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Summarized Methodologies for Non-Municipal Water Demand Projections for the 2021 Regional Water Plans and 2022 State Water Plan

The methodology for developing draft non-municipal water demand projections is summarized below. Board-adopted projections took into consideration requested adjustments by the Regional Water Planning Groups based upon required criteria and supporting data.

Irrigation: The baseline methodology for irrigation water demand projections is the average of the most recent five years (2010–2014) of water use estimates that is then held constant between 2020 and 2070. In counties where the total groundwater availability over the planning period is projected to be less than the groundwater portion of the baseline water demand projections, the irrigation water demand projections will begin to decline in 2030 or later, commensurate with the groundwater availability. 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 the Farm Service Agency. These estimates are then adjusted based on surface water release data from Texas Commission on Environmental Quality and comments from groundwater conservation districts, irrigation districts, and river authorities.

Livestock: The 2020 water demand projections for each county are based on the average of the most recent five years (2010–2014) of water use estimates. Water use estimates are calculated by applying a water use coefficient for each livestock category to county level inventory estimates from the Texas Agricultural Statistics Service. The rate of change for projections from the 2017 Regional Water Plans was then applied to the new base.

Manufacturing: The 2020 water demand projections for each county are based on the highest county-aggregated manufacturing water use in the most recent five years (2010–2014). The most recent 10-year projections for employment growth from the Texas Workforce Commission are used as proxy for growth by manufacturing sectors between 2020 and 2030. The water use within each North American Industry Classification System (NAICS) category is multiplied by the employment growth rate. In cases where the employment is projected to decrease for a three-digit NAICS sector, the water demand projections are held constant. After 2030, the manufacturing water demand is held constant through 2070. Water use estimates are developed through the TWDB's annual Water Use Survey.

Mining: Mining water demand projections are carried forward from the 2017 State Water Plan and based largely on a 2012 TWDB-contracted study, "Oil & Gas Water Use in Texas: Update to the 2011 Mining Water Use Report," by the Bureau of Economic Geology (BEG). The BEG estimated recent mining water use and projected the use across the planning horizon using data collected from trade organizations, government agencies, and other industry representatives. County-level projections were developed as the sum of individual projections for four sub-sector mining categories: oil and gas, aggregates, coal and lignite, and other. Water use estimates are developed through the TWDB's annual Water Use Survey and FracFocus.

Steam-Electric Power: The 2020 water demand projections for each county are based on the highest county-aggregated historical steam-electric power water use in the most recent five years (2010–2014). The anticipated water use of future facilities listed in state and federal reports is added to the demand projections from the anticipated operation date until 2070. The reported water use of facilities scheduled for retirement in the state and federal reports is subtracted from the demand projections. Subsequent demand projections after 2020 are held constant throughout the planning period. Water use estimates are developed through the TWDB's annual Water Use Survey.

For additional information on the water demand projections, please visit our website at www.twdb.texas.gov/waterplanning/data/projections/index.asp.