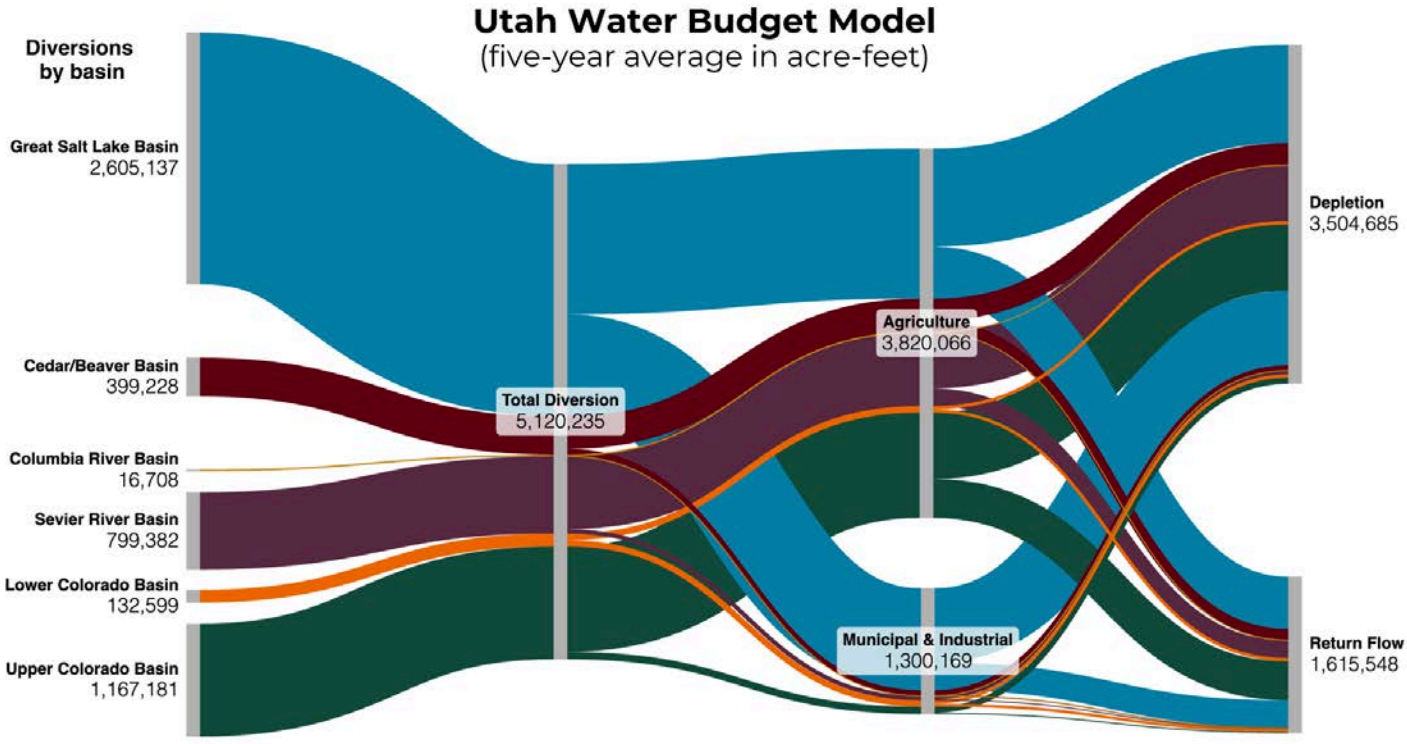
The Utah Water Budget

What is the Utah Water Budget?

The Utah Water Budget is a model that helps the Division of Water Resources provide decision-makers with an understanding of:

- **The state's water supply:** surface water inflow, precipitation and storage
- **Water use per sector:** diversions and depletions through agriculture, municipal and industrial (M&I) use
- **How much water leaves the state:** surface water outflow

The model is fundamental to our collective planning efforts, helping us formulate strategies for conservation, demand reduction and water repurposing. This cannot be done without a clear understanding of water **diversions** (total water diverted for water users) and **depletions** (water removed from the system through consumption, evaporation or evapotranspiration) throughout the state.



The above diagram shows the water utilized (2020-2024) by the two main sectors in the state (agriculture and municipal and industrial). Water that is diverted to satisfy the demands in these sectors is either consumed (depleted) or returned to the water supply. Proportions of agriculture and municipal and industrial use vary across basins, but overall, agriculture is the largest user in terms of diversion, depletion and return flow.

Model inputs include climate, stream flow, groundwater, reservoir, water use, soil and agricultural datasets from various sources including the Utah divisions of Water Resources and Water Rights, U.S. Geological Survey, U.S. Bureau of Reclamation, U.S. Department of Agriculture, National Oceanic and Atmospheric Administration and others.

Updated 12/2025

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What is new with the Utah Water Budget model?

The division continuously works to improve the water budget model, and each year refinements are implemented. The increased accuracy of the most recent model stems from comprehensive updates across three major categories:

- New research
- Methodology changes
- Calculation refinements

Two key modifications to the 2025 version include:

Updated proportion of water for municipal indoor and outdoor use

Utilization of winter (indoor) versus summer (indoor and outdoor) source data provides a more accurate estimate of what portion of residential deliveries goes to outdoor irrigation.

Previously, different methods were used across years. Standardizing the utilization of winter versus summer usage data allowed for better comparisons.

Amended amounts of municipal outdoor depletion

Research shows a much higher percentage of outdoor M&I water is depleted than previously assumed, leading to a substantial correction in total M&I depletions.

The previous method relied on an audit that found Utahns over-irrigate lawns by 60%: assuming 40% of applied water is depleted. The new method incorporated statewide irrigation data, irrigation efficiency, greenspaces, hardscapes and additional relevant research that now concludes that 91% of applied residential outdoor water is depleted.

Why do these improvements matter?

The improvements in the water budget model reveal several key findings:

- Higher outdoor depletions across the residential sector are estimated
- Overall M&I water depletion shows an increasing trend across the state
- The specific trends of agricultural and M&I water depletions differ between each of the river basins

Note: M&I data collection was enhanced in 2016 following a legislative audit. Conclusions about trends over time in municipal water use prior to 2016 should be utilized cautiously.

Where are the Utah Water Budget results published?

The water budget model is refined each year. **Utah Water Budget** results are then published on the Division of Water Resources site annually. More detailed documentation on the water budget model will also be made available in early 2026.

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