

Addendum to Socioeconomic Impact Analysis for the 2026 Regional Water Plans

After the release of the socioeconomic impact analysis regional reports, the TWDB determined that a portion of the multi-faceted socio-economic impact estimates likely include upwardly biased impact results. It appears that the baseline value-added per acre-foot, used to determine the final drought degree adjusted impact estimates, may be inflated for the manufacturing water use sector. A similar conclusion applies for the estimates for jobs at risk and tax collections within that sector since all three measures rely upon a similar calculation procedure and required datasets.

Initial estimates for the value-added per acre-foot of water use are obtained using IMPLAN data coupled with TWDB Water Use Survey data. These calculations are limited to production subsectors (4-digit NAICS codes) for which TWDB Water Use Survey data was available and deemed reliable. These value-added estimates are adjusted downward, if necessary, to better correspond to the footprint of the data collected in the Water Use Survey. This is done to better match the productivity estimate from IMPLAN with the quantitative estimate of the water used to produce that output. The adjustment process involves using the proportion of the number of firms surveyed in the Water Use Survey versus the number of firms in the U.S. Census County Business Pattern data, limited to those firms with more than 50 employees. This approach assumes that the Water Use Survey captures water use from the larger water users in the state for the manufacturing sector.

Historically, this methodology has served the socio-economic impact estimation effort well, yet several factors have combined to result in likely upwardly biased estimates during this cycle that include:

- Adherence to the usual 5-year increment to access baseline IMPLAN value-added estimates prompted use of year 2021 data, a year with significant economic impacts as well as data collection issues prompted by the COVID pandemic, and
- Increased data suppression (reduced geographic data coverage) within the U.S. Census County Business Pattern Employment Data

This addendum is to make consumers of this analysis aware of the potentially skewed results for the manufacturing sector. Factors that are at play in this likely overestimated impact include: abnormal data collection results accompanying the COVID pandemic resulting in much higher than normal impact estimates for this water use sector, and reality-check values for the value-added per acre-foot of water that are almost non-existent within the research literature. The few research-based values that do exist, however, apply for periods ten or more years ago and/or foreign countries. Neither of these sources are deemed as being reliable for determining a reasonable upper bound or reliable estimate for this unique impact measure. The net effect is believed to overstate large projected income losses, jobs at risk, and tax collections within the manufacturing sector. This likely impacts a number of the sixteen planning regions but cannot be conclusively determined prior to planning groups needing to adopt their final regional water plans.