Water Supply Reserve Account – Grant and Loan Program
Water Activity Summary Sheet
September 11-12, 2014
Agenda Item 13(q)

Applicant: Water Preservation Partnership

Program Sponsor: Colorado State University

Water Activity Name: Economic Analysis and Design of Policies to Reduce Colorado's Groundwater Use in the Northern High Plains Ground Water Basin

Water Activity Purpose: Agricultural Study

County: Counties wholly, or partially within boundaries of the Republican River Basin

Drainage Basin: South Platte (Republican River Basin)

Water Source: Republican River and tributaries

Total Amount Requested: $159,882

Source of Funds: $7,994 South Platte Basin Account; $151,888 Statewide Account

Matching Funds: Basin Account Match ($7,994) = 5% of total grant request
Basin Account & Applicant Match (cash: $56,430) = 35% of total grant request
Applicant Match (cash: $48,436) = 24% of total project costs ($208,318)
(refer to *Funding Summary/Matching Funds*)

Staff Recommendation:
Staff recommends conditional approval (contingent upon the applicant or program sponsor satisfying concerns addressed in the *Issues/Additional Needs* section of this summary) of up to $7,994 from the South Platte Basin Account; and $151,888 from the Statewide Account to help fund the study titled: Economic Analysis and Design of Policies to Reduce Colorado's Groundwater Use in the Northern High Plains Ground Water Basin.

Water Activity Summary: The purpose of this project is to collect, develop, and disseminate the information necessary to promote reductions in groundwater use and to help in the development of policies that would be voluntarily adopted by the various groundwater districts to achieve pumping goals.

Colorado residents in the Northern High Plains Ground Water Basin (NHPGWB) face significant challenges related to groundwater use in the basin. Groundwater pumping within the basin currently exceeds recharge by close to 400,000 acre-feet per year, a deficit that cannot be sustained. Realizing the potentially devastating social and economic impacts associated with continued pumping at these levels, representatives from each of the basin's eight groundwater management districts formed the Water Preservation Partnership (WPP). The challenges facing the WPP are determining (1) by how much pumping should be reduced and (2) which policies should be used to achieve the desired reductions. The WPP has identified a lack of information surrounding the economic impacts of different levels of reductions, the effectiveness of different policies, and the preferences of the producers within each of their districts as the immediate barriers preventing the adoption of policy measures.

The primary goal of this project is to provide the WPP with the information needed to develop, and get support for long-term solutions to the over-pumping problem, while at the same time promoting wise water use in the short-run through the targeted dissemination of information about the problem and strategies for water conservation best management practices. A reduction in pumping is inevitable, either as wells begin to run dry due to continued over pumping or as a result of polices developed as part of a coordinated effort from pumpers in the area that is designed to promote the long-term sustainable use of the aquifer while minimizing the economic impacts of the reductions. Again, the question is by how much and by what means should the reductions be achieved. Achieving this goal involves four interrelated components including: (1) the development of a dynamic, regional hydrologic-economic model capable of modeling the impacts of alternative pumping policies on producers in the area, as well as identifying the broader economic impacts of these policies; (2) the dissemination of outreach materials designed to (a) educate groundwater users about the state of groundwater pumping, (b) provide them information about best management practices, and (c) inform them of the modeling results; (3) the implementation of a survey designed to illicit producer preferences towards different policies; and (4) the design of policies utilizing the economic information and survey responses.

Discussion:
No further discussion is required.

Issues/Additional Needs:
CWCB staff has requested that the applicant and program sponsor obtain additional letters of support, or financial contributions from local entities as a condition of approval.

Threshold and Evaluation Criteria:
The application meets all four Threshold Criteria

Tier 1-3 Evaluation Criteria:

Tier 1: (a) Agriculture serves as the single largest user of water in the basin, however, municipal and other industrial users of water also compete for this resource. Reducing agricultural water use will directly benefit these other interests. In addition, because of agriculture's importance to the local economy limiting the impacts of reductions in water use on the agricultural sector will benefit other linked industries both within and outside of the immediate area.

(b) The Water Preservation Partnership (WPP) is a grassroots group representing all of the groundwater management districts in the Northern High Plains Ground Water Basin (NHPGWB). This includes all of the groundwater management districts located within the Republican River Basin and one outside district.

(c) It is hoped that project findings may assist in a reduction to the potential changes in irrigated acres in the Republican River Basin as identified in the 2010 South Platte Basin Basinwide Consumptive and Nonconsumptive Water Supply Needs Assessments.

Tier 2: (d) n/a (not addressed)

(e) The project team is committing to match approximately $48,436 (24% of total study costs) in additional salary/fringe and indirect over the course of the project. This time is

in addition to the significant time donated by the project team leading up to the proposal as part of presentations and meeting/organizing focus groups.

Tier 3: (f) A key component of the project will be identifying polices that will help the districts achieve desired levels of reduction in a way that preserves agriculture and minimizes the direct and indirect regional economic impacts of reduced pumping.

(g) n/a

(h) n/a

(i) Previous research suggests that the potential costs savings from well-designed policies can be large. For example, Kuwayama and Brozovic (2013) showed the potential costs savings of properly designed ground water policies to be in the millions. It is also noted that the requested amount is significantly less than similar projects in surrounding states yet will yield similar deliverables. This is because the project builds off of the hydrologic work by Slattery and the WPP/CSU have agreed to contribute more than the minimum amount of matching funds. In addition, this study may provide a template for future analysis in other geographic areas of the state.

(j) n/a

Funding Summary/Matching Funds:

	Cash	In-kind	Total
WSRA South Platte Basin Account	$7,994	n/a	$7,994
WSRA Statewide Account	$151,888	n/a	$151,888
Colorado State University	$48,436	$0	$48,436
Total Study Costs	**$208,318**	**$0**	**$208,318**

All products, data and information developed as a result of this grant must be provided to the CWCB in hard copy and electronic format as part of the project documentation. This information will in turn be made widely available to Basin Roundtables and the general public and will help promote the development of a common technical platform. In accordance with the revised WSRA Criteria and Guidelines, staff would like to highlight additional reporting and final deliverable requirements. The specific requirements are provided below.

Reporting: The applicant shall provide the CWCB a progress report every 6 months, beginning from the date of the executed contract. The progress report shall describe the completion or partial completion of the tasks identified in the scope of work including a description of any major issues that have occurred and any corrective action taken to address these issues.

Final Deliverable: At completion of the project, the applicant shall provide the CWCB a final report that summarizes the project and documents how the project was completed. This report may contain photographs, summaries of meetings and engineering reports/designs.

Engineering: All engineering work (as defined in the Engineers Practice Act (§12-25-102(10) C.R.S.)) performed under this grant shall be performed by or under the responsible charge of professional engineer licensed by the State of Colorado to practice Engineering.