

Summarized Methodologies for Non-Municipal Water Demand Draft Projections for the 2016 Regional Water Plans

For the development of the 2016 Regional Water Plans, draft water demands are projected for each decade from 2020 to 2070 for the five sectors of non-municipal water use. For each of these sectors, the Regions will be given an opportunity to request adjustments to the base for each county. Brief summaries of the projection methodologies are provided below:

Irrigation: Draft irrigation water demand projections utilize an average of TWDB's 2005-2009 irrigation water use estimates as a base. Annual water use estimates are developed at the county level by applying a calculated evapotranspiration-based "crop water need" estimate to reported irrigated acreage from Farm Service Agency (FSA). These estimates are then adjusted based on surface water release data from TCEQ and Texas Water Masters and comments from Groundwater Conservation Districts. The rate of change for projections from the 2011 Regional Water Plans is then applied to the new base.

Livestock: Draft livestock water demand projections utilize an average of TWDB's 2005-2009 livestock water use estimates as a base. Water use estimates are calculated by applying a water use coefficient for each livestock category to county level inventory estimates from Texas Agricultural Statistics Service. The rate of change for projections from the 2011 Regional Water Plans is then applied to the new base. Many counties chose to hold the base constant throughout the planning horizon.

Manufacturing: Draft manufacturing water demand projections utilize 2004-2008 data from TWDB's Water Use Survey (WUS). For each county, employment data from the WUS is compared to employment data from the Bureau of Economic Analysis (BEA), in order to adjust surveyed water use by the survey response rate. County water use estimates in manufacturing are then derived from output-water use coefficients. The rate of change for projections from the 2011 Regional Water Plans is then applied to the new base.

Mining: Draft mining water demand projections are developed through a TWDB-contracted study with the Bureau of Economic Geology (BEG). BEG estimates current mining water use and projects that use across the planning horizon using data collected from trade organizations, government agencies, and other industry representatives. County-level projections are compiled as the sum of individual projections for four sub-sector mining categories: oil and gas, aggregates, coal and lignite, and other.

Steam-Electric Generation: Draft steam-electric power generation water demand projections are based on projections from the 2011 Regional Water Plans and the 2008 TWDB report *Water Demand Projections for Power Generation in Texas*. Recent data from the Public Utilities Commission of Texas on plant announcements, retirements, and capacity changes are incorporated to adjust the base. The rate of change for projections from the 2011 Regional Water Plans is then applied to the new base.