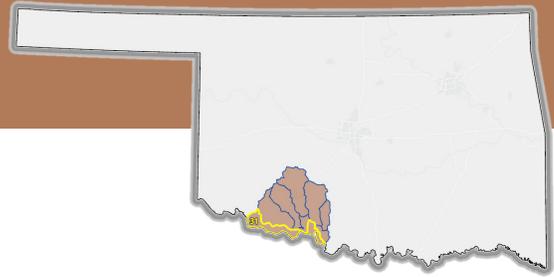


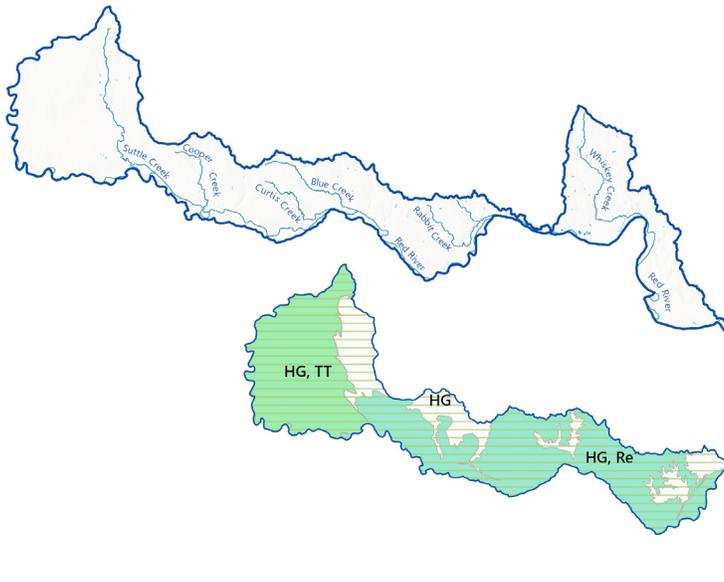
# BASIN 31

## Red River Mainstem (To North Fork of Red) / Beaver Cache Region



### Surface Water Legend

- Planning Basin
- OWRB Major Streams
- OWRB Lakes



### Groundwater Legend

- Planning Basin
- Minor Bedrock Aquifer
- Hennessey-Garber (HG)
- Major Alluvial Aquifer
- Red River (Re)
- Tillman Terrace (TT)

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

## SUMMARY

- Basin 31 - Red River Mainstem (To North Fork of Red) demands are supplied by a combination of surface water, groundwater, and out-of-basin supplies.
- Water demand (withdrawal) is projected to decrease by 430 acre-feet per year (3%) between 2020 and 2075.
- No surface water gaps are projected.
- No alluvial groundwater depletions are projected.
- Physical bedrock groundwater depletions are projected in Basin 31 as early as 2030 and will continue through 2075.
- Basin 31 is projected to have surface water available for appropriation through 2075.
- Basin 31 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**
  - Water reuse (PS, SSI). **WM** **WSS**
  - Water transfers (all sectors). **WM** **WSS**



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

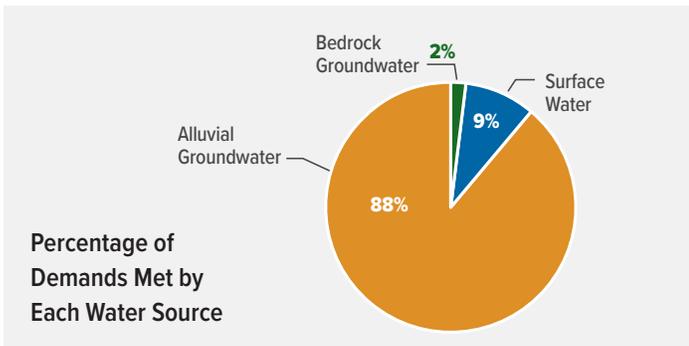
How is the population expected to change in the future?

2020	2030	2035	2045	2060	2075
4,032	3,875	3,643	3,236	2,710	2,155

## Water Demand Projections

How much water is needed to meet Oklahomans' needs?

Basin 31 accounts for approximately 30% of the overall water demands of the Beaver Cache Region.



### Total Demand by Sector (AFY)

	2020	2030	2035	2045	2060	2075
Self-supplied Domestic	20	19	18	16	13	11
Self-supplied Industrial	-	-	-	-	-	-
Crop Irrigation	11,066	11,304	11,304	11,304	11,304	11,304
Livestock	675	656	652	634	608	586
Oil & Gas	35	35	35	35	35	35
Public Supply	1,375	1,330	1,263	1,133	973	806
Thermoelectric Power	-	-	-	-	-	-
<b>Total</b>	<b>13,171</b>	<b>13,344</b>	<b>13,273</b>	<b>13,122</b>	<b>12,933</b>	<b>12,741</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	314	313	313	312	311	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)
406,600	No	No	864,290

- If, yes – basin wholly or partially subject to the provisions of the 2016 Water Settlement Agreement.
- If, 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 31 Evaluation
Demand Management	PS, SSI, OG, TE	Partially Effective - Shortages Remain
Agriculture Options	CI, LS	Partially Effective - Shortages Remain
Increase Reliance on In-Basin Surface Water	All sectors	Effective at Meeting Future Demands
Increase Reliance on In-Basin Groundwater	All sectors	May Increase Shortages - Use with Other Strategies
Stormwater Capture & Use	PS, SSI	Ineffective at Meeting Future Demands
Reuse	PS, SSI	Effective at Meeting Future Demands
Water Transfers	All sectors	Potentially Effective with Local Variability

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.