

Wind/Bighorn Basin Advisory Group
Meeting Record
Lander, Wyoming
April 6, 2004

Welcome

Facilitator Sherri Gregory welcomed the group and the meeting was called to order at 3:00 p.m. All attendees introduced themselves, followed by a review of the overall meeting agenda. A sign-in sheet was passed around to record attendance. The next meeting is scheduled for July 6 in Thermopolis.

Water Development Commission Report

Barry Lawrence updated the BAG on the status of the plans for the other basins. The BAGs for the Powder/Tongue and Northeast Wyoming Basins will be meeting April 7 in Buffalo, and April 8 in Beulah. Barry discussed the status of all basin studies, and agendas for future meetings. Handouts from the prior meeting were distributed.

John Jackson indicated that 33 new projects were authorized in the Omnibus Water Bill – Planning. The Statewide Water Research program was appropriated an additional budget of \$200,000. The Small Water Project Program was amended to include irrigation as a purpose and to increase the monetary size of the project from \$50,000 to \$200,000. However, WWDC participation is still limited to a maximum of \$25,000. Funding for the program was increased by \$1,500,000, which is split equally between the Rehabilitation and New Development accounts.

In the Wind/Bighorn Basin, the new projects approved were:

Planning

Kirby Area Water Supply Study	\$ 150,000
Weather Modification, Upper Wind River Range	\$ 100,000
Westside Irrigation NEPA	\$ 250,000
Crowheart/Dinwoody Delivery	\$ 150,000
Dubois Water Supply, Phase 2 Test Well	\$ 400,000
Hyattville Water Supply Test Well	\$ 600,000
Northern Arapaho Groundwater	\$ 700,000
Ray Lake Enlargement	\$ 100,000
Shoshone Groundwater Development	\$ 850,000
Greybull Wells Rehabilitation	\$ 475,000
Heart Mountain Screens	\$ 100,000
Worland Wells Flow Test	\$ 40,000
Midvale Sand Gulch	\$ 75,000

Construction

Dubois SCADA, 50% grant	\$ 45,000
Heart Mountain Pipe Conversion, 50% grant	\$ 602,110
Hidden Valley Pipeline, 50% grant	\$1,474,103
Wind River Irrigation Rehabilitation, 50% grant	\$3,500,000

More information can be found at:

<http://wwdc.state.wy.us/legreport/2004/approvals.html>

Water Planning Website Update

Debra Cook, WRDS, indicated that the 2003 Wind/Bighorn Water Plan website is complete and she gave an overview of its new features. The Water Plan consists of an Executive Summary, Final Report, GIS products, hydrologic models, and 25 Technical Memoranda. All items are online and can be viewed at:

<http://waterplan.state.wy.us/plan/bighorn/bighorn-plan.html> . Of particular note is the Future Water Use Opportunities Technical Memorandum

(<http://waterplan.state.wy.us/plan/bighorn/techmemos/opport.html>), which includes the long and short list of opportunities.

Middle Fork/Popo Agie Flood Control EIS

Jeri Trebelcock, Popo Agie Conservation District, introduced the topic to the group and showed historical pictures of flooding in the area. George Cleek, Natural Resources Conservation Service, reviewed the Watershed Protection and Flood Prevention Program, PL-566. The program provides both funding and technical expertise for planning and implementing works of improvement for soil conservation. There are currently 13 projects in Wyoming utilizing this program. Lander is located on a flood plain, and it has experienced nine floods since 1917. Different options for mitigating floods and the associated costs were discussed. Various preliminary planning alternatives include 1) no action, 2) a diversion from the river during a flood via a vegetated channel and rock chutes, 3) a diversion from the river during a flood via underground pipes, 4) construction of a floodwall, 5) storage, and 6) restoration of the streambank and channel. In a recent WWDC study, potential storage sites were identified. Local communities must purchase land rights and easements, obtain permits, and perform operation and maintenance. In summary, it was reiterated that safety is the top concern for this project.

Economic Development in the Basin

Roger Bower, Wyoming Business Council, indicated that the basin is diversifying its agricultural base. A Wind River mushroom operation is scheduled to open in Shoshoni within several months, and markets are being opened to raspberry raising operations and pharmaceutical crops. The Westside Irrigation District project is moving forward with a NEPA analysis, while a Kirby Area Water Supply study has also been initiated.

Wyoming's Drought Status

Jan Curtis, State Climatologist, presented an overview of the revised Climate Atlas, which is available at: http://www.wrds.uwyo.edu/wrds/wsc/climateatlas/title_page.html, particularly referencing the Drought chapter

(<http://www.wrds.uwyo.edu/wrds/wsc/climateatlas/drought.html>). The current drought started in 1999, with 2000 and 2001 being the driest back-to-back years since 1895.

The greatest months for precipitation are May and June. The effectiveness of the moisture falling during this time is critical to emerging plants. Jan went on to say that

precipitation in this state is a function of elevation; the lower elevations experience four times more evaporation than precipitation. Without the mountains to capture the moisture in the form of snow, Wyoming would be a virtual desert. Until March 1, this year looked favorable for improving water supplies. However, higher than usual temperatures coupled with below normal precipitation have eliminated any gain and this year's drought is expected to be extreme to exceptional across much of the state. The current forecast products are available at <http://www.wrds.uwyo.edu/wrds/wsc/df/drought.html> .

Jan distributed flyers on the Community Collaborative Rain and Hail Study (CoCoRaHS) and discussed the importance of the data and how it would be used in Wyoming. Funding for this program comes from the Colorado State Climate Office. Further information on this program can be found at <http://www.cocorahs.com/> .

Testing of Hydrologic Models for Estimating Streamflow in Mountainous Areas

Hugh Lowham and Bruce Brinkman presented the research that was used to test models that are used to estimate stream flows in Wyoming. This research looked only at the portion of these existing equations that covered the snow-covered months of October through March. Physically measurements were made mid-month, every month, through the October to March time period during the winters of 2000-2001 and 2001-2002. The study sites consisted of eleven sites in the Brush Creek area, six sites in the Rock Creek area, six sites in the Douglas Creek area, and eight sites in the Encampment area. The measured data collected was then compared to the projected data of existing equations to determine their accuracy in this area of Wyoming. The data was then used to produce new equations for these flows in mountainous areas during winter conditions. The research resulted in new monthly equations for estimating monthly winter discharge. These equations are a function of the basin area and the range of the segment's basin elevation: discharges = f (basin area, elevation range). Once the new equations were determined, their projections were compared with measured values around the State of Wyoming. They were found to fit well with seven of nine sites tested. The two sites that did not fit were found to have special geologic conditions that need additional research. Discussion followed.

Instream Flow Segments in the Wind/Bighorn Basin

Paul Dey, Wyoming Game and Fish Department (WGFD), indicated that instream flow is beneficial in that it maintains a quality of life, is an important economic factor in tourism and is a legal tool for the State of Wyoming to protect a beneficial use of water. The goals are to either maintain existing flow patterns and habitat on public lands or to restore or improve flow patterns and fishery habitat on private property. The process to obtain an instream flow right has science, public involvement and legal/institutional components. These involve various state agencies, the public, and various state and federal laws.

Paul pointed out that of the 89 statewide instream flow segments filings, 18 segments were located in this basin on the Clarks Fork, Tensleep Creek, Wind River, Medicine Lodge Creek, Shoshone River, Shell Creek #1 and #2, Dry Fork Little Bighorn River,

and the Upper Greybull River. Paul briefly described each segment's habitat, and the targeting of additional segments for future consideration. Discussion followed.

The meeting adjourned at 6:02 p.m.