



COLORADO WATER CONSERVATION BOARD



Alternative Agricultural Water Transfer Methods Criteria and Guidelines for the Competitive Grant Program

Introduction

Colorado's population is projected to nearly double from 4.8 million to upward of 10 million people in 2050. The South Platte basin alone is forecasted to grow from 3.3 million to 5.8 to 6.8 million people. By 2050, Colorado will need between 830,000 and 1.7 million acre feet of additional water for municipal and industrial needs. Additionally, there are growing demands in Colorado for water flowing instream for environmental and recreational purposes.

Water providers have identified specific projects that they plan to implement to meet their future water demands. If 100% successful, these projects could yield approximately 511,000 acre feet. Yet there still remains a water supply gap. A large portion of the gap will likely be met through agricultural transfers.

In response to concerns that some water transfers may have negative third-party effects such as impacts to the agricultural sector and rural economies, the CWCB investigated alternatives to traditional purchase and transfer of water from irrigated lands to new uses in the SWSI Phase 2 Report (<http://cwcb.state.co.us/public-information/publications/Pages/StudiesReports.aspx>). Stemming from this report, the Legislature authorized the CWCB to develop a grant program to facilitate the development and implementation of alternative agricultural water transfer methods. Since its inception in 2007, the CWCB has awarded \$1.5 million in grants. The grant projects are described below:

- Parker Water & Sanitation District (PWSD)/Colorado State University (CSU) – The Lower South Platte Irrigation Research and Demonstration Project is a four-year study to quantify potential consumptive water use savings resulting from the use of deficit irrigation practices. With approval of the State Engineer's Office, it is believed that consumptive use savings could be transferred to municipal use.
- Colorado Corn Growers Association (CCGA) – Working with Ducks Unlimited and the City of Aurora, the Colorado Corn Growers Association will investigate a variety of alternative agricultural water transfer methods. The study will produce a Business Plan, which will be made available to other water users to help facilitate practical utilization of alternative transfer methods. Included in this project is an analysis of exchange potential on key points along the lower South Platte River and two case studies of alternative water transfers.

- Lower Arkansas Valley Water Conservancy District (LAVWCD) – The grant funding provides for continued economic and engineering analyses of the Super Ditch Company, which would provide a means for irrigators under a group of ditch companies to collectively lease agricultural water for other uses, including municipal use.
- Farmers Reservoir & Irrigation Company (FRICO) – FRICO is investigating a number of alternative agricultural water transfer methods. Much like the PWSD/CSU study, the objective of these methods is to reduce consumptive use for purposes of transferring the “saved” consumptive use to municipal or industrial users. The project also includes the evaluation of a water bank concept.
- Colorado State University Extension Office – The CSU Extension Office is conducting a four-year study to assess various technical aspects of returning fallowed land to production and maintaining or improving crop yields on those lands.
- High Line Canal Company - The Highline Canal Company is conducting a project to explore implementation of various means of alternative water transfer. Water developed under these methods will be provided to other users via existing irrigation infrastructure or via a proposed pipeline.

While all of these projects are still underway, valuable findings have been made. Probably more importantly, the project sponsors have identified areas where more work may be necessary before alternative transfer methods are more fully accepted by irrigators and cities. To continue this effort, the Legislature approved an additional \$1.5 million to further this area of water resources management. The specific authorizing legislation for the grant program [Senate Bill (S.B) 09-125] is provided below.

SECTION 4. Continuation of the alternative agriculture water transfer sustainability grant program - appropriation. (1) In addition to any other appropriation, there is hereby appropriated, out of any moneys in the Colorado water conservation board construction fund not otherwise appropriated, to the department of natural resources, for allocation to the Colorado water conservation board, for the fiscal year beginning July 1, 2009, the sum of one million five hundred thousand dollars (\$1,500,000), or so much thereof as may be necessary, for the board to develop and implement a competitive grant program to advance various agricultural transfer methods as alternatives to permanent agricultural dry-up, including interruptible water supply agreements, long-term agricultural land fallowing, water banks, reduced consumptive use through efficiency or cropping while maintaining historic return flows, and purchase by end users with leaseback under defined conditions. Projects and programs in all drainage basins are eligible for funding.

(2) The moneys appropriated in subsection (1) of this section shall remain available for the designated purposes until they are fully expended.

Background

It is important to acknowledge that there are financial, economic and demographic factors that are also influencing the trend toward reduced farming and ranching in Colorado. Shrinking profit margins, limited access to markets, escalating costs (fuel, equipment, and labor) and the increasing average age of farmers and ranchers are just a few examples of these influential factors. The current grant program does not directly address these factors but seeks to further examine and implement alternate transfer methods to traditional purchase and transfer of agricultural water. In addition, it is emphasized that it is not the intent of CWCB or the grant program to “mandate” such alternatives, but rather to better understand how such alternatives may be utilized within Colorado and competitive with the traditional means of purchasing and transferring agricultural water.

Traditional agricultural water transfers have historically been, and continue to be, an important component of most Municipal and Industrial (M&I) water providers' strategic plans toward meeting growing water demands. Generally, in areas of the state where urbanization and transfer of water are occurring concurrently there is less concern over economic and social impacts as other industries and benefits ultimately accrue to the local community. However, one could argue that the loss of open space and diverse landscapes can be detrimental to the area.

In contrast, when water is, or may be, transferred from more remote and rural areas that have limited development potential, there is a deeper concern over the impact to the local economy and the long-term viability of the community. This can result in a division between the benefits that may accrue to the seller of the water rights versus potential impacts to the overall community.

In both of the above cases there may be circumstances where alternatives to traditional agricultural water transfers may be advantageous to all parties to the transfer, while mitigating impacts and providing benefits to the source community and potentially to other third party interests. Such alternatives to traditional water purchases may allow more rural areas that are heavily reliant on an agricultural economy to remain economically viable while providing water in some or all years for other uses. Alternatives to traditional agricultural transfers may also present opportunities for local governments desiring to increase the reliability of their water supply system as well as establishing areas for open space, trails, parks, wildlife habitat or other uses within and between communities. Ideally, the alternatives may facilitate the ability for some irrigated agriculture to remain active among and between existing and future municipal boundaries.

It is recognized that exploring "transfer" alternatives that are not entirely market driven raises questions not easily answered. Such questions run the spectrum - from quantifying the 'quality of life' some Coloradoans equate with having local irrigated agriculture, to concerns over interfering with property rights, the market price of water, and the future plans of local water providers for meeting their future water needs. It is further recognized that alternatives that deviate from traditional approaches may be more costly

but may also have a broader array of beneficiaries. As a result, a conventional cost-benefit analysis is difficult. It is hoped that this competitive grant program can advance our understanding of these complex and interrelated issues.

Moreover, the grant program authorized under S.B 09-125 is not intended to interfere with or criticize traditional transfers of agricultural waters. It is recognized that water rights are a form of a property right and such waters will be necessary to help satisfy Colorado's future water needs. The grant program is intended to further our understanding and potential implementation of alternative transfer methods and to sustain agricultural areas of the state where they are deemed to provide high values to our communities and the state as a whole. It is also hoped that the grant program will improve our understanding of how and when alternatives to traditional agricultural transfers may present benefits to not only the parties to the transfer, but other third party beneficiaries.

As a key component to this grant program and to better understand alternatives to traditional agricultural transfers it is important to establish the fundamental difference between "reducing crop consumptive use" and what some call "improving efficiencies in agricultural irrigation practices". Although improving efficiencies in irrigation practices may directly or indirectly influence surface and sub-surface return flow patterns to the adjacent river system, and may also influence water quality, in most instances such improvement rarely produce water available for transfer. For the purposes of this competitive grant program, consumptive use (CU) is defined as the water that is physiologically utilized by the crop and is viewed as the ultimate "beneficial" use of water. Generally speaking, CU equates to a crops evapotranspiration.

This grant program focuses on identifying and assisting in the development of agricultural transfer methods/programs that reduce consumptive use by reducing the amount and/or the type of crops planted and irrigated from historic levels while lessening the impact to rural communities. It is this reduced consumptive use, not the reduction in gross diversions (i.e., changes from flood irrigation to sprinkler irrigation etc.) that can potentially be transferred to an alternate use. Overall the goal of the alternative transfer is to minimize the geographic focus of the associated impact and optimize both the agricultural and nonagricultural benefits of the remaining lands and community.

Several types of agricultural transfers have been proposed as potential alternatives to the traditional agricultural transfers that often result in permanent dry-up of all or a large portion of irrigation systems as a means to obtain additional water supplies for emerging needs. Conceived transfer methods include, but are not limited to: 1) interruptible water supply agreements; 2) long-term agricultural land fallowing; 3) water banks; 4) reduced consumptive use through efficiency, deficit irrigation cropping changes while maintaining historic return flows; and 5) purchase by end users with leaseback under defined conditions. By no means is the listing exhaustive nor should it be considered advocacy for one or more alternatives. It is hoped that these methods will form the initial basis for discussion and evaluation of alternatives to traditional agricultural water transfers.

Ultimately, how M&I providers and environmental and recreational users who desire additional water in the future to meet their diverse needs will be very site/situation specific. It is likely that a diverse and unique set of alternatives and strategies will be needed. Thus, it is important to consider a number of alternative agricultural transfer methods (interruptible supplies, fallowing, banks, etc.) available to match the irrigator's and end users' needs. In addition, these alternatives must be flexible enough to allow variations to meet specific source and user situations. One size will not fit all.

Application Process, Eligibility and Evaluation Criteria

Purpose

The purpose of this grant program is to further examine and assist in developing/implementing alternate transfer methods to traditional purchase and transfer of agricultural water. The Colorado Water Conservation Board recognizes the economic, environmental and cultural value that agriculture provides to our local communities and the state as a whole. The grant program seeks to both allow the free marketing of water supplies and to advance alternatives to traditional purchase and transfer of agricultural water. **Projects funded from this grant program should not simply be aimed at facilitating a single locally-driven transfer but must also provide usable and transferable information or processes that will increase our understanding of how to successfully design transfer programs that provide a long-term reliable water supply while sustaining meaningful production agriculture. Further, projects funded from this grant program should build upon work performed in the initial funding round.**

The grant program is available to applicants/projects statewide. The ultimate number of grants funded will depend on the number and quality of applications received. It is anticipated that there will be one round of application submittals. The deadline to submit grant applications will be 60 days prior to the January 2011 CWCB Board meeting (November 26, 2010). The CWCB Board will consider the grants and recommendations by staff and will decide whether to fund, not fund or partially fund the grant requests. If funds are not exhausted, the Board will determine when it will consider the next round of grant applications at their January 2011 meeting. .

Application forms are available electronically at <http://cwcb.state.co.us>

Eligibility Requirements

In order for a project to be eligible to receive funding from the grant program it must meet the requirements described in this section. If a project meets the eligibility requirements it will then undergo further analysis to determine how well it meets the Evaluation Criteria described in the following section.

In order to be eligible for funding, the project must include:

1. A completed application form.
2. A description of how, if implemented, it will protect property and water rights.
3. The project must at a minimum conceptually describe the technical, institutional, or legal elements of alternative agricultural water transfers. Grant monies may be used to address one or more of these elements. If grant monies are not requested for all three elements, the grant applicant must describe how the applicant has or intends to address the elements, which are not included in the grant request, through other efforts.
4. If grant monies are proposed for use for legal assistance then the use of those funds shall be oriented toward advancing the knowledge of alternative agricultural water transfer methods and techniques; not for preparation of a specific water court case. The total requested funds for legal assistance shall not exceed 40 percent of the total grant request. In addition, grant monies proposed for use for legal assistance must be used to collaboratively address issues and concerns related to agricultural water transfer. Funds shall not be used to solely advance the cause of the project proponents.
5. A minimum of a 10 percent cash match of total project costs is required.

The following list includes examples of activities related to alternative agricultural transfer methods/strategies that would qualify for funding.

- Technical analysis of transferable consumptive use
- Identification and examination of administrative and legal considerations or issues related to alternative agricultural water transfers
- Technical, logistical, and/or legal analysis/work to organize the institutional framework necessary to implement an alternative transfer method(s)
- Technical, logistical and/or legal analysis of water supply delivery options. This may include conceptual solutions and the feasibility of implementing the delivery of water to the new use.
- Assist in addressing potential third party concerns

Note: While design and construction of infrastructure is an eligible activity, other funding sources such as the Water Supply Reserve Account or the CWCB loan program would be more appropriate sources of funding for these types of activities.

Evaluation Criteria

The following grant evaluation criteria will be used by the CWCB to evaluate and make recommendations to fund, partially fund or not fund a grant application. The criteria are

Final Version—September 16, 2010

aimed at advancing alternative transfer methods from the literature and studies to actual on the ground projects/programs that provide reliable water supply and sustain key elements of the agricultural area from which the water is transferred. The applicant should fully address and explain in detail in the application how, and the extent to which, the proposed project/program meets each of the criteria. However, it should be noted that the project does not have to meet all of the criteria to be eligible to receive funding and the criteria below are not listed in any order of important or priority.

1. The proposed project/program builds upon the work of former alternative water transfer methods efforts and addresses key areas that have been identified (e.g. reduced transaction costs, presumptive consumptive use, and verification/administration issues). For more detailed information on this work, please refer to the draft technical memorandum, “*Alternative Agricultural Transfer Methods Grant Program Summary of Key Issues Evaluation*,” July 16, 2010.
2. Preference will be given to projects that provide additional matching resources in the form of cash, past expenditures and in-kind contributions that are in addition to the required 10% cash match.
3. The proposed project/program has the ability/potential to produce a reliable water supply that can be administered by the State of Colorado, Division of Water Resources.
4. The proposed project/program produces information that is transferable and transparent to other users and other areas of the state (i.e., would provide an example “template” or roadmap to others wishing to explore alternate transfer methods).
5. The proposed project/program addresses key water needs identified in SWSI or as identified in a basin’s needs assessment.
6. The proposed project/program advances the preservation of high value agricultural lands. Value can be viewed as: the value of crops produced, the value the agriculture provides to the local community, and the value the agricultural area provides for open space and wildlife habitat.
7. The proposed project/program addresses water quality, or provides other environmental benefits to rivers, streams and wetlands.
8. The proposed project/program increases our understanding of and quantifies program/project costs. This could include: institutional, legal, technical costs, and third party impacts.
9. The proposed project/program does not adversely affect access to other sources of water (not subject to/participating in the program) where owners of these water rights may wish to pursue traditional transfer of their rights to other users.
10. The proposed project/program provides a perpetual water supply for the new and/or alternate use and preserves agricultural production and/or helps sustain the area’s economy from which the transfer is occurring.
11. The quantity of water produced by the proposed project/program. Preference will be given to programs that can address larger water supply needs.

For additional information about the program and to obtain an application form please visit the CWCB website at <http://cwc.state.co.us> or contact Todd Doherty at (303) 866-3441 ext.3210.