Alternative Transfer Methods (ATM)

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Chair & South Platte River Basin representative on the CWCB Board

When many hear or see the acronym “ATM” they most likely would think of the little banking machines that allow you to withdraw or deposit cash from your bank account. That is unless you are an agriculture water provider or a student of the Colorado Water Plan; in that case, ATM takes on a whole new meaning.

When I hear ATM, I think of a mechanism by which an agricultural water user can temporarily lease their water for a use other than irrigation (industrial, municipal, environmental, etc.) and receive compensation. The past few years this concept has been receiving significant attention and is looked at as a way to provide water to help meet the Colorado water gap without farmers selling their water rights and the land being permanently taken out of production. Since there is a lot of talk about ATMs, I thought I’d take this opportunity to explain a few things about them (I was allowed to discuss any topic and it was either ATMs or how proud I am of my daughter, Hannah, graduating from CSU with a Masters of Finance – I thought ATMs would have a broader appeal within the water community). So here we go.

Alternative Transfer Methods (ATMs) have been in use on the South Platte River for over 25 years (that I am aware of). The North Sterling Irrigation District, which I manage, has an interruptible supply agreement going on its 13th season and a deal with an energy company in its second year. So we’ve been doing ATMs before they were “cool” and even before they were called ATMs – we did them just because they made sense. I got my first taste of municipal/agricultural water deals when a few of us from the South Platte Basin Roundtable visited the Palo Verde Irrigation District (PVID) in Blythe, California. At that time, PVID had just done a deal with the Metropolitan Water District (MWD), which serves the large municipalities in Southern California, including Los Angeles and San Diego. The deal was pretty simple since both entities received water from storage along the Colorado River and MWD already had a pipeline in place. It was just the matter of working out the monetary compensation and a few other details to make it happen. The farmers of the PVID were required to fallow their land and the MWD used their water and paid the farmers. As I said, this was a pretty straightforward deal. The deals on the South Platte and other parts of Colorado are a bit more complex because of the make-up of our water rights in Colorado and a phenomena we refer to as return flows.

In Colorado, an agricultural water right is made up of two components: 1) the water that is used by the crop or evaporated to the atmosphere (this part we call “consumptive use”) and 2) the water that returns to the river system (“return flows”). The return flows add to water in the river system and are diverted by water users downstream, they actually make up another water users water right and therefore must be maintained in order to prevent injury. This return flow component is then further divided into two parts, runoff from the field that immediately affects flow in the river and the deep percolation into the groundwater that eventually flows back to the river. Let’s look at a simple example.

Sunshine Ditch has a right to divert 10 cubic feet per second (cfs) from Happy River. Farms irrigated by Sunshine Ditch are flood irrigated and this practice is 60% efficient. Therefore, of the 10 cfs diverted, 60% or 6 cfs is used by the crop and 40% or 4 cfs is a return flow to the

These photos show the ATM project, Point of Rock Water Company LLC II, entered into in 2017 with BNN Energy to deliver water from the North Sterling Reservoir in Logan County through a 37 mile pipeline for oil production in Weld County.

Pump Station No. 1 at the outlet of North Sterling Reservoir. This is 1 of 4 pump stations to move the water 37 miles and lift it 750 feet in elevation.

Placement of large vault in the Outlet Canal used to house the valves that divert water to Pump Station No. 1.

David Hernandez, NSID board president, Dave Breidenbach, board vice president, and Jim Yahn at the delivery site in Weld County as the first water arrives.

river. The return flow is then separated into its parts - we'll assume a 50/50 split, half or 2cfs is field runoff and half or 2 cfs is deep percolation. If the farmers on Sunshine Ditch want to enter into an ATM with a municipality, say Pleasant City, they would have 6 cfs, their crop's consumptive use, to lease and the other 4 cfs must be maintained in Happy River to prevent injury to other water users. The return flows must mimic the historic return flow pattern in time of year and place of occurrence.

On the South Platte River, what I just described is a very simplistic example on a small ditch, not taking into account several different crop types, ditch losses, river call regimes, weighted irrigation efficiencies, stored water versus direct diversions, and several other factors unique to each ditch system.

The interesting fact is that the process described in the example above is actually the easy part. The more difficult parts are: how the farmer's water is delivered to the treatment plant of the municipality, how the return flows are practically maintained, how to handle when the ditch is in priority one day and not in priority the next, and how to determine the price and term of the agreement.

As you can see, it takes a lot of work to make an ATM happen. But despite the complexity, ATMs are being done, and when they are done correctly, they can be a stable income stream to farmers and a firm source of water to an industry, municipality, or other water user.

On the South Platte, the biggest obstacles to ATMs are the lack of infrastructure to move the water and the desire of municipalities to have access to water in perpetuity while farmers want shorter term deals. The issue of infrastructure is important because a municipal user needs the water throughout the year, while an agricultural water right is exercised only during the growing season. A city can't feasibly build a pipeline large enough to transport an entire ditch's water right for 4 or 5 months out of the year and then have it sit idle the rest of the time. Instead, storage needs to be created that would hold the water when the ditch is historically in operation and a smaller pipeline could draw on the water over the entire year. The storage vessel could also

be used to release water to maintain historic return flows. These types of storage sites are currently being contemplated on the South Platte River.

The bigger issue may be the length term of the agreement. It is easier to reach an acceptable term with an industrial user than a city simply because an entity with and industrial use normally has a project timeline or useful life of a plant, so a planning horizon of 10, 25 or 50 years can be used. It's hard, or impossible, to allow the construction of a sub-division with a 10-year or even a 50-year supply of water. However, if the city could use the water to fill in until another water source is developed, or if the water could be used as part of an industrial portfolio that the city provides, or used as a drought recovery mechanism, then maybe the term of the lease could be acceptable to both the city and the farmer. Or perhaps the lease price paid could be tied to a reasonable escalator that would give a farmer the assurance that the lease price will continue to help pay the bills in the future.

I believe that if we continue to talk, if we continue to build relationships, if we continue to find ways to make leasing agriculture water attractive to both the lessee and lessor, and we do a little give and take, we can make deals happen. Because we all know the alternative is the permanent dry up of agriculture, which is something most of us do not want to take place. And that is why we are wading into these ATM waters in the first place.

***About the author**: Jim Yahn is the manager of the North Sterling and Prewitt Reservoirs, a position that he has held for over 24 years. He is responsible for overseeing the diversion and distribution of water to over 350 farmers. Together the reservoirs are a source of irrigation water for approximately 70,000 acres.*

Jim is a registered professional engineer, receiving his B.S. in Agricultural Engineering from Colorado State University. Prior to his employment with the North Sterling and Prewitt Reservoirs, he worked as a private consulting engineer in Fort Collins for 5 years.

Jim is the past Chairman of the South Platte Basin Roundtable and currently serves as the roundtable's representative to the Interbasin Compact Committee. He is also the Chair of the CWCB Board.

He is a native of Colorado growing up on a family ranch, which used water from the North Sterling Reservoir System. In his spare time Jim farms and ranches with his wife Tracy and two children.