

OF WHAT USE WOULD THE MOFFAT TUNNEL  
BE TO ARVADA AND VICINITY

The matter of transportation has been so fully discussed that I will not touch on that matter.

Arvada is in the center of an irrigated area and there are certain features of the diversion of water through the tunnel that may be new to my readers or which may be presented in a new light.

One of the hardships which the irrigated district near Arvada has to bear is that of having its water supplies shut off to supply older water rights down on the Platte. This occurs year after year. Just at the time when the farms need the water the most the order comes from the State Engineer's office to the local water commissioners that the old rights down the Platte are short of their quota and the head gates of the junior ditches on Clear Creek and on Boulder Creek and their tributaries are shut down.

To make a close estimate of the amount of water thus lost to the Moffat Tunnel District in Jefferson County would involve an enormous amount of detailed work, but approximations can easily be made which will illustrate the point almost as well as exact figures.

Roughly speaking, about one-sixth of the available supply of Boulder Creek, Clear Creek, Bear Creek and the Platte as it issues from the mountains, must be allowed to flow down the streams to satisfy older priorities on the lower Platte.

The yearly discharge of all these streams is about 540,000 acre feet, *and the demand of the lower Platte is roughly 90000 acre feet.* Of this amount the Moffat Tunnel District in Jefferson County gives up about 20,000 acre feet annually.

I think it will be admitted that this water is worth \$1.50 per acre foot. It takes but a little figuring to see that this amounts to \$60,000 annually, which in turn is 6% of the principal sum of \$1,000,000. In other words it would be worth \$1,000,000 to Arvada and environs if the old water rights on the Platte could be supplied from some other source than from the waters of Clear Creek, Boulder Creek and other tributaries of the upper Platte.

Now let us assume for the moment that 100,000 acre feet of water is brought through the tunnel and that not one drop of this water is given to the farmers but that all of it is selfishly used by the City of Denver.

A city does not actually consume or evaporate much water. Most of it is used for washing or cleansing in thousands of different ways. It flows out of the faucet and into the sewer without material diminution. Of that portion which is used for irrigating lawns the same proportion returns to the stream bed as is the case in farm irrigation. This farm return is said to be about 70% but for a city the return is about 90%.

So the city will return to the Platte 90,000 acre feet of the Tunnel water. This will be in addition to what it now returns.

This amount equals the rough estimate of the demand of the lower river (90,000 acre feet). *In other words the inevitable return to the streambed of the Moffat Tunnel water will take care of old water rights on the lower Platte and relieve Boulder Creek and Clear Creek of this burden.*

So we see that the country around Arvada would be benefitted to the extent of \$1,000,000 in a manner which is positive, direct and ~~exactly~~ <sup>about</sup> measurable.

If some or all of the tunnel water is used directly on the farms near Arvada then the benefit will be just so much greater.

But some objectors say that bringing water through a tunnel from one side of the range to another is "new, untried, unpractical and illegal." Now such a project is not new nor untried nor impractical as a very little study will prove, and the best lawyers in the state have said that there is no law which prohibits it.

The largest tunnel diversion project which I have seen was built by the Reclamation Service in Utah. The head waters of the Strawberry River are collected by a ditch and conveyed through a 4-mile tunnel which pierces the divide between the Colorado River water shed and the Salt Lake Basin. The water is used on farms near Provo. About 150,000 acre feet are diverted annually.

The Chambers Lake project, which is over 20 years old, takes water from the streams which flow into Grand Lake and conveys this water across the Continental Divide to Chambers Lake which is on the head of the Cache la Poudre which is a tributary of the South Platte. The water is used on 10,000 acres near Fort Collins. This project, from a legal standpoint, is a counterpart of the Moffat Tunnel project. The source of supply of both projects is the upper reaches of streams flowing into the Colorado River and the place of use in both cases is in the basin of the South Platte.

Governor Eaton built a similar but smaller diversion on Sheep Creek over 25 years ago.

Strange to say, one of the first ditches built in the State was a diversion of water across the Continental Divide. Its purpose was to augment the water supply for the working of the high placers above

Fair Play. It took water from tributaries of the Blue, which flows into the Colorado, and used it in the basin of the South Platte.

I could go on and mention several more similar projects but space forbids. I think that sober second thought of any of my experienced readers will dispel the idea that there is anything "new or untried or impractical" about bringing water through the Moffat Tunnel. As to the legality of the enterprise I understand that the rule is no different from that of smaller enterprises, namely that if the water can be taken without injuring those who have a prior right to it, then the law sanctions its use. So let us see what chance there is of someone proving injury.

The western slope is mostly mountains. There are relatively few places where the land lies flat enough to farm. The total farmable area in the basin of the Colorado (Grand) is 250,000 acres, and of this amount 160,000 is now irrigated. The Colorado (Grand) River as measured by the Government just below Glenwood Springs flows 3,000,000 acre feet yearly. These figures do not include the basins of the Gunnison and Uncompahgre which have a superabundant water supply of their own.

It is apparent that diverting a few hundred thousand acre feet to the eastern slope would never be missed, so far as the farmers are concerned.

The rights of the Colorado Power Company are more apt to be affected than those of any other interest and all conservative estimates deduct a certain amount of the low water flow, which occurs in midwinter on this account.

The estimates of available water which can be brought through the

Moffat Tunnel are not based on guesses. They are based on the results of Government measuring stations located at the altitude of the tunnel. The records for 14 years are now available.

The total assessed valuation of the Tunnel District is just about \$300,000,000.00. The assessed valuation of the Tunnel District in Jefferson County is about \$3,700,000.00. The total liability, assuming the whole project is an utter failure, is \$6,720,000.00. The liability of the Tunnel District in Jefferson County is about \$83,000.00.

A simple way of putting it is this--the tunnel district in Jefferson County is asked to loan its credit up to a maximum of \$83,000.00, to a project which is thoroughly sound, which has every prospect of being very prosperous and which is officered by the best men in the district. And for this loan of credit the district is practically sure of getting its water supplies augmented to the extent of \$1,000,000.00 and will share in the other benefits of the project.