Water Rate Update

Souotheastern Colorado Water Conservancy District, October 16, 2017

Matching costs and revenues

Rates for Fryingpan-Arkansas Project (Project) water have remained unchanged for 20 years, and in fact were lowered in 1998 by action of the Southeastern Colorado Water District (District) Board of Directors.

The District has responsibility for the legal, engineering and administrative support required to assure water is used wisely in accordance with state laws. Because Reclamation owns and operates Project facilities, the District has an added responsibility to meet federal laws as well.

In 2010, the District added the sales of water to its Enterprise revenues, but that has not been enough to cover the capital costs of the Enterprise. The shortfall has averaged about $220,000 annually. This is largely due to development of hydroelectric power at Pueblo Dam. While hydro will repay those costs over time, other capital projects in the future may not have a repayment source.

Staff is suggesting a three-year plan to recover that cost that will lead to a water rate study in 2020. The timing of the study would coincide with the negotiation of a new Repayment Contract with Reclamation, and the interim steps will make up lost ground. Today's discussion is necessary to begin implementing changes for the 2018 Budget.

There are five areas the Board is being asked to consider:

1. A $1/AF rate increase for Project water in 2018, 2019 and 2020.
2. A $2/AF rate increase for Return Flows in 2018, in order to bring the cost of water in line with Project Water. Increases of $1 in 2019 and 2020 would follow.
3. A $1/AF fee for carryover storage of municipal water in Pueblo Reservoir in 2018, followed by $1 increases in 2019 and 2020.
4. An evaporation charge of $0.60/AF for Project water stored after the first year of allocation.
5. Removing the surcharge for augmentation, and replacing it with a Fully Consumable water fee.

By implementing these changes, it is anticipated Enterprise revenues will increase by about $260,000 in 2018, and $173,500 in 2019 and 2020. This averages about $202,000 per year over a three-year period.

By the end of that period, the District will undertake a more detailed study that will identify the appropriate level of rates in relation to services provided, and where specific revenues should be applied.

Each of the five areas will be discussed in detail in the following pages of this report.

Also included is some historical background about the District's current rate structure, an explanation of unique Project features, and a look at comparable water sales in the Arkansas River basin.

Proposed Changes

1. Water Rate increase

Water rates are now $7 per acre-foot, but should be increased gradually to conform with the true cost of water. This is the base rate of water and does not reflect surcharges. The change would reduce losses to the Enterprise.

Water Rates

2017	$7
2018	$8
2019	$9
2020	$10

(per acre-foot)

2. Return Flow rate

Return Flows require as much, if not more, administration as Project Water. They are used for augmentation plans, and the value of the water these flows are replacing is many times this cost. The rate was set in 1999 (for the 2000 water year) at a time when demand was lower for Return Flows.

Return Flows

2017	$6
2018	$8
2019	$9
2020	$10

(per acre-foot)

3. Municipal Carryover

Water is stored in municipal accounts under the District's allocation principals. The intent was to provide municipalities a guaranteed place for terminal storage (Pueblo Reservoir). In the past 15 years, these accounts have increasingly filled, meaning reduced space for Project water and potentially reduced revenue from municipal sales. This price would be the premium for multi-year storage.

Municipal Carryover

2017	$0
2018	$1
2019	$2
2020	$3

(per acre-foot)

4. Evaporation

The District now pays for the evaporative loss of water in storage with a reduction in Project water. About 7,500 acre-feet of water are lost on the 108,000 acre-feet in Project carryover storage. The intent of this charge is to recoup the loss with charges on the water that is stored, based on the price of first-use Project water.

Evaporation

2017	$0
2018	$0.60
2019	$0.66
2020	$0.75

(per acre-foot)

5. Fully Consumable

The District initiated a surcharge for Augmentation water in 2005 that does not adequately reflect the value of the water. Based on a consumptive use factor of 60 percent, the value of a full acre-foot of water is 1.666 the price of Project water. In other words, if Project water sells for $8 per acre-foot, the full value of water used to extinction is $13.33. A new fee would account both for Augmentation water and the use of Return Flows by entities claiming first right. It would also be charged in cases where the District has no way to recover flows.

Fully Consumable

2017	$2.60*
2018	$5.33
2019	$6.00
2020	$6.66

(per acre-foot)

*Augmentation surcharge

Project Water Sales

The core business of the District is to sell Project water, but this task has been avoided for years. After gaining control of the revenues from Project water sales in 2010, the District has not raised the price of water.

It's even more remarkable, because at one time, the rate for Project water increased to $9.20 per acre-foot, when revenues were applied to the Repayment Contract with Reclamation. Rather than adjust the rate of Project water, District or Enterprise funding gaps have been covered by dipping into reserves, or in the case of specific needs, by surcharges.

District staff has calculated that the value of an acre-foot of water priced at $7 per acre-foot in 1998 would have increased $13.16 per acre-foot in 2017 using the Consumer Price Index for Colorado's Front Range.

In each case, the surcharges represent additional costs that were not present in 1998, including the Safety of Dams which was added that year as a way to repay the Enterprise for a loan to cover the municipal costs and to make direct payments to Reclamation to cover the municipal costs.

The Enterprise surcharge was established in 2002 as an attempt to begin setting up Enterprise reserve funds for unspecified large capital or operational costs. The District also had begun new projects at the time, including moving into a new building, establishing a conservation program, reviving the Arkansas Valley Conduit, and moving ahead with the Preferred Storage Options Plan.

Well augmentation began in 2005 as an attempt to account for fully consumable water, but the price was set too low.

Finally, an environmental surcharge was applied in 2013.

Because the surcharges are complex and interwoven, staff is recommending a gradual approach of raising rates on sales $1 annually for three years. In 2020, the District will commence a rate study with the goal of eliminating these surcharges in favor a rate structure that reflects actual costs.

Revenues	Muni Sales (Surcharges)	Ag Sales (Surcharges)
2017	$236,847 ($66,803)	$181,854 ($40, 412)
2018	$261,139 ($66,803)	$202,060 ($40, 412)
2019	$285,431 ($66,803)	$222,266 ($40, 412)
2020	$309,723 ($66,803)	$242,472 ($40, 412)

Note: All numbers on 20-year average for comparison

History of Water Sales Rates

1965 – The 1965 contract (14-06-700-4715) set the rate at $5.40 per acre-foot , with a plan to increase the rate each year.

1972 – A 10-year temporary contract set the rate at $4.80 per acre-foot in the first year water was delivered.

1975 – The rate was increased to $5.40 per acre-foot.

1982 – The rate was increased to $8.00 per acre-foot in 1982 under the new contract (5-07-70-W0086). Winter water was increased to $3.20 per acre-foot.

1996 – The rate was increased to $9.20 per acre-foot. Winter water was raised to $3.65 per acre-foot.

1998 – Reclamation agreed to "ability to pay" and "willingness to pay" provisions which would be reviewed every four years. The rate was reduced to $7.00 per acre-foot. Winter water was reduced to $2.80 per acre-foot, but only $1.50 per acre-foot was charged during the Safety of Dams program.

2002 – Four-year reviews of agricultural rate begin. No change in ability to pay requirement.

2010 – Amendment 9 to the contract deletes the required dollar amount, and allows annual adjustments to the water sales and winter storage rates.

Return flows

2000 — $6.00 per acre foot

Surcharges

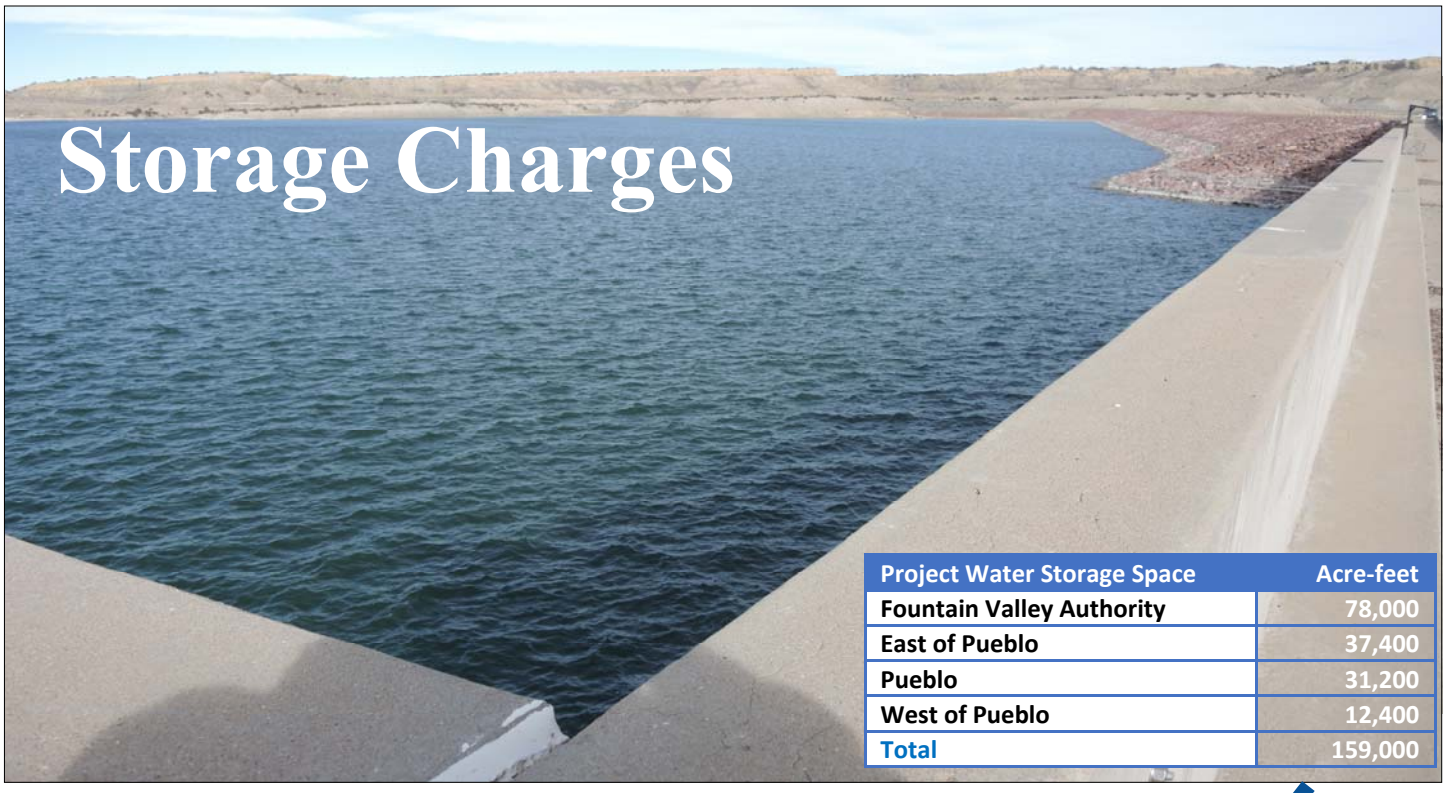
1998 – Safety of Dams: $0.50/$2.00 per AF

2002 – Water Activity Enterprise:
Storage: $0.50/$1.25/$4 per AF
Sales: $0.75/$1.50 per AF

2005—Well Augmentation: $2.60 per AF

2013 – Environmental Stewardship: $0.75 per AF

Storage Charges

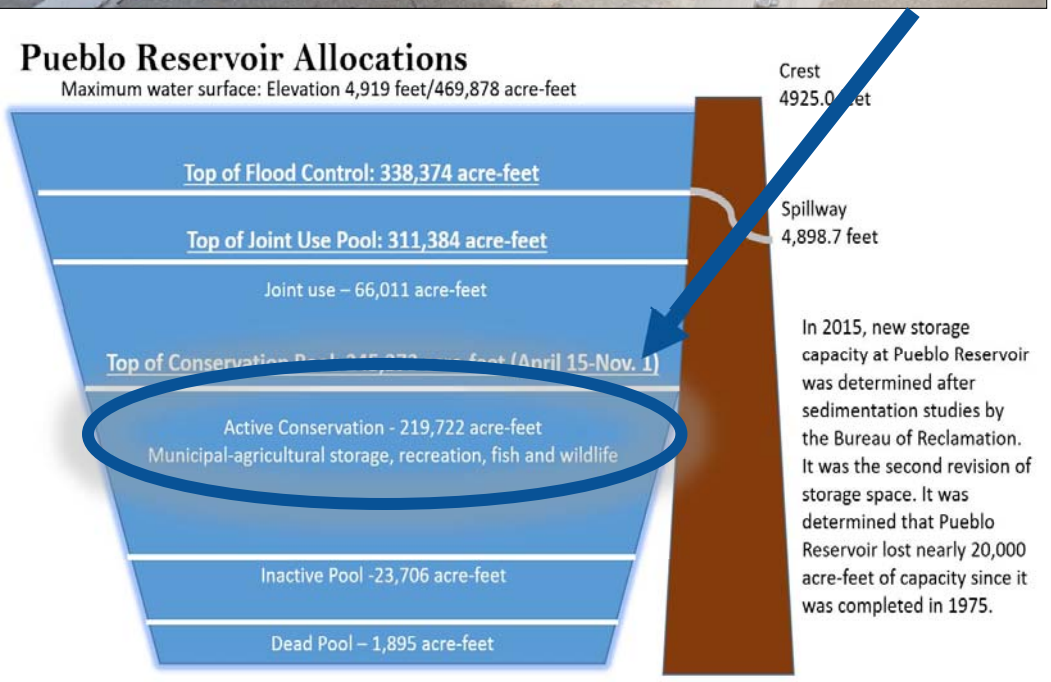


Project Water Storage Space	Acre-feet
Fountain Valley Authority	78,000
East of Pueblo	37,400
Pueblo	31,200
West of Pueblo	12,400
Total	159,000

Terminal storage for Project water is in Pueblo Reservoir, and much of that space was set aside for municipalities in the Allocation Principles. That storage has come at no cost to municipal entities within the District.

Since 2002, cities have been using more of the space more often as a hedge against drought.

In the process, there is less space available for Project water, if-and-when contracts that benefit the Project, and a reduction in municipal demand.



The District also loses the ability to sell Return Flows from Project water that is not used in the same year.

Related to this is the physical loss of water due to evaporation.

District staff anticipates this trend will continue, so is advising the Board to begin charging for year-over-year storage of Project water after the first year.

The District should recover the costs of storage space that is lost, as well as the foregone revenues from Project water and Return flows.

Revenues	Storage Charge	Evaporation
2017	$0	$0
2018	$107,840	$64,000
2019	$215,680	$72,000
2020	$323,520	$80,000

Note: All numbers on 20-year average for comparison

Return Flows/Fully Consumable

Return flows are created when either agricultural or municipal water is not fully consumed. The initial function of the Water Activity Enterprise when it was formed in 1995 was to administer sales of return flows generated by the sales of Fryingpan-Arkansas Project water.

From the first planning stages of the Project, any water brought into the Arkansas River basin from the Fryingpan River watershed was required to be fully consumed. The Repayment Contract between the District and the Bureau of Reclamation requires that the District retain "dominion and control" over Fry-Ark water.

This means the District is responsible for tracking, capturing and selling return flows. In 1995, the District created the Water Activity Enterprise for the purpose of accounting for these revenues.

First Right to Purchase

Return flows, when possible, should be physically available in the area where Project water was first used, but not for resale outside that area.

Cities have the right of first refusal for municipal return flows, which are generated as the water from first allocation is used. The amount is determined quarterly.

Agricultural return flows are modeled based on headgate deliveries to canal companies and allocated annually. Irrigation companies must have approval of the Board if they wish to claim their own return flows from Project water.

A five-year pilot program with the Fort Lyon Canal Company began in 2014 to determine the best way for a ditch company to account for return flows. Some Fort Lyon shareholders are using the return flows to augment well pumping or pond-fed sprinklers.

Any return flows not fully used become the property of the District. The price and terms of payment are at the discretion of the Board.

Supplemental Supply

First-use Fry-Ark water may only be used for supplemental supplies under restrictions applied under the Reclamation Reform Act. Return Flow sales are available to a broader group of users, primarily for well augmentation, but are now sold at a lower price than Project water. In addition, the entire consumptive use of each acre-foot is included in the price.

The goal of adjusting the rate for return flows is to move the price to at least the same level as Project water, rather than continuing to discount these sales.

Year	Return Flows Sold (acre-feet)
2017	13,260**
2016	15,253
2015	13,673
2014	8,033
2013	5,470
2012	1,986
2011	20,022
2010	10,114
2009	5,101
2008	17,354
2007	5,673
2006	9,565
2005	4,842
2004	1,358
2003	9,626
2002	18,686
2001	26,005
2000	18,197
1999	12,310
1998	16,310
1997	7,252
*1996	3,718
1995	4,472
1994	3,853
1993	2,595
1992	2,573
1991	2,830
1972-90	34,158
TOTAL	**301,223**

*Return flow revenues began funding Enterprise Activity in 1996.

**As of October 1, 2017

Revenues	Return Flows	Fully Consumable
2017	$57,000	$13,665*
2018	$72,566	$41,840
2019	$80,411	$47,070
2020	$88,256	$52,248

*Augmentation Surcharge revenues
Note: All numbers on 20-year average for comparison

COST OF WATER

Annual price per acre-foot equivalent of several types of water (2016):

Retail water

(based on 115,000 gallons/year)

Colorado Springs	$2,286
Aurora	$2,125
Greeley	$1,616
Denver	$1,225
Pueblo	$ 954

Wholesale water

Pueblo Board of Water Works:

Dispensing station	$1,225
Marijuana	$1,063
Long-term lease	
(high)	$651
(average)	$365
Short-term lease	
(high)	$ 200
(average)	$ 25
Arkansas Valley Super Ditch	$500

(Pilot program, with Fountain, Security, Fowler)

Northern Water (Colorado-Big Thompson):

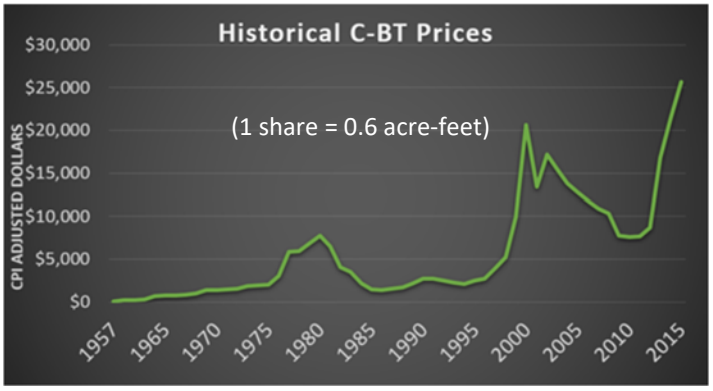
Open market lease	$ 85
Municipal Assessment	$42.20
Agricultural Assessment	$24.90
Fry-Ark water	$7.25-12.35*

Stored water

(Pueblo Reservoir)

Reclamation Excess Capacity Contracts

In-District	$40.04
Out-of-District	$61.24
Winter Water	$ 3.80*
Fry-Ark Water	$ 3.00*



Unlike Fry-Ark Project water, Colorado Big-Thompson (Northern) shares can be sold. This is what has happened in the last 60 years.

"Comparables"

Talking about the "willingness to pay" that the District's rates have been bound by for the past 20 years ignores the greater world outside the District and what has been happening with water rates.

For Front Range developers, water has been a vitally important piece of the real estate puzzle. As water continues to be scarce, the price has been driven upward.

In most of Southeastern Colorado, growth has not occurred, and water has been taken from farmland for use in cities in many places.

Even that water, at sale prices of $2,500-$10,000 per acre-foot, is priced higher than Project water — figure that $2,500 would buy 200 acre-feet of the most expensive Project water.

The District has only applied surcharges to storage of Project water, essentially getting nothing for the storage itself. Yet, recent Reclamation contracts (defended at a public meeting in 2011) indicate the true value of that storage.

The Board's choice is whether to continue at lower rates or raise them to a reasonable level.

"But we pay taxes, right?"

Think of it this way: When you buy a car, you still need to put gas in it to get the full use of the vehicle.

The ad valorem taxes have been used to pay the debt, pay off interest on the debt, and for Project OM&R. The boundaries of the District were drawn so that only those receiving benefits are paying those costs.

Until recently, water sales also paid those costs. Now, those revenues are part of the District Enterprise and are used to maintain the Project, and continue improving the use and operation of the Arkansas River and Project facilities.

Year	Yield	Cumulative	Available
1972	32,000 af	32,000 af	----------
1973	36,800 af	68,800 af	16,000 af
1974	34,100 af	102,900 af	18,600 af
1975	37,200 af	140,100 af	25,000 af
1976	26,900 af	167,000 af	24,000 af
1977	11,400 af	178,400 af	25,000 af
1978	49,200 af	227,600 af	25,000 af
1979	53,700 af	281,300 af	25,600 af
1980	55,700 af	337,000 af	70,000 af
1981	34,600 af	371,600 af	25,000 af
1982	75,200 af	446,800 af	68,000 af
1983	90,810 af	537,610 af	125,000 af
1984	110,120 af	647,730 af	210,000 af
1985	70,200 af	717,930 af	289,900 af
1986	30,300 af	784,230 af	300,300 af
1987	2,200 af	750,430 af	288,000 af
1988	13,400 af	763,830 af	247,800 af
1989	36,200 af	800,030 af	197,600 af
1990	46,600 af	846,630 af	142,100 af
1991	59,100 af	905,730 af	58,700 af
1992	54,800 af	960,530 af	32,900 af
1993	86,600 af	1,047,130 af	70,100 af
1994	52,200 af	1,099,330 af	51,700 af
1995	90,500 af	1,189,830 af	55,000 af
1996	36,900 af	1,226,730 af	110,000 af
1997	78,600 af	1,305,330 af	116,000 af
1998	51,300 af	1,356,630 af	102,000 af
1999	40,800 af	1,397,430 af	127,500 af
2000	44,800 af	1,442,230 af	171,600 af
2001	45,300 af	1,487,530 af	67,500 af
2002	13,200 af	1,500,730 af	8,500 af
2003	54,900 af	1,555,630 af	37,500 af
2004	27,400 af	1,583,030 af	15,300 af
2005	54,600 af	1,637,630 af	40,800 af
2006	61,200 af	1,698,830 af	49,200 af
2007	54,200 af	1,753,030 af	40,400 af
2008	90,000 af	1,843,030 af	83,000 af
2009	82,700 af	1,925,730 af	78,000 af
2010	56,500 af	1,982,230 af	44,000 af
2011	98,900 af	2,081,130 af	75,000 af
2012	13,414 af	2,094,544 af	9,900 af
2013	46,700 af	2,141,244 af	37,600 af
2014	80,300 af	2,221,544 af	68,500 af
2015	72,205 af	2,293,749 af	67,500 af
2016	59,214 af	2,352,963 af	45,995 af
2017	67,009 af	2,419,972 af	46,371 af

Average 1981-2017 56,296 acre-feet

Budget Basis for Water Sales

The Fryingpan-Arkansas Project, and the Allocation Principles for Project water sales and storage, are predicated on a yield of 69,200 acre-feet. The "average" yield of the Project is about 56,000 acre-feet, or about 80 percent of average.

The problem is that there are few "average" years, as shown by the table on the left. Allocations are made based on the May 1 estimate for yield each year, but the eventual yield can vary.

For example, in 2017, the yield was projected to be 77,700 acre-feet, but only 67,009 acre-feet were brought over, so only 80 percent of the projected allocation was delivered.

The allocation was reduced to 46,371 acre-feet from 55,000 acre-feet as a result.

The District bases its budget numbers for sales on a 20 -year average, which in 2017 was 55,733 acre-feet. Using those numbers, the amount available for allocation in the budget was 44,489.

It would be possible for the District to allocate 80 percent of the design yield of 69,200 acre-feet for the Project, with a strategy in place to add revenues above the 80 percent mark to a water sales reserve fund.

That fund could be used in dry years to make up shortfalls from sales.

In very wet years, where storage is reduced, allocations might be curtailed in order to replenish storage levels in Pueblo Reservoir. (See table below.)

Storage level	Storage/ Sales			
High	Add $ from Reserves	OK	Add $ to Reserves	
Medium			Store	
Low				
	Low	Medium	High	

Project water available for allocation

The matrix above shows a possible strategy for budget water sales in relation to storage. When water is plentiful and storage depleted, the District could store water in Pueblo Reservoir. If storage levels are adequate, revenue from sales could be added to reserves to make up shortfalls in dry years.