

Oregon Water Resources Department

Water Supply and Conservation Initiative

1) **Applicant:** Powder Basin Water & Stream Health Committee
Organization: Baker County

2) **Contact Information:**

Peggy S. Browne, Coordinator/Project Manager
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E-mail address: pegbrowne@eoni.com

3) **Project Overview (brief description of project 3 sentences or less):**

The Powder Basin Water & Stream Health Committee is dedicated to producing a long-term water management plan. A Hydrologic Analysis of the Powder Basin will assess when and where water is available for winter and spring storage and late season release. This Analysis will develop possible solutions or options that best meet current and future water needs identified within the basin.

4) **Description of the water supply limitations your community is facing:**

The Powder Basin has been over-appropriated for more than 60 years resulting in low flows and lack of water for beneficial uses as early in the year as mid-June. However, many areas in the basin often experience flood conditions in the spring months during snowmelt. This creates a dynamic of having excessive water flowing through the basin at times when beneficial uses cannot utilize it and lack of water during the hot dry summer months when flowing water is crucial.

5) **Project description, including:** The following is a plan that the Bureau of Reclamation and the Powder Basin Water & Stream Health Committee have agreed upon to proceed with the Hydrologic Analysis.

a) **Scope of Work** – Powder Basin Hydrologic Analysis

- I. Description of Current Hydrology
 - a. Identify and define the physical attributes of the system
 - b. Spatial layout of potential sites in relation to existing infrastructure
 - c. Timing of runoff, duration of runoff, historical runoff volume, comparison of relative drainages
- II. Water Supply and Operations Analysis
 - a. Determine available water quantities under existing systems
 - b. Given new water availability data, analyze what facilities and systems are options

- c. Other considerations –flood control, irrigation demand obligations, minimum flow requirements, environmental and ESA requirements.
 - d. Assess existing water and related infrastructure to rate current condition.
 - i. Condition of resources, facilities, problems, opportunities
 - e. Estimate future conditions based on patterns in natural systems, irrigation growth needs, human behavior, aging of facilities
- III. Water Supply and Operations and Development (Potential Sites)
- a. Clearly defined screening process for identifying potential options that warrant additional consideration
 - b. Mechanism for identifying and proposing new options – must take into consideration the following:
 - i. Inventory existing and previously proposed dams, reservoirs, and power facilities
 - Size
 - Storage capacity or inflow
 - Operational integration
 - a. Storage right priority
 - b. Flood control requirements
 - ii. Irrigation rights and demands
 - Surface water
 - Ground water
 - iii. In-stream flow targets
 - iv. Definition and calculations of unregulated or natural flows at various locations
 - v. Endangered species designations
 - vi. Wild and Scenic River designations
- IV. Climate Change
- a. Depict the change in timing of spring runoff and precipitation events
 - b. Project future water availability based on past data
- V. Recommendations
- a. List of activities necessary to achieve prior to implementation/construction of highest ranked sites

b) **Methods Proposed** – The Bureau of Reclamation (BOR) and the Powder Basin WASH Committee will be working closely together to accomplish the Hydrologic Analysis scope of work listed above. The WASH Committee is requesting \$20,000 from the State of Oregon as a match for the \$136,000 from the BOR for the Hydrologic Analysis.

The Literature Review of the basin recently completed will provide a base of the existing data and data gaps. The BOR will work closely with OWRD to obtain data from the Water Availability Reporting System (WARS) and create a new model to determine the water that is available in the basin for storage. Browne Consulting will coordinate with all entities to facilitate this project and fulfill the

networking role. Data will also be collected with the irrigation districts and SWCD of the basin.

- c) **Background** - The Powder Basin is located in eastern Oregon, bordered to the north by the Wallowa Mountains, to the west by the Blue Mountains, and to the east by the Snake River. The Powder Basin is comprised of three subbasins: the Powder River subbasin, Burnt River subbasin, and Pine Creek subbasin; a series of mountains separates the subbasins. Collectively they encompass approximately 2.7 million acres.

The Burnt River and Powder River were declared over-appropriated more than 60 years ago by the state engineer. The water supply does not meet water demand. Nearly all of the natural flow is diverted for irrigation during the irrigation season. The reservoirs in the basin provide supplemental irrigation water; yet late summer water demand and instream flow targets are still not met.

The communities in the Powder Basin formed a coalition called the Powder Basin Water and Stream Health Committee (WASH) to pursue additional water supply opportunities in the basin. The WASH Committee and Bureau of Reclamation (BOR) are working together to address these issues and have developed an appraisal study. The focus of this study is to assess additional water supply opportunities within the basin.

The appraisal study will include three major phases:

- Phase I: Development Phase
 - Includes scoping the study framework by working with local stakeholders to identify and clearly define needs and opportunities.
- Phase II: Assessment Phase
 - Includes a literature review to identify existing data, data gaps, and a needs assessment. The needs assessment was accomplished in order to develop a comprehensive understanding of the water management goals and objectives, both current and future.
 - Consists of the Powder Basin Hydrologic Analysis, as described in this grant. Includes the development of alternatives, description of project elements, and preliminary cost estimates.
 - Consists of the alternative evaluation process and recommendations for further consideration.
 - Environmental and feasibility studies (i.e. NEPA, EIS)
- Phase III: Implementation Phase
 - Select an option
 - Final Design

Limited funding has led to a phased approach in accomplishing this appraisal study. Phase I and part of Phase II, the literature review, has been completed by WASH, BOR, and the state of Oregon under various programs, contracts, and activities. The next step of Phase II includes the Hydrologic Analysis.

- d) **Schedule** – April 1, 2008 – Begin Hydrologic Analysis: collect data and create model.
August, 2008 – Begin writing report and create maps.

- e) **Estimated Outcomes and Benefits** - The result of the Hydrologic Analysis will assess when and where water is available for winter and spring storage and late season release. An Options and Alternatives Analysis will then be performed to determine the most feasible storage projects of the sites resulting from the Hydrologic Analysis. The WASH Committee and partners will perform a ranking of each potential storage project. The process (or model) that is being created can be used to determine water availability in other basins across the West using their own specific data.

6) Description of Involvement of stakeholders, agencies, and citizens in this project:

The Water & Stream Health Steering Committee chose to employ a collaborative approach, coordinating with as many partners as possible. A cooperative transparent project was the result of the enormous amount of time and energy invested in networking. The Bureau of Reclamation has been an essential partner from the onset of the project providing guidance, technical expertise, and funding. Other agencies such as Oregon Water Resources Department, Oregon Department of Agriculture, Oregon Department of Fish and Wildlife, US Fish and Wildlife Service, US Forest Service, US Department of Agriculture, Oregon Department of Rural Policy and OSU Extension Service have all been invaluable partners in the endeavor.

Regionally, numerous public informational sessions have been held in various communities throughout the basin as well as many updates being published in local newspapers. Citizens are continuously reminded that the monthly Steering Committee meetings are open to the public and all are welcome to attend. Additionally, it was recognized early on that state and national support would be crucial as well, much energy has been expended in networking with leaders and interested parties at all levels. The project coordinator, Peggy Browne, was invited to give a presentation to the Oregon Rural Policy Advisory Group in 2006. At Rural Oregon Day in Pendleton in 2006 we helped craft state water policy. The Steering Committee is comprised of a diverse group of individuals to help ensure that all interests are represented.

7) Description of Involvement of local government representatives in this project:

The Powder Basin Water & Stream Health Committee is under the purview of the Baker County Commissioners, therefore the project is fully supported by the local government. It is also endorsed by the Union County Commissioners, local agriculture groups and special districts such as Baker County Farm Bureau, Union County Farm Bureau, Baker County Livestock Association, and all affected soil and water conservation districts and irrigation districts. (Please reference the attached Partners/Contributors list.)

8) Description of how the project will address or provide benefits to region-wide water supply issues (including a description of the geographic area served by the project and a map showing the geographic limits of your planning project):

The region in question is the Powder Basin which encompasses more than 1.8 million acres. Prior to any site specific feasibility analysis or construction we must ensure that there will be adequate water to fill a water storage project. Thus a basin wide Hydrologic Analysis is a key building block in the foundation for long-term water storage. It will assess when and where water is available for winter and spring storage and late season release. Three of the many regional water supply issues are low flows, high water temperature, and excessive fine sediment; all of these problems can be diminished by conducting a Hydrologic Analysis and constructing water storage projects.

A key component of the Hydrologic Analysis is the water availability model that the Bureau of Reclamation will develop. The model will indicate when and where water is available for storage throughout the Basin. The model may potentially be utilized in basins similar to the Powder Basin. The water availability model will likely be the most expensive portion of the Hydrological Analysis, thus if other basins were able to utilize the process time and money will be saved.

9) Describe how these efforts may also address or benefit other watershed issues facing your community such as water quality, land-use changes, and the effects of climate change:

The efforts of the Powder Basin Water & Stream Health Committee include long-term water management and enhancing the water quality and quantity in the basin. The WASH Committee's long-term water management plan (including the upcoming Hydrologic Analysis) takes into consideration all beneficial uses during the planning and allocating processes. The beneficial uses considered throughout all WASH's projects and the future Hydrologic Analysis include fish and aquatic ecosystems, wildlife and terrestrial ecosystems, recreation, agriculture, municipalities, stream health, and hydropower. These beneficial uses will be improved by a water storage project as there would be late season water when it's often not available; water storage will decrease extreme flood events that cause erosion, sedimentation, and turbidity, minimize low flow which will enhance fish habitat, add recreation opportunities, and agriculture land will have supplemental irrigation water.

The Hydrologic Analysis will provide data to determine when and where water is available. This available water can be managed with storage to improve water quality. Nearly all the major streams in the Powder Basin have been listed on the DEQ 303(d) Water Quality Impaired list for exceeding the temperature standard. Deep narrow reservoirs with water outlets low on the dam profile significantly help decrease water temperature.

Alterations in period and duration of run-off have made it increasingly difficult for late season water users (aka climate change). Streams have been drying up earlier in the season and late season (July through October) and surface water irrigation is nearly impossible unless land is under an existing water storage project.

BUDGET

Powder Basin Hydrologic Analysis

TASK	OWRD FUNDING REQUESTED	BOR FUNDING	CASH MATCH
Powder Basin Hydrologic Analysis			
I) Description of Current Hydrology	\$1,800	\$10,000	\$1,395
II) Water Supply and Operations Analysis (Need)	\$15,000	\$90,000	\$11,631
III) Water Supply and Operations Analysis (Potential Sites)	\$3,200	\$20,000	\$2,482
IV) Climate Change	\$0	\$10,000	\$0
V) Recommendations	\$0	\$6,000	\$0
TOTALS	\$20,000.00	\$136,000.00	\$15,508.00

Contributing partners:

- \$2008 Keating SWCD
- \$2000 Baker Valley SWCD
- \$2000 Burnt River Irrigation District
- \$6000 Baker County
- \$2000 Lower Powder Irrigation District
- \$1500 Powder Valley Water Control District

Phased Progression of Project

■ PHASE I : Development Phase

- STEP 1
 - Identify Goals
 - Identify Needs/Issues
 - Identify Decision Makers

■ PHASE II : Assessment Phase

- STEP 1
 - Data Collection

- STEP 2
 - Literature Review
 - Hydrologic Analysis

- STEP 3
 - Data Review
 - ◆ Identify Data Gaps
 - ◆ Refine Objectives
 - Develop Options and Alternatives

- STEP 4 – site specific
 - NEPA Process
 - ◆ Feasibility Study

■ PHASE III : IMPLEMENTATION PHASE

- STEP 1
 - Pre-Implementation
 - ◆ Select an Option
 - ◆ Refine Plans for Proceeding With Selected Option

- STEP 2
 - Implementation
 - ◆ Construction

WATER & STREAM HEALTH STEERING COMMITTEE

Under the authority of the Baker County Commissioners:

Marion Crow	Resident of Pine Creek and Eagle Creek Drainages
Darrell Dyke	Engineer; Bureau of Reclamation
Cal Foster	Producer; Baker Valley Watershed
Jerry Franke	Irrigation District Manager; Burnt River Subbasin
Tom (Mac) Kerns	Engineer; Upper Powder River Drainage
Tim A. Kerns	President; Baker Valley Assn. of Soil and Water Conservation Districts
Bill Knight	Producer; Powder Valley Water Control District
Rick Lusk	District Manager; Oregon Water Resources Department
Michael McNamara	Hydrologist; U.S. Forest Service, Wallowa Whitman National Forest
Gary Miller	Regional Manager; U.S. Fish and Wildlife Service, La Grande
Aaron Umpleby	District Manger; Powder Valley Water Control District
Tim Bailey	Fisheries Biologist; Oregon Department of Fish and Wildlife

Fred Warner, Jr., Chair; Baker County Commissioners

Peggy S. Browne, Coordinator; Water and Stream Health Committee

Powder Basin Water & Stream Health Partners/Contributors

Baker County
Baker County Farm Bureau
Baker Valley Soil & Water Conservation District
Bureau of Reclamation
Burnt River Irrigation District
Burnt River Soil & Water Conservation District
Congressman Walden
Eagle Cap Resource Conservation & Development
Eagle Valley Soil & Water Conservation District
Keating Soil & Water Conservation District
Lower Powder Irrigation District
North Powder Water Control District
Oregon Department of Agriculture

Oregon Department of Fish & Wildlife
Oregon Department of Rural Policy
Oregon State University Extension Service
Oregon Water Resources Department
Pine Valley Community Watershed Projects
Senator Smith
Senator Wyden
Union County Farm Bureau
United States Forest Service
United States Department of Agriculture
United States Department of Fish & Wildlife
Water For Life



Burnt River Irrigation District

Baker County, Oregon

19498 Hwy 245

Hereford, Oregon 97837

Phone (541) 446-3313

E-Mail: briver@ortelco.net

February 6, 2008

Oregon Water Resources Department
North Mall Office Building
725 Summer St. NE, Suite A
Salem, OR 97301-1271

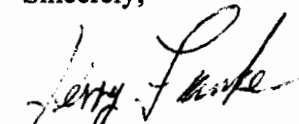
Reference: Baker County Water and Stream Health

To Whom it May Concern

The Burnt River Irrigation District (BRID) is a member of and gives it's total support to the Baker County Water and Stream Health (WASH) committee.

As a member of the WASH committee, we agree with the goals and objectives of the committee and actively support their efforts to enhance stream health by all means possible. This includes but is not limited to increased storage for late season flows, riparian restoration, and encouraging increased water use efficiency.

Sincerely;


Jerry Franke, Manager

United States Senate

WASHINGTON, DC 20510-3704

June 15, 2006

Ms. Peggy S. Browne
Coordinator
Powder Basin Water and Stream Health Committee
50809 Ellis Road
North Powder, OR 97867

Dear Ms. Browne:

I am writing to commend your efforts with the Powder Basin Water and Stream Health Project. Your work in reaching out to partners and stakeholder groups regarding the future of Baker County's water supply is a great example of a locally-developed solution using innovative approaches for the good of the entire community.

As you note, the population of Baker County is increasing and the water needs for agriculture, recreation, the environment and wildlife are increasing as well. There is a need to explore all options to make certain that various water needs are met. I am a firm believer that farmers and ranchers are protectors of the environment, since they recognize that healthy land is productive land. An abundant and predictable water supply will ensure that Baker County maintains a healthy environment, and remains a viable long-term community for farmers and ranchers.

Throughout my years in the United States Senate, I have pledged to use my position to support the rural communities of Oregon. Coming from a rural community myself, I understand first hand the challenges rural Oregon faces today. I am in full support of your efforts to enhance the water quality and quantity in the Powder Basin and I will do all that I can to help you in your efforts. I have submitted the Powder Basin Water and Stream Health Committee's 2007 request to the Senate Appropriations Energy and Water Subcommittee for the Bureau of Reclamation to begin an appraisal study for the basin. While we all need to recognize that funds will be limited next fiscal year, I will continue to work with the Oregon congressional delegation and the Senate Appropriations Committee as we move forward with the 2007 appropriations process.

Please keep me informed of your progress and let me know how I can help as you move forward with the Water and Stream Health Project.

Sincerely,



Gordon H. Smith
United States Senator

POWDER VALLEY WATER CONTROL DISTRICT

P.O. Box 189-690 E Street, North Powder, OR 97867 Tele: (541) 898-2366

Fax: (541) 898-2548 Email: pvwater@ucinet.com

Hearing Impaired – Call 711

February 28, 2008

To Whom It May Concern:

The Powder Valley Water Control District would like to voice strong support of the Powder Basin Water and Stream Health Committee. To date the Committee has made several important accomplishments toward better water stewardship within the basin. One recent undertaking that the District is specifically interested in is the Hydraulic Analysis for the entire basin which is currently underway.

In the near future the District hopes that more support can be raised throughout local, state and federal levels to accomplish the next steps needed to continue, an example would be the Feasibility Studies for several potential water storage sites, including the North Powder Reservoir.

The District is pleased to be a local sponsor of the Water and Stream Health Committee, and would encourage organizations and other interested parties to join in the support effort for a project advocating the beneficial storage and use of our precious natural resource. Finding new water storage facilities must be a high priority or water issues and shortages will continue to become more widespread; which, in effect, will cause the solution to be more difficult and cost prohibitive to pursue.

Sincerely,



Aaron Umpleby

Manager, PVWCD



April 26, 2006

Peggy Browne
Powder Basin Water and Stream Health
50809 Ellis Road
North Powder, OR 97867

Dear Peggy:

Thank you so much for making the trip to Sisters to do the presentation about the Powder Basin water storage project. The Water for Life Board of Directors enjoyed the presentation and are excited to hear about the work your Committee is doing to develop new water storage in the Powder Basin.

Water for Life endorses your project and we would be happy to support your efforts to move this project forward.

I'll look forward to working with you on water related issues in the future.

Sincerely,

Helen Moore
Executive Director

P.O. Box 12248
Salem, Oregon
97309-0248

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Food and Wildlife for the Future



Oregon

Theodore R. Kulongoski, Governor

Water Resources Department

North Mall Office Building
725 Summer Street NE, Suite A
Salem, OR 97301-1271
503-986-0900
FAX 503-986-0904

April 26, 2006

The Honorable Greg Walden
U.S. Representatives
1210 Longworth Building
Washington, D.C. 20515

Dear Representative Walden:

I am writing to express my support for the federal appropriation request submitted by the Baker County Water and Stream Health Committee. This committee composed of landowners, local and state government representatives, and other partners is requesting \$240,000 in FY 2007 for the Bureau of Reclamation to conduct an appraisal study. The appraisal study will identify the location of potential snowmelt storage sites, including off-stream locations and available underground storage sites. Identifying these potential storage sites is a critical step for the Powder Basin to meet summer instream fish and wildlife and agricultural water needs by capturing excess winter water. The total cost of the study is estimated to be \$300,000 with \$60,000 of the cost funded by local partners.

This project will complement our statewide efforts and separate pending federal appropriation request to identify existing and future water needs and potential above and below-ground storage opportunities to meet those needs. Our State must continue to support local efforts to meet critical water supply needs while also working toward a comprehensive, statewide look at water demands and water supply opportunities. This information at the basin level and statewide will greatly aid us in resolving existing conflicts over water and in heading off future water supply conflicts.

Thank you for your continued efforts to address Oregon's economic development and environmental restoration needs. Please do not hesitate to contact me at (503) 986-0910 if you have any questions.

Sincerely,

Phillip C. Ward
Director

c: Peggy Brown, Water and Stream Health Committee