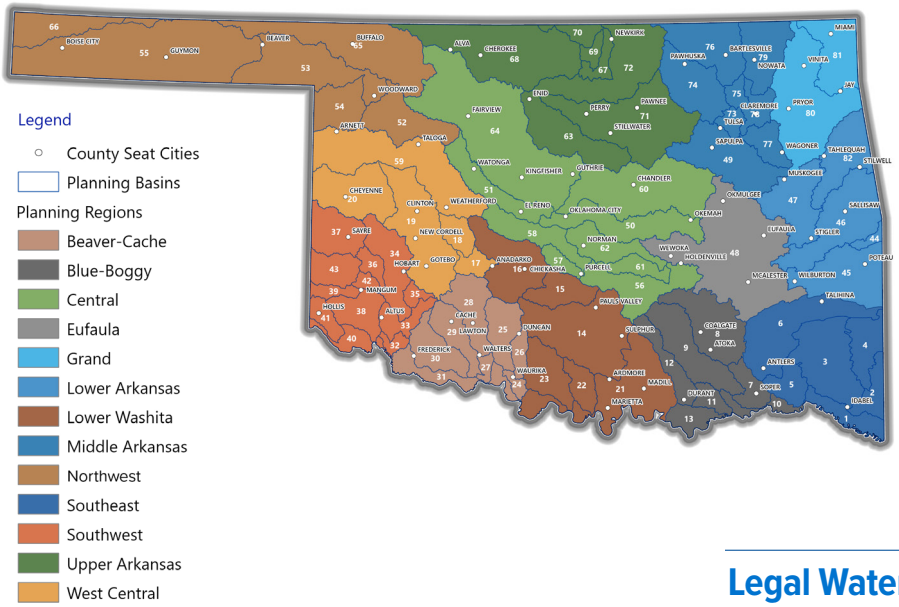
Guide to Region and Basin Fact Sheets

The OCWP evaluates water resources in each of the 82 Basins that are aggregated into 13 Regions, recognizing the diversity of water supply issues and solutions across the state. A fact sheet has been developed for each region and each basin. These fact sheets summarize technical study findings and stakeholder input on policy needs. Each **Region Fact Sheet** includes information on a region's population, water demand, physical water shortages, legal water availability, surface and groundwater resources, water infrastructure needs, water quality evaluations, and region-specific recommendations. The **Basin Fact Sheet** provides projections through 2075 regarding the basin's population, water demand, physical water shortages, legal water availability, and a summary of the effectiveness of a range of water management strategies. These fact sheets provide a detailed picture of the water future in each basin and each region.

Statewide Map



Population

How is the population expected to change in the future?

Population projections are based on demographic data from the 2020 United States Census and population trends developed by the Oklahoma Department of Commerce.

Water Demand Projections

How much water is needed to meet Oklahomans' needs?

Water demand refers to the amount of water that needs to be withdrawn from surface waters and/or groundwater to meet the needs of people, communities, industry, agriculture, and other users. Changes in water demand often correspond to changes in population, agriculture, industry, or other economic activity.

Demands were projected through 2075 for seven distinct consumptive water demand sectors: public supply (PS), self-supplied industrial (SSI), oil & gas (OG), thermoelectric power (TE), crop irrigation (CI), livestock, and self-supplied domestic (SSD).

OWRB Water Planning Page
oklahoma.gov/owrb/water-planning

Physical Water Shortages

Will there be enough "wet water" physically available to meet anticipated needs?

WIW WM WSS

To quantify physical surface water gaps and groundwater storage depletions through 2075, use of existing surface water and groundwater supplies in each basin was assumed to continue in current proportions, while out-of-basin supplies will be used up to currently-permitted amounts. The maximum magnitude of shortages based on the hydrologic record is projected for all planning years through 2075, and the frequency (probability) of a shortage occurring is estimated for 2075 demand conditions. Frequent shortages with large magnitudes may be indicative of the greatest need to implement alternative water management strategies.

Legal Water Availability WM WSS

Will there be water available for permitting after meeting 2075 demands?

The surface water permit availability analysis followed OWRB's general methodology for the evaluation of surface water available for appropriation that is applied whenever a stream water permit application is reviewed. Interstate compact inflows were included for 10 basins on Oklahoma's borders which receive water from neighboring states and compact-required outflows from 17 basins along the Red River or Arkansas River which are subject to interstate compact requirements for those rivers. In-basin reserves were included in the total set-asides per basin (not just for inter-basin transfers). Permitting of surface water in portions or all of the Southeast, Blue-Boggy, Lower Washita, Beaver-Cache, Central, Eufaula, and Lower Arkansas Regions is subject to the provisions of the 2016 Water Settlement Agreement. Surface water in the Grand Region is administered by the Grand River Dam Authority.

The owner of the land owns the groundwater beneath the surface and may develop the water for beneficial use subject to reasonable regulation by the State. Analysis of legal groundwater availability utilizes estimates of the maximum allowable permitted amount of groundwater along with the total amount currently permitted (as regular, prior right, and temporary permits) and the remaining amount available for permitting after meeting projected demands in 2075.

OKLAHOMA Water Resources Board

Guide to Region and Basin Fact Sheets

Water Management Strategies

What approaches are most viable for meeting future needs and mitigating shortages?

WSS WDI WIW WM

Reliable water supplies must be physically available (wet water available at the time and place it is needed), legally available (having a permit to use the water), of suitable quality for its intended purpose, and have the necessary infrastructure to divert, convey, and treat the water if necessary. Water management strategies were identified that could mitigate the potential for shortages or otherwise be implemented to manage water resources.

Water Management Strategy Definitions

- **Demand Management** refers to the potential to reduce water demands and alleviate gaps or depletions by implementing conservation or drought management measures. It is a vitally important tool that can be implemented either temporarily or permanently to decrease demand. This strategy is specific to non-agriculture uses. Examples include water utility-driven conservation programs, industrial conservation, water loss control, and drought management measures.
- **Agriculture Options** are water conservation and efficiency tools specifically for the irrigated cropland and livestock production sectors. Examples include irrigation system improvements, soil moisture probes, meters, electrified pumps, operational changes, growing less water intensive crops, reuse of tailwater, and using municipal recycled water for agriculture purposes.
- **Increased Reliance on In-basin Surface water** is any water resource found above ground, such as a lake, river, reservoir, or stream. There are various means of increasing surface water resources, but the applicability is highly dependent upon location. Examples of increased reliance on surface water include constructing new reservoirs, conveying or allocating water from existing reservoirs, expanding existing reservoirs, treating brackish surface water to suitable standards, and diverting additional stream water.
- **Increase Reliance on In-basin Groundwater** refers to any water resource that is found underground in saturated zones. Site-specific information on the suitability of aquifers for supply should be considered. Examples of increased reliance on groundwater include drilling additional wells, treating brackish groundwater to suitable standards, and developing managed aquifer recharge and recovery wells.
- **Stormwater Capture and Use** refers to collecting and beneficially using water that does not infiltrate after a precipitation event. Large volumes can be generated in urban settings where impervious cover is typical. Most municipalities have infrastructure in place to divert stormwater to nearby bodies of water. However, this water could potentially be stored, treated, and used for potable or non-potable uses.
- **Water Reuse** refers to the reclamation of water from various sources and then treated and utilized again for beneficial purposes (e.g., irrigation, potable water supply, groundwater recharge, etc.). Typically, the most common source of reclaimed water is treated municipal wastewater. Examples include indirect potable reuse, non-potable reuse, direct potable reuse.
- **Water Transfers** describe the strategy of obtaining either surface or groundwater resources from an outsourced local supplier or region and conveying the supply to where it is needed. Examples include water purchases, out-of-basin transfers, water provider collaboration, interconnections, and regionalization.

Water Management Strategy Ratings

Effective at Meeting Future Demands:

Strategy is expected to meet projected water needs. Demand Management and Agriculture Options may be effective in addressing 2075 shortages that are less than 20 percent of demands.

Potentially Effective with Local Variability:

Strategy may address some future shortages, but effectiveness varies across basin.

Effective When Paired with Demand Management / Agriculture Options:

Can reduce smaller shortages when combined with Demand Management and/or Agriculture Options.

Partially Effective – Shortages Remain:

Strategy meets part of future demand, but 2075 shortages exceed estimated water savings that Demand Management and/or Agriculture Options alone may achieve.

May Increase Shortages – Use with Other Strategies:

Strategy could worsen shortages and requires additional WMS to meet future needs.

Ineffective at Meeting Future Demands:

Strategy is unlikely to reduce projected shortages.

No Shortage or Needs Met by Other Strategies:

Basin has no projected 2075 shortage; or future needs can be met with existing or traditional WMS.

OCWP Statewide Recommendations are designed to address current and anticipated water supply challenges and are noted throughout this fact sheet with the following icons: WIW Water Infrastructure & Workforce, WM Water Management, WSS Water Supplies & Storage, and WDI Water Data & Information

Learn more about these recommendations by reading the 2025 OCWP Executive Summary, found on the OWRB Planning Page: oklahoma.gov/owrb/water-planning.html