## Bureau of Reclamation delivers flood of misinformation

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The U.S. Bureau of Reclamation has apparently determined in a number of recent publications that on an annual average basis, our Rio Grande delivers several million additional and previously undetected acre-feet of water per year. That should be consequential news in this dry state, especially because the new flow volumes are several times greater than the status quo of mere observations. Without a doubt, the irrigation-based farmers of the Rio Grande watershed, along with a host of agencies and professionals in natural resources, earth sciences, biological sciences, engineering and many other municipalities and flood control districts and citizens of our state would be interested to understand more about this miraculous discovery. Are we to believe the long-term and careful streamflow observations of the U.S. Geological Survey, or the bureau?

I have been examining the bureau's watershed simulations since 2016 because as a hydrologist, I developed a concern over how poorly its accuracy compared to real-world observations. After reviewing additional modeled stream cases, along with a series of open discussions with the Bureau of Reclamation Science Adviser David Raff, UNM Professor David Gutzler and other related scientists, I can confirm that the bureau's official water estimates are not an anomaly. Rather it appears that its thousands of recent and costly Western streamflow simulations are each similarly detached from the reality of observations. Given those deficiencies, this might not be the Bureau of Reclamation's finest hour.

My hope is that regardless of its current stance, the bureau will soon return to the basic standards of scientific practice that the public is entitled to. In that event it will accordingly need to retract the use of any of these streamflow simulations for any purpose. On the other hand, if the bureau and its aligned scientists, water managers and engineers continue to support these models, then many of the Rio Grande water stakeholders will likely soon demand their fair share of this vast and miraculous water windfall. Or perhaps they will settle for monetary compensation.