

Meeting Notes
Henry's Fork Watershed Council
February 19, 2008

The Henry's Fork Watershed Council meeting began with introductions followed by community building. The meeting was well attended with more than 40 people present. The topic of this meeting was weather modification, also known as cloud seeding, and provided attendees with information about the current program in Idaho.

Steve Smart from the High Country Resource and Development Council gave an overview of the HCR&D and their involvement in forming a committee to direct a program for the Upper Snake Region. The role of the HCR&D is to form a committee, get a plan in place, develop funding and a RFP, contract for seeding operations and a statistical assessment, handle administration of the program, and report to project sponsors.

Steve described weather modification as "the deliberate treatment of clouds or cloud systems with the intent of affecting the precipitation process(es) within those clouds." Steve added that the intent of the program is to realize greater moisture over the long term not implement a short-term drought relief program. He also reiterated that the increase will only happen if storms are occurring and not much can be done if the area is in a dry weather pattern. The Upper Snake program uses ground generators but aircraft has been used in other states but with a significant increase in operational costs. Many states including Utah, Wyoming, Nevada, and California already have cloud seeding programs and some have been operating since the 1960s. Data has been collected in other states demonstrating seasonal increases in water from 4 to 10% or greater depending on the storms or clouds that move through the area. The cost of augmented water varies from state to state depending on the type of equipment, cost of labor, and how often the equipment is operating. For example: the cost of augmented water after factoring in the cost of the program in Nevada ranged from \$7 to about \$18 per acre-foot. A study dated a few years ago in Utah showed the cost of water was \$1.70 per acre-foot.

Idaho has a very efficient program. Not a lot of data is available for the Upper Snake program but after concurrent years of operating, the committee hopes to demonstrate an appreciable difference in moisture in the area.

Next on the agenda was Paul Romrell, Fremont County Commissioner and Chair of the Cloud Seeding Committee. Romrell discussed the formation of the committee and how target areas were selected. Target areas include north Clark County, Fremont County, Teton County, Palisades mountain range, and Bingham County. He said that 21 generators were running this year and they hope to add more next year if funding could be secured. A large portion of this year's funding was provided by irrigators but the committee hopes that other sources will develop next year. Romrell explained that North American Weather Consultants NAWC has been contracted to perform an independent statistical analysis of the effectiveness of the current season project.

Marty and Conni Owen of "Let it Snow, Inc." have been hired to operate the generators for the project. Mary and Connie gave an overview of how cloud seeding works and where the generators are located. Marty reported that they rely on orographic uplifting currents to carry the silver iodide (AgI) into the atmosphere. He has devised a system using a beer keg for the mixture of silver iodide and acetone as a carrier. Propane is used to generate a smoke flume that is carried upward where the silver iodide collects to particles in the clouds along with moisture where it becomes heavy and falls to the ground.

Marty and Conni watch the weather closely to determine the best times to run the generators. Many of the generators are located on private property and are turned off and on by property owners. Generators are not operated in temperatures below 20 degrees or above 36 degrees or when prevailing winds are above 10 mph. They estimate the cost of running the generators at about \$19.50 per hour with most of the cost

in supplies. When asked about environmental concerns they said that the chemical is widely dispersed and that much of those concerns would be addressed when a NEPA analysis was done. As the program expands and generators are located on state and federally owned land, a NEPA study will be necessary.

Hal Anderson from Idaho Department of Water Resources was on the agenda next to give the group a perspective on cloud seeding from the state. In addition to other duties, the director of the Department of Water Resources has the authority to develop and coordinate weather modification projects to increase water supplies for the state by enhancing natural precipitation. Other duties include developing and implementing a plan to gather data that will help determine the effect of these weather modification efforts. Hal recounted the disputes over water in Idaho and that the Idaho Water Resource Board Eastern Snake River Plain Comprehensive Aquifer Management Plan has been established to construct a framework for future management of the Eastern Snake River Plain Aquifer. The management plan includes alternatives to help water managers adjust and balance water demand and legally administrate supply. The Management Plan includes money for an Upper Snake Weather Modification Feasibility Study. As mentioned previously, North American Weather Consultants was selected to conduct the study. The study is scheduled for completion in September 2008.

Mr. Anderson concluded his presentation by giving the IDWR perspective on weather modification. He reiterated what Steve Smart said by stating that weather modification is conceptually defensible and that there is documented success. He qualified that by also stating that it is difficult to quantify the effectiveness because so many variables exist. Anderson also stressed that success of a program relies on the program being well designed and managed by qualified operators. He spoke briefly about funding and stressed that there is no current funding for a weather modification program. He said that local interest and financial support will be key to getting state appropriated money for the Upper Snake Program. Hal quickly gave a brief overview of the current SNOTEL data and reported that many areas have experienced more than 100 percent precipitation during this winter season. With many storms moving through the state, it has been a good year to activate the weather modification project.

After a break the Council used its WIRE process to evaluate the project. The evaluation was for technical review only. Component groups agreed that the project meets most criteria of the WIRE with the following comments:

- More data needs to be compiled to quantify the question of whether or not it really works.
- More SNOTEL sites may be necessary to more accurately assess results of data and to make the data credible.
- The project does not take into account larger, long-term, social and cultural problems that could arise as a result of creating more water in the system e.g.: downstream interest in the water could develop as a result of 'ample' water supply.
- Outreach and education could be intensified to help broaden support and create better understanding of weather modification.
- Committee is comprised of broad representation and has been assemble with skilled individuals.
- Project sponsors are aware that the economy is very reliant on an ample supply of water.
- The project has broad support from local as well as regional constituents.
- Funding to sustain the project will be challenging but with support shown thus far, should not be detriment to project.

It was decided that the Watershed Council should compose a letter for project coordinators to use when seeking funding for the project. The letter would not state that the Council endorses weather modification definitively but endorses the concept. Council members asked that when the feasibility study was complete, more information be brought to a future Council meeting.

After a final community building session, the meeting adjourned at 12:45.