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

I. Grant Information

Study Name: *Lower Powder System Optimization Review*

Type of Grant Requested: ☒ Water Conservation ☐ Reuse ☐ Above Ground Storage
☐ Storage Other Than Above-Ground [Including Aquifer Storage and Recovery (ASR)]
Note: A Water Conservation and Reuse study may be submitted as a joint application. All other applications must only include one application type.

Program Funding Dollars Requested: $ 42,409.50 Total cost of planning study: $ 86,285.17
Note: Request may not exceed $500,000

II. Applicant Information

Applicant Name: *Lower Powder Irrigation District*		**Co- Applicant Name:**	
Contact:	*Frederick Phillips*	Contact:	
Address	*2550 Broadway*	Address:	
	Baker City, OR 97814		
Phone	*541-518-2222*	Phone:	
Fax:		Fax:	
Email:	*Phillipsranch3@gmail.com*	Email:	

Fiscal Officer Name: *Bruce Nichols*		**Principle Contact:** *Peggy S. Browne*	
Organization:	*Nichols and Mitchell CPA*	Organization:	*Browne Consulting, LLC*
Address:	*2550 Broadway*	Address:	*50809 Ellis Road*
	Baker City, OR 97814		*North Powder, OR 97867*
Phone:	*541-523-6471*	Phone:	*541-523-5170*
Fax:	*541-523-6472*	Fax:	*541-523-5170*
Email:	*brucenichols@integra.net*	Email:	*Peggy@BrowneConsulting.biz*

Certification:

I certify that this application is a true and accurate representation of the proposed work for a project planning study and that I am authorized to sign as the Applicant or Co-Applicant. By the following signature, the Applicant certifies that they are aware of the requirements of an Oregon Water Resources Department grant and are prepared to conduct the planning study if awarded.

Applicant Signature: Frederick Phillips Date: *12-14-2011*

Print Name: *Frederick Phillips* Title: *District President*

III. Planning Study Summary

Please give a brief summary of the planning study using no more than 150 words.
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 usurers 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.

IV. Grant Specifics

Section A. Common Criteria

Instructions: Answer all questions in this section by typing the answer below the question. It is anticipated that completed applications will result in additional pages.

1. Describe how the planning study will be performed. Include:
   a. A description of the planning schedule/timeline, which includes identifying all key tasks. (Section VI provides an opportunity for a "graphical" representation of the schedule.)

   With this study, we are requesting funding for a feasibility portion study for additional water storage and conservation in the Lower Powder Irrigation District. The task that we would like to request funding for is Task 1. Data Collection. Due to budgetary constraints, combined with Federal Planning requirements that include following the NEPA process, a logical phased approach has been used for the overall effort where the project has been broken into distinct phases. At present, we have finished phase I, and are currently working on Step 4 of Phase II- Feasibility Study.

   Task1. Data Collection will take approximately 5 months, during the irrigation season, and will commence in June 2012, and consist of the following key study components:

   a) Water Quality- Water temperature will be monitored from Thief Valley Reservoir to the end of the study area. Six sites have been chosen to collect temperature data that will provide air and temperature data at key nodes along the river which will provide key data to assist with understanding the hydrology and temperature dynamics of the area. This will give a baseline of temperature throughout the river during the irrigation season and during the time of low flows. The water temperature data will be collected and downloaded from the data loggers at the end of the irrigation season.

   b) Hydrology- A team will develop a detailed hydrologic analysis of the area. Development of hydrologic data will include compiling stream flow data, point of diversion data and water rights data. The purpose of this effort is to assess water that is entering the Lower Powder Irrigation District from Thief Valley Reservoir, the amount of water that is being diverted, the amount of water that is returning to the river and the amount leaving the Keating Valley in the Powder River. Flow measurements will be collected throughout the irrigation season at six points of diversion and in-stream continuously throughout the year.

   c) Economic Analysis- As the data is analyzed; a team will determine cost and benefit associated with potential system improvement (examples may include automated diversion gates (SCADA), lining canals, and/or piping canals). Economic analysis will give insight towards the next step in this conservation effort. This team will look into cost benefit analysis for areas that the study finds to have excessive water lose. The result will include an analysis of the ability to meet water demands solely through conservation or if increasing water storage in Thief Valley Reservoir may still be necessary. This section will commence once there is significant amount of data to notice trends or areas of concern.

   e) Fish & Wildlife- Fish species will be surveyed throughout the affected area. USFWS and ODFW will be closely consulted throughout the process.

b. When the planning study could begin.

The planning study is scheduled to begin June 1, 2012. The above tasks are planned and will be ready to deploy and install equipment commence June 1st contingent upon being awarded this grant.

2. Provide a description of the relevant professional qualifications and/or experience of the person(s) that will play key roles in performing the planning 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 planning study.

The Bureau of Reclamation, Lower Powder Irrigation District and Browne Consulting will put together a team of experienced professionals to perform various tasks in the study. Team members are as follows: Lesa Stark (BOR), Darrell Dyke (BOR), Julia Pierko (BOR), Peggy S. Browne (Browne Consulting), Janae Trindle (Browne Consulting), Tyrell Monter (Browne Consulting), Sara Haynes (Browne Consulting), Jennie Yancey (Browne Consulting), and Frederick Phillips (Lower Powder Irrigation District).

Lesa Stark- Bachelor of Science Landscape Architecture, Washington State University. Over 14 years project management experience in the Pacific Northwest in land and water resource management for water resource planning and ESA programs in the Snake River basin. Past projects include: Emigrant Lake Resource Management Plan, Pilgrim Creek Stream Evaluation Study, Snake River Resources Review Recreation Evaluation, Boise/Payette Storage Study Appraisal Study, Upper Snake BA/BO section 7 consultation, Lewiston Orchards BA/BO section 7 consultation.

Darrell Dyke- BS in Engineering Oregon State University, Professional Hydraulic Engineer, 10 years of hydrology analysis experience, 8 years experience with civil design and cost analysis, all with the Bureau of Reclamation. Past projects include San Juan Basin Hydrology Study, Upper Colorado Hydrology Study, Lower Colorado Water Accounting Study, Boise valley Water Use Study and FCRPS Water Enhancement Projects.

Peggy S. Browne- BS in Rangeland Ecology, Oregon State University with a minor in Crops and Soil Sciences. Professional Certificate in River Restoration Physical Processes and Ecological Processes, Portland State University, 12 years experience as rangeland ecologist. Peggy is the owner of Browne Consulting, LLC in Baker City, Oregon. Past projects include; Powder Basin Watershed Council Education and Outreach Program, Project management and development Eagle Creek Restoration Project, Coordinator Powder Basin Water & Stream Health Project, numerous conservation projects.

Janae Trindle- BS in Business Administration from Eastern Oregon University with an emphasis in marketing. Office manager and Inside Sales, 10 years at Moe Country Cupboards. Office Manager of Browne Consulting, LLC for past 4 years. Past projects include: Interior marketing to McNary Dam, interior marketing to Orchard Homes (Housing Authority), and interior marketing to Pine Valley Ranches).

Tyrell Monter- BS in Natural Recourses from Washington State University with an emphasis in Wetlands and Aquatics. Currently Tyrell is working as a Fish Biologist for Browne Consulting, LLC, with 5 years in fish biology and management, fish handling and expert surgeon experience with emphasis in microacoustic transmitters (JSATS) and passive tags (PIT), fish/mammal surveys, data analysis and compilation, and ArcGIS. Past projects: Survival Studies on Lower Columbia River Dams, Columbia River Channel Improvement Project, Hydro Acoustic Studies; Cougar Reservoir, The Dalles Dam, Bonneville Dam, and Grand Coulee Dam for Battelle-Pacific Northwest National Labs.

Sara Haynes- BS in Civil Engineering at Montana State University. Office Manager at Browne Consulting, LLC. Past projects include: Four years project field experience with Bechtel Corp. Performed hydraulic flow studies at Toolik Field Station on the north slope of Alaska for Veco Polar Company.

Jennie Yancey- BS Biology, BA Chemistry at Whitworth University, MS Rangeland Ecology and Management for Oregon State University with an emphasis in Riparian Ecology. Riparian Ecologist/Eco-Hydrologist for Browne Consulting, LLC with 5 years experience in stream hydrology and water quality management, riparian ecosystems studies, PHABSIM/RHABSIM study in Northeast Oregon forest and range ecosystems.

Frederick Phillips- President of Lower Powder Irrigation District, and local landowner. Frederick brings knowledge and valuable insight in irrigation system throughout the valley. Public relations between landowners and irrigation users within the district.

3. What local, state or federal project permitting requirements/issues do you anticipate in order for the planning study to be conducted?

   There are no permitting requirements for this project. Gauge stations will be approved by the BOR in order to meet NEPA and CWA requirements. There are not any local or state permits required due to less than 50 cubic yards per site for fill and removal during equipment installation.

4. Are permits/governmental approvals required for the planning study? If yes, indicate whether you have obtained the necessary permits/governmental approval. If you have not obtained the necessary permits/governmental approval, describe the steps you have taken to obtain them.

   No, there are no permits or governmental approvals required for this planning study; research has already been done at the local, state and federal levels to verify.

5. Describe your goal (which must be based on evaluating the feasibility of developing a water conservation, reuse or storage project) and how this study helps to achieve the goal.

   The Lower Powder Irrigation District has indicated that they are one (1) month short of summer water. Prior to committing to a large scale water storage project on Thief Valley Reservoir, this study is prudent to analyze the amount of water that can be conserved as a result of more efficient irrigation system infrastructure and irrigation practices.

   The goal of this project is to have a reliable source of water available throughout the irrigation season and to more prudently use irrigation water. With this study, this goal can become closer to being a reality. Our team will be able to analyze areas of water loss that are occurring, provide water comservatiom option and associated costs and determine if conserving water in troubled areas will provide enough reliable water to meet late season needs or if it will be necessary to pursue increasing water capacity within Thief Valley Reservoir.

6. Describe the technical aspects of the planning study and why your approaches are appropriate for accomplishing the goal of the planning study.

   Lower Powder Irrigation District is looking into two (2) ways to meet their goals to have a reliable source of water that would be available throughout the irrigation season and to more efficiently utilize irrigation water. The first way to meet their goal is through water conservation. By looking into conservation of water throughout their system, the District will be able to identify and

pinpoint locations of significant water loss. By measuring the amount of water coming into the system from Thief Valley Reservoir, the amount of water being diverted to irrigation ditches, and the amount of water that is returning to the river at the end of the district, a water budget can be calculated.

The amount of water that is entering the Lower Powder Irrigation District via the Powder River will be determined by data from the Bureau of Reclamation at Thief Valley Dam. An in-stream flow gauge will be placed at the entrance of the first two irrigation ditches (Emele and Basche) and another in-stream flow gauge will be placed before the first place of use within these same two irrigation ditches.

The Emele and Basche irrigation ditches have the longest distance prior to first point of use, they are routed along dry rocky hillsides in remote locations and likely have the opportunity for the most water conservation; these two irrigation ditches will have continuous monitoring. The next two ditches in the system, (Erwin and Duncan), have water diverted through the head gates from a diversion dam. The Erwin and Duncan ditches will be monitored weekly with a staff gauges or at any event of change in the head gate or significant rain event. During monitoring events, a crew will use a velocity meter to gather flow data to build a rating curve to use with the staff gauge. The same technique will be used for the irrigation ditches, Perkins and Cranston, located further downstream.

A stilling well will be used at the end of the district to determine return flow. A stilling well will be installed with a sensor to measure depth. A team will form a rating curve at different variations of stream conditions to compare against different depth measurements received by the sensor in the stilling well. The measurements received from the stilling well will provide baseline information of water returning to the river. At this same location, a temperature logger will also be placed to calculate water temperature as it exits the district and starts down a steep canyon.

Temperature loggers will be placed throughout the study area. The first being below Thief Valley Dam, the second before the diversion to Emele Ditch, the third will be placed just downstream of State Highway 203 where the geography changes, the fourth will be placed prior to the diversion dam that feeds the Perkins and Cranston and the final last logger at the end of the district at the location of the stilling well.

Understanding how the water is used and the amount utilized and amount "lost" and to where, the Lower Powder Irrigation District will have enough information to request funding for capitol construction improvement projects. By calculating the quantity of water being diverted into each irrigation ditch to the quantity being received at the first point of use, will provide information necessary evaluate the feasibility of capital improvement projects within the District. If the amount of water loss within the delivery system is significant, then fixing this issue would be one step closer to achieving the District's goal. Many more additional benefits will be realized as a result of this project. It will allow for a longer period for irrigation and possibly allow for a healthier main stream for fish, wildlife, and river conditions (i.e. cooler water, fewer amounts of stagnant water area, cleaner river).

A significant product that will be realized as a part of this effort is a water budget. It will show the District board and District patrons the following crucial information necessary for proper management.

- *Amount of water entering LPID*
- *Amount of water taken out at each river diversion*
- *Amount of water lost on two ditches prior to first point of deliver*
- *Amount of water leaving the District*
- *Amount of water returning to the river prior to leaving the District*

- *Cost of options for locations in the District that necessitate capital improvements*
- *The foundation information necessary to apply for construction grants*

The information provided will help identify whether a Supervisory Control and Data Acquisition (SCADA) system will be a feasible choice for water conservation.

The deliverable product from this grant is a report that will show the amount of water being lost, where the water is being lost, areas where water can be conserved, practices to implement in conserving water and costs of these practices. In the report, Browne Consulting and Reclamation will identify options for each site that is found to be a significant point of water inefficiency.

After this grant and associated project are complete, the District intends to apply to Reclamation's WaterSMART grant program for capital improvements.

7. Describe the level of involvement; interest and/or commitment of different entities associated with the planning study (attach letters of support). Describe how these entities will benefit or be impacted by the planning study.

While this study specifically addresses potential water conservation within the Lower Powder Irrigation District, it is merely a small step of a large ongoing project. In 2005, The Baker County Commissioners formed the Water and Stream Health Committee to address water quantity and quality within the Powder Basin. At that time, numerous partners joined the effort and are identified below. In 2009-2011, the Bureau of Reclamation conducted an Appraisal Study which identified costs and benefits associated with four potential water storage projects within the Powder Basin. The projects were increasing capacity at Thief Valley Reservoir, constructing Hardman Dam on the South Fork Burnt River, a new dam on the North Powder River, and a new dam on East Pine Creek, outside of Halfway, Oregon. At the appraisal level, Reclamation only evaluates costs and benefits associated with construction, irrigation, and hydropower. The only project that met the minimum threshold of a 1:1 cost/benefit ratio with the given parameters was the Thief Valley Reservoir; it came in at 1.38. Based on that finding, the next step is to evaluate and address irrigation system efficiency below Thief Valley and increase efficiency as much as practicable.

The Lower Powder Irrigation District System Optimization Review continues to be a part of the Water and Stream Health Project in the Powder Basin. It therefore boasts an enormous number of supporters at the local, state, and national levels. Supporters are listed below with those that provided letters of support addressed in greater detail.

Lower Powder Irrigation District
Baker County
Union County
Baker County Farm Bureau
Baker County Association of Conservation Districts
Bureau of Reclamation
Eagle Valley SWCD
Keating SWCD
Water For Life
Freshwater Trust
City of Richland
City of Halfway
Senator Merkley
Senator Wyden
Congressman Walden
Idaho Power

Bureau of Reclamation – It is mandated by Congress that prior to investing in significant water storage projects that system efficiency and water conservation must first be addressed. Therefore, the Reclamation team out of Boise, Idaho has budgeted funding to assist with the technical aspects of the

proposed project. The project directly benefits Reclamation by making one of the irrigation systems below a Reclamation Project more efficient.

Lower Powder Irrigation District – Irrigators within the Lower Powder Irrigation District currently lack approximately one month of irrigation water during late summer. They believe that if they are able to quantify the amount of water that is "lost" through inefficiency at points of diversions and ditch loss, that they can then prioritize which points to address first and decrease overall water loss. This will ultimately decrease the number of days that they lack adequate irrigation water. The reliable availability of late season water is not only vital for the vitality of individual ranches but the economic stability of the rural community. This water often determines whether or not a rancher can produce a third cutting of hay. One ton of hay currently is valued between $150-200±. Each irrigated acre yields approximately one to two ton per acre for three cuttings.

Baker County – Baker County's number one source of economic revenue is agriculture. The County Commissioners understand this fact and support all feasible endeavors to increase agriculture productivity and sustainability within the county. Furthermore, they realize that a healthy and viable agriculture community means healthy rural development. If farmers and ranchers are realizing financial gain they in turn hire more employees and spend locally thus economically stimulating not only the Keating community but Baker City as well.

Section B. Unique Criteria

Instructions: Answer the set of questions below that applies to the type of planning study that this grant will fund.

☒ Water Conservation or ☐ Reuse

1. Water Conservation or Reuse projects that may result from this planning study are requested to be included in the Water Resources Department's "Inventory of Potential Conservation Opportunities". Though you may have already submitted this information earlier in the year through a separate survey, we ask that all applicants complete the information on the form provided at the end of this application. ☐ I have filled out the application or ☒ I have not filled out the application.

2. Describe the water supply need(s) that the project associated with the planning study is intended to meet. Applicant should reference supporting documentation that would be available upon request.

   Water problems that are consistently identified in numerous documents pertaining to irrigation below Thief Valley Dam in the Keating area include: lack of reliable available irrigation water during late summer, inefficient head gates and irrigation ditches, excessive water temperature and water quality issues. References to these problems can be found in "Eastern Oregon Water Storage Appraisal Study for Powder River, Burnt River, and Pine Creek Basins" (draft)2011, "Powder Basin Natural Stream Flow Determination" 2009, "Literature Review of the Powder Basin" 2008, Thief Valley Reservoir 1992 Sedimentation Survey" 1994, "Reservoir Increase at Thief Valley Dam, Oregon" 2001, "Water Supply in the Powder Basin" 2006, The Fish & Wildlife Resources of the Powder Basin and their Water Requirements" 1967,

3. Explain how the associated project will mitigate the need to develop new water supplies and/or use water more efficiently. Reference documentation and/or examples of the success of similar or comparable water conservation/reuse projects that would be available upon request.

   As a result of the "Powder Basin Natural Stream Flow Determination" 2009, we now understand that there is a large amount of water that is "unaccounted for" in the Lower Powder Irrigation District section of the Powder River. Therefore, it is unknown what the fate of the water is in this stretch of stream. This project takes two significant steps in optimizing water conservation and efficiency in the Lower Powder Irrigation District. First, by gathering and analyzing stream flow data and river diversion data we will understand how much water is entering the system, its path while there, and how much leaves the system via the Powder River. Based on that knowledge, District priorities can be logically established; it is likely that diversions will be made more efficient in terms of the amount of water diverted and the time spent managing, and ditch loss reduced. There are currently places on the ditches identified as high priority where a person can visually watch water leak out. Ultimately, more efficient irrigation practices mean additional water conserved and likely higher instream flows throughout the irrigation season.

4. Explain how the project associated with the planning study 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% of your need will be met).

   The current water demands are 17,400 acre-feet; however, with the increased siltation of Thief Valley Reservoir the actual received demand is 13,500 acre-feet. The projected demand for the downstream area is 34,800 acre-feet, which is the appropriated right for Thief Valley

Reservoir to fill twice. With identifying, repairing diversions and water transport, the potential water increase through conservation could be a 15-35% increase. This estimate is based on other districts working with Reclamation and the state of Idaho and implementing similar studies and practices.

5. Provide data and information on the associated project and the project's sources of water supply:

   a. The location of the associated project. (Include the basin, county, township, range and section.)

   The Powder Basin is bordered to the north by the Wallowa Mountains, to the west by the Blue Mountains, and to the east by the Snake River. Within the Powder Basin, a series of mountain separates the two sub-basins; the Powder River Sub-basin and Burnt River Sub-basin. The topography of the local area has a large influence on water availability. The steep topography causes water to pass through the system rapidly, thus during the spring months (April thru June) creating intense runoff often leading to flooding. The topography of the area also influences annual precipitation receiving less than 10 inches annually for the area.

   The location of this project will occur in the Lower Powder Basin of the Keating Valley in Baker County, Oregon. The area will start below Thief Valley Reservoir and continue down the valley to where the Powder River crosses under State Highway 86. The township and range for this area will include Township 7S including Ranges 41-43E and Township 8S including Ranges 42-44E.

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

   The Powder River is a tributary to the Snake River. The section of the Powder River in this study will start from Thief Valley Reservoir at river mile 0 and continue downstream to river mile 37.1 where the Powder River flows under State Highway 86.

   c. Environmental flow needs and water quality requirements of supply source water bodies and water bodies downstream of associated and/or affected return flows.

   Department of Environmental Quality did a study where the Powder River goes under Highway 86 during the water years of 1986-1995 and found high levels of total phosphates, fecal coliform, and biochemical oxygen demand impact water quality at this monitoring site. Eutrophication is active towards the end of summer when flow is low and water temperature is high, resulting in high dissolved oxygen supersaturation. With the increase in water conservation from this project, stream health could increase with the availability of water throughout the year.
   http://www.deq.state.or.us/lab/wqm/wqindex/powder3.htm

   d. Reliance on return flows by downstream water right holders.

   The amount of water that will be applied to cropland will not change. However, the amount of water lost as canal seepage and evaporation will. Therefore, return flows to downstream water users is not anticipated to be an issue. Due to the geographical features of the Keating Valley, water that is used from irrigation ditches will be used in fields and will return to the river through subsurface flows.

6. Provide a review of the local, state, and/or federal permitting requirements and issues posed by the implementation of the project associated with the planning study.

   The specific study element that will require ground disturbance is the installation of stream gauges and other water flow, stage, and temperature measurement devices. These are not "land use" practices and are therefore not under county jurisdiction. At the state level, no permitting will be necessary, whereas there will not be more than 50 cubic yards of material removed in one location. It

is the same threshold for the federal level that would trigger an Army Corps of Engineer permit and therefore none are necessary. Finally, where construction will only take place at existing diversions, where earth has previously been disturbed, no archeology permits are required.

☐ Above-Ground Storage

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

Will the project divert greater 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 one of these questions, by signature on this application, you are committing to include the following required elements in your planning study.

Describe how you intend to address the required elements in your planning 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.**

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.**

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

d) **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.**

Is the proposed storage project for municipal use?

☐ Yes ☐ No

If you answered "Yes," then describe how you intend to address the following required element in your planning 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 answering the following questions:

1. Describe when and to what extent the project associated with the planning study includes provisions for using stored water to augment instream flows to conserve, maintain and enhance aquatic life, fish life or other ecological values.

2. Describe the water supply need(s) that the project associated with the planning study in intended to meet. Applicant should reference supporting documentation that would be available upon request.

3. Explain how the project associated with the planning study 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% of your need will be met).

4. Present convincing argument that there are no other reasonably achievable alternatives that would be able to meet the water supply need(s). Applicant may reference supporting documentation that would be available upon request.

5. Provide data and information on the associated project and the project's sources of water supply:
   a. The location of the associated project. (Include the basin, county, township, range and section.)

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

   c. Whether the project will be off-channel or on-channel.

   d. Water availability to meet project storage. (Typically, the Department evaluates new storage projects using a 50 percent water availability analysis.)

   e. Proposed purposes and uses of stored water.

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

6. Provide a review of the local, state, and/or federal permitting requirements and issues posed by the implementation of the project associated with the planning study.

☐ **Storage Other Than Above-Ground [Including Aquifer Storage and Recovery (ASR)]**

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

Will the project divert greater 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 one of these questions, by signature on this application, you are committing to include the following required elements in your planning study.

Describe how you intend to address the required elements in your planning 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.**

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.**

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

d) **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.**

Is the proposed storage project for municipal use?

☐ Yes ☐ No

If you answered "Yes," then describe how you intend to address the following required element in your planning 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 answering the following questions:

1. Water Conservation or Reuse projects that may result from this planning study are requested to be included in the Water Resources Department's "Inventory of Potential Conservation Opportunities". Though you may have already submitted this information earlier in the year through a separate survey, we ask that all applicants complete the information on the form provided at the end of this application. ☐ I have filled out the application or ☐ I have not filled out the application.

2. Describe the water supply need(s) that the project associated with the planning study is intended to meet. Applicant should reference supporting documentation that would be available upon request.

3. Explain how the project associated with the planning study 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% of your need will be met).

4. Present convincing argument that there are no other reasonably achievable alternatives that would be able to meet the water supply need(s). Applicant may reference supporting documentation that would be available upon request.

5. Provide data and information on the associated project and the project's sources of water supply:
   a. The location of the associated project. (Include the basin, county, township, range and section.)

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

   c. Water availability to meet project storage. (Typically, the Department evaluates new storage projects using a 50 percent water availability analysis.)

   d. Proposed purposes and uses of stored water.

   e. Environmental flow needs and water quality requirements of source water.

   f. Water quality, storage capacity, and geologic aspects of the associated aquifer(s) and/or recharge zones.

6. Provide a review of the local, state, and/or federal permitting requirements and issues posed by the implementation of the project associated with the planning study.

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 resources, b) previously expended resources, and/or c) pending resources. For secured funding, you must attach a letter of support from the match funding source that specially 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. For resources that have been previously expended, the expenditure must have occurred on or after July 1, 2011. Resources expended prior to July 1, 2011 are not eligible for match purposes.

The Type of matching funds may include:	The Status of matching funds may include:
• The value of in-kind labor, equipment rental and materials essential to the planning study provided by the applicant or partner*.	• Secured funding commitments from other sources.
• Cash is direct expenditures made in support of the planning study by the applicant.	• Associated and documented expenditures for the planning study from non-program sources incurred on or after July 1, 2011.
	• 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 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)*
Lower Powder Irrigation District	☒ cash ☐ in kind	☒ secured ☐ expended ☐ pending	*30,723.50*	*December 1, 2011*
Bureau of Reclamation	☒ cash ☐ in kind	☐ secured ☐ expended ☒ pending	*22,810*	*September 30, 2012*
Browne Consulting, LLC	☒ cash ☐ in kind	☐ secured ☒ expended ☐ pending	*5,172.17*	
Lower Powder Irrigation District	☒ cash ☐ in kind	☐ secured ☒ expended ☐ pending	*7,000*	
	☐ cash ☐ in kind	☐ secured ☐ expended ☐ pending		
	☐ cash ☐ in kind	☐ secured ☐ expended ☐ pending		
	☐ cash ☐ in kind	☐ secured ☐ expended ☐ pending		
	☐ cash ☐ in kind	☐ secured ☐ expended ☐ pending		
	☐ cash ☐ in kind	☐ secured ☐ expended ☐ pending		
	☐ cash ☐ in kind	☐ secured ☐ expended ☐ pending		
	☐ cash ☐ in kind	☐ secured ☐ expended ☐ pending		
	☐ cash ☐ in kind	☐ secured ☐ expended ☐ pending		

	☐ cash ☐ in kind	☐ secured ☐ expended ☐ pending		
	☐ cash ☐ in kind	☐ secured ☐ expended ☐ pending		

VI. Project Planning Study Schedule

Estimated Project Duration: June 1, 2012 to September 30, 2012

Place an "X" in the appropriate column to indicate when each element (key task) of the project will take place.

	2012		2013			
Project Planning Study Element (Key Tasks)	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr
Installation of water/air temperature gauges	X					
Installation of stilling well	X					
Installation of water flow meters	X					
Installation of staff gauges	X					
Data Monitoring and surveys	X	X	X	X	X	X
Data Analysis	X	X	X	X	X	X
Fish and Wildlife Monitoring	X	X	X	X	X	X
Quarterly reports		X	X	X		
Final Report				X		
Analysis towards conservation recommendations		X	X	X		

* It is anticipated that LPID will continue to collect and analyze data past 2nd quarter 2013 final report submission.

VII. Project Planning Study Budget

Section A

Please provide an estimated line item budget for the project planning study. An example would include: labor, materials, equipment, contractual services and administrative costs.

Line Items *Note: Administrative costs may not exceed 10% of the total funding requested by the Department.*	Unit * Number *(e.g. # of hours)*	Unit Cost *(e.g. hourly rate)*	In-Kind Match	Cash Match Funds	OWRD Grant Funds	Total Cost
In-stream Flow Monitor	*4*	*4,128*		5,450	11,062	*16,512*
Software for Flow Monitor	*1*	*1,800*		595	1,205	*1,800*
Staff Gauge	*4*	*55*		110	*110*	*220*
Temperature/Air Data Logger	*6*	*118*		354	354	*708*
Permanent Gauging Station	*1*	*4,045*		1,450	*2,955*	*4,405*
24" Culvert Pipe 8' Long	*1*	*390/8'*		195	*195*	*390*
2" Galvanized Steel Pipe 21'	*1*	*135/21'*		67.5	67.5	*135*
Gravel	*1*	*300/Load*		150	*150*	*300*
Rebar	*1*	*8/20'*		4	4	*8*
Excavator for installing permanent gauging station	*8*	*125*		333	667	*1,000*
Maintenance for monitoring equipment				500	500	1000
Labor (Hourly)						
Labor for installing permanent gauging station	*9*	*95*		425	430	855
Installation of monitoring equipment	*96*	*55*		1,740	3,540	*5,280*
Downloading Data/Survey Sites	*144*	*55*		2,600	*5,320*	*7,920*
Checking monitoring equipment	*96*	*55*	*5,280*			*5,280*
Data Analysis for permanent gauging station	*90*	*55*		*1,630*	3,320	*4,950*
Data Analysis for monitoring gear	*96*	*55*		1,740	3,540	*5,280*
Reports (Hourly)						
Quarterly Reports	*48*	*55*		870	1,770	*2,640*
Final Report	*120*	*55*		*2,170*	4,430	*6,600*
Mileage	*1100*	*.50*		*550*		*550*
Four Wheeler Rental (Days)	*18*	*150*	*2,700*			*2,700*
Browne Consulting Expenditure **			*5,172.17*			5,172.17
*Lower Powder Irrigation Expenditure***				*7,000*		7,000
Administrative Costs		*7%*		2790	2790	5580
Total for Section A			*13,152.17*	*30,723.50*	42,409.50	86,285.17
Percentage for Section A			***15.2%***	***35.6%***	***49.2%***	***100%***

** Note: The "Unit" should be per "hour" or "day" – not per "project" or "contract."*

*** Note- The expenditures stated above were expended between July 1, 2011 and grant awarding.*

Section B

If Grant amount requested is $50,000 or greater, you MUST complete Section B. Elements (key tasks) in Section B should be the same as the elements (key tasks) in Section VI (Project Planning Study Schedule).

Project Planning Study Element (Key Tasks)	In-Kind Match	Cash Match Funds	OWRD Grant Funds	Total Cost
Total for Section B				

Totals in Section B must match the totals in Section A

APPLICATION CHECKLIST

Instructions: Use this form as an important cross-check 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 – Planning 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 planning study is Water Conservation, Reuse or Storage Other Than Above-Ground, a Request to be added to the Oregon Water Resources Department's Inventory of Potential Conservation Opportunities has been completed. (Form is located at the end of this document.)
☒ All applicable questions for the type of grant requested have been answered.

Section V – Match Funding Information

☒ Applicant has identified that at least 50% 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 – Project Planning Study Schedule

☒ Estimated project duration dates have been supplied.
☒ All elements (key tasks) of the project are listed.

Section VII – Project Planning Study Budget

☒ Section A is complete.
☒ Administration costs do not exceed 10% of the requested OWRD Grant Funds.
☒ If grant amount requested is $50,000 or greater, Section B has been completed.
☒ All elements (key tasks) listed in Section B mirror the elements listed in Section VI.

Request to be added to the Oregon Water Resources Department's

Inventory of Potential Conservation Opportunities

The purpose of this inventory is to catalogue potential conservation projects that water users themselves have identified but not yet pursued because of financial, institutional, or other barriers. For the purpose of this application, water storage other than above-ground are included as conservation opportunities and are most likely capital conservation projects.

As a water provider or user, you know your water demands and water conservation opportunities better than anyone. We would appreciate your assistance with this important data collection effort by completing this survey. Your participation will help provide the building blocks we need to begin to identify and achieve potential future water supplies. Please answer the questions as completely as possible, to the best of your ability. We appreciate your help with this important effort.

This inventory of already-identified, potential conservation projects includes both capital and programmatic projects. Capital projects are defined as one-time, large investments resulting in water savings. Examples include reclaimed water plants, reservoir covering, transmission line upgrades reducing leaks, or industrial engineering modifications to re-use process water. Programmatic projects are defined as ongoing investments resulting in water savings. Examples include facilitating upgrades to more efficient water using devices (e.g., distributing free showerheads, toilet rebates) and distribution system leak detection programs. The conservation inventory is primarily intended to include "planned" projects rather than projects that are currently being implemented. However, currently active programmatic projects may be listed if they will continue or expand in future years. The inventory of projects submitted will be compiled by county or basin.

Examples are provided below.

	Example Capital Conservation Project	Example Programmatic Conservation Project
Project Description Provide brief sentence	Line 3 miles of unlined ditch.	Toilet rebate program for residential customers
Estimated Future Savings Provide brief sentence, including information regarding savings seasonality.	20 acre feet of water per year	If we spend our full budget each year, we estimate 50,000 gallons of water save per year
Seasonality Indicate what part of the year savings are generated (e.g. year-round; summer only; etc.).	Peak (irrigation) season savings.	Savings should occur throughout the year.
Estimated Future Costs Provide brief sentence.	$500,000 total project costs.	$40,000 a year.
Implementation Schedule Provide brief sentence.	Not set. Have conducted cost and savings estimate, but still seeking funding.	We started the program in 2005 and plan to implement until 2015.
Project Funded? Designate either "yes", "no", or provide brief sentence if necessary	No. Pursuing grant funding.	Yes. IN our CIP through the next 5 years.

To add a project to the inventory of potential conservation opportunities, please provide the following information for each conservation project.

This is a ☐ Capital Conservation Project ☐ Programmatic Conservation Project	
Project #/Name	**Lower Powder System Optimization Review**
Project Description	Calculate water loss to move forward with conservation efforts
Estimated Future Savings	15-35% increase in irrigation water
Seasonality	Throughout irrigation season
Estimated Future Costs	$87,000 total project costs
Implementation Schedule	Start June 1, 2012 depending on funding availability
What are the barriers to implementation, e.g. funding?	No barriers to implementation. Pursuing grant funding.
This is a ☐ Capital Conservation Project ☐ Programmatic Conservation Project	
Project #/Name	
Project Description	
Estimated Future Savings	
Seasonality	
Estimated Future Costs	
Implementation Schedule	
What are the barriers to implementation, e.g. funding?	

- Include this form with your application -

December 15, 2011

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

Subject: Lower Powder System Optimization Review

To Whom It May Concern:

I am writing to request your support of the grant application for our proposed System Optimization Review. Thief Valley Reservoir was constructed in 1932 and much of our irrigation system was built in the same era or even earlier. That combined with reservoir siltation, which has effectively decreased the amount of irrigation water available and environmental pressures, it is past time to quantify, analyze and address system inefficiencies. It is as a result of this realization that our District has been a member and financial supporter of the Water and Stream Health Project in the Powder Basin for numerous years. It will be as a result of this study that we will finally be able to see on the ground results of previous efforts.

I recently had the opportunity to tour the Payette River Water District 65. Relatively recently they took a completely antiquated irrigation system, went through the process that we have outlined within the application and are requesting financial assistance, and realized an enormous increase in water conservation and efficiency. One of the Payette District tour guides relayed that at certain times throughout the irrigation season they now see as much as 30% increase in system efficiency and water conservation.

As a result, our District has set aside enough money to match against the amount requested in the grant application to complete the proposed project. We also appreciate the opportunity to use "in-kind" work and equipment rental as a part of the matching funds. As our past grant application history to your department has shown, we are interested in additional water storage at Thief Valley Reservoir. However, we also realize that if we can improve our system efficiency enough, we may not need to increase capacity at the reservoir. We are looking forward to achieving our water conservation and efficiency goals.

We strongly request that Oregon Water Resources Department fund our System Optimization Review.

Sincerely,

F. Phillips

Frederick Phillips
President – Lower Powder Irrigation District

GRANTS.GOV™

Grant Application Package

Opportunity Title:	WaterSMART: Water and Energy Efficiency Grants for FY 2
Offering Agency:	Bureau of Reclamation - Denver Office
CFDA Number:	15.507
CFDA Description:	WaterSMART (Sustaining and Manage America's Resources f
Opportunity Number:	R12SF80049
Competition ID:	R12SF80049
Opportunity Open Date:	11/07/2011
Opportunity Close Date:	01/19/2012
Agency Contact:	Michelle Maher Grants Officer E-mail: mmaher@usbr.gov Phone: 303-445-2025

This electronic grants application is intended to be used to apply for the specific Federal funding opportunity referenced here.

If the Federal funding opportunity listed is not the opportunity for which you want to apply, close this application package by clicking on the "Cancel" button at the top of this screen. You will then need to locate the correct Federal funding opportunity, download its application and then apply.

This opportunity is only open to organizations, applicants who are submitting grant applications on behalf of a company, state, local or tribal government, academia, or other type of organization.

*** Application Filing Name:** Lower Powder System Optimization Review

Mandatory Documents

Move Form to Complete

Move Form to Delete

Mandatory Documents for Submission

- Application for Federal Assistance (SF-424)

Optional Documents

- Disclosure of Lobbying Activities (SF-LLL)
- Attachments
- Budget Information for Construction Programs (S
- Assurances for Non-Construction Programs (SF-42
- Assurances for Construction Programs (SF-424D)

Move Form to Submission List

Move Form to Delete

Optional Documents for Submission

- Budget Information for Non-Construction Program

Instructions

1 Enter a name for the application in the Application Filing Name field.

- This application can be completed in its entirety offline; however, you will need to login to the Grants.gov website during the submission process.
- You can save your application at any time by clicking the "Save" button at the top of your screen.
- The "Save & Submit" button will not be functional until all required data fields in the application are completed and you clicked on the "Check Package for Errors" button and confirmed all data required data fields are completed.

2 Open and complete all of the documents listed in the "Mandatory Documents" box. Complete the SF-424 form first.

- It is recommended that the SF-424 form be the first form completed for the application package. Data entered on the SF-424 will populate data fields in other mandatory and optional forms and the user cannot enter data in these fields.

- The forms listed in the "Mandatory Documents" box and "Optional Documents" may be predefined forms, such as SF-424, forms where a document needs to be attached, such as the Project Narrative or a combination of both. "Mandatory Documents" are required for this application. "Optional Documents" can be used to provide additional support for this application or may be required for specific types of grant activity. Reference the application package instructions for more information regarding "Optional Documents".

- To open and complete a form, simply click on the form's name to select the item and then click on the => button. This will move the document to the appropriate "Documents for Submission" box and the form will be automatically added to your application package. To view the form, scroll down the screen or select the form name and click on the "Open Form" button to begin completing the required data fields. To remove a form/document from the "Documents for Submission" box, click the document name to select it, and then click the <= button. This will return the form/document to the "Mandatory Documents" or "Optional Documents" box.

- All documents listed in the "Mandatory Documents" box must be moved to the "Mandatory Documents for Submission" box. When you open a required form, the fields which must be completed are highlighted in yellow with a red border. Optional fields and completed fields are displayed in white. If you enter invalid or incomplete information in a field, you will receive an error message.

3 Click the "Save & Submit" button to submit your application to Grants.gov.

- Once you have properly completed all required documents and attached any required or optional documentation, save the completed application by clicking on the "Save" button.
- Click on the "Check Package for Errors" button to ensure that you have completed all required data fields. Correct any errors or if none are found, save the application package.
- The "Save & Submit" button will become active; click on the "Save & Submit" button to begin the application submission process.
- You will be taken to the applicant login page to enter your Grants.gov username and password. Follow all onscreen instructions for submission.

OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424

Version 02

* 1. Type of Submission:
- [ ] Preapplication
- [x] Application
- [ ] Changed/Corrected Application

* 2. Type of Application:
- [x] New
- [ ] Continuation
- [ ] Revision

* If Revision, select appropriate letter(s):

* Other (Specify)

* 3. Date Received: Completed by Grants.gov upon submission.

4. Applicant Identifier:

5a. Federal Entity Identifier:

* 5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:

7. State Application Identifier:

8. APPLICANT INFORMATION:

* a. Legal Name: Frederick Phillips

* b. Employer/Taxpayer Identification Number (EIN/TIN):

* c. Organizational DUNS:

d. Address:

* Street1: 2550 Broadway
Street2:
* City: Baker City
County: Baker
* State: OR: Oregon
Province:
* Country: USA: UNITED STATES
* Zip / Postal Code: 97814

e. Organizational Unit:

Department Name: Lower Powder Irrigation Dist.

Division Name:

f. Name and contact information of person to be contacted on matters involving this application:

Prefix:
* First Name: Peggy
Middle Name: S
* Last Name: Browne
Suffix:

Title:

Organizational Affiliation: Browne Consulting

* Telephone Number: 541-523-5170
Fax Number:

* Email: Peggy@browneconsulting.biz

FY 2010-2011 Financial Review for WASH

Description	Date	Revenue	Expenditure	Balance
				$108.46
Beg Balance 09-10	7/1/2009			$108.46
Wash Budget- Baker Co	7/1/2010	$7,000.00		$7,108.46
Browne Consulting Invoice	7/1/2010		$682.50	$6,425.96
Browne Consulting Invoice	7/12/2010		$2,706.25	$3,719.71
Eagle Valley SWCD	8/4/2010	$2,000.00		$5,719.71
Browne Consulting Invoice	8/3/2010		$1,995.00	$3,724.71
Browne Consulting Invoice	8/31/2010		$2,135.00	$1,589.71
Lower Powder Irrigation District	9/13/2010	$2,000.00		$3,589.71
Browne Consulting Invoice	10/1/2010		$2,721.25	$868.46
Adjustment - Union Co 09-10	6/25/2010	$1,500.00		$2,368.46
Union Co 10-11	10/11/2010	$1,500.00		$3,868.46
Browne Consulting Invoice	11/3/2010		$3,015.84	$852.62
OWRD payment	10/29/2010	$5,000.00		$5,852.62
Browne Consulting Invoice	11/15/2010		$962.50	$4,890.12
Browne Consulting Invoice	1/3/2011		$1,793.75	$3,096.37
Browne Consulting Invoice	1/18/2011		$2,242.80	$853.57
Baker County Contribution	3/1/2011	$6,000.00		$6,853.57
Browne Consulting Invoice	3/21/2011		$6,559.59	$328.98
Contribution	5/1/2011	$2,000.00		$2,328.98
Browne Consulting Invoice	5/9/2011		$1,951.49	$377.49
Browne Consulting Invoice	5/23/2011		$149.78	$227.71
Baker County Contribution	7/20/2011	$5,000.00		$5,227.71
Browne Consulting Invoice	7/25/2011		$4,825.33	$402.38
Pending OWRD payment	8/1/2011	$3,141.50		$3,543.88
Browne Consulting Invoice	8/10/2011		$3,488.34	**$55.54**
Lower Powder Irrigation District	11/29/2011	$3,500.00	$3,500.00	
Pending Invoices through August 30, 2011			$8,111.25	
Invoice for September			$516.25	$8,627.50

United States Department of the Interior
BUREAU OF RECLAMATION
Snake River Area Office
230 Collins Road
Boise, Idaho 83702-4520

DEC 15 2011

SRA-1215
WTR-3.00

ELECTRONIC MAIL ONLY

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

Subject: Lower Powder System Optimization Review

To Whom It May Concern:

This letter is provided in support of the Lower Powder Irrigation District (District) grant application to continue their comprehensive assessment of the infrastructure that supplies water for irrigated agriculture in the Keating Valley of Baker County, Oregon. The Bureau of Reclamation's Snake River Area Office has been involved for many years with planning and implementing conveyance system improvement projects with several irrigation districts in eastern Oregon. Most projects have been relatively small with localized benefits, but they are representative of the potential that exists on a larger scale. Reclamation appreciates the initiative being shown by their application for the State of Oregon's grant.

The proposed District-wide analysis should identify water conservation opportunities for water users, promote coordinated efforts to improve water use efficiencies, and may lead to improved water management and reliability of the area's water supply. To provide the best information for planning and implementation, it is essential to obtain accurate field data. The plan outlined here should meet those objectives through the use of advanced electronic data collection methods and analyses. The need for improved water measurement in eastern Oregon is recommended in Reclamation's Draft *Eastern Oregon Water Supply Appraisal Study*, further illustrating Reclamation support for this activity.

The Lower Powder Irrigation District has indicated to Reclamation that it intends to apply for a Reclamation WaterSMART grant using 2012 funds. If the Lower Powder Irrigation District is awarded this grant through the Oregon Water Resource Department, it would be an excellent opportunity to leverage both State and Federal resources.

Reclamation supports water conservation and field measurement activities as a foundational element to improved water management. Reclamation encourages Oregon Water Resource Department's full consideration of the Lower Powder Irrigation District's proposed project.

Sincerely,

Julia R. Pierko, P.E.
Activity Coordinator

Fred Warner Jr.
Commission Chair
fwarner@bakercounty.org

Tim L. Kerns
Commissioner
tkerns@bakercounty.org

Carl E. Stiff, M.D.
Commissioner
cstiff@bakercounty.org

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

Subject: Lower Powder System Optimization Review

To Whom It May Concern:

I am writing in support of the grant application of the Lower Powder Irrigation District for furthering the work of their efforts to optimize water efficiency and conservation within Keating Valley of Baker County, Oregon. Agriculture is our **number one** source of economic revenue in Baker County and as such we cannot emphasize enough the importance of community efforts such as Lower Powder's to optimize the use of sustainable natural resources.

Baker County has invested in the Water and Stream Health Project since 2005 and we are very pleased to learn that the federal government has found that the investment is worthwhile and should be continued. Reclamation conducted an Appraisal Study which determined the cost/benefit of each project based on agriculture and hydropower. Looking at only these two variables, the project calculated out to 1.38; 1 is considered a minimum.

Lower Powder Irrigation District's efforts are a large undertaking with broad community and local government support. With support from the local and Federal levels, it is critical that it also has State level support. The award of this grant to the project will cement that piece of the coordination effort.

I encourage Oregon Water Resource Department's full consideration and support of the proposed continuation of this ongoing project.

Sincerely,

Fred Warner Jr.

Fred Warner, Jr., Chairman
Baker County Board of Commissioners