can be supplied to the pumps and evaporative and seepage loss eliminated. Watershed benefits include improved water quality by eliminating sediment and nutrient-laden tailwater; decreasing the amount of water diverted for irrigation and eliminating evaporative and seepage loss.

Project components include installing one diversion box for the pipeline; 3,300 feet of 21-inch mainline; 2,450 feet of 18-inch mainline; 1,750 feet of 15-inch mainline and 2,950 feet of 8-inch mainline. In addition, a flow meter will be installed at each pump - five total - to monitor water usage.

Implementation follows the *Wallowa County Salmon Habitat Recovery Plan* as it states that high levels of sediment and nutrients are a high concern in Prairie Creek; the *Wallowa County Agriculture Water Quality Management Plan* as it addresses water quality and improved riparian vegetation and conditions and the *Grande Ronde Subbasin Plan* as it indicates that improved water quality will improve fisheries habitat.

REVIEW PROCESS

Regional Review Team Evaluation

Prairie Creek was a high priority focus area for many restoration and water quality improvement efforts in the mid 1990's, due to the high amount of nutrients, runoff, and *E. coli* concentrations. A greater emphasis on water quality improvement efforts is again being focused in this area which is a very positive step. Significant amounts of tailwater from various ditches return to Prairie Creek. Converting from an open ditch to a pipe is an excellent opportunity to reduce sediment and significantly reduce *E. coli* transport.

The application was well written and the map easy to understand. This is a good project and pipe is being installed in an area that is still mostly earthen ditches. There is significant sediment and bacterial contaminations in Prairie Creek. While sprinkler irrigation is fairly common in this area, the conveyance is still primarily earthen ditch which increases evaporative and seepage loss. The pipeline will divert significantly less water than the current earthen ditch. Many existing ditches are significantly incised and contribute high sediment loads to the system. This project will help to solve water quality and flow issue and is a meaningful contribution to the sediment problem. It addresses high-priority limiting factors in a water quality-limited stream.

The fiscal administration requested seemed low and the team noted that the SWCD should value their time more. There is high likelihood that these types of projects will continue in the Prairie Creek area and have significant water quality benefits. The project is very similar other ditch-to-pipe projects that have very positive impacts on water quality. The team agrees there is very significant ecological merit to warrant funding this grant cycle.

Ecosystem Process and Function

Eliminating earthen conveyance ditches will significantly reduce soil erosion runoff that annually contributes significant sediment and other pollutants to Prairie Creek and the Wallowa River. This project addresses altered watershed functions affecting water quality.

Regional Review Team Recommendation to Staff

Fund Increased with Conditions. Increase administration by \$3,000. Provide signed landowner agreements prior to the release of funds.

Regional Review Team Priority

1 of 17

Distribution of Recommended Award Amounts

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$110,123.00			

Staff Recommendation to the Board

Fund Increased with Conditions. The ditch is not managed by a ditch company and the project needs support from all landowners. Provide signed landowner agreements from all ditch landowners prior to the first release of funds. Increase fiscal administration by \$3,000.00.

Staff Recommended Award

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$110,123.00			

Total Recommended Board Award

\$110,123.00

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5057	Project Type:	Restoration
Project Name:	Wallowa County Weed Control		
Applicant:	Wallowa SWCD		
Basin:	GRANDE RONDE	County:	Wallowa
OWEB Request:	\$52,700.00	Total Cost:	\$150,300.00

Application Description

Wallowa County has an extensive weed program in the canyon areas and on federal lands, but other areas have weed infestations that are increasing in size. The Wallowa County Weed Department is proposing to treat noxious weeds on the "A" list and "T" list that are over one half acre in size. This grant will help cost-share the initial spraying and seed with grasses that are site specific. OWEB funds are requested to pay for 50 percent of the initial spraying and the seeding costs. Ten landowners were identified to participate in the project. The Natural Resource Conservation Service (NRCS) will determine which seed type is most appropriate for each site treated. Noxious weeds displace native vegetation resulting in overland flow, increased runoff and sediment. Wildlife habitat is also negatively affected as forage and seed opportunities decline. Watershed benefits include improved native vegetation, upland and riparian habitat and infiltration as native plants provide more complex root structure.

Project components include contract spraying (47%), herbicide and seed (47%) and administration (6%). Cost-share partners include the participating landowners, Wallowa County Weed Department and Wallowa SWCD.

Yellow starthistle, musk thistle, sulfur cinquefoil, Medusahead rye, pepperweed, meadow hawkweed, and other listed weeds are noted in OWEB's restoration priorities as having a moderate impact in the uplands.

REVIEW PROCESS

Regional Review Team Evaluation

The application was submitted last year but was not funded. There was more detail with this submission regarding the appropriate chemical and the targeted weeds which was an improvement. The cost-share is good. However, the team felt that there is still important information missing and that this is more of a block grant.

It is not clear if there is any coordination or overlap with either Wallowa Resources or Tri-County Coordinated Weed Management Area (CWMA). The team would like to know if any coordination exists between these organizations. The budget was lump sum lacking unit costs for chemicals, labor and seed mix. It is unclear how many acres will be treated and where these are located. The map was improved but still needs additional detail. GPS-identified points on the map would have been good detail to provide. Knowing why the identified landowners were chosen for spray work would also be helpful. Were they chosen because of a high priority weed present or for opportunistic reasons?

The application lacked essential detail on the watershed benefits of the project. Also, are any of the management practices adversely contributing to the spread of noxious weeds? The application has merit but lacks essential detail. A future application would need a more complete budget with units, unit costs and better treatment breakdowns, a more clearly defined map and more detail on the adverse impacts of noxious weeds to watershed health and function. The project does not warrant funding this grant cycle.

Regional Review Team Recommendation to Staff

Do Not Fund.

Staff Recommendation to the Board

Do Not Fund.

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5060	Project Type:	Restoration
Project Name:	Cottonwood Creek Juniper Control & Spring Development		
Applicant:	Harney SWCD		
Basin:	OWYHEE-MALHEUR	County:	Harney
OWEB Request:	\$91,812.00	Total Cost:	\$114,812.00

Application Description

Located in the Cottonwood Creek drainage north of Drewsey in the upper Malheur basin, this project proposes to address juniper encroachment in the riparian areas and uplands, streambank stability, loss of fisheries habitat and overland erosion in the uplands. The landscape has riparian area areas transitioning into dry upland sites with scattered springs. The conifer overstory is mostly juniper, ponderosa pine, and scattered Douglas-fir, lodgepole and mountain-mahogany. The diverse species provide significant habitat for many avian, terrestrial and aquatic wildlife. The riparian area needs improvement as a result of livestock concentration and lack of alternate water. The project also addresses the need for better livestock distribution by developing upland water.

Project components include hand removal (chainsaw) of 355 acres of juniper in the riparian and spring areas and adjacent uplands; machine pile the felled juniper with an excavator; develop three springs, fence 132-feet by 132-feet around the spring areas; and seed 36 acres with a mixture of intermediate wheatgrass, Paiute orchardgrass, mountain brome, pubescent wheatgrass and/or Ladak alfalfa. Watershed objectives are to reduce runoff, improve upland vegetation by providing alternative water sites and reducing overstocked conifers, improve riparian vegetation and bank stability by restricting livestock access to the creek and removing juniper and improve wildlife and fisheries habitat.

OWEB funds are requested for project management - layout and oversight (7%), contracted services (81%), mileage (1%), administration (8%) and monitoring (2%). The landowner will provide in-kind contribution.

Implementation follows the *Malheur River Agricultural Water Quality Management Plan* that encourages practices that help to achieve water quality standards and enhance streamside vegetation. The *Malheur Basin Watershed Assessment* has a goal to achieve proper functioning conditions in streams and waterways.

REVIEW PROCESS

Regional Review Team Evaluation

The team agreed that the application was well written with good detail, background information and budget breakdowns. The HarneySWCD strategically selected areas and assessed each with a preliminary inventory which is very positive. The maps provided good detail. By developing the springs, livestock distribution will be improved, and upland and riparian vegetation enhanced. Fencing the spring will protect vegetation by reducing trampling and soil compaction potential. The grazing plan summary was provided which was positive.

The riparian area needs improvement and indicates evidence of overuse. However, during the site visit younger conifer regeneration was noted that was not shown in the submitted photos. Also, it appears that there was a recent flow event that scoured the banks in some areas. Lessening the livestock pressure is needed. Pulling livestock and wildlife from the riparian area through upland springs developments will show positive benefits. The riparian area will need at least one year of rest for seed heads to set. Also, if the

riparian area is used as a gathering area that will have adverse effects on vegetative response while juvenile plants are being established. An ODF Notification of Operation will most likely be needed. Overall, the team felt that this application was well written and would provide significant ecological merit. It is ready for funding this grant cycle.

Ecosystem Process and Function

Removing juniper and overstocked conifers, and improved grazing management, will lead to decreased erosion and overland flow by increasing infiltration. Upland and riparian vegetation and water quality will improve in the Cottonwood Creek and upper Malheur River drainages. This project addresses altered watershed function affecting riparian function, water quality and various wildlife habitat.

Regional Review Team Recommendation to Staff

Fund with Conditions. Contact ODF to see if a Notification of Operations is required. Fence the overflow area of the spring.

Regional Review Team Priority

9 of 17

Distribution of Recommended Award Amounts

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$91,812.00			

Staff Recommendation to the Board

Fund with Conditions. The grant agreement will require contacting ODF to see if a Notification of Operations is required; fencing the overflow area of the springs; and the final project completion report must include a long-term juniper management plan and a grazing management plan, showing at least one year of rest for the riparian area for seed heads to set.

Staff Recommended Award

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$91,812.00			

Total Recommended Board Award

\$91,812.00

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5061	Project Type:	Restoration
Project Name:	Cow Creek Juniper Control & Spring Development		
Applicant:	Harney SWCD		
Basin:	LAKES	County:	Harney
OWEB Request:	\$49,405.00	Total Cost:	\$61,868.00

Application Description

This property is located 35 miles northwest of Burns on the East Fork of the East Fork of Cow Creek in the Harney-Malheur Lakes Subbasin. Juniper encroachment in the riparian and upland areas is causing a loss of desired riparian species, plant diversity, decreased streambank stability and overland erosion. The proposed solution is to remove 148 acres of encroaching juniper and minor amounts of smaller, overstocked diameter ponderosa pine from the riparian areas and spring areas. Due to the steep terrain, three different juniper prescriptions are proposed. Unit 1 (49 acres) - hand cut (chainsaw) and machine pile. Unit 2 (50 acres) - hand cut and lop and scatter the slash and Unit 3 (49 acres) – hand cut and hand pile. Disturbed areas will be seeded. The spring areas will be fenced at 132 feet by 132 feet. In addition, a 3,000 - gallon trough will be installed. The grazing plan was discussed and is a cooperative plan with the Vale BLM district.

OWEB funds are requested for pre-implementation (9%), project management (3%), contracted services - juniper removal (75%), travel (1%), administration (7%) and monitoring (5%). The landowner will provide in-kind contribution.

Implementation follows the *Treater Harney Basin Agricultural Water Quality Management Plan* (March 2003) that encourages practices that help to achieve water quality standards, enhance streamside vegetation and improve upland vegetation. The BLMs *Upper Malheur Basin Water Quality Restoration Plan* indicates that invading juniper results in decreasing perennial herbaceous vegetation.

REVIEW PROCESS

Regional Review Team Evaluation

The project has good match and is straightforward with positive riparian and upland benefits. From the photos, it appears that a lot of the area is phase 1 juniper with some areas transitioning into stage 2 and 3. The herbaceous plant community seems to still be healthy and removing the overstory juniper will ensure that perennial bunchgrass will not be degraded by the negative aspects of juniper. It would be good to know the relative percentage of deep-rooted perennials so that the team can ascertain if seeding is warranted.

The cost per-acre is very high for unit 3. However, there is high stand density and it is hand cutting and piling. It is in a very remote area with little access and contractors would have a time-consuming walk up a canyon to get to the unit while packing all their gear. Therefore, those costs were justified. The seed mix is well described. The grazing plan is a cooperative effort with the BLM which is positive. Also, the budget has good detail with unit costs well described. The team recommends that the spring overflow area be fenced as well as around the spring box. The application was well written. The team agreed that this project has significant ecological merit and should be funded this grant cycle.

Ecosystem Process and Function

Removing juniper and overstocked conifers will lead to decreased erosion and overland flow by increasing infiltration. Upland and riparian vegetation and water quality will improve in the Cow Creek. This project addresses altered watershed function affecting riparian function, water quality and various wildlife habitat. This project addresses altered watershed functions affecting water quality and riparian vegetation.

Regional Review Team Recommendation to Staff

Fund with Conditions. Fence the spring overflow area and provide a long-term juniper management plan with the final project completion report.

Regional Review Team Priority

12 of 17

Distribution of Recommended Award Amounts

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$49,405.00			

Staff Recommendation to the Board

Fund with Conditions. Fence the spring overflow area and provide a long-term juniper management plan with the final project completion report.

Staff Recommended Award

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
\$49,405.00			

Total Recommended Board Award

\$49,405.00

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5030	Project Type:	Technical Assistance
Project Name:	Harney Basin Groundwater Project - Data Analysis		
Applicant:	Harney WC		
Basin:	LAKES	County:	Harney
OWEB Request:	\$45,650.00	Total Cost:	\$57,890.00

Application Description

Harney Watershed Council (Harney WC) is seeking technical assistance from a GIS specialist to assist in this phase of their ongoing groundwater study effort. This project will collect all of the existing data gathered from an ongoing OWEB funded grant (210-5001). Well log data located within the Harney-Malheur Lakes Subbasin and portions of the Silvies, Donner Und Blitzen and a small portion of the upper Malheur subbasin encompassing approximately 572,400 acres was collected. The study area, which has approximately 2,534 wells, was derived by combining a slope analysis with geologic data. However, not all of the wells will be analyzed and entered into the geo database. Inclusion of the database will depend on the integrity of the information about each well and the accuracy of the location and stratigraphic data. Wells that do not meet the standard for quality of information, perhaps up to 20% of the total, will not be included. The primary receivable will be spatial and temporal data for all wells when stored in the geodatabase and will conform to ArcHydro standards.

The groundwater model will be created by a hydrogeologist who will review and analyze well log data to establish hydrogeologic units (HGU). The HGU's will be correlated to the wells to create a borehole profile for each well. The contractor will review the well log data and develop values for the geodatabase, create rasters (surfaces) and analyze data gathered into a geodatabase based on the ArcHydro Groundwater data model. From this information, two-dimensional and three-dimensional cross sections are created. These profiles will be used to create cross-sections (known as "fences"). The hydrogeologist will review the cross-sections to ensure that they represent a reasonable picture of the subsurface geologic structure. The cross-sections are combined to create a 3-D representation of the subsurface structures. The values between the cross-sections are then interpolated to create the groundwater model. The groundwater model will allow effective display of aquifer layers and accurately estimate the volume of water storage. Data gathered when drilling new wells will be used to validate or update the existing model.

OWEB funds are requested for contracted services - hydrogeology consultant (87%), software (4%) and administration (9%). Cost-share partners include Oregon Water Resources Department (OWRD), Watching Cat Inc., Harney County Court and Harney WC.

The *Harney-Malheur Lakes Subbasin Assessment* (HCWC's 2001) identified "the lowering of the water table due to an increase in the number of wells" as a priority item. The plan recommended educating the public to the importance of establishing a database for the location of wells and baseline of seasonal/periodic fluctuations of groundwater in those wells. It also recommended inventorying historic wells.

REVIEW PROCESS

Regional Review Team Evaluation

The application was previously submitted and recommended, but fell below the funding level. A focus of the Harney WC for the last few years has been beginning a groundwater study. Groundwater resources in this area are being over utilized. Many wells dug are less than 200-feet deep and pump significant amounts of

water. Groundwater and surface water are interconnected. Concentrating efforts to obtain initial data will assist Harney WC in developing future restoration projects. The information collected will help ascertain where the aquifers are and will also help to develop a strategic plan and produce a map.

Reviewers felt it was a good effort in an area that had the highest number of groundwater applications. It is not known why certain areas have excess water and others have poor recharge capacity. Providing better information can assist OWRD in making better decisions on well applications.

This could be a valuable tool for evaluating how much groundwater is present in the area. It was questioned if a significant number of test wells are needed to obtain accurate data. However, the wells are fairly evenly distributed across the study area. Also, the accuracy of the well log data is a concern. As new wells are drilled, these have better, more complete data gathered than from data collected from older wells. Seismic testing would also be very beneficial, but it is quite expensive and beyond the amount available for this project. There are insufficient funds to cover seismic testing.

It was questioned who would use this groundwater model. OWRD could use this model to show where water is flowing, in what direction and the original source of the water. The model should be able to ascertain the amount of water that could be expected in future well drilling efforts. If the amount of water is estimated to be insufficient, an alternative source could then be sought. It was also questioned how this project would lead to future restoration efforts. The information would be very valuable when planning for off-stream livestock water. Also, if there is a concern about the resource, this information would provide data needed to ascertain if a water right should be granted in a water-limited area as the data would show where the confining layers are and how water is stored. A determination could be made if the water resource has been maximized. The groundwater model would be very useful in planning future water-related projects. The team also felt that the appropriate disciplines are involved including a hydrogeologist, GIS analyst and former watermaster. Overall, the team felt that continuing the groundwater model is important to assist Harney WC's future efforts.

Regional Review Team Recommendation to Staff

Fund.

Regional Review Team Priority

1 of 4

Distribution of Recommended Award Amounts

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
			\$45,650.00

Staff Recommendation to the Board

Fund.

Staff Recommended Award

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
			\$45,650.00

Total Recommended Board Award

\$45,650.00

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5035	Project Type:	Technical Assistance
Project Name:	Baker County Conservation Planning		
Applicant:	Baker Assn of Conservation Dist		
Basin:	POWDER	County:	Baker
OWEB Request:	\$45,500.00	Total Cost:	\$272,738.00

Application Description

Baker County SWCDs work closely with various natural resources agencies to support and promote conservation practices through a variety of state and federal programs authorized by the U.S. Farm Bill. The Baker SWCDs have had notable success and progress through various programs, but remained constrained in the amount of projects that can be implemented due to lack of conservation planning. The need for conservation planning has increased with the recently awarded USDA Conservation Innovation Grant (CIG) for developing the Baker County Grassbank, designed to assist landowners to facilitate conservation by having grassland forage in reserve and in exchange for improving the health and productivity of their lands through various conservation practices. Many of these conservation practices require resting pastures from grazing for a period of a year or two. Having alternative pastures or forage enables the conservation projects to occur. The technical assistance will enable the SWCDs to implement more additional watershed improvement projects especially those that can qualify for the Conservation Stewardship Program (CSP), the Cooperative Partnership Initiative Program (CPIP), Wildlife Habitat Incentive Program (WHIP) and the Sage Grouse Initiative (SGI). Many opportunities exist for participation in these projects, but without the technical assistance to develop the projects, they cannot be implemented.

The SWCDs are seeking technical expertise including knowledge of plant identification, GIS, natural resource management principles and good communication skills. The contractor needs to meet the qualifications for a NRCS planner. A priority list of conservation practices complementary to the various programs of partner agencies of the SWCDs will also be developed.

OWEB funds are sought for a certified conservation planner (92%) and administration (8%). The landowner is providing cost-share. Cost-share partners include the NRCS, Baker County SWCDs, CIG and ODA.

REVIEW PROCESS

Regional Review Team Evaluation

The team agreed that having additional conservation plans will enable the SWCDs to implement additional projects. Having expertise to focus on projects that meet the criteria of certain federal programs will result in the ability to better access those particular funds. That would be a high priority especially for projects that would be able to utilize funds from SGI and WHIP. There is currently a high demand for funding from these programs, but there is a lack of technical expertise to provide the assistance for enrollment in those projects. Conservation planning is needed for the lands that will become part of the grassbank including an inventory, determining the carrying capacity and the site index. That data will help the grassbank manager ascertain where to prioritize resources. If restoration projects such as a prescribed burn need to have a rest-rotation period, then alternative forage will be needed or perhaps alternative feed can be purchased. There can be a variety of options.

The grassbank will provide positive environmental benefits and is an excellent concept. The SWCDs oversee the grassbank with a steering committee that meets monthly and is well organized. However, that

was not clearly articulated in the application. More detail about the organizational structure and function of the Grass Bank would have been helpful.

The area is also seeing more nontraditional landowners reluctant to cut juniper, other conifers or implement upland management to control stocking rates. This is resulting in a higher potential for upland fire. As more fires occur, there will be increased demand for alternative forage. In addition, some land not currently being grazed could potentially be enrolled into the grassbank to provide this alternative forage. It was questioned if the expertise needed of this planning effort is available and stated it is. However, if the planner is not certified, then NRCS could provide training until the planner's certification is secured.

The team noted that the application would have been improved by providing more specifics about deliverables and products that would result from funding this application, for example, what types of plans will be produced? While the team felt the application could have been better, they agreed that this is an excellent concept which will result in some positive restoration efforts. It is ready for funding this grant cycle.

Regional Review Team Recommendation to Staff

Fund.

Regional Review Team Priority

3 of 4

Distribution of Recommended Award Amounts

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
			\$45,500.00

Staff Recommendation to the Board

Fund with Conditions. Staff will work with the applicant to develop a list of products and deliverables from funding this application. The grant agreement will require delivery of the products along with the final project completion report.

Staff Recommended Award

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
			\$45,500.00

Total Recommended Board Award

\$45,500.00

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5059	Project Type:	Technical Assistance
Project Name:	Pine Creek Valley Reach Restoration - Part II		
Applicant:	Powder Basin WC		
Basin:	POWDER	County:	Baker
OWEB Request:	\$24,200.00	Total Cost:	\$62,250.00

Application Description

Pine Creek, near Halfway, is a high-quality, high-gradient stream that experiences significant high flow regimes. High flows during spring runoff events deposit very large quantities of rock and debris throughout the creek channel causing excessive bank scouring. Eroding banks, stream widening and pools that fill with sediment have degraded habitat. Past flood events have resulted in stream channel excavation and other actions that have been detrimental to fish, in-stream habitat and irrigation diversions. Pine Creek has been targeted for intensive analysis and watershed planning by the Baker County Board of Commissioners, the Powder Basin Watershed Council (PBWC), Oregon Water Resources Department (OWRD), Idaho Power and Eagle Valley SWCD.

Severe flooding reoccurred in June 2010 emphasizing the need for riparian restoration floodplain management. Riparian surveys of Pine Creek completed in April 2010 through OWEB funded project 209-5028 are now outdated. Data compiled from the April survey, collected using ODFW protocols, needs to be collected again to obtain revised information on diversion, headgates and current stream channel configuration. The destruction of newly installed restoration projects in addition to more damage to well-established infrastructure, including bridges, diversion, roads, stresses the need for a whole watershed, long-term planning approach. PBWC is addressing the long-term planning need through the Pine Creek Floodplain plan. PBWC is collecting information needed to design and implement projects that would reduce flood damage along the valley reach of Pine Creek, through the Brownlee Subbasin Assessment and to, revise the Pine Creek Action Plan. Additional funding is needed to update the surveys completed prior to the June flooding, Idaho Power is currently in the process of Federal Energy Regulatory Commission (FERC) relicensing for the Hells Canyon complex of dams including Hells Canyon, Oxbow and Brownlee on the Snake River. The contractor hired for the survey needs experience in fluvial processes and engineering techniques to assess conditions and develop specific actions to protect and enhance fish passage, stream habitat values and identify actions to mitigate future flood damage. Analysis will include sediment transport, floodplain conditions and land uses, operations of diversion dams and ditches, fish habitat use data, and hydrologic and hydraulic processes.

OWEB funds are requested for project management (7%), in-house personnel (6%), contractor (70%), travel (4%) and administration (9%). Idaho Power, Eagle Valley SWCD, OWRD and PBWC are the cost-share partners.

REVIEW PROCESS

Regional Review Team Evaluation

Pine Creek is an important bull trout stream and a very flashy system. Extensive damage occurs periodically to infrastructure, streambanks and the riparian areas with a high amount of bedload moving through the system. Flooding issues escalate when floodwaters flow through the town of Halfway, at times causing an emergency situation. Prior to the listing of the bull trout, Pine Creek was dredged every year to maintain the amount of bedload. Continuing on with the previous effort from the current OWEB grant will enable the

PBWC to better plan restoration efforts. The floodplain restoration plan cannot continue without a revised riparian survey, especially considering the amount of damage that occurred. It is an important effort when the relicensing of Hells Canyon dam with Idaho Power is resolved.

The team supported this application as necessary to ensure that any restoration and flood mitigation activities that occur in Pine Creek improve and do not damage water quality and bull trout habitat. The June 2010 flooding damaged five bridges and removed a large section of a major road. In addition, there is a possible reintroduction of salmon and steelhead in Pine Creek, which is the first Oregon stream above Hells Canyon dam. Pine Creek has many significant ecological values including high quality water, bull trout, and migratory habitat and riparian resources. The flooding and bedload movement will continue until the upper end of the watershed and stability are addressed. OWRD has done significant inventory in the area, and it was noted that future restoration efforts should focus on the upper end of the watershed and move down from there. In addition, several diversions are being replaced. The applicant clearly demonstrated the need to continue this effort. The team agreed that it is ready for funding this grant cycle.

Regional Review Team Recommendation to Staff

Fund.

Regional Review Team Priority

4 of 4

Distribution of Recommended Award Amounts

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
			\$24,200.00

Staff Recommendation to the Board

Fund Reduced. Reduced due to limited non-capital funds.

Staff Recommended Award

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
			\$22,719.00

Total Recommended Board Award

\$22,719.00

October 18, 2010 OWEB Grant Cycle Eastern Oregon Review Team (Region 5)

Application No.:	211-5062	Project Type:	Technical Assistance
Project Name:	Dry Mountain Ranch Riparian Crossing		
Applicant:	Harney SWCD		
Basin:	LAKES	County:	Harney
OWEB Request:	\$8,440.00	Total Cost:	\$10,565.00

Application Description

The project is located eight miles northwest of Riley in the Silver Creek drainage. Upstream water control and natural flows have been altered increasing the water flows through this stream segment. The potential project was sited from an aerial assessment of the Silver Creek Valley by ODA water quality personnel. A riparian crossing with an undersized culvert washes out during high-flow events. The crossing has small water control structures and a roadway over the top. Water quality has declined due to increased unregulated flow from upstream diversions causing excessive erosion of both the streambanks and the roadway. Currently, up to 60 cfs (cubic feet per second) flows through an undersized culvert that blocks redband trout migration and has blown out. This section of stream is enrolled in the Conservation Reserve Enhancement Program (CREP). The applicant seeks a design that will provide sufficient water passage, fish passage and erosion control in addition to accommodating access to an adjacent field. The design will need to list any permits needed for future implementation.

The applicant will have an ad hoc technical advisory committee with representatives from ODFW, ODA, DSL, the SWCD and the landowner. A structural engineer with expertise in riparian management is needed for this project.

OWEB funds are requested for project management (6%), in-house personnel (2%), contracted services – engineering (85%), travel (2%) and administration (5%). Cost-share partners include ODFW, ODA, DSL and Harney SWCD.

REVIEW PROCESS

Regional Review Team Evaluation

A restoration application was submitted in April 2010 but not recommended for funding due to some concerns regarding the proposed design. This section of Silver Creek is braided as it flows through the riparian area. The original proposed design included a 12-foot wide by 5-foot-high by 30-foot long multi-plate arched pipe and another culvert into the side channel. The team had questioned if raising the roadbed over the culvert would force the water into culverts and potentially create additional unforeseen problems. By having an engineered design, the applicant will be able to ascertain if the proposed pipe size and design are adequate for the flashy flows. The CREP area downstream of the proposed project site has excellent vegetation and needs to be protected from excessive flows.

The application was well written and had good maps, budget and project detail. The overall request for the engineering is modest. Because there are a few channels of the creek, this crossing is more complicated than other culvert installations. By seeking technical assistance the applicant will obtain a better design and also ensure positive fish passage. ODFW is involved with the design and plans to obtain technical expertise from the fish passage coordinator regarding redband trout. Overall, the team felt that the project is ready for funding this grant cycle.

Regional Review Team Recommendation to Staff

Fund.

Regional Review Team Priority

2 of 4

Distribution of Recommended Award Amounts

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
			\$8,440.00

Staff Recommendation to the Board

Fund.

Staff Recommended Award

Capital Amount	EM Portion	PE Portion	Non-Capital Amount
			\$8,440.00

Total Recommended Board Award

\$8,440.00