



2015-2017 Grant Solicitation

WATER CONSERVATION, REUSE AND STORAGE FEASIBILITY STUDY GRANT PROGRAM

GRANT APPLICATION

APPLICATION INSTRUCTIONS

1. Complete Sections I through VII in the spaces provided.
2. An application must be submitted on a form provided by the Department. An explanation must accompany the application if any of the information required cannot be provided [OAR 690-600-0020(6)].
3. If in hard copy - use 8 ½” x 11” single sided, unstapled pages. Provide any attachments to application also on 8 ½” x 11” single-sided, unstapled pages. Avoid color and detail that will not photocopy clearly.
4. Please Contact the Department’s Grant Specialist Jon Unger at **503.986.0869** or Jon.J.Unger@wrд.state.or.us if you have any questions.

Application Deadline: July 31, 2015 5:00 PM,
(Application must be received by this date and time)

Mail application to:

OREGON WATER RESOURCES DEPARTMENT
Attention: Grant Specialist
725 Summer Street NE, Suite A
Salem, OR 97301

KEY GRANT INFORMATION

Introduction. The Water Conservation, Reuse and Storage Grant Program, established by Senate Bill 1069 (2008), is designed to fund the qualifying costs of feasibility studies that evaluate the feasibility of developing water conservation, reuse or storage projects. Oregon is facing increasing water demand and increasingly scarce water supplies. To adequately meet Oregon's diverse water demands now and into the future, Oregonians must use their water wisely and efficiently. That means looking more closely at innovative water conservation and reuse programs and environmentally sound storage projects that capture available water so it can be put to good use when needed.

What is a feasibility study? A feasibility study is an assessment of a proposed plan or method. Typically there should be a previously identified water project that appears to have merit but is lacking important details necessary to determine whether or not to proceed. The feasibility study focuses on helping answer the essential question of "should we proceed with the proposed project idea?" All activities of the study are directed toward helping answer this question. Ideally the project identified will have community support and will have been identified through a collaborative process.

Match Funding. To be eligible for funding applicants must clearly demonstrate funding from a source other than the Program of not less than a dollar-for-dollar match from cash or in-kind services. For example, if \$25,000 is requested in Program Funds, then there must be a match of at least \$25,000 from another source. The matching funds must be secured or in the process of being secured. The maximum grant award is \$500,000.

Eligibility Requirements for Storage Studies. To be eligible for funding for a project feasibility study associated with a proposed storage project that would: Impound surface water on a perennial stream; Divert water from a stream that supports sensitive, threatened or endangered fish; **or** Divert more than 500 acre-feet of surface water annually, the proposed project feasibility study must contain the following elements:

- Analyses of by-pass, optimum peak, flushing and other ecological flows of the affected stream and the impact of the storage project on those flows;
- Comparative analyses of alternative means of supplying water, including but not limited to the costs and benefits of water conservation and efficiency alternatives and the extent to which long-term water supply needs may be met using those alternatives;
- Analyses of environmental harm or impacts from the proposed storage project;
- Evaluation of the need for and feasibility of using stored water to augment in-stream flows to conserve, maintain and enhance aquatic life, fish life and any other ecological values; and
- For a proposed storage project that is for municipal use, analysis of local and regional water demand and the proposed storage project's relationship to existing and planned water supply projects.

See [Application Criteria and Evaluation Guidance](#) for assistance in filling out this application.

IV. Grant Specifics

Section A. Common Criteria

Instructions: Please answer all questions contained in this section. It is anticipated that completed applications will result in additional pages.

1. Describe your goal and how this study helps to achieve the goal.

The most critical component to establishing feasibility of the Alder Creek Dam is to understand the geologic materials, which includes the rock structure and degree of weathering particularly below and to the sides of the dam site. The funds available from this grant award, in connection with the match funding to be provided, will allow the applicant to proceed with fully understanding the geology below the dam foundation and in the abutment areas.

Once this information is ascertained, costs associated with construction materials and design will determine whether or not this project is feasible and if it should be advanced to the design and permitting stage. The ultimate goal in proceeding with this project is to determine the cost to build the storage facility and if the long-term benefits and value will outweigh the initial construction cost.

The feasibility study will provide the last pieces of the puzzle necessary to begin design and permitting phases. Without the feasibility study, the project will not proceed.

2. Describe the water supply need(s) that the proposed project addresses. Identify any critical local, regional, or statewide water supply needs that implementation of the project associated with the feasibility study will address. **Responses should rely upon solid water availability and needs data/analysis.** For examples of water supply needs see “Criteria and Evaluation Guidance Document.”

Surface water used for irrigation of crops usually runs dry in July of each year under normal precipitation and snowfall conditions in the Durkee area. In order to produce average yields, Mr. Siddoway’s property requires a minimum of 600-800 acre-feet of water each irrigation season in order to use his pivots, wheel lines, hand lines and flood irrigation. Agriculture products that are produced on the ranch include grain, hay, and livestock.

The applicant currently has approximately 252 acres that he irrigates with primary surface water rights from Alder Creek and Pritchard Creek with an allowed duty of 3 acre-feet per acre. Mr. Siddoway has a total of 758.7 acres within tax lot 2600 (Township 11S, Range 43E, W.M.) and has applied for a total of 528.8 acres of water rights (276.8 acres of primary and 252 acres of supplemental) under Application S-86985 with the Oregon Water Resources Department.

If Mr. Siddoway were able to develop his water storage project and utilize the water rights he has applied for, he would be able to irrigate throughout the irrigation season as well as allow recommended minimum flow levels to remain in-stream to benefit fish habitat and stream ecology. Hydrologic data was sources included thirteen years of stream gauge data from the mouth of Pritchard Creek and Alder Creek, a year long flow study conducted in 2009, and water availability calculations were made utilizing exceedance flows from both Oregon Water Resources Department and Idaho. Idaho flows more accurately fi the hydrologic regime of peak flows for Alder Creek than Oregon peak flows. The predominant reason is that peak flows in the drainage are reached in March rather than in April. (Yancey and Browne 2010) As shown in the attached document “ODFW Final Flow Recommendations for Alder Creek, Burnt River Basin,” ODFW fish biologist Tim Hardin outlined minimum flow releases for Alder Creek Reservoir.

Based on the 50% exceedence flows and the required monthly outflows set forth by ODFW, the reservoir outflow would have to equal inflow for the months of May through September. Also during these months, no water storage is allowed to take place per standard permit conditions of approval. The reservoir would reach maximum capacity by mid-March and the Siddoways would be able to apply water from the reservoir for irrigation from April through October, however on a normal precipitation season, it would not be necessary to draw down the reservoir until June. Based on standard conditions of approval and hydrology data, the reservoir would provide all necessary water for agricultural needs.

3. Explain how the proposed project will meet the water supply need(s), and indicate what percentage of that need will be met. (For example: If your water supply need is 20,000 acre-feet of additional water and the project will supply 10,000 additional acre-feet, 50 percent of your need will be met).

The minimum water supply need for Mr. Siddoway's agricultural development is approximately 600-800 acre-feet per irrigation season. The irrigation season as defined by Division 33 comments made pertaining to the water storage and use permit applications for the Alder Creek Reservoir is April 1 - October 31. Water is allowed to be stored from October 1 through April 14. The storage capacity of the reservoir reservoir at preliminary design (10% design) would hold approximately 721 acre-feet of water. Alder Creek flows have been estimated at about 1,000 acre-feet in an irrigation season (April through October) and therefore, 100% of the project need will be met if the outflow levels could be maintained throughout an irrigation season.

4. Describe the technical aspects of the feasibility study and why your approach is appropriate for accomplishing the specific study goals and objectives.

Through discussions and proposals obtained from several different reputable engineering firms, we have determined that understanding the geology, including the availability of construction material quantities at the site, is the most critical element at this juncture of the project to assess project feasibility. For example, if on-site materials were unable to be used, potential freight costs to bring dam construction material in may render this project unfeasible. Soil samples will be taken in the field and tested in a laboratory. Bore holes will be drilled which will illustrate permeability of the subsurface rock formations. This will indicate the capacity for foundation design with in-situ material.

In addition, recently drilled wells will be tested for ground water quality and data will be used in evaluating alternative methods of irrigation and associated costs. Initial analysis of Alder Creek has been performed to assess seasonal flows for storage analysis. Applications for storage and irrigation use have already been submitted to OWRD and are pending dam design analysis prior to moving to permit status.

The ultimate goal of this study is to be provided with an economic and efficiency feasibility analysis that will illustrate professional estimates of the cost to construct a new dam with current engineering and safety standards compared with long-term benefits to the landowner. The feasibility study will also analyze potential alternatives to determine overall project payback potential. If it is not feasible to construct the dam and have it pay for itself within a 50-year period with increased production of crops and livestock, then the project will not move forward.

Understanding the geology of the project site is the most critical component of calculating project feasibility at this stage of the process. Detailed geologic information will inform the design of the spillway, foundation, abutments and even type of dam that would be most cost effective to construct. Multiple types of dam construction methods will be evaluated including roller-compacted concrete and clay core dams. Engineers will test the type of aggregate in the area to analyze if it is a viable source of construction material as well as ascertain permeability and depth to foundation rock. The evaluation of borrow sources is critical to inform cost of construction.

Once the above described evaluation is conducted, a more in-depth hydrologic analysis can be conducted. Understanding the strengths of weaknesses of the abutments and subsurface geology of the dam site will help inform capacity calculations.

Necessary permits and estimates to obtain permits will be identified as a component of the feasibility study. There has been significant work already undertaken pertaining to permitting for the site. The Division of State Lands has conducted a site visit and submitted recommendations to Browne Consulting. Additionally, Browne Consulting has been negotiating with the Oregon Department of Fish and Wildlife pertaining to streamflow requirements and fish passage.

At the conclusion of the study, permits will be able to be obtained and, with necessary funding, construction could commence. Although the primary project focus is on construction of a dam, the feasibility analysis will indicate the best avenue for season-long reliable irrigation water supply and will pursue considering all aspects of the project.

5. Describe how the feasibility study will be performed. Include:
 - a. General summary statement that describes the study progression.
 - b. When the feasibility study will begin.
 - c. Listing of key tasks to be accomplished with each task having:
 - i. Title
 - ii. Timeline for completion
 - iii. Description of the activities to be performed in this key task
 - iv. Description of the resources necessary for accomplishing the key task

(Key tasks listed here are to be placed in Section VI. Project Feasibility Study Schedule for a quick reference “graphical” representation of the schedule.)

Subsurface Investigation: April - June 2016

Field exploration will involve digging test pits and conducting analysis of the materials encountered. Simultaneously, the geology of the area will be mapped in order to ascertain quantities of local construction materials. The aggregate material will be tested in a certified laboratory in order to determine suitability for construction. Geologic and geotechnical testing and analysis are scheduled to commence April 2016 and be concluded by June 2016. Professionals with appropriate certifications will be hired to perform testing and analysis.

Hydrology and Hydraulics: April - June 2016

One project alternative is to provide mid and late season water from irrigation wells. To that end, well pump tests, ground water data and subsurface composition information will be collected and evaluated for alternative project options comparison. Also included in field work will be a general hydrologic and hydrology analysis so that spillway capacity can be calculated. Hydrology and hydraulic testing and analysis will commence April 2016 and will be concluded by June 2016. Professionals with appropriate certifications will be hired to perform testing and analysis.

Permit Identification & Agency Consultation: April - September 2016

Agency consultation and permit identification are critical elements to address during a feasibility study in order to design project elements to acceptable standards. Agency coordination and consultation has been ongoing since water right applications were submitted at project initiation. During that time, the project team has worked with OWRD, Oregon Division of State Lands (DSL), and Oregon Department of Fish and Wildlife (ODFW) to identify potential conditions of approval for the project. Stream flow and fish passage have proven to be the most time consuming and costly requirements of the project. ODFW required that a stream flow study be conducted in order to estimate the amount of water that would need to be left instream for environmental flows. This was necessary due to the lack of stream flow data in the drainage. The task was accomplished and ODFW has signed off.

Fish passage is an ongoing negotiation with ODFW. This task is the predominant agency consolation that is intended to get resolved during the feasibility study. It is with this effort that whether or not the structure will contain fish passage will be resolved. This is a critical design element and will add or subtract a significant cost to the overall project design. Permit identification and agency consultation will be reinitiated in April 2016 and be concluded by September 2016.

Project Feasibility: April - September 2016

Once the above information is collected, the four project alternatives can be reviewed in terms of economic viability. Project alternatives that will be evaluated include: no project (i.e. do nothing), Roller Compacted Concrete dam, earth core dam, and multiple wells for providing season long irrigation water. Project feasibility will begin in April 2016 and be concluded by September 2016.

Conceptual Layout & Alternatives Analysis: July - September 2016

The final outcome will be a report which includes the above information, conceptual design and a clearly justified preferred alternative. Ultimately, at the conclusion of the study, if a construction alternative is chosen (wells or reservoir) the project will be ready for the implementation phase. The report will be compiled and written beginning July 2016 and completed for final submission by September 2016.

6. Please provide the following data and information for the proposed project and the project’s sources of water supply:

- a. The location of the proposed project. Include the basin, county, township, range and section. Attach a **map** that identifies the project’s implementation area to this application.

The Alder Creek Dam site is located in the Burnt River Basin in Baker County at the following legal description: Township 11 South, Range 42 East, W.M.; Section 12 located in the SE ¼ of the SW ¼. See attached map.

- b. The name(s) and river mile(s) of the source water and what they are tributary to, if applicable.

Alder Creek is a small tributary to the Burnt River. The proposed project site is located approximately 3.5 river miles upstream of the confluence of Alder Creek with Pritchard Creek. Pritchard Creek then flows into the Burnt River approximately 1.7 river miles downstream.

- c. Whether the project will be off-channel or on-channel (for above-ground storage only).

The proposed Alder Creek Reservoir would be an on-channel, above-ground water storage facility.

- d. Water availability to meet project storage. For above-ground storage the Department typically evaluates availability using a 50 percent exceedance water availability analysis.

The “Instream Flow Characterization for Alder Creek, Eastern Oregon, 2010” study calculated water availability at 20%, 50%, and 80% exceedance levels. Results indicate that there is adequate water available at the site to fill the reservoir. Additionally, the engineering contractor has been asked to do additional hydrology analysis, hydrologic fill and hydraulics. These additional analyses will allow the engineer to determine critical information for the viability and management of the functioning reservoir. This information will allow the calculation of examples such as spillway capacity and comparative construction costs. There will be discussion in the final report submitted to OWRD pertaining to this topic.

Exceedance flows for Alder Creek (CFS)

<i>USING IDAHO REGION 4 FORMULAS</i>				<i>OREGON WATER RESOURCES</i>		
<i>Month</i>	<i>Q .80</i>	<i>Q .50</i>	<i>Q .20</i>	<i>Month</i>	<i>Q.80</i>	<i>Q. 50</i>
<i>oct</i>	<i>0.93</i>	<i>1.27</i>	<i>1.64</i>	<i>oct</i>	<i>0.28</i>	<i>0.62</i>
<i>nov</i>	<i>1.42</i>	<i>1.76</i>	<i>2.75</i>	<i>nov</i>	<i>0.69</i>	<i>1.39</i>
<i>dec</i>	<i>1.69</i>	<i>2.59</i>	<i>6.30</i>	<i>dec</i>	<i>1.13</i>	<i>2.53</i>
<i>jan</i>	<i>1.90</i>	<i>3.25</i>	<i>9.87</i>	<i>jan</i>	<i>1.51</i>	<i>4.14</i>
<i>feb</i>	<i>3.17</i>	<i>7.72</i>	<i>23.88</i>	<i>feb</i>	<i>3.43</i>	<i>8.37</i>
<i>mar</i>	<i>8.11</i>	<i>25.60</i>	<i>72.89</i>	<i>mar</i>	<i>5.71</i>	<i>15.4</i>
<i>apr</i>	<i>5.64</i>	<i>17.36</i>	<i>50.62</i>	<i>apr</i>	<i>11.9</i>	<i>25.2</i>

may	3.32	4.27	16.10	may	8.62	17.1
jun 2.31	3.19	5.68		jun	3.58	7
jul 1.18	1.60	2.20		jul	0.85	1.55
aug 0.48	0.73	1.07		aug	0.36	0.58
sep 0.56	0.83	1.17		sep	0.27	0.46

Source: Taken from “Instream Flow Characterization for Alder Creek, Eastern Oregon, 2010” Prepared by Browne Consulting

e. Proposed purposes and/or uses of conserved or stored water.

Water stored in the Alder Creek Reservoir would be beneficially used for irrigation, wildlife, as a water source for cattle and enhancement of in-stream flows. The project is located in a semi-arid area characterized by the majority of its 8-10 inches of annual precipitation coming in the form of snow melt runoff during the spring months. Local residents describe the water situation as “having too much when you don’t need it and not enough when you do.” If fish and wildlife could speak they would say the same thing. Alder Creek runs high during the months of February through May and then drastically tapers off, often becoming completely dry. The ability to introduce a reservoir for the sake of water storage would ultimately lead to the enhancement of riparian areas and allow agriculture to expand in both crop and livestock. These benefits would then domino a benefit later to the environment through supporting wildlife and propel the Durkee, OR economy by creating jobs, goods and services with the expansion of agriculture. It is due to these circumstances that fish, wildlife, and irrigation uses will all benefit.

f. Environmental flow needs and water quality requirements of supply source water bodies.

Under current Oregon State Rules, applications for water storage projects must undergo a Division 33 Review which essentially requests input from all agencies with regulatory responsibilities governing water. Three requirements were advanced by ODF&W. First, to work with the Stream Flows Division to ascertain the amount of water that should be left in-stream for red-band trout which are a species of focus in the area. The “Instream Flow Characterization for Alder Creek, Eastern Oregon, 2010” was a requirement from ODFW since very little data was available for Alder Creek and for the reservoir site in particular. Within the study, 10 cross-section profile surveys were established. Transect data was collected at each established cross section on the creek. The transects were established based on where different mesohabitats were present within the three reaches. Upon study completion, ODFW issued their requirements for the amount of water that should be left instream for stream habitat (as shown in the attached “ODFW Final Flow Recommendations for Alder Creek, Burnt River Basin”).

Fish Passage is the second requirement forwarded by ODFW. Oregon Administrative Rules (OAR’s) dictate that when constructing water storage on a perennial fish bearing stream that fish passage must either be provided for, waived, or be exempt. Discussions pertaining to this matter are currently ongoing with the Department. Fish passage options and mitigation options will be included in ongoing consultation with ODFW and are identified as a study task.

Wildlife habitat is the third component that ODFW has purview over that may be affected by the proposed reservoir. Wildlife includes birds, whose habitat will be greatly expanded by supplying a larger water body with diverse vegetation around the perimeter. Furthermore, wildlife will see expanded benefits due to Mr. Siddoway’s comprehensive ranch-wide conservation plan that he has begun to implement during the planning phase of this project. Specific elements include fencing off streams and planting vegetation along riparian areas. He intends to continue the large-scale conservation project simultaneously with the reservoir development and provide off stream water sources to be used for cattle.

Alder Creek was listed by the Oregon Department of Environmental Quality for exceeding stream temperature standard. There are very few methods that are proven to be effective to decrease instream water temperatures. Constructing a narrow dam with the outflow low on the dam profile is one methodology

that is proven to decrease downstream water temperatures. Engineers will take water quality into consideration when rendering conceptual designs for this project and incorporate those considerations into the feasibility study.

Mr. Siddoway, as a larger part of a landscape scale, has developed a ranch-wide habitat enhancement plan. There are numerous components to the ranch plan including, but not limited to, a vegetation plan, which includes weed management and re-vegetation efforts; development and implementation of a grazing management plan, which will take into consideration wildlife needs; and development of off-stream water sources for livestock and wildlife. The ranch-wide conservation plan will not be a part of the feasibility study, however, the description of the overall project and how the feasibility study plays into executing the project is valuable for reviewers to understand.

7. What local, state or federal project permitting requirements/issues/approvals do you anticipate in order for the feasibility study to be conducted? If approvals are required, indicate whether you have obtained them. If you have not obtained the necessary permits/governmental approval, describe the steps you have taken to obtain them. If no permits are needed, please provide explanation.

No local, state, or federal permits will be necessary to carry out the tasks described for the Alder Creek Feasibility Analysis. Less than 5CY of material will be impacted within a designated wetland, therefore no permits will be required to be obtained from the Division of State Lands or Army Corps of Engineers. Test holes will not impact water quality and thus no permits are necessary from Oregon Department of Environmental Quality. Permits will not be necessary to obtain until after feasibility has been determined but prior to construction. The information obtained from the feasibility study are necessary to inform permit questions.

Since 2007, the landowner in conjunction with Browne Consulting have made progress toward achieving reliable late season water availability. There are numerous steps involved when trying to accomplish the aforementioned goal. The process began with pre-permitting consultations with agencies, informal discussions with qualified engineers and many site visits. Water right permits for water storage and surface water use were filed which catalyzed the Division 33 Process. Under current Oregon State Rules, applications for water storage projects must undergo a Division 33 Review which essentially requests input from all agencies with regulatory responsibilities governing water. Agencies that provided comments to OWRD included ODFW, ODEQ and DSL. Based on those comments, conditions of approval were identified which directly correspond with achieving the water storage goal (addressed above in question 6). If the feasibility analysis finds that one of the construction alternatives of the project is feasible, then final design and permitting and construction will be pursued.

It should be noted that irrigation reservoirs are an outright permitted use under the Baker County Comprehensive Land Use Plan and thus no land use permitting will be required.

8. Describe the level of involvement, interest and/or commitment of local entities associated with the feasibility study. Describe how the feasibility study and/or proposed project will benefit/impact these entities. Attach letters of support if available.

The attached letters of support are from Baker County and local businesses that Mr. Siddoway conducts business with. The local economy will benefit from this project in numerous ways including employment of companies during the course of the feasibility study as well as if the project were deemed feasible. If a construction option is selected, the project would require employment of local labor and materials for construction. Eastern Oregon is an area where every dollar spent on agriculture is multiplied through the local economy and is beneficial to a large number of neighboring businesses. This multiplier effect is so important that the United States Department of Agriculture (USDA) Economic Research Service (ERS) has an entire website dedicated to the topic. (<http://www.ers.usda.gov/data-products/agricultural-trade-multipliers/glossary.aspx>)

9. Identify when matching funds will be secured, from whom, and the dates of matching funds availability.

Match funding will be provided from the Siddoways as in-kind labor, secured cash match and expended cash match (since July 1, 2015). In-kind labor will include labor and equipment required to assist in digging test pits for the geotechnical subcontractor and includes equipment labor rates for use of backhoe, excavator and/or bulldozer. Mr. Siddoway will also be responsible for performing flow capacity analysis on his irrigation system by installing flowmeters and pumps on his irrigation wells so that flow rates are measured and documented. Cash match funds

already expended by the Siddoways include irrigation well pumps, flowmeters and required pipe and electrical material. These materials have already been purchased (July 2015) and are planned for installation by the second quarter in 2016. In addition, July 2015 payment to Browne Consulting to continue with project management as already been expended. Cash match funds secured include a loan from Zion Bank to the Siddoways to facilitate future costs for project development services, on-site project meetings, travel expenses, permit identification, agency consultation and analysis and compilation of final reports.

10. Provide a description of the relevant professional qualifications and/or experience of the person(s) that will play key roles in performing the feasibility study. If the personnel have not been decided upon, include a description of the professional qualifications and/or experience of the person(s) you anticipate will play key roles in performing the feasibility study.

The majority of the staff anticipated to play key roles in the planning study will be performing geotechnical investigations and compiling an economic analysis that will allow the landowner to know if the project is a feasible venture or not. The professional staff will be responsible for initial reconnaissance; a preliminary geological/geotechnical study; assessing hydrology, hydrologic fill and hydraulics; and conducting an engineering and financial feasibility analysis. This includes assessing the flow data taken from the ground water wells to compare with the dam development costs in order to determine if pursuing additional ground water development is a better economic decision than pursuing dam construction. The majority of the involved personnel will be licensed and registered professional engineers employed by engineering firms with a background in reservoir design and construction. Laboratory testing will be performed in a certified lab capable of performing American Society for Testing Materials (ASTM) and/or American Association of State Highway and Transportation Officials (AASHTO) test procedures. Estimates have already been obtained from three well regarded experienced engineering firms for the described services. However, new estimates will need to be obtained if the grant funding is awarded due to the fact that the originals were only good for three months.

Requests for estimates were sent out and obtained from two qualified engineering firms that assisted in compiling the attached budget estimate for a feasibility study.

Browne Consulting staff will be coordinating site access, monitoring project progress and fulfilling grant funding requirements among other things and will not require any professional registration(s). Browne Consulting has over thirteen years of experience in project management and working with irrigation entities and individual water users to secure funding and implement projects. We are a registered Woman Business Enterprise (WBE), Emerging Small Business (ESB) and Disadvantaged Business Enterprise (DBE) in the state of Oregon (Certification #6948). With headquarters in Baker City, Oregon, and a satellite office near North Powder, Browne Consulting, LLC provides superior consulting services for natural resource, land use, and agriculture management in both public and private sectors for over a decade. The firm has been a valuable resource to diverse interests groups from Eastern Oregonian farmers and ranchers to local, state and federal government agencies requiring contract assistance.

Section B. Unique Criteria

Instructions: Address the set of items below that applies to the type of feasibility study that this grant will fund.

Above-Ground Storage

Please answer the following three questions **BEFORE** proceeding:

Will the project divert more than 500 acre-feet of surface water annually? Yes No

Will the project impound surface water on a perennial stream? Yes No

Will the project divert water from a stream that supports sensitive, threatened or endangered species? Yes No

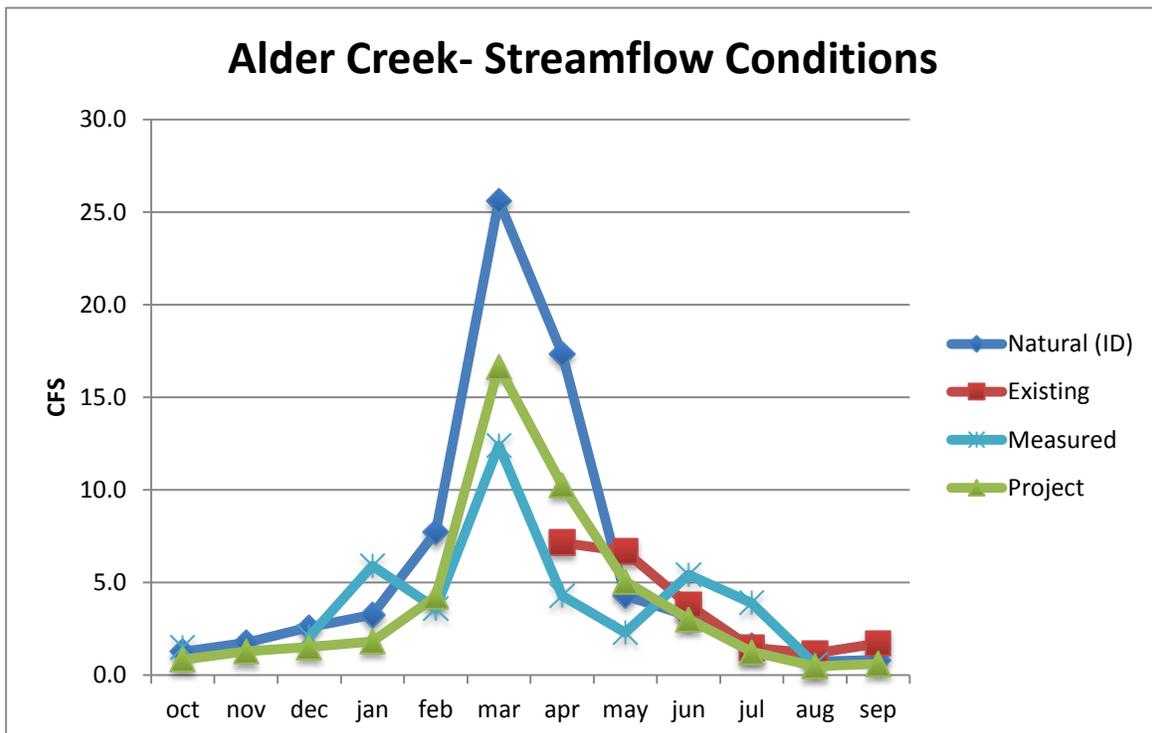
If you answered "Yes" to any of these questions, by signature on this application, you are committing to include the following required elements in your feasibility study.

Describe how you intend to address the required elements in your feasibility study:

- a) Analyses of by-pass, optimum peak, flushing and other ecological flows of the affected stream and the impact of the storage project on those flows.

A yearlong study required by the Oregon Department of Fish and Wildlife was undertaken in 2009 which largely addressed questions surrounding the ecological impact to the stream of siting a reservoir on Alder Creek. The name of the study is "Instream Flow Characterization for Alder Creek, Eastern Oregon, 2010". As shown in the chart below, the natural stream hydrologic regime is leveled out with the introduction of the dam (Natural vs. Project). The chart below shows the vast range in quantity of water that flows throughout the year out of Alder Creek. By installing the Alder Creek Dam, outflow from the dam would mitigate flooding conditions that occur during early spring runoff and would reduce erosion and bank instability issues. A more detailed discussion and analysis pertaining to this subject will be included in the final report.

Chart of Streamflow Conditions with Proposed Project



Source: Taken from "instream Flow Characterization for Alder Creek, Eastern Oregon, 2010. Prepared by Browne Consulting

- b) Comparative analyses of alternative means of supplying water, including but not limited to the costs and benefits of water conservation and efficiency alternatives and the extent to which long-term water supply needs may be met using those alternatives.

In an area that receives less than 10 inches of precipitation annually, there are very few alternative means of supplying water to agriculture, streams and wildlife other than developing ground water and/or diverting and conveying surface water. The proposed feasibility study will include an Economic Analysis section which will take into consideration the construction and utilization of additional irrigation wells to supply water to the specified lands throughout the irrigation season in comparison to constructing the proposed reservoir.

Water conservation and efficiency does not aptly apply to this project since the majority of the lands that are in need of water do not have an existing irrigation system on them. Typical water conservation efforts have meant converting flood irrigation to center pivot irrigation systems. Other means of water conservation and efficiency have historically included piping and lining ditches to mitigate seepage and evaporation. Again, those systems are not in place on the majority of the land in question. Therefore, with this project, water conservation and efficiency means how to capture and store water when it is rapidly leaving the drainage during the spring months and efficiently releasing and applying it where it is needed during the dry summer months. The final report will fully analyze and address this topic in the hydrologic and hydrology section of the report.

- c) Analyses of environmental harm or impacts from the proposed storage project.

Analysis of environmental harm from the proposed storage project shows streamflow data acquired from the Burnt River Irrigation District and from field data collected at the site from September 2009 through September 2010 and has been analyzed in relation to water quality and habitat conditions. The results have been documented in the “Instream Flow Characterization for Alder Creek, Eastern Oregon, 2010” and will be reported in the final report presented to OWRD as a result of obtaining this feasibility grant.

All potential environmental harms or impacts associated with the storage project will comply with the requirements of federal, state and local government agencies and authorities. The most involved level will be the state which includes the Oregon Department of Fish and Wildlife, the Department of Environmental Quality, the Department of State Lands, and The United States Army Corp of Engineers. As the applications for feedback from government agencies and authorities progress, the environmental provisions per the project become apparent.

Potential environmental impacts for the storage project will either have provisions from government agencies or may be insignificant and will not be acknowledged. These potential environmental impacts and the potential for needed agency coordination are included below.

- d) Evaluation of the need for and feasibility of using stored water to augment instream flows to conserve, maintain and enhance aquatic life, fish life and any other ecological values.

Mr. Siddoway, project owner, and staff at Browne Consulting have worked with individuals at the Oregon Department of Fish and Wildlife (ODFW) to analyze this very question based on the amount of stream flow and habitat type in Alder Creek. To that end, there are in-stream flows that have already been identified and recommended that would result if this project were to come to fruition. There will be a section in the final report which will include the data, findings, and ODFW in-stream flow recommendations (see attached in the Appendix).

Is the proposed storage project for municipal use?

Yes No

If “Yes,” then please describe how you intend to address the following required element in your feasibility study:

- e) For a proposed storage project that is for municipal use, analysis of local and regional water demand and the proposed storage project’s relationship to existing and planned water supply projects.

Proceed in addressing the following items:

1. Describe to what extent the project associated with the feasibility study includes provisions for using stored water to augment instream flows to conserve, maintain and enhance aquatic life, fish life or other ecological values. Projects that include the above provisions receive preference in the scoring process.

Previously, an Instream Flow Characterization Study was conducted for the affected stream reach. A large component of this study was collecting stream flow data. The feasibility study will utilize that data and build on it to compile a more comprehensive understanding of hydrology at the site. Additionally, as described above, stored water will not only provide for enhanced aquatic habitat, but will also provide cooler water temperatures that will be a benefit to fish within the stream. Habitat quality and quantity will increase for bird and mammal life due to extended water availability (thus expanding riparian habitat) and through the implementation of the conservation plan.

2. Provide a review of: (a) Local, state and/or federal permitting requirements and issues posed by the **implementation** of the project associated with the feasibility study and (b) property ownership status within the project implementation area.

Reasonable alternatives to meeting water supply needs are limited due to the dry climate (less than 10 inches of annual precipitation). Many irrigators rely on snow melt for irrigation, however, in the project drainage, snow melt is gone by May and surface water runs dry by early July each year. Part of this feasibility study will be to evaluate all other alternative irrigation methods, which is limited for the most part to installing ground water wells. Associated with irrigation wells is the high cost of installation and long-term pumping costs resulting in high energy costs. In order to determine the project feasibility, long-term maintenance and expenses of all alternatives will be reviewed.

V. Match Funding Information

Applicants must demonstrate a minimum dollar-for-dollar match based on the total funding request. The match may include a) secured funding commitment from other sources, b) pending funding commitment from other sources, and/or c) the value of in-kind labor, equipment rental, and materials essential to the feasibility study. For secured funding, you must attach a letter of support from the match funding source that specifically mentions the dollar amount shown in the “Amount/Dollar Value” column. For pending resources, documentation showing a request for the matching funds must accompany the application.

In the “type” column below matching funds may include:	In the “status” column below matching funds may have the following status:
<ul style="list-style-type: none"> • Cash - Cash is direct expenditures made in support of the feasibility study by the applicant or partner*. 	<ul style="list-style-type: none"> • Secured - Secured funding commitments from other sources.
<ul style="list-style-type: none"> • In-Kind - The value of in-kind labor, equipment rental and materials essential to the feasibility study provided by the applicant or partner. 	<ul style="list-style-type: none"> • Pending - Pending commitments of funding from other sources. In such instances, Department funding will not be released prior to securing a commitment of the funds from other sources. Pending commitments of the funding must be secured within 12 months from the date of the award.

*”Partner” means a non-governmental or governmental person or entity that has committed funding, expertise, materials, labor, or other assistance to a proposed project planning study. OAR 690-600-0010.

Match Funding Source (if in-kind, briefly describe the nature of the contribution)	Type (✓ One)	Status (✓ One)	Amount/ Dollar Value	Date Match Funds Available (Month/Year)
<i>Bert Siddoway: Paid to Browne Consulting for project development services from July 2015 to present</i>	<input checked="" type="checkbox"/> cash <input type="checkbox"/> in-kind	<input checked="" type="checkbox"/> secured <input type="checkbox"/> pending	\$3,021	July 15
<i>Bert Siddoway: Provide in-kind labor and equipment (backhoe, bulldozer and excavator) to assist in excavation of test pits for geotechnical subcontractor</i>	<input type="checkbox"/> cash <input checked="" type="checkbox"/> in-kind	<input checked="" type="checkbox"/> secured <input type="checkbox"/> pending	\$1,900	April 16
<i>Bert Siddoway: Perform flow capacity analysis for irrigation system</i>	<input type="checkbox"/> cash <input checked="" type="checkbox"/> in-kind	<input checked="" type="checkbox"/> secured <input type="checkbox"/> pending	\$1,750	April 16
<i>Bert Siddoway: Cost for materials and installation of two flowmeters, two pumps and associated pipe and electrical connections</i>	<input checked="" type="checkbox"/> cash <input type="checkbox"/> in-kind	<input checked="" type="checkbox"/> secured <input type="checkbox"/> pending	\$45,023	July 15
<i>Bert Siddoway: Cash match funding for consultant project development services, on-site meetings, travel expenses, permit identification, agency consultation and compilation of final report</i>	<input checked="" type="checkbox"/> cash <input type="checkbox"/> in-kind	<input checked="" type="checkbox"/> secured <input type="checkbox"/> pending	\$15,000	July 15

VI. Feasibility Study Schedule

Estimated Study Duration: April 1, 2016 to September 30, 2016

Place an “X” in the appropriate column to indicate when each Key Task of the project will take place.

Feasibility Study Key Tasks	2015			2016				2017 & Beyond
	2 nd Qtr	3 rd Qtr	4 th Qtr	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	
<i>Subsurface Investigation (Testing, Design and Mapping)</i>					X			
<i>Analysis of Hydrology and Hydraulic Design</i>					X			
<i>Permit Identification and Ongoing Agency Consultation</i>					X	X		
<i>Project Feasibility</i>					X	X		
<i>Conceptual Layout and Alternatives Analysis</i>						X		

- **Please Note:** Successful grantees must include all invoices and identify which key tasks are associated with each invoice when requesting financial reimbursement.

VII. Feasibility Study Budget

Section A

Please provide an estimated line item budget for the proposed feasibility study. Examples would include: labor, materials, equipment, contractual services and administrative costs.

Line Items	Number of Units*	Unit Cost (e.g. hourly rate)	In-Kind Match	Cash Match Funds	OWRD Grant Funds	Total Cost
6-in Flowmeters	2	\$1,050		\$2,100		\$2,100
Irrigation Well L-101882 800S Grundfoss Submersible Pump w/ 60HP Grundfoss Motor 8-in	1	\$10,835		\$10,835		\$10,835
6-in x 20-ft Certalock Drop Pipe	220	\$ 22		\$4,849		\$4,849
1/0 3 Wire w/ Ground	248	\$11		\$2,778		\$2,778
Pump Installation	1	\$1,500		\$1,500		\$1,500
Irrigation Well L-109662 800S Grundfoss Submersible Pump w/ 40HP Grundfoss Motor 8-in	1	\$11,835		\$11,835		\$11,835
6-in x 20-ft Certalock Drop Pipe	220	\$ 22		\$4,849		\$4,849
1/0 3 Wire w/ Ground	248	\$ 11		\$2,778		\$2,778
Pump Installation	1	\$ 3,500		\$3,500		\$3,500
Flow Capacity Analysis for Irrigation	50	\$ 35	\$1,750			\$1,750
Project Development Services	43	\$ 70		\$3,021		\$3,021
Equipment Rate for Digging Test Pits	20	\$ 95	\$1,900			\$1,900
Staff Salary: Project Engineer	31	\$143			\$4,433	\$4,433
Staff Salary: Jr. Hydraulic Engineer	107	\$ 82			\$8,774	\$8,774
Staff Salary: CADD Specialist	36	\$ 82			\$2,952	\$2,952
Staff Salary: Design Review/Approval	27	\$143			\$3,861	\$3,861
Staff Salary: Report Preparation	8	\$ 61			\$484	\$484
On Site Project Meetings & Travel Expenses	1	\$ 5,850		\$ 5,850		\$5,850
Subcontractor: Geotechnical Study	161	\$138			\$22,218	\$22,218
Subcontractor: (4) Bore Holes	1	\$11,000			\$11,000	\$11,000
Permit Identification & Agency Consultation	50	\$75		\$3,750		\$3,750
Analysis & Compilation Final Report	72	\$75		\$5,400		\$5,400
Administrative Costs**	67	\$75			\$5,025	\$5,025
Total for Section A			\$3,650	\$63,044	\$58,747	\$125,441
Percentage for Section A			3%	50%	47%	100%

Section B

If grant amount requested is \$50,000 or greater, you **MUST** complete Section B. Key Tasks in Section B should be the same as the Key Tasks in Section VI (Feasibility Study Schedule).

Feasibility Study Key Tasks	In-Kind Match	Cash Match Funds	OWRD Grant Funds	Total Cost
<i>Subsurface Investigation (Testing, Design and Mapping)</i>	\$1,900	\$5,850	\$45,464	\$53,214
<i>Analysis of Hydrology and Hydraulic Design</i>	\$1,750	\$45,023	\$9,774	\$56,547
<i>Permit Identification and Ongoing Agency Consultation</i>		\$3,750	\$1,000	\$4,750
<i>Project Feasibility</i>		\$3,021	\$1,484	\$4,505
<i>Conceptual Layout and Alternatives Analysis</i>		\$5,400	\$1,025	\$6,425
Total for Section B	\$3,650	\$63,044	\$58,747	\$125,441

Totals in Section B must match the totals in Section A

APPLICATION CHECKLIST

Instructions: Use this checklist to ensure that your application is complete. An incomplete application will jeopardize your application's review. **This form does not need to be included in your application packet.**

General

If submitting electronically, the preferred format is either a Microsoft word or Adobe pdf

- Only one application is included with the packet (other applications must be sent separately).

Paper submissions only

- The application and attachments are on 8 ½" x 11" paper.
- The application and attachments are single-sided.
- The application and attachments are not stapled or bound.

Section I – Grant Information

- All questions in this section have been answered.
- The Grant Dollars Requested and the Total Project Cost mirror the totals shown in Section VII.

Section II – Applicant Information

- All contact information for the applicant(s) and fiscal officer is complete and current.
- The certification is signed by an authorized signer.

Section III – Feasibility Study Summary

- A brief summary, of no more than 150 words, is complete.

Section IV – Grant Specifics

- All questions in Section A have been answered.
- If the type of feasibility study is water conservation, reuse or storage other than above-ground, you have contacted the Department and requested project be added to the Oregon Water Resources Department's statewide water assessment and inventory.
- All applicable questions for the type of grant requested have been answered.

Section V – Match Funding Information

- Applicant has identified that at least 50 percent match has been sought, secured or expended.
- Letters of support are included for "secured" match funding sources.
- Documentation is included for "expended" match funds.
- Documentation is included for "pending" match funds.

Section VI – Feasibility Study Schedule

- Estimated project duration dates have been supplied.
- All Key Tasks of the project are listed.

Section VII – Feasibility Study Budget

- Section A is complete.
- Administration costs do not exceed 10 percent of the requested OWRD Grant Funds.
- If grant amount requested is \$50,000 or greater, Section B has been completed.
- All Key Tasks listed in Section B mirror the Key Tasks listed in Section VI.



OREGON WATER RESOURCE DEPARTMENT WATER CONSERVATION, REUSE AND STORAGE GRANT PROGRAM

Appendix

- ODFW Final Flow Recommendations for Alder Creek, Burnt River Basin
- Zions Bank Letter of Funds Commitment
- Baker County Commissioner Chairman Bill Harvey's Letter of Support
- Baker County Economic Development Director Greg Smith Letter of Support
- Robbins Farm Equipment Letter of Support
- ACI Letter of Support
- Browne Consulting LLC Invoice
- Roman's Parts & Machinery Invoice
- Map of Proposed Alder Creek Reservoir Location
- Map Showing Place of Use of Irrigation Water
- Preliminary Engineering Map

ODFW final flow recommendations for Alder Creek, Burnt River basin

Methods

This analysis covers the entire storage season of October 1 to April 30. The monthly minimum flows prescribed by ODFW would apply during the months in which storage is allowed by the applicant's water right (R86984). At present, ODFW understands this storage right to be restricted to March and April.

ODFW compared several different methods for deriving flow methods during these months.

PHABSIM: Browne Consultants collected PHABSIM data and produced computer output. ODFW did the interpretation mainly on juvenile redband results. Since stream conditions for PHABSIM were difficult, other hydraulic and hydrologic methods were used to check and adjust the PHABSIM interpretation.

Hydrological: The stream is ungaged. 50% and 80% exceedance flow estimates were made by Browne Consulting based on the "Idaho Region 4 method". The results seemed reasonable in comparison to the OWRD figures. ODFW sometimes uses 50% and 80% exceedance flows as approximate general guidelines for upper and lower boundaries on flow recommendations.

Channel width: The PHABSIM hydraulic results allowed estimation of wetted width as a function of flow. The inflection point of wetted width vs. flow is used by some agencies to recommend minimum flows.

Browne Consultants listed their proposed minimum flows (Browne report, Table 11). These proposed flows are repeated in Table 1 for convenience.

ODFW minimum flow recommendations

We used the 90% PHABSIM number (PHAB90) as a baseline target. This is the flow at which weighted usable area (WUA) is about 90% of its peak value: 3.5 cfs. Based on hydrology, and the seasonally-varying needs of fish, this target flow is too high in some months, and too low in others. The minimum flows in Table 1 were based on consideration of several numbers.

October-November: Neither 90% nor 80% PHABSIM flows occur most of the time. Therefore, the 50% flow exceedance numbers were set as the minimum flows (1.3 and 1.8 cfs, respectively).

December-January: The 90% PHABSIM flow does not usually occur. Minimum flow was set as the 80% PHABSIM flow for both months (2.0 cfs).

February: Minimum flow is the 90% PHABSIM flow (3.5 cfs).

March-April: Since spawning could be occurring in these months, the PHABSIM flow based on juvenile habitat is probably too low. We therefore used the wetted width result of 4.5 cfs.

Table 1. Monthly flows for various methods, and ODFW minimum flow releases for Alder Creek Reservoir

month	50%ID	80%ID	Browne	WW	PHAB80	PHAB90	^c ODFW
^a Oct	1.3	0.9	0.8	4.5	2.0+	3.5+	1.3
^a Nov	1.8	1.4	1.3	4.5	2.0+	3.5+	1.8
^a Dec	2.6	1.7	1.5	4.5	2.0+	3.5+	2.0
^a Jan	3.3	1.9	1.8	4.5	2.0+	3.5+	2.0
^a Feb	7.7	3.2	4.2	4.5	2.0+	3.5+	3.5
Mar	25.6	8.1	16.6	4.5	2.0+	3.5+	4.5
Apr	17.4	5.6	10.3	4.5	2.0+	3.5+	4.5
^b May	4.3	3.3	5.1				>= inflow
^b Jun	3.2	2.3	3.0				>= inflow
^b Jul	1.6	1.2	1.3				>= inflow
^b Aug	0.7	0.5	0.5				>= inflow
^b Sep	0.8	0.6	0.6				>= inflow

a) According to ODFW’s understanding of the water right (R86984), water cannot be stored in these months. If it turns out that storage is allowed in these months, then the minimum flows in the last column would apply.

b) ODFW’s understanding is that these months are outside the storage season. Thus, reservoir outflow would have to equal or exceed reservoir inflow in these months.

c) ODFW recommended minimum flows apply whenever total inflow is at least equal to the minimum flow. If total inflow is less than the ODFW minimum, then outflow must equal inflow.

Tim Hardin
 Instream Flow Specialist
 ODFW Fish Division
tim.s.hardin@state.or.us
 503-947-6093

Zions Bank
909 NW 16th St., Suite B
Fruitland, Idaho 83619

Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, OR 97301

July 30, 2015

Regarding: Feasibility Study for the Alder Creek Reservoir

To Whom It May Concern,

In the agriculture industry, dependable available water is a critical element for property values and cash flow potential. Not only will the Siddoway's benefit from this project but additionally, all the businesses in the area, farm supply stores, main street shops and others will experience the multiplier effect of the additional water supply to even one farm. Economic growth in Eastern Oregon is highly dependent on the success of our local ranches and farms.

It is for these reasons that we strongly encourage the support of the Alder Creek Reservoir Feasibility Study. To that end, Zions Bank is providing this letter as evidence of \$15,000 of funding secured for the Siddoway's to expend on the study.

Sincerely,

Zions Bank



Kevin Coats

V.P. & Commercial Relationship Manager



Bill Harvey

Commission Chair

bharvey@bakercounty.org

To Whom It May Concern:

I greatly support the water storage project for the Alder Creek area. We, as a County, know all too well the benefits of having stored water for our County to help supplement irrigation needs. We live in a semi-arid climate and have always needed additional water to support a longer growing season.

This project would be an economical way of helping our County with jobs during construction of the dam, but also following completion with additional irrigation for crops.

Many of our creeks have an abundance of water during run-off from snow melt, but this is at a time that we are not in need of irrigation. It would greatly help our County to have the storage capability at that time for the water to be used at a later time.

Sincerely,

A handwritten signature in cursive script, appearing to read "William Harvey", with a long horizontal flourish extending to the right.

William Harvey, Chairman
Baker County Board of Commissioners

To Whom It May Concern:

In support and encouragement for the betterment of Baker County, the Baker County Economic Development Department would like to extend their support to Bert Siddoway and his reservoir project on Alder Creek. In a county where water resources are crucial to the sustainability of our economy, social well-being and the environment, water storage is of utmost importance.

The long-term effect of this project as a benefit is apparent. The use of this water will lead to an increase in agricultural production, local and county economic benefits, and a benefit to riparian and instream habitat. Agricultural production will increase as water storage expands and irrigation is added to Mr. Siddoway's operations. The increase in agricultural production will in turn boost the economy by providing goods, services and jobs. The small town of Durkee, Oregon in the recent past had a gas station, convenience store, and restaurant. All have gone out of business.

The creation of this reservoir will benefit the environment as well, as it provides a greater area of riparian habitat and allows the biota in that habitat to thrive further into the hotter summer months. Under current conditions, Alder Creek can be dry in July. With the addition of the reservoir, the length of the summer that water runs in the stream will expand.

The increased storage of water on Alder Creek and the benefits that accompany it are evident. It is with great enthusiasm that the Baker County Economic Development Department reinforce their support for this project with the conveyance of this letter. In a county where water resources are crucial to the sustainability of our economy, social well-being and environment, water storage is of utmost importance, and we respectfully urge that Mr. Siddoway's project be funded.

Best Regards,



Greg Smith, Director
Baker County Economic Development

Robbins Farm Equipment
3850 10th Street
Baker City, OR 97814
July 21, 2015

RE:
Alder Creek Reservoir Project

To whom it may concern:

Robbins Farm Equipment strongly supports the proposed Alder Creek Reservoir Project. The project would have economic, social and environmental benefits. Additional cropland with a reliable water supply would yield enormous returns to the Baker County economy. The project would act as an economic stimulant to the small town of Durkee as well. An adequate reliable water supply with which to irrigate cropland allows consistent application of water to crop, thus requiring an increase in work. An increase in work required to irrigate would inevitably provide new jobs, higher employee pay, and an increase in goods and services related to the land and the crop. The reservoir would also mean that Alder Creek would remain flowing for longer each year keeping the instream water temperature lower making it a more suitable habitat for fish species for a longer period of time each year.

We believe that anytime water can be retained for agriculture purposes it increases land value and production. In this case specifically our company would benefit directly from increased production on the Siddoway Ranch due to increased equipment, parts & service needs.

If you have any questions, please contact me by phone at 541-523-6377 or by email at chelsey@robbinsfarmeq.com. Thank you.

Sincerely,



Robbins Farm Equipment

Agricultural Construction Inc

To Whom It May Concern:

As an eastern Oregon based business we at Agricultural Construction Inc. would like to convey our full support of Bert Siddoway's reservoir project. The completion of Mr.Siddoway's reservoir project would be of great benefit to not only our business but to the local economy, environment, and quantity and quality of jobs.

At Agricultural Construction Inc. we specialize in selling irrigation equipment, including center pivot systems and their associated parts. The incorporation of Mr. Siddoway's reservoir to provide more water to crops would then in turn require more equipment to transport that water. Hence why we support this project seeing as it directly effects the potential for Mr. Siddoway to purchase equipment from our business.

The purchase of irrigation equipment by Mr.Siddoway however does much more than help a business grow. The growth of that business dominos it's benefit to provide jobs for its employees and maintain their livelihood. We believe that if this project were funded that others in eastern Oregon would likely follow due to the very nature of agriculture production in a semi-arid environment.

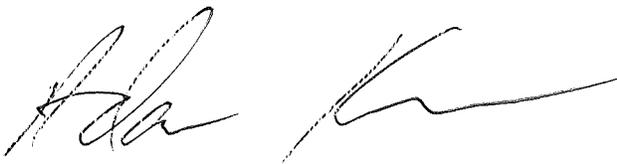
This project while boosting the local economy and the quality and quantity of jobs will also enhance the riparian habitat of Alder Creek. By storing water in a reservoir on Alder Creek it allows for aquatic life in the creek sustainable sustainable stream flows, and thus habitat, longer into the summer season. As a business that cares about Baker County and the health of its buisnesses, environment and jobs we see only positive impacts when this project is funded.

Again, as an eastern Oregon based business we at Agricultural Construction Inc. would like to extend our full support to Bert Siddoway and his reservoir project. The completion of Mr.Siddoway's reservoir project would be of great benefit to not only our business but to the economy, environment, and quantity and quality of jobs.

Best Regards,

Adam Kerns, Owner

Agricultural Construction Inc.



Agricultural Construction Inc.
13865 Willow Creek Ln
Haines, OR 97833
Phone & Fax: 541-910-8420
agcontracting@hotmail.com

Browne Consulting, LLC

50809 Ellis Road

North Powder, OR 97867

Invoice

Date	Invoice #
7/30/2015	2570

Bill To:
Bert Siddoway P.O. Box 115 Durkee, OR 97905

Terms
Net 15

Project

Serviced	Description	Qty	Rate	Amount
7/6/2015	Peggy: Outlined talking points to send to project supporters for 2015 grant.	1.41667	70.00	99.17
7/13/2015	Parker: Reviewing grant for edits.	0.5	70.00	35.00
7/13/2015	Peggy: Emailed grant info to Robbins Equipment and County Commissioners.	0.91667	70.00	64.17
7/14/2015	Parker: OWRD Grant review and edits. Added new information/detail.	2.5	70.00	175.00
7/14/2015	Peggy: Returned commissioner Harvey's phone call. Put together requested info, discussed letters of support with the Siddoways.	0.83333	70.00	58.33
7/15/2015	Parker: Discussed grant with Peggy.	0.16667	70.00	11.67
7/15/2015	Peggy: Reviewed application status with Parker, continued updating.	1	70.00	70.00
7/16/2015	Peggy: Updated grant app, emailed Siddoways with budget questions.	0.75	70.00	52.50
7/17/2015	Peggy: Continued working on grant.	2.25	70.00	157.50
7/20/2015	Sara: Emailed Bert and Terri regarding budget update and July 2015 expenditures.	0.5	70.00	35.00
7/21/2015	Parker: Reviewed grant for instream flow of Alder Creek. Added flow study info.	3.25	70.00	227.50
7/22/2015	Parker: Compared previous grant with new to identify changes and updates.	4.25	70.00	297.50
7/22/2015	Sara: Started permit amendment for additional POA.	1.91667	70.00	134.17
7/23/2015	Parker: Updated environmental, social and economic aspects of grant.	1	70.00	70.00
7/24/2015	Parker: Grant study information input. Assisted with compiling letters of support.	2.5	70.00	175.00
7/28/2015	Parker: Review study additions to grant and letters of support.	1	70.00	70.00
7/28/2015	Sara: Discussed amendment with OWRD, created list of to do items.	2.16667	70.00	151.67
7/28/2015	Peggy: Discussed grant application with J. Unger at OWRD. Edited latest draft.	0.58333	70.00	40.83
7/29/2015	Parker: Picked up letter of support from Ag Construction.	2	70.00	140.00
			Total	

Browne Consulting, LLC

50809 Ellis Road

North Powder, OR 97867

Invoice

Date	Invoice #
7/30/2015	2570

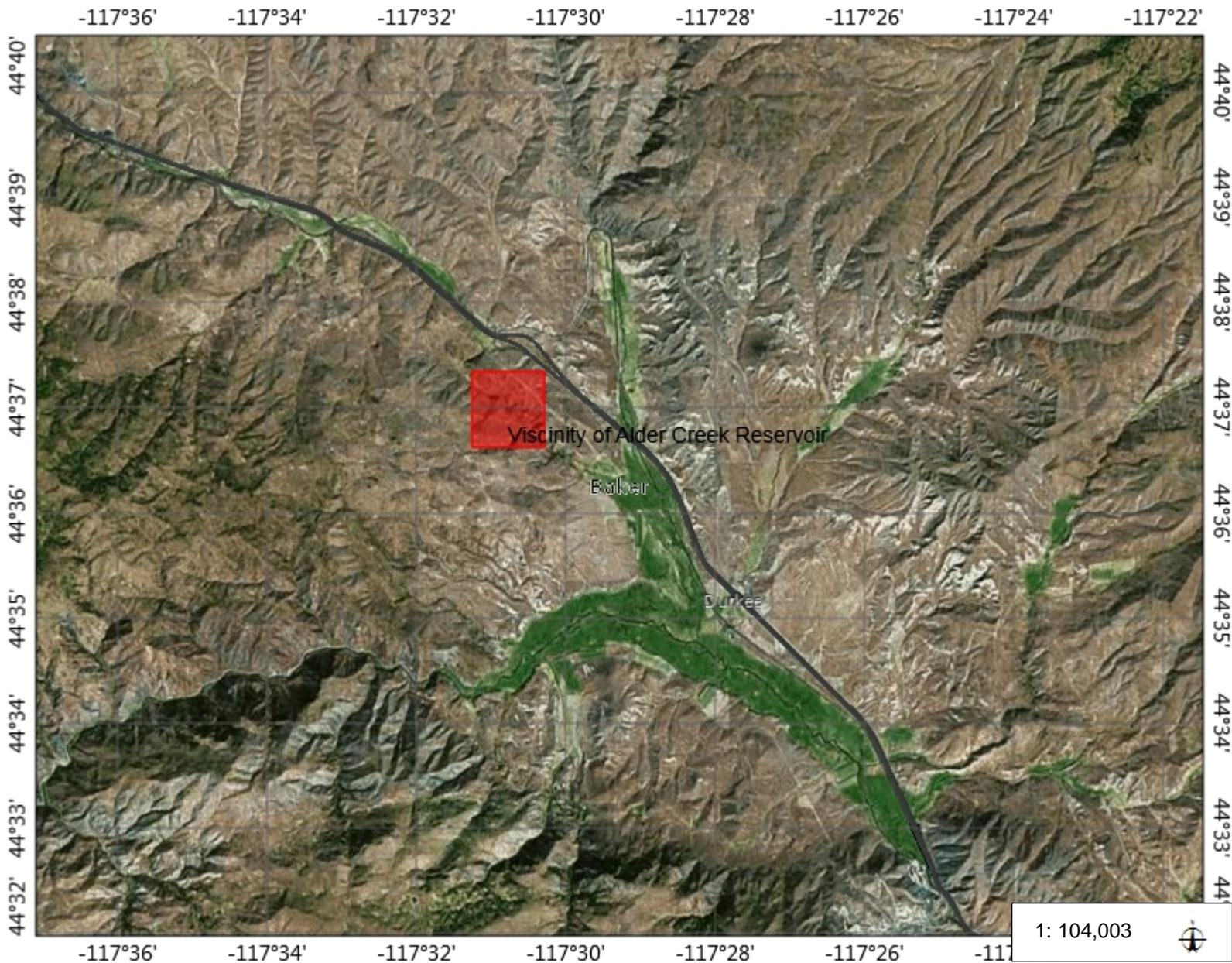
Bill To:
Bert Siddoway P.O. Box 115 Durkee, OR 97905

Terms
Net 15

Project

Serviced	Description	Qty	Rate	Amount
7/29/2015	Sara: Grant budget.	0.5	70.00	35.00
7/29/2015	Peggy: Edited grant with inputs from Unger. Researched multiplier effect on farm gate valve.	1.66667	70.00	116.67
7/30/2015	Peggy: Meet with Bert in office. Finalize grant application. Submit.	6	70.00	420.00
7/30/2015	Parker: Final edits on grant application.	1.5	70.00	105.00
7/30/2015	Sara: Met with Bert in office to discuss budget. Edited and updated budget and match fund sources.	4	70.00	280.00
			Total	\$3,021.68

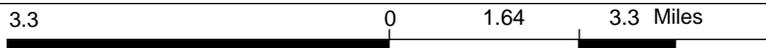
Alder Creek Reservoir Feasibility Study



Legend

- Counties (Census 2010)
- Highway Network**
 - <all other values>
 - Connection
 - Frontage Rd.
 - Other
 - Regular
 - Spur
- States & Provinces**
 - Other States and Provinces
 - Oregon

1: 104,003

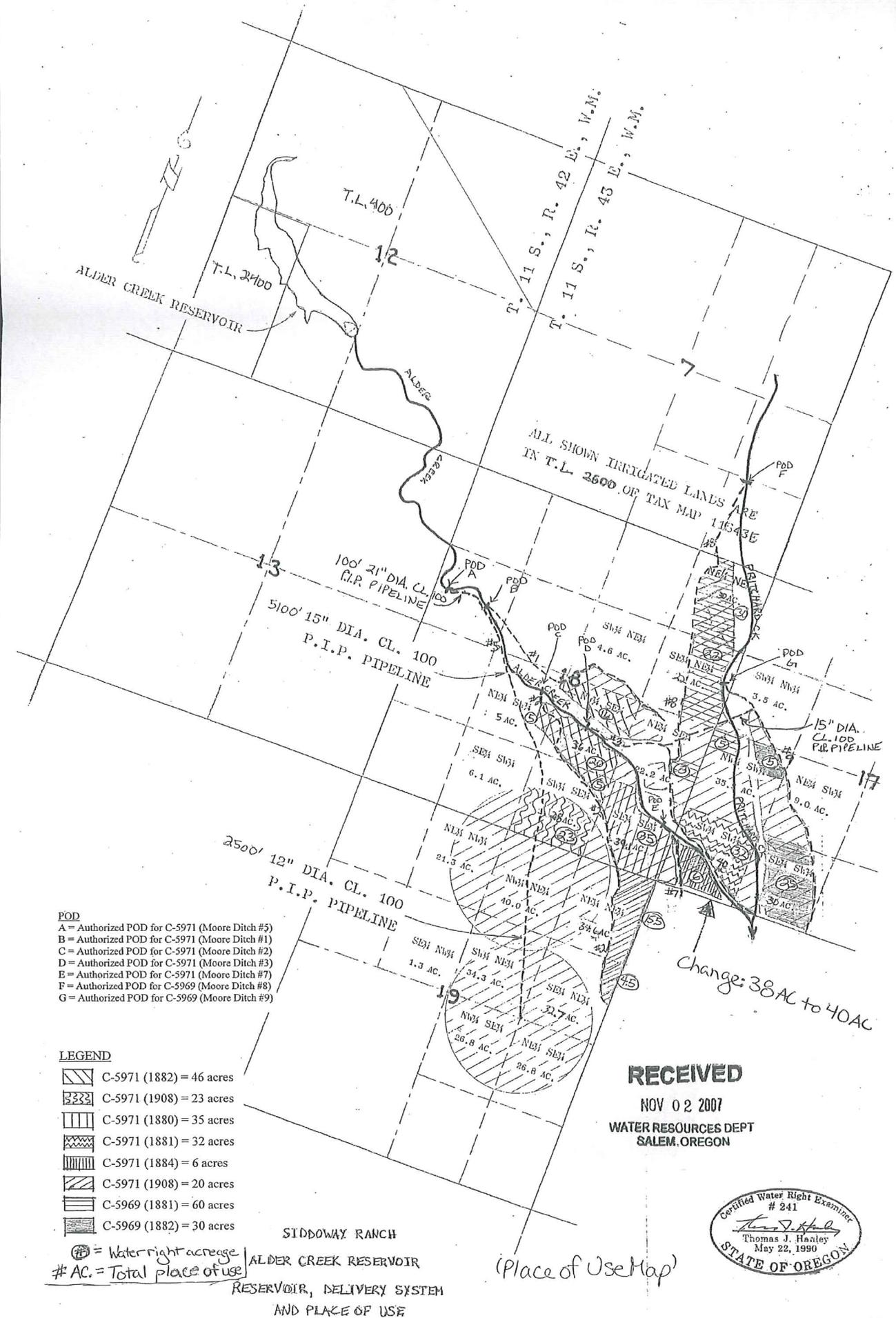


WGS_1984_Web_Mercator_Auxiliary_Sphere
 © Oregon Explorer (<http://oregonexplorer.info>)

This map is a user generated static output from the Oregon Explorer Map Viewer (http://tools.oregonexplorer.info/oe_map_viewer/Viewer.html?Viewer=OE) and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

Notes
 BURNT RIVER BASIN
 Section 12, T. 11S, R. 42E, W.M.



- POD**
- A = Authorized POD for C-5971 (Moore Ditch #5)
 - B = Authorized POD for C-5971 (Moore Ditch #1)
 - C = Authorized POD for C-5971 (Moore Ditch #2)
 - D = Authorized POD for C-5971 (Moore Ditch #3)
 - E = Authorized POD for C-5971 (Moore Ditch #7)
 - F = Authorized POD for C-5969 (Moore Ditch #8)
 - G = Authorized POD for C-5969 (Moore Ditch #9)

- LEGEND**
- C-5971 (1882) = 46 acres
 - C-5971 (1908) = 23 acres
 - C-5971 (1880) = 35 acres
 - C-5971 (1881) = 32 acres
 - C-5971 (1884) = 6 acres
 - C-5971 (1908) = 20 acres
 - C-5969 (1881) = 60 acres
 - C-5969 (1882) = 30 acres

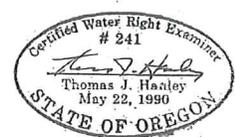
= Water right acreage
 # AC. = Total place of use

SIDDOWAY RANCH
 ALDER CREEK RESERVOIR
 RESERVOIR, DELIVERY SYSTEM
 AND PLACE OF USE

(Place of Use Map)

RECEIVED

NOV 02 2007
 WATER RESOURCES DEPT
 SALEM, OREGON



Scale: 1"=1320'

SEPT, 2007 → revised Oct 29, 2007

