Water Supply Reserve Account – Grant and Loan Program
Water Activity Summary Sheet
Agenda Item 19.b.

Applicant: Colorado State University

Water Activity Name: Investigation of Water Savings, Water Quality benefits and Profitability of Sub Surface Drip on Alfalfa in Grand Valley

Water Activity Purpose: Structural Activity

County: Mesa

Drainage Basin: Colorado

Water Source: Colorado

Amount Requested: $50,972

Source of Funds: $50,972 Colorado Basin Fund

Matching Funds: In-kind Salary Match: $8,039 (15%).

Staff Recommendation
Staff recommends approval of up to $50,972 from the Colorado basin account to help fund the Investigation of Water Savings, Water Quality benefits and Profitability of Sub Surface Drip on Alfalfa in Grand Valley Project contingent upon resolution of the items listed in the issues/additional needs section below.

Water Activity Summary: The study is a side-by-side comparison of furrow and sub-surface drip irrigation (SDI) on alfalfa over two years starting in 2012. The study will be performed on about 3 acres under the supervision of the Colorado Water Institute and Agricultural Experiment Station staff at the Fruita Research Center in the Grand Valley of Western Colorado. The funding for this study will work collaboratively with a $9,611 request to the Alternatives Agricultural Water Transfer Methods program in addition to CSU match of $7,720 and a cash match of $1,000 from the Colorado River District. The Agricultural Transfers request will fund a comparison of SDI to furrows in a plot arrangement. The combination of basic research at the Fruita Research Center and applied research on-farm will provide a conclusive summary for all Grand Valley (and Western Slope producers) interested in more efficient and profitable alfalfa. Results are expected to show SDI will generate some water savings on-farm for alfalfa production; that alfalfa will be more profitable and productive under SDI than furrow irrigation; and that SDI will have significant water quality benefits over furrow. One of the project objectives is to provide a "proof of concept" to demonstrate to West Slope irrigators that SDI technologies are effective for perennials (pasture, hay, alfalfa) in Western Colorado soils.

Discussion: Staff believes that higher efficiency irrigation systems may provide significant benefits to many river basins within the State. As mentioned in the application, some of the potential benefits include: reduced selenium and salinity loading, reduced consumptive use through a reduction in evaporation, increased crop yields and increased streamflows due to reduced diversion amounts. This demonstration project, if successful, will help test whether or not sub-irrigation drip is feasible for the typical West Slope soils. If successful, farmers may be more inclined to begin adopting SDI to gain higher crop yields. It also may be apparent that SDI does produce broader benefits (i.e. reduced selenium/salinity or instream flows) that warrant subsidies or other incentives to encourage more wide-

spread adoption. In addition, this project compliments and helps verify the applied research work that will be ongoing at the Fruita Research Center which was mostly funded through the CWCB's Alternative Agricultural Water Transfer grant program.

Issues/Additional Needs: The applicant is requesting the CWCB to waive the 60 application deadline requirement to take advantage of this year's growing season.

Reporting and Deliverables: 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.