Overview and Concluding Report
Bear River Targeted Watershed Grant
# WS978073-01
Submitted by:
The Bear River Commission
and it’s
Water Quality Committee
December 2009
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Cover photo of Bear Lake from the west at sunrise mid-summer 2009.
Photograph of Bear Lake courtesy of: Jen Barnett
Inception:

The Bear River Commission (Commission) was created by the Bear River Compact (Compact). Every watershed has unique features. The Bear River is unique because of the creation of state lines that cross the river several times. Initially, this created issues with respect to the allocation and distribution of water at times of shortage. The states of Idaho, Utah, and Wyoming desired a binding and equitable agreement that would resolve these water quantity issues.

The states turned to the opportunity offered them in the Constitution and ask the federal government to give them permission to start compact negotiations. This was granted and after many years of negotiations the three states agreed on a proposed Compact and that agreement was set forth by an action of all three state legislatures. Congress agreed and passed legislation and the Compact was created when President Eisenhower signed the bill into law in 1958.

Map showing the course of the Bear River from the headwaters in the Uinta Mountains in Utah (lower right) and its course northward crossing state lines and in Idaho turning south to its terminus in the Great Salt Lake in Utah
The Commission created by the Compact is composed of a chairman, appointed by the President, and nine state designated Commission members, appointed by the three governors.

The Compact has served the states and the water users well for 51 years as the waters are allocated each year. At the time of the Compact, there were not water quality administrations on the river. There were no interstate provisions for shared water quality administration. Stakeholders urged the Commission to become involved in a broader range of issues than just water distribution. In response, and with the concurrence of each of the three states environmental agency, the Commission created a Water Quality Committee (Committee). The three members of the Committee are the lead water quality administrators from each state.

Noting the need to bring together all available hydrologic information on the river and the need to examine the opportunity for pollution trading, the Committee urged the Commission to apply for an EPA Targeted Watershed Grant (Grant).
Utah State University (USU) is located in Cache Valley, Utah, which is a part of the Bear River drainage. USU has significant talents in its many departments and at the Utah Water Research Laboratory with expertise in water resources. In recent years, USU administration has rededicated its commitment to using the Bear River watershed as a place to focus research efforts. This meant that USU was a natural partner for the Commission to consider as it prepared an application for the Grant. USU responded to an early Commission request and helped formulate the Grant proposal.

A proposal was advanced the first year and the request was not funded, but EPA urged that a revised proposal be submitted the following year and that Grant request was funded. The Grant is dated October 1, 2004.

Tour participants view fish screen on Coal Creek. Photo courtesy of Jen Barnett.
Tasks:

The Commission asked the Committee to shepherd the Grant effort. The Engineer-Manager of the Commission was designated as the Grant administrator and an accountant with the Utah Division of Water Resources who serves the Commission on fiscal matters was designated as the financial officer for the Grant. The Committee designated a Steering Committee (SC) to advance the Grant efforts. The SC outlined the tasks to be accomplished as set forth in the Grant and the overall effort was divided into four major categories. They are: 1) information gathering and the development of a Watershed Information System (WIS), 2) analysis of pollution trading opportunities, 3) modeling of water quality to support potential pollution trading, and 4) outreach to the public so that stakeholders might learn of findings and accomplishments. The SC discussed with USU the opportunity to contract with USU to perform various tasks. This led to the Commission
entering into a contract with USU to perform all but the tasks identified in item 3 above. Additional time was taken to consider various options as to contracting with a provider to perform the tasks associated with the water quality modeling work. With time, it was determined that USU was well qualified to perform these tasks as well, and the Commission entered into a second contract with USU.
Progress:

USU performed the assigned tasks well and provided the Commission with quality reports as to its progress; USU billed the Commission on a regular basis. The SC met at USU almost monthly to discuss and track the effort. At the end of the three year grant period, USU was prepared to write its final report.

EPA advised the Commission that it would favor extending the Grant for another year. EPA felt that additional time might help to mature the thinking of stakeholders with respect to trading options. The Commission requested, and EPA granted, a one year extension. At the end of year four, USU prepared a draft final report; however, it was learned that all Grant funds had not been expended.

In consultation with USU, it was determined that work accomplished to date, especially in the area of trading, could be built on and better developed with more time. Also, the Commission felt that it could use some of the remaining funds to accomplish outreach efforts that the Commission was best suited to perform. The Commission requested a second one-year extension of the Grant and this extension was granted by the EPA. The Commission then entered into an amended contract with USU that set forth the final year’s tasks to be performed.

Area studied from the trading options: Bear River from Oneida Narrows Reservoir to Cutler Reservoir including the Little Bear River and the Cub River. Courtesy of the WIS.
Final Report:

Appended to this Overview and Concluding Report is USU’s final report to the Commission. The Commission believes that USU has completed all of the tasks that were agreed to and that were set forth in the contracts. In fact, the Commission believes that USU preformed very well and that significant and important information is contained in the report that goes beyond what was required in their contract.

The final USU report speaks for itself. There is no need to summarize it in this overview. It is felt that significant knowledge is contained in the report that could be helpful to EPA and other water quality administrators in other watersheds. It is urged that this report receive broad circulation.
Last Year’s Effort:

The efforts of USU during the last year resulted in amendments and insertions to the draft final report prepared at the end of the fourth year of the Grant. Hence, these accomplishments are predominantly a part of the whole and not easily discernable.

During the last year, USU focused on trading issues. Not only are summaries of the water quality trading study in place and available on the Water Information System (WIS), but USU has created a software program called the Trading Calculator. The Trading Calculator combines results of the economic studies and water quality modeling efforts undertaken on this grant within a single software application that can be used to evaluate potential water quality trades within the Bear River Basin. During the final year, watershed coordinators, particularly Northern Utah’s Watershed Coordinator, were trained in the use the Trading Calculator.

The efforts of the Commission to accomplish outreach in the final year are best summarized in this overview and concluding report. The Commission proposed and
received approval from the EPA for five outreach projects. A summary of each of the outreach efforts follows:

1) Meeting with EPA officials in Denver/June 22, 2009- Members of the Bear River team traveled to Denver, Colorado where they met with regional EPA representatives and presented the trading model and WIS program. There were 20 in attendance. After introductions, an overview of current conditions in the Bear River was presented and a demonstration of the WIS was given. An in-depth look at hydrologic and water quality modeling was given by Dr. David Stevens of USU followed by a discussion of trading possibilities in the Bear River Basin. The Trading Calculator was demonstrated and a worksheet of how to operate it was distributed to participants. Concluding the presentation was a discussion of the public outreach efforts. Several EPA participants expressed their opinion that the presentation was very well organized and informative. This in-person presentation was followed up by a conference call and Web presentation to additional EPA personnel that were not in attendance at the first meeting.

2) Tour/June 25, 2009- The Commission’s staff arranged a tour of the Upper Bear River drainage with stakeholders to discuss water quality and quantity issues. This tour started at 7:30 A.M. and finished at 6:30 P.M. The group visited several important places along the river. There were many presenters from various backgrounds. The tour brought
stakeholders interested in water quantity and water quality together, both professionals and local stakeholders. Transportation, lunch, and snacks were provided for tour participants. It was a very informative tour that helped with a cross pollination of ideas from many backgrounds. There were about 60 in attendance.

3) National trading event conference call/September 17, 2009 - A national EPA trading conference call was held where members of the Bear River team explained the project and their findings to a national audience of people interested in pollution trading. It was hosted by EPA and the audience consisted of EPA trading specialists. The Bear River team was allowed time to present and then to answer questions. The presentations were given through online video conferencing. There were about 20 participants.
4) **Real-time data and Bear River Gaging** -
There are newly installed gaging stations along the Bear River that allow water managers and water users to remotely retrieve flow information from the internet. EPA approved an outreach effort for one year to have this information hosted and posted to a website. The information being available has reduced conflict between water users and promoted a sense of stewardship over the allocation of water resources.

5) **Trading Symposium/September 9, 2009** - A trading symposium was held in Garden City, Utah near Bear Lake. This symposium helped local water managers and water users better understand the potential for pollution trading on the Bear River. The workshop was held in conjunction with a Bear River Symposium. Invitations were sent out to municipalities, local governments, state agencies, and local businesses. An announcement was also issued in the local newspaper. The workshop was attended by 22 participants. The workshop covered the basics of water quality trading. Various scenarios of when and where water quality trading could be used were presented. The possibilities of trading in the Bear River Watershed was discussed with the entire group. The water quality trading calculator was presented, and several examples were shown using the calculator developed by Utah State
University. To close out the workshop an hour long guided discussion was opened up to discuss the possibilities and interests of various entities in water quality trading. While the interest of the entities for water quality trading was low, it was good to have an open discussion to understand what their general concerns were. The calculator was accepted very well, and it was pointed out that even if opportunities for using the calculator for trading are limited, it could be a useful tool to estimate pollution reductions in the watershed, and help government agencies determine where they should focus their efforts to reduce nutrient loading. Dinner was provided for the participants.
**Observation as to Process:**

The Commission feels that the application, approval, and fund transfer process that has been established by EPA is most effective and easy to deal with. The EPA lead was most responsive to questions and was most helpful. Requests for payment were honored in a timely manner.

The Commission would like to take this opportunity to suggest a few process improvements that if initiated by EPA would greatly aid in grant administration. Detailed guidance as to what is expected in a final report and how to close out a grant, financially, would be greatly appreciated. EPA has the unique position to foster communication between the Commission investigators and investigators in other targeted watersheds where common issues are being addressed. The Bear River effort may have been
enhanced by this suggested cross-pollination. The Bear River team feels it has much to share and our experiences and findings could be very helpful to others. It appears that EPA has not explored how this sharing of common issues might be facilitated or encouraged.

The intended future use of this final report is unclear. Our hope is that these efforts can be broadly shared and the Commission encourages EPA to consider ways to further disseminate the information and tools this Bear River grant effort has produced.
Lasting Value of Effort:

The value of this Grant effort to the Commission, water quality administrators, and stakeholders will be more fully appreciated in the years ahead. The completion of the Water Information System (WIS) described in the USU final report was, in the view of the Commission, tremendously worthwhile and successful. It has great value to the researcher, to the water administrator, and to the stakeholders. USU believes it will be a valuable teaching and research tool, helping to fulfill these aspects of the university’s mission. It was up early and running and put to use during much of the grant period. It is expected that the system will receive about 8,600 hits this year.

The value of the WIS in future years will diminish unless there are ongoing efforts to maintain and add to the components. To ensure it’s future value USU, and the three state water quality agencies have agreed to a three year contract. All four entities will contribute equally financially and USU will staff the effort. It is anticipated that at the end of the three years, additional provisions will be made to keep this a viable tool.
The trading efforts were most informative to the states. Conceptually, the states have come to understand how trading might be allowed to occur within a state or across state lines. The complexities of trading are better understood and the state regulatory framework required for trading has been considered.

The trading model and the associated calculator are understood and when used will put science to evaluating trades, rather than spreadsheet guess work. The number of permitted point discharges in the watershed is limited. TMDL’s have identified that the vast majority of pollutant loads are coming from non-point sources. The USU team made a remarkable breakthrough when they found a way to attribute pollution loading to each farm field in the study area. EPA would be well served to understand this USU approach and consider its transfer to other watersheds.

Water quality administrators have also learned from the USU team the necessary economics required to push trading forward. It was also learned that these economically driven trading alternatives do not exist in any major way in the
watershed today. In the short term, it is anticipated that perhaps only a few, within one state, minor trades may occur.

It does appear, however, that the trading model and the associated calculator has great value today in making choices as to where subsequent grant funds such as 319 and EQIP might best be spent to control non-point source pollution. Staff from NRCS and state agencies should be made aware of this opportunity.
**Final Financial Accounting:**

The entire grant amount of $707,581.00 has been expended. The contracts with USU total $593,043.00. USU’s spent all of these contract funds. USU’s final billing has cleared the Commission’s officers, and has been sent to the EPA and EPA has paid the billing. It should be noted that USU also provided a significant amount of unpaid matching beyond the amount contracted for and billed which was in keeping with the grant proposal.

The Commission provided the administration of the grant, the involvement and the expertise of its Engineer-Manager (the grant administrator) and in the final year, sponsored, facilitated, or promoted five outreach efforts. The Commission also provided input and guidance from its Committee and from its members of the Steering Committee. The Commission has billed for and has been paid $114,538 for these services. All the time and effort spent by employees of the three states as they served on the Committee and the S.C. were not reimbursed by the grants.

The State of Utah, Division of Water Resources, volunteered the services of an accountant. The accountant received all bills after they were approved by the grant administrator and advanced them to EPA. Payments received were dispersed. The accountant is now providing a final accounting as required by the grant. No reimbursement from the grant was requested for these services.