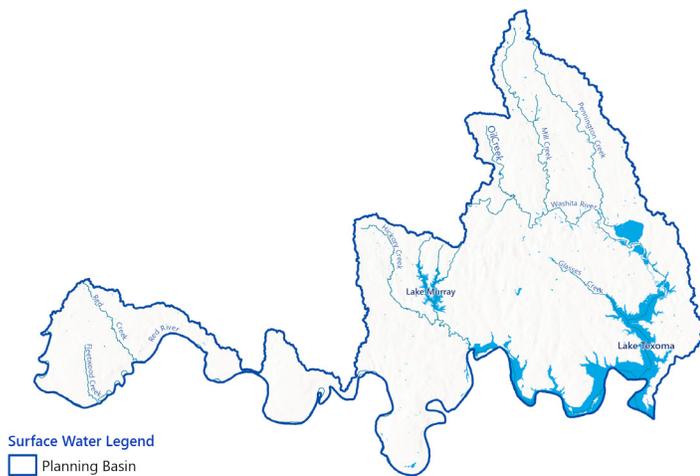
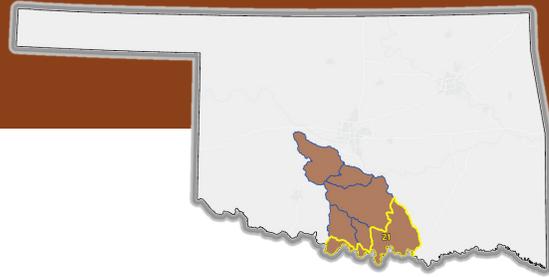
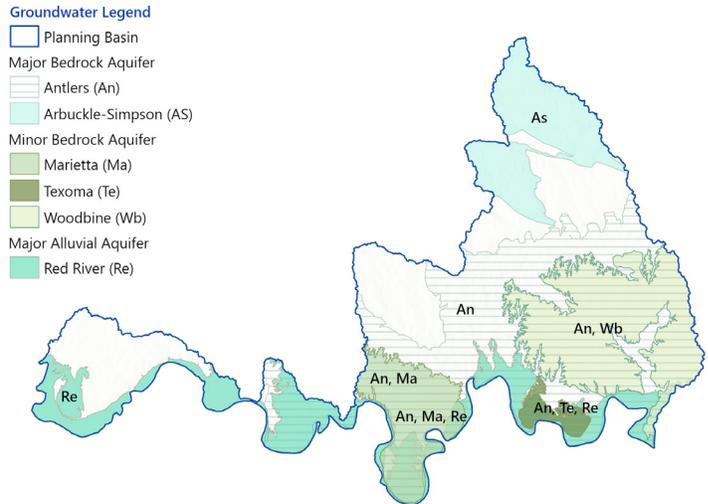


# BASIN 21

## Red River Mainstem (To Walnut Bayou) / Lower Washita Region



**Surface Water Legend**  
 □ Planning Basin  
 — OWRB Major Streams  
 ■ OWRB Lakes



**Groundwater Legend**  
 □ Planning Basin  
 Major Bedrock Aquifer  
 ▨ Antlers (An)  
 ▨ Arbuckle-Simpson (AS)  
 Minor Bedrock Aquifer  
 ■ Marietta (Ma)  
 ■ Texoma (Te)  
 ■ Woodbine (Wb)  
 Major Alluvial Aquifer  
 ■ Red River (Re)

Interactive maps can be viewed through the OCWP dashboards, accessible at [oklahoma.gov/owrb/water-planning](http://oklahoma.gov/owrb/water-planning)

### SUMMARY

- Basin 21 - Red River Mainstem (To Walnut Bayou) demands are supplied by a combination of surface water, groundwater, and out-of-basin supplies.
- Water demand (withdrawal) is projected to decrease by 2,834 acre-feet per year (22%) between 2020 and 2075.
- No surface water gaps are projected.
- No alluvial groundwater depletions are projected.
- Physical bedrock groundwater depletions are projected in Basin 21 by 2075.
- Basin 21 is projected to have surface water available for appropriation through 2075, but its permitting may be subject to provisions of the 2016 Water Settlement Agreement.
- Basin 21 is projected to have groundwater available for appropriation through 2075.
- To mitigate projected water supply shortages in this basin, 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 demands 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**



OWRB Water  
 Planning Page  
[oklahoma.gov/owrb/water-planning](http://oklahoma.gov/owrb/water-planning)

Refer to the “**Guide to Region and Basin Fact Sheets**” for a description of the types of information detailed in this fact sheet.

**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** 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

## Population

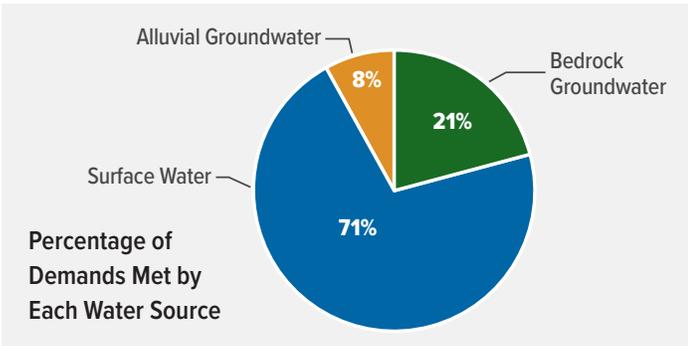
How is the population expected to change in the future?

2020	2030	2035	2045	2060	2075
45,012	47,083	46,921	47,095	48,589	49,572

## Water Demand Projections

How much water is needed to meet Oklahomans' needs?

Basin 21 accounts for approximately 24% of the overall water demands of the Lower Washita Region.



### Total Demand by Sector (AFY)

	2020	2030	2035	2045	2060	2075
Self-supplied Domestic	85	90	991	92	97	100
Self-supplied Industrial	-	-	-	-	-	-
Crop Irrigation	1,423	2,110	2,178	2,406	2,899	3,655
Livestock	1,702	1,652	1,649	1,607	1,548	1,499
Oil & Gas	577	577	577	577	577	577
Public Supply	8,855	9,133	9,142	9,193	9,470	9,646
Thermoelectric Power	-	-	-	-	-	-
<b>Total</b>	<b>12,643</b>	<b>13,563</b>	<b>13,637</b>	<b>13,876</b>	<b>14,591</b>	<b>15,477</b>

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

## Physical Water Shortages

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

WIW WM WSS

	Magnitude (AFY)					Frequency <sup>1</sup>
	2030	2035	2045	2060	2075	2075
Surface Water Gap	-	-	-	-	-	0%
Alluvial Groundwater Depletion	-	-	-	-	-	0%
Bedrock Groundwater Depletion	-	-	-	-	24	N/A

1. Probability of a water shortage occurring in at least one month of the year.

## Legal Water Availability

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

WM WSS

Estimated Surface Water available for appropriation in 2075 (AFY)	Inside 2016 Water Settlement Area? <sup>1</sup>	Is there a downstream mainstem restriction? <sup>2</sup>	Estimated Groundwater available for appropriation in 2075 (AFY)
2,023,100	Yes	No	2,320,700

1. Yes – basin wholly or partially subject to the provisions of the 2016 Water Settlement Agreement.

2. Yes – mainstem restriction may impact water available for appropriation within the basin.

## Water Management Strategies

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

WSS WDI WIW WM

Water Management Category	Demand Sector	Basin 21 Evaluation
Demand Management	PS, SSI, OG, TE	Effective at Meeting Future Demands
Agriculture Options	CI, LS	Effective at Meeting Future Demands
Increase Reliance on In-Basin Surface Water	All sectors	Effective at Meeting Future Demands
Increase Reliance on In-Basin Groundwater	All sectors	Effective at Meeting Future Demands
Stormwater Capture & Use	PS, SSI	No Shortage or Needs Met by Other Strategies
Reuse	PS, SSI	No Shortage or Needs Met by Other Strategies
Water Transfers	All sectors	No Shortage or Needs Met by Other Strategies

In addition to the water management strategies, water users need:

- Options to address water quality concerns, which could include expanding source water protection programs and expanding water quality studies.
- Ways to address infrastructure limitations, which could include additional water funding from the State, Federal, and/or public-private partnerships, and by providers setting water rates that fully fund system operation and maintenance.