



**Oregon Water Resources Department**

Water Conservation, Reuse and Storage Grant Applications – 2011

The following grants have been determined to have met grant application requirements

<b>Entity</b>	<b>Project name and description</b> (as provided by Applicant)	<b>Type</b>	<b>Amount</b>
Central Oregon Irrigation District	<p><i>Redmond 25 Mile Feasibility Study</i></p> <p>The Feasibility Study will comprehensively examine COID's existing main Pilot Butte Canal from the 25-Mile weir to the end of the canal (approximately 26,890 linear feet or a little over 5 miles) to determine the highest loss areas and the best alternative to maximize water conservation in the high-loss areas. A preliminary loss study conducted in 2006 shows an estimated 20cft (7,140.6 AF) loss through the entire project area which includes 41 head gates and 5 laterals. The overall goals are to conserve water through system improvements in the high areas of water loss and increase capacity in the canal to allow for future water conservation projects that will assist in water delivery improvements within COID and North Unit Irrigation District.</p>	Conservation	\$ 11,485
Corvallis, City of	<p><i>City of Corvallis Wastewater Reclamation Plant East Alternative Feasibility Study</i></p> <p>The City of Corvallis is in the process of developing a plan for complying with the requirements of the Willamette River Total Maximum Daily Loads (TMDLs) for temperature and other pollutants. After completing a TMDL Alternatives Evaluation and undertaking an extensive citizen involvement process, the City of Corvallis selected two TMDL Alternatives for evaluation in an initial, Part A Due Diligence Feasibility Study of the East and West TMDL alternatives, to determine fatal flaws that could impact future implementation of either alternative. The findings of the Part A Feasibility Study resulted in a recommendation to the City to implement the East TMDL Alternative due to capacity limitations identified for the West Alternative. The City has elected to proceed with a Part B Detailed Feasibility Study of the East TMDL Alternative to verify recycled water uses and address issues raised in the Part A Due Diligence Feasibility Study.</p>	Reuse	\$ 466,977

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Clean Water Services	<p data-bbox="401 228 1325 261"><i>Reuse and Flow Restoration from Decentralized Wastewater Treatment</i></p> <p data-bbox="401 302 1528 699">The purpose of this study is to evaluate the feasibility of decentralized reuse water production facilities to reduce demands on irrigation and potable water supplies and to improve water quality in tributaries of the Tualatin River. It will focus on a range of options to improve the health of tributary streams through offsetting irrigation withdrawals and stored water usage; local water reuse by new industrial or residential developments; and stream flow-augmentation through hyporheic or wetland recharge. Clean Water Services (CWS) has demonstrated the benefits of summer time flow augmentation in tributaries over the last five years that suffer from low flows (due to low rainfall and agricultural irrigation withdrawals). This study will therefore add to an existing body of work and support innovative approaches to wastewater management that benefit watershed health.</p> <p data-bbox="401 740 716 773">The study will evaluate:</p> <ul data-bbox="453 781 1503 967" style="list-style-type: none"> <li>• Potential demand for reuse water from decentralized treatment facilities as the District expands.</li> <li>• Strategies to utilize reuse water to indirectly restore tributary stream flow.</li> <li>• Treatment, conveyance and O&amp;M requirements and costs necessary to protect public health and improve water quality.</li> </ul>	Reuse	\$ 57,000

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Deschutes Conservancy	<p><i>The Deschutes Conservation Initiative Study</i></p> <p>The Deschutes Conservation Initiative Study proposes to develop up to twenty irrigation district water conservation projects in the upper Deschutes Basin. These projects will supply Deschutes and Crooked River water to meet agricultural and environmental water needs. Project partners will delineate canal piping and lining projects in Central Oregon Irrigation District and Swalley Irrigation District. Project partners will evaluate water supply benefits, develop reconnaissance level designs, quantify project costs, and prioritize projects for implementation. Study partners intend that these conservation projects will be ready to finance and implement following the completion of the proposed feasibility study. These projects will, upon implementation, yield up to 20,000 acre-feet of Deschutes and Crooked River water rights through Oregon's Allocation of Conserved Water Program. These water rights will be allocated to the Deschutes River, Crooked River, and lands in North Unit Irrigation District that currently receive water pumped from the Crooked River.</p>	Conservation	\$ 50,000
Umatilla Basin Watershed Council	<p><i>Dillon Ditch Conservation and Dam Removal Feasibility Study</i></p> <p>This study will evaluate and mitigate environmental concerns associated with moving the Dillon Ditch point of diversion upstream 2.6 miles and converting an open ditch system to pipe. An in depth study will evaluate removing water from a portion of the Umatilla River not previously de-watered and identify return flow conditions contributed from the 1.75 mile open and unlined delivery system. Advantages to moving the point of diversion are conservation of water in a water quality limited area, increase in irrigation efficiency and remove the need for one of seven anadromous fish passage barriers on the Umatilla River.</p>	Conservation	\$ 34,020

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Dundee, City of	<p><i>City of Dundee Recycled Water Feasibility Study</i></p> <p>Drinking water supply is an issue in the City of Dundee due to diminishing capacity in the City's existing groundwater wells and limited groundwater capacity in the area. The City is in the process of completing construction of a new membrane bioreactor (MER) wastewater treatment facility that, when complete, will consistently produce Class A recycled water. The City is interested in exploring options for using the Class A recycled water from the new wastewater treatment plant to help reduce the City's long term drinking water supply issues in the summer months by using the water for irrigation, toilet flushing, industrial process water and other allowable uses.</p>	Reuse	\$ 30,000
East Valley Irrigation District	<p><i>Drift Creek Storage Project II</i></p> <p>East Valley Water District has completed a number of studies to develop a storage reservoir on Drift Creek, near Silverton, Oregon. This request will include the next level of studies that will enable the District to then develop its final EIS or EA prior to construction development.</p> <p>2012-2013 Study Tasks:</p> <ol style="list-style-type: none"> <li>1. Provide an additional year of stream gauge analysis to further verify flow data</li> <li>2. Develop a time-step hydrologic yield analysis to determine storage fill and withdrawal operational requirements</li> <li>3. Determine water right needs</li> <li>4. Continue development of fish passage mitigation with agencies</li> <li>5. Develop economic analysis of irrigator ability-to-pay</li> <li>6. Complete land use requirements, including geologic and flood plain assessments</li> <li>7. Follow through with State Historic Preservation Office request for project approval</li> <li>8. Evaluate pump station viability</li> <li>9. Provide additional water quality discharge study</li> </ol>	Storage	\$ 71,665

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Fessler Nursery	<p><i>Fessler Nursery Aquifer Storage and Recovery Feasibility Study</i></p> <p>Fessler Nursery is determining the feasibility of using Aquifer Storage and Recovery (ASR) as an alternate source of water for nursery use. The objective of the feasibility study will be to determine whether: the source water meets drinking water standards; the source water is chemically compatible with the basalt aquifer; the basalt aquifer has the capacity to store the volume of water to be injected; and the source can sustainably provide the water. The source is an alluvial aquifer that is also used for drinking water. Water will be pumped from existing permitted alluvial wells and injected into a basalt well completed for the feasibility study. The study will consist of water quality testing, water compatibility analysis, a pumping test, pumping test analysis and water level monitoring.</p>	Storage (GW)	\$ 11,405
Grande Ronde Model Watershed	<p><i>Lostine River Watershed Storage Study</i></p> <p>The planning study will evaluate the potential application of managed underground storage (MUS) techniques in the Lostine River watershed in Wallowa County. The goal of the study is to determine feasible ways to augment late season stream flows that are currently diminished by irrigation as well as to provide an alternative to mitigate potentially declining groundwater levels in the Columbia River Basalt Group (CRBG) aquifers of the Lostine River watershed. Specifically, the study will evaluate whether using the Oregon Water Resources Department (OWRD) artificial recharge (AR) and/or aquifer storage and recovery (ASR) rules can be used to employ aquifer storage technologies in the Lostine River watershed for these purposes.</p>	Storage (GW)	\$ 56,000

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Grande Ronde Model Watershed	<p><i>Grande Ronde River Watershed Storage Study</i></p> <p>The planning study will evaluate the potential application of managed underground storage (MUS) techniques in the Grande Ronde River watershed in Wallowa County. The goal of the study is to determine feasible ways to augment late season stream flows that are currently diminished by irrigation as well as to provide an alternative to mitigate potentially declining groundwater levels in the Columbia River Basalt Group (CRBG) aquifers of the Grande Ronde River watershed. Specifically, the study will evaluate whether using the Oregon Water Resources Department (OWRD) artificial recharge (AR) and/or aquifer storage and recovery (ASR) rules can be used to employ aquifer storage technologies in the Grande Ronde River watershed for these purposes.</p>	Storage (GW)	\$ 56,000
Hood River County	<p><i>Hood River Basin Surface Water Storage Feasibility Study</i></p> <p>Hood River Valley's economy and ecology are highly dependent upon surface water. In fall 2008, Hood River County convened its Water Planning Group to assess future water needs for threatened and endangered aquatic species, irrigated agriculture, and recreation in the Hood River Basin. This group collected all existing water-related study documents and identified the need for a feasibility study of the potential to store winter water flows in above-ground reservoirs to allow for operational flexibility of irrigation diversions while enhancing late-season stream flows for aquatic species. This OWRD grant (along with a secured BOR WaterSMART Basin Study Grant) will address this need, providing for the analysis of required irrigation, by-pass, optimum peak, flushing, and ecological flows, including comparative water supply alternative analyses and the potential for environmental harm from proposed storage facilities. At its conclusion, the study will identify the actual need, if any, for stored water in the Hood River Basin.</p>	Storage	\$ 250,000

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Jefferson County Soil & Water Conservation Dist	<p><i>South Juniper Butte Water Conservation Feasibility Study</i></p> <p>North Unit Irrigation District, partnering with Jefferson County Soil and Water Conservation District, are proposing to redesign and implement a water conservation and re-use project in South Juniper Butte Area. The area is 4,700 estimated acres with potential water savings: 2,000 CFS/season through conservation of on farm irrigation and water delivery system, along with tail water reuse.</p> <p>South Juniper Butte Feasibility Study will determine: 1) the amount of water that could be conserved by piping open delivery canals and on farm ditches along with improved on farm irrigation equipment and management 2) where adequate pressure for on farm energy conservation exists, and 3) what options exist for tail water management for re-use of irrigation water. NEPA evaluation will be completed if needed for Federal project implementation funds. The consequence of this study is helping farmers help the fish in the Crooked River, Deschutes Basin.</p>	Conservation	\$ 15,350
La Creole Orchards	<p><i>La Creole Orchards water storage projects planning study</i></p> <p>The planning study will evaluate the feasibility of three on-farm water storage projects to provide irrigation to a 50-acre truffle, fruit, and nut orchard in Polk County. The potential projects are: (a) several small storage ponds to hold groundwater pumped year-around from the orchard's low-yielding wells; (b) a storage pond to hold water from a spring that has been detected at the site; and (c) a bioswale to reclaim polluted storm-water runoff that is discharged onto the site by a drain from a neighboring subdivision (part of the City of Dallas), and a storage pond for the reclaimed water. Storing at least 350,000 gallons is an absolute necessity to be able to irrigate the entire orchard when it reaches full maturity in 2014-2015. The planning study will analyze the best technical solutions, best cost/benefit ratios, and best environmental benefits for the storage projects.</p>	Storage	\$ 6,200

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Lane Council of Governments	<p><i>Willamette Multi-City Regional Conservation and Reuse Planning Study</i></p> <p>This project ignites a conservation and reuse initiative with eight small cities in the upper and middle regions of the Willamette River Basin. Through an examination of information about current supply and future demand needs, the Lane Council of Governments (LCOG) will develop a water conservation and reuse policy tool kit that includes existing and successful models in addition to new tools and measures to reduce water supply needs. This project initiates a regional platform for water conservation/reuse; and provides feedback from stakeholders throughout the process. Strategies developed will be scalable and transferable while building relationships and supporting broader outreach. Extensive resources are leveraged in partnership with the Willamette Water 2100 Project and efficiencies achieved that provide for communication, coordination and participation of a diverse partnership supporting the goals of SB 1069.</p>	Combined	\$ 242,553
Lower Powder Irrigation District	<p><i>Lower Powder System Optimization Review</i></p> <p>The Lower Powder Irrigation District, in cooperation with the Bureau of Reclamation, is planning a feasibility study of the Lower Powder Irrigation District. The feasibility study process consists of the Lower Powder Irrigation District, Bureau of Reclamation and Browne Consulting, who will work towards the goal of a reliable source of water to be able to serve all water users in the district throughout the entire irrigation season. The feasibility study will identify areas of water loss, areas that can conserve water, collect missing data such as stream flows, diverted flows, and return flows, and collect information for baseline conditions that already exist within the basin, like natural flows and irrigation demands.</p>	Conservation	\$ 42,409

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Polk County	<p><i>2012-2013 Valsetz Water Storage Concept Analysis</i></p> <p>The 2011 Valsetz Water Storage Concept Analysis included several suggestions for further assessment. This grant application would be used to conduct further assessments. Components of the 2012-2013 storage concept analysis would include the following:</p> <ol style="list-style-type: none"> <li>1. Collection of LIDAR data</li> <li>2. Expanded modeling of flows and water temperature to evaluate potential use of variable level intakes to modify temperature and dissolved oxygen in the reservoir and downstream of the dam</li> <li>3. Modeling of the effect of reservoir management options on dissolved oxygen</li> <li>4. On the ground surveys of sensitive plants near the head of the proposed reservoir</li> <li>5. On the ground surveys of fish presence/absence and habitat quality in the tributaries upstream of the proposed dam</li> <li>6. Expansion of the assessment of alternatives, to include a reconnaissance-level examination of possible alternative locations.</li> <li>7. Instrumentation to measure water temperature, climate, and stream flow.</li> </ol>	Storage	\$ 80,538
Central Point, Eagle Point, Jacksonville, Talent & Phoenix, Cities of Co- Applicant Name: Medford Water Commission	<p><i>Rogue Valley Cooperative Urban Water Conservation Strategy</i></p> <p>The Medford Water Commission (MWC) currently provides wholesale domestic water for five customer cities (Central Point, Eagle Point, Jacksonville, Talent &amp; Phoenix) and three water districts in addition to providing water on a retail basis for the citizens of Medford, and some customers in the outlying, unincorporated areas near Medford including White City. The planning study is proposed to generate coordinated water conservation strategies that can be incorporated into water management and conservation plans for all entities served by the MWC. In doing so, we anticipate that the need for water system expansion and acquisition of additional water rights can be reduced or delayed. Potential projects to be evaluated in the study include: expansion of MWC's conservation program, an enhanced leak detection program, calibration of large meters, usage trend analysis, modeling of Big Butte Springs pipelines, and the implementation of other identified successful conservation strategies in use throughout the nation.</p>	Conservation	\$ 100,000

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Sisters, City of	<p><i>City of Sisters Wastewater Reuse &amp; Conservation Project Planning Study</i></p> <p>The City of Sisters requests a Water Reuse &amp; Conservation Grant to develop an implementation plan to transition from surface water irrigation to effluent irrigation on the City's Lazy Z property. The plan would determine when, how and under what conditions the transition could occur. The study will also assess on-farm efficiency opportunities and opportunities to place existing surface water rights on the Lazy Z property instream, and how such instream transactions might help finance needed reclaimed water infrastructure improvements instream transactions could help meet future water supply needs for City uses and flow needs for fish and wildlife in Whychus Creek.</p>	Reuse	\$ 21,210
Eugene/Springfield Metropolitan Wastewater Management Commission	<p><i>Industrial Aggregate Recycled Water Use Study, Eugene/Springfield, Oregon</i></p> <p>The Eugene/Springfield Metropolitan Wastewater Management Commission (MWMC) will study the feasibility of expanding recycled water use to neighboring industrial aggregate partners in lieu of river and groundwater sources. The potential demand is over 3 million gallons per day and could be the first recycled water use in Eugene/Springfield outside of MWMC's facilities. This use could potentially provide more efficient use of water resources, benefits to river temperature and habitat, and enhance green business practices. The proposed study includes analytical water balance modeling, engineering design scoping, water quality evaluations, water rights issues assessment, stakeholder acceptability, and triple-bottom-line cost/benefit analysis. Potential industrial applications for recycled water include gravel washing, concrete and asphalt production, equipment rinsing, and dust control. These applications could demonstrate safe and effective recycled water use to the greater community, potentially expanding interest in regional use of recycled water for sustainability and water quality benefits.</p>	Reuse	\$ 170,262

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Tri City Water & Sanitary Authority	<p><i>Tri City Water &amp; Sanitary Authority Water Storage</i></p> <p>Tri City Water &amp; Sanitary Authority's planning study would evaluate the above-ground storage options and conservation potential in order to compare the relative feasibilities of various strategies. The physical, regulatory, ecological, economic, and energy saving feasibilities will be explored in order that TCWSA can make a qualified decision on increasing surface water storage. The goal of this study will be to find additional water storage options in order to provide less constant demand and impact on Tri City Water's municipal intake on the South Umpqua River and pump less frequently, allowing more constant river flows during the summer months, and the conservation of energy. TCWSA's Water Master Plan which was completed in 2006 and a Risk Failure Analysis completed in 2011 states that a significant deficiency exists that could impact area development and service to users, including sufficient water flows for fire protection.</p>	Storage	\$ 16,500
Walla Walla Basin Watershed Council	<p><i>Aquifer Storage and Recovery Potential-Walla Walla Basin, Eastside Alluvial Aquifer</i></p> <p>The study will help fund a bi-state strategic plan for aquifer restoration and flow recovery. This will utilize data from over 100 wells, 60 surface-water points, seepage analysis, several aquifer recharge projects, and modeling tools such as IWFM and Hydrus 2D/3D. These tools and data sets have been in development for nearly 10 years and we believe sufficient information has been collected to be able to compile this data into a comprehensive recovery plan.</p> <p>The second component will focus on the feasibility of shallow aquifer recharge in the depleted 'Eastside' sub-basin of the alluvial aquifer; with the added component to investigate recovery of a portion of the recharged water to supplement instream flows during irrigation season. Due to aquifer depletion in this particular sub-basin, seepage loss in the adjacent mainstem Walla Walla River can exceed 75% in the summer.</p>	Storage (GW)	\$ 129,200

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Water And Stream Health Committee	<p><i>Powder Basin "Water and Stream Health" (WASH)</i></p> <p>The Water and Stream Health Committee is seeking funding to continue the study of how to conserve, enhance and maximize use of water in arid Baker County, while identifying additional partners in this long term project. Our goal is to better manage unallocated water from excessive spring flows for later beneficial use during dry summer months. Streams in this area typically run extremely low on water as the summer progresses; many even go completely dry to the demise of fish and aquatic life. Some beneficial uses to be evaluated and emphasized include flood control, necessary spring flushing, dilution of pollution in impaired streams, promotion of aquatic life, electrical power production, production of food and fiber.</p>	Combined	\$ 134,000
Talent Irrigation District - WISE	<p><i>WISE Project Cost Benefit Analysis</i></p> <p>The WISE Project is a regional approach to addressing water resource issues in the Rogue Valley. This project will improve water reliability and availability for agriculture while improving stream flow and water quality throughout the Bear Creek and Little Butte Creek watersheds. The proposed project includes piping the entire irrigation system (thus conserving all of the water lost through the earthen and lined infrastructure), increasing storage at one of the irrigation reservoirs, and using reclaimed effluent for agriculture uses. The project will leave live summer stream flows instream to improve aquatic habitat. Based on the preliminary feasibility study, during an average precipitation year the WISE Project will provide more than 45,000 acre-feet of additional water annually (sum of conserved water, reclaimed effluent, and live flows left instream).</p>	Combined	\$ 243,000
			\$ 2,295,774