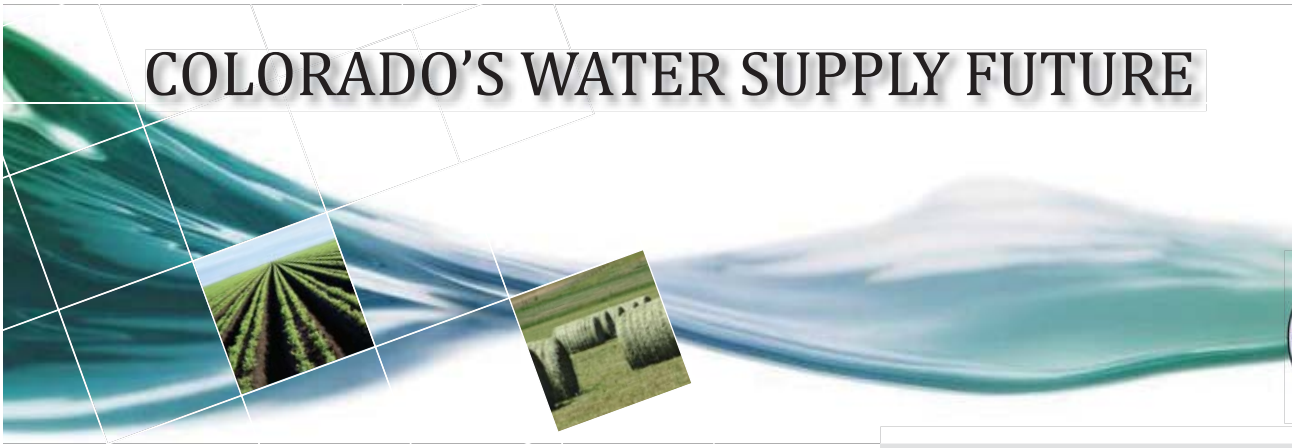

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Alternative Agricultural Water Transfer Methods

The CWCB's SWSI 2010 found that Colorado's population is projected to double from approximately 5 million to 10 million by the year 2050. To continue to meet the demands of this growing population, Colorado will need approximately 633,000 to 1 million acre-feet of additional water statewide for municipal and industrial (M&I) needs. Most of this demand will be met through four main water supply strategies—planned water projects, conservation, agricultural transfers, and new water supply development.

As part of the SWSI 2010, CWCB identified water providers' specific projects and processes that are planned for implementation to meet future water demands. Based on updated analyses completed in 2010, CWCB found that if 100 percent successful, these projects could yield approximately 500,000 acre-feet. Even if completely successful, there still remains a water supply gap. Over the past several years, many of these water projects have been proceeding through the federal permitting process with no guarantee of their success. If these projects and others that are premised on the development of new West Slope water supplies are not built, future water demand will have to be met mostly through a combination of permanent agricultural transfers, reuse, and conservation. While conservation will occur, a larger portion of future water supply needs will most likely be met through agricultural transfers.

Due to the likelihood that increased transfers of agricultural water rights will occur in the coming decades in order to satisfy M&I water demands, there is a desire by state policy makers, farmers, and some municipal water providers to promote alternatives to traditional transfers resulting in permanent dry-up in order to maintain a healthy agricultural economy in Colorado while providing for water sharing opportunities for municipal, industrial, and environmental purposes. It is recognized that Colorado's water court transfer process is heavily weighted towards dry-up of irrigated lands in order to transfer the historical consumptive use (CU) water. To provide incentives for M&I water providers to consider alternative methods for their water supply options, in 2007 the Legislature authorized the CWCB to develop a grant program to facilitate the development and implementation of alternative agricultural water transfer methods (ATMs). This ATM program is an incentive-based program that promotes ATMs within the confines of Colorado Water Law and respectful of private property rights. A major goal of the program is to help foster water sharing partnerships between municipal water providers and irrigators allowing for the continuance of irrigated agriculture in Colorado while providing for some water for M&I purposes. In 2009, the Legislature authorized an additional $1.5 million for the program. The purpose of the ATM Program is to assist in developing and implementing creative alternatives to the traditional purchase and transfer of agricultural water.

ATM examples are as follows:

- Interruptible supply agreements (ISAs)
- Long-term rotational fallowing
- Water banks
- Deficit/partial irrigation practices
- Alternate cropping types

Since its inception, the CWCB's Alternative Agricultural Water Transfer Methods Grant Program has awarded approximately $3 million to various water providers, ditch companies, and university groups for the funding of a variety of projects to study and further various alternative water transfer methods and concepts. Below is a brief description of some of the projects that were funded during the first round of grants and are currently underway or completed.

- **Parker Water & Sanitation District and Colorado State University**—studying alternatives to continuous irrigated corn crops. This project involved demonstration farms where deficit/partial irrigation and varying cropping patterns were studied. Study results show reductions of 30 to 40 percent in CU.
- **Colorado Corn Growers Association**—this project developed the concept of a "Flex CU" market where the irrigator sells a small percentage of shares (e.g., 10 percent, known as Base CU) to the M&I user. The remaining volume, referred to as Flex CU, is made available to the M&I user through variable

leases. The producer manages the land through rotational fallowing or reduced CU. Recharge sites serve as vehicles for the delivery of CU and return flows.

- **Super Ditch Company**—studying where up to nine ditch companies collectively lease CU made available primarily through rotational fallowing. The Super Ditch is underway with a pilot program in the lower Arkansas Valley to transfer 500 acre-feet of water from the Catlin Ditch to Security and Fountain Valley using a Substitute Water Supply Plan.
- **Farmers Reservoir & Irrigation Company**—investigating a water bank concept where both farmers and M&I users could deposit water in FRICO's existing infrastructure and the water can be made available to other users on a negotiated price basis.

With the exception of purchase and leasebacks and some limited occurrences of short-term leasing, these ATMs are just beginning to be explored as viable options for meeting M&I water demands in Colorado. While promising, there are technical, legal and institutional, financial, and other issues associated with ATMs.

The findings suggest that combinations of ISAs, shared water banking, and fallowing are likely to find success in Colorado. ISAs and rotational fallowing appear particularly suited to areas in the lower South Platte and Arkansas Basins, areas where there is extensive irrigated land and less pressure from urbanized development. Shared water banking may be viable at the interfaces of urban and rural areas as the FRICO study has indicated. At some scale, ISA, rotational fallowing, and/or shared water banking or other practices may allow some irrigated lands to remain in agricultural production in these areas and to provide valuable open space buffer areas between developments.

The barriers to implementation have been identified as (1) potentially high transaction costs, (2) water rights administration issues, (3) water providers need permanence and certainty of long-term supply, and (4) infrastructure and water quality.

Through the ATM Grant Program, CWCB, the IBCC ATM subcommittee, and Basin Roundtables are currently exploring ways to address these issues utilizing incentives to gain greater awareness, interest, and participation from agricultural water users and municipalities with alternative agricultural water transfers. In 2011, the CWCB approved additional grant requests to continue advancing this area of water management. Below is a brief description of some of the projects approved.

- **Colorado River Water Conservancy District**—project aimed at developing a Compact Water Bank utilizing pre-compact agricultural water rights. This project is also closely aligned with a WSRA grant sponsored by the Gunnison and Arkansas roundtables to look at storing these pre-compact water rights in the Aspinall Unit.
- **East Cherry Creek Valley District**—study will examine means to continue agricultural productivity on lands purchased by cities for their water rights.
- **The Nature Conservancy**—project will identify locations within the Yampa River Basin where alternative water transfers can benefit both environmental and agricultural water uses.
- **Lower South Platte Water District**—study is examining excess augmentation credits in the South Platte River and identifying means to use those credits and optimize the use of water in the basin.

Emphasis has been placed on finding solutions to overcome barriers that complicate or preclude the development of ATM projects. One major impediment to ATM success is the potentially high transaction costs associated with water court processes, including engineering and legal fees. Current law in Colorado allows certain types of ATM projects such as ISAs, but limits leasing to no more than 3 out of 10 years. Municipalities are generally reluctant to make significant expenditures for water supplies that are not guaranteed in the long term. At an IBCC ATM subcommittee meeting on February 21, 2012, there was interest in the continued exploration of using conservation easements coupled with interruptible water supply agreements as a mechanism to provide certainty for municipal dry-year or drought recovery supplies while ensuring that the lands stay in agricultural in perpetuity. In line with the CWCB, the ATM subcommittee has indicated that (1) certain of water supply for municipalities, (2) infrastructure/storage, and (3) economics and finance are all critical issues that must be dealt with regarding ATMs.

As identified by CWCB, the ATM subcommittee and the sponsors of the grant-funded projects, some specific areas where water court processes could be streamlined and transaction costs could be lowered are as follows:

- Development of special review procedures to facilitate ATM agreements
- Adoption of presumptive CU procedures
- Determination of historical CU for a canal or ditch system
- Develop specific methodologies for measuring, calculating, and monitoring CU water transferred through ATM projects (the Arkansas Basin is developing an "Administrative Tool" to calculate a farm's historic CU and return flow obligations)
- State funding of infrastructure cost
- Pursue transfer of a portion of a water right

In the CWCB's 2012 Projects Bill, there is a request for $1 million to continue the grant program. While some projects may further address the barriers identified above, it is hoped that pilot projects will be developed to test some of the concepts that have been developed to date. The sooner ATMs are a viable option for municipalities and irrigators, the sooner we can begin applying this source of water to the water supply gap.

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