

# Eufaula Planning Region

## Summary

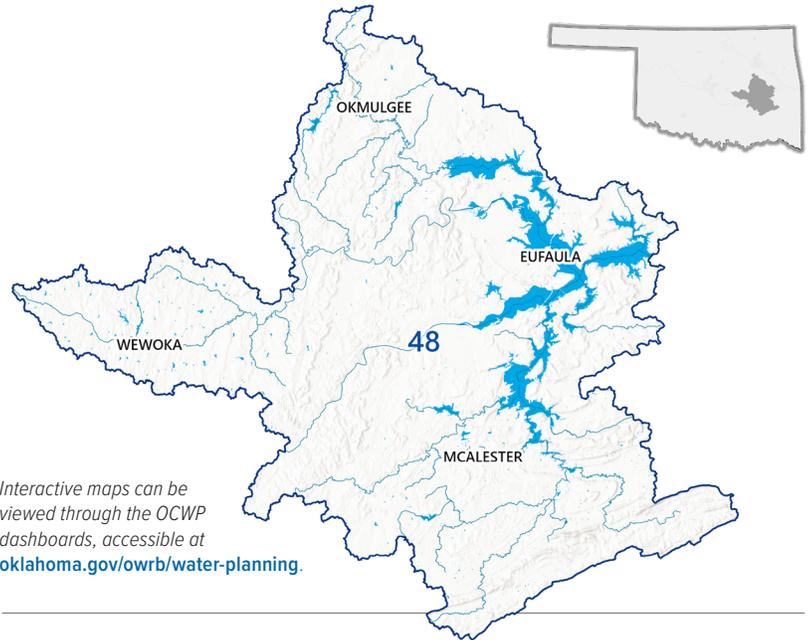
- Eufaula Region demands are supplied by a combination of surface water, groundwater, and out-of-basin supplies.
- Water demand (withdrawal) is projected to decrease by 1,400 acre-feet per year (7%) between 2020 and 2075.
- Physical water shortages are projected for surface water and groundwater as early as 2030 and will continue through 2075.
- Surface water and groundwater are projected to remain legally available for permitting through 2075 in the Eufaula Region basin. Permitting of surface water in the Eufaula Region is subject to provisions of the 2016 Water Settlement Agreement.
- In addition to the Statewide Recommendations, Eufaula Region stakeholders expressed the need to consider investing in regionalization, instream (or nonconsumptive) flow, and non-point source mitigation (source water protection).



OWRB Water  
Planning Page

[oklahoma.gov/owrb/water-planning](http://oklahoma.gov/owrb/water-planning)

The Eufaula Region represents 2% of the state's 2075 projected population and less than 1% of the state's total 2075 water demand projections.



**Reliable water supplies must be physically available (wet water available at the time and place it's 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.** For the Eufaula Region, to mitigate projected water supply shortages, the following strategies will typically be most effective:

- Reduce water demand through conservation, water loss reduction, and other activities (PS, SSI, OG, TE). **WSS**
- Reduce water demand through agricultural water saving options (CI, LS). **WSS**
- Continue/increase reliance on in-basin surface water (all sectors). **WSS** **WDI**
- Continue/increase reliance on in-basin groundwater (all sectors). **WSS** **WDI**

Options to address water quality concerns include expanding source water protection programs and expanding water quality studies. **WSS** **WDI**

Infrastructure limitations can be addressed through additional water funding. Possible sources of new funding include providers setting appropriate water rates, public-private partnerships, state programs, and federal programs. **WIW**

**Water Demand Sectors:** PS = Public Supply, SSI = Self-supplied Industrial, OG = Oil & Gas, TE = Thermoelectric Power, CI = Crop Irrigation, LS = Livestock, SSD = Self-supplied Domestic

**OCWP Statewide Recommendations:** The recommendations are designed to address current and anticipated water supply challenges. Areas where the OCWP Statewide Recommendations specifically address this region's challenges 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



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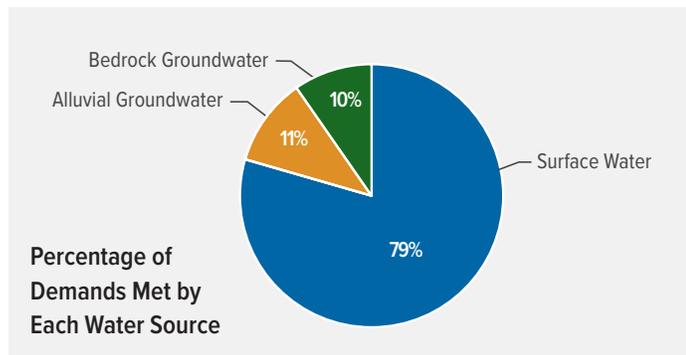
## Population

2020	2030	2035	2045	2060	2075
94,591	92,014	88,990	84,482	79,850	73,627

## Water Demand Projections

**Water demands (withdrawals) are projected to decrease by 7% between 2020 and 2075.**

The Eufaula Region’s largest demand sector is Public Supply, representing 54% of the region’s 2075 water demands. The second largest demand sector is Livestock, representing 20% of the region’s 2075 water demands.



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 demands correspond to growth or decline in population, agriculture, industry, or related economic activity. Demands were projected through 2075 for seven distinct consumptive water demand sectors.

In the Eufaula Region, Crop Irrigation demands will increase while Self-supplied Domestic, Self-supplied Industrial, Livestock, and Public Supply demands will decrease between 2020 and 2075. There are no Thermoelectric Power demands. There is no change in Oil & Gas demands.

### Total Demand by Sector (AFY)

	2020	2030	2035	2045	2060	2075
Self-supplied Domestic	180	182	177	169	161	151
Self-supplied Industrial	536	523	506	482	457	421
Crop Irrigation	688	1,733	1,949	2,408	2,408	2,408
Livestock	3,964	3,917	3,933	3,897	3,853	3,833
Oil & Gas	2,081	2,081	2,081	2,081	2,081	2,081
Public Supply	13,457	13,167	12,765	12,133	11,468	10,612
Thermoelectric Power	-	-	-	-	-	-
<b>Total</b>	<b>20,906</b>	<b>21,602</b>	<b>21,410</b>	<b>21,170</b>	<b>20,427</b>	<b>19,506</b>

AFY = acre-feet per year; Small differences may result due to rounding.

## Physical Water Shortages WIW WM WSS

To quantify physical surface water gaps and groundwater storage depletions through 2075, use of existing surface water and groundwater supplies was assumed to continue in current proportions while out-of-basin supplies will be used up to permit amounts or projected demands, whichever is less.

The Eufaula Region is projected to experience surface water gaps (where demand exceeds supplies) and groundwater depletions (where water use exceeds rate of recharge), as detailed in the tables below. The magnitude of shortages is projected for all planning years, and the frequency (probability) of a shortage occurring is estimated for 2075 demand conditions. Bedrock groundwater frequencies are constant because of the lack of direct connection to surface water hydrology. Frequent shortages with large magnitudes are indicative of the greatest need to implement alternative water management strategies.

SURFACE WATER GAP	2030	2035	2045	2060	2075	2075
Basin	Magnitude (AFY)					Frequency
48	26	56	245	300	503	4%

AFY = acre-feet per year

ALLUVIAL GROUNDWATER DEPLETION	2030	2035	2045	2060	2075	2075
Basin	Magnitude (AFY)					Frequency
48	98	97	219	221	224	6%

AFY = acre-feet per year

BEDROCK GROUNDWATER DEPLETION	2030	2035	2045	2060	2075
Basin	Magnitude (AFY)				
48	100	84	58	30	-

AFY = acre-feet per year



Lake Eufaula

## Legal Water Availability WM WSS

Surface water and groundwater are projected to remain legally available for permitting through 2075 in the Eufaula Region basin. Permitting of surface water in portions or all of the Eufaula Region basin is subject to provisions of the 2016 Water Settlement Agreement.

### Surface Water Legal Availability

- Planning Basins
- Basins under GRDA authority
- Basins wholly or partially subject to the provision of the 2016 Water Settlement Agreement

Surface Water Legal Availability (AFY) using 2075 Demands

- 0
- <200,000
- 200,001-500,000
- 500,001-2,000,000
- 2,000,001-4,000,000
- >4,000,000



### Groundwater Legal Availability

- Planning Basins
- Groundwater Legal Availability (AFY) using 2075 Demands
- <200,000
  - 200,001-500,000
  - 500,001-2,000,000
  - 2,000,001-4,000,000
  - >4,000,000



*Legal water availability projected in 2075 varies across the region, with darker shading indicating more water available for appropriation.*

## Surface Water Resources

WIW WM WSS WDI

The OCWP uses historical monthly streamflow data (1950-2021), which reflects current natural and human-created conditions (runoff, diversions and use of water, and impoundments and reservoirs) to represent the water that may be physically available to meet projected demand. The maximum amount of water a reservoir can dependably supply during a critical drought period is referred to as its yield. The table below provides information about remaining water supply yield that is available for permitting from existing reservoirs in the region.

Reservoir	Estimated Remaining Water Supply Yield to be Permitted (AFY)
<b>Dripping Springs</b>	0
<b>Eufaula</b>	33,352
<b>Henryetta</b>	---
<b>McAlester</b>	0
<b>Okmulgee</b>	---
<b>Sportsman</b>	---
<b>Talawanda #2</b>	---
<b>Weleetka</b>	---
<b>Wewoka</b>	---

--- Indicates no information is available.  
 AFY = acre-feet per year  
 Estimated remaining water supply yield as of July 2025.

## Groundwater Resources

WII WM WSS WDI

For the OCWP physical water availability analyses, alluvial aquifers are defined as aquifers comprised of river alluvium and terrace deposits, occurring along rivers and streams and consisting of unconsolidated deposits of sand, silt, and clay. Alluvial aquifers are more hydrologically connected with surface water features (streams, rivers, lakes) than bedrock aquifers. Bedrock aquifers consist of consolidated (solid) or partially consolidated rocks, such as sandstone, limestone, dolomite, and gypsum. Bedrock aquifers are typically replenished slowly by recharge from surface infiltration (precipitation) and from adjacent aquifers.

Aquifer	Type	Class	Equal Proportionate Share (AFY/Acre)
Ashland Isolated Terrace	Alluvial	Minor	temporary 2.0
Canadian River	Alluvial	Major	temporary 2.0
East-Central Oklahoma	Bedrock	Minor	temporary 2.0
Garber-Wellington	Bedrock	Major	2.0
Kiamichi	Bedrock	Minor	temporary 2.0
North Canadian River	Alluvial	Major	1.0
Pennsylvanian	Bedrock	Minor	temporary 2.0
Vamoosa-Ada	Bedrock	Major	2.0

AFY = acre-feet per year

Bedrock aquifers with typical yields greater than 50 gallons per minute (gpm) and alluvial aquifers with typical yields greater than 150 gpm are considered major aquifers.

## Water Quality WII WDI



**Groundwater:** Groundwater from the major aquifers, such as the North Canadian River alluvial aquifer, demonstrates elevated nitrate, sulfate, and salinity concerns as it connects to Eufaula Lake.



**Lakes:** Water quality in this region is impacted by elevated levels of nutrients, chlorophyll-a, and turbidity – factors that directly affect both recreational and water supply uses. Most lakes in the area are classified as mesotrophic to eutrophic with moderate to high levels of nutrients. These conditions contribute to a heightened risk of harmful algal blooms (HABs), increased water treatment costs, taste and odor issues, and diminished recreational value—impacting both recreational and water supply beneficial uses.



**Streams:** Water quality of Lake Eufaula is heavily influenced by urbanization, sedimentation, and riparian loss concerns in its large watershed. These factors contribute to poor aesthetics, habitat degradation, increased nutrients, tourism concerns, and increased treatment costs.

## Water Infrastructure Needs WII

OWRB compiled near-term wastewater project needs, water supply project needs, and state flood plan project needs as part of developing the 2025 OCWP. Near-term costs include drinking water and wastewater projects by public utilities (various system sizes) and other entities (such as conservancy districts, department of wildlife, regional councils, and tourism). All flood mitigation projects in the database were identified by public water suppliers in the State Flood Plan.

Near-term Drinking Water Cost (2024 dollars)	Near-term Wastewater Cost (2024 dollars)	Near-term Stormwater Cost (2024 dollars)
\$122M	\$235M	\$33M

M = million

For drinking water, costs were projected for the next 20 years for public suppliers. While it is difficult to anticipate all the changes that may occur within this extended timeframe, it is beneficial to evaluate the order of magnitude of the long-range potential costs of meeting demands. Estimated costs include rehabilitation of existing water infrastructure and construction of new water infrastructure for growth and regulatory compliance. The costs are categorized according to system sizes:

- Small systems serve less than 3,300 people;
- Small-medium systems serve 3,301 to 10,000 people;
- Medium-large systems serve 10,001-100,000 people; and
- Large systems serve more than 100,000 people.

System Size	Near-term Drinking Water Cost (2024 dollars)	Future Drinking Water Costs through 2035 (2025 dollars) <sup>1</sup>	Future Drinking Water Costs through 2045 (2025 dollars) <sup>2</sup>
Small	\$22M	\$939M	\$1.72B
Small-Medium	\$32M	\$338M	\$390M
Medium-Large	\$21M	\$157M	\$411M
Large	N/A	N/A	N/A
Non-Public suppliers	\$48M	N/A	N/A
<b>Total</b>	<b>\$122M</b>	<b>\$1.43B</b>	<b>\$2.52B</b>

M = million; B = billion; N/A = not applicable

1. Not inclusive of near-term costs.

2. Not inclusive of near-term or future drinking water costs through 2035.

Visit OWRB Water Planning page (<https://oklahoma.gov/owrb/water-planning.html>) for more information on region water quality and trend analysis.