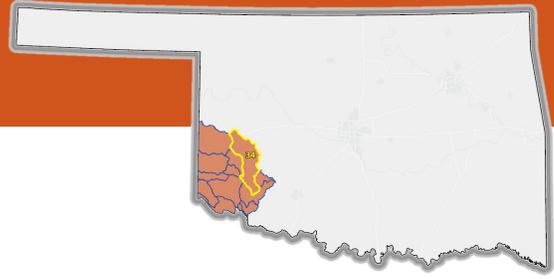


# BASIN 34

## Lower North Fork Red River - 3 / Southwest Region



**Surface Water Legend**  
 Planning Basin  
 OWRB Major Streams  
 OWRB Lakes



**Groundwater Legend**  
 Planning Basin  
 Major Bedrock Aquifer  
 Elk City (EC)  
 Rush Springs (RS)  
 Minor Bedrock Aquifer  
 Hennessey-Garber (HG)  
 Southwestern Oklahoma (SO)  
 Western Oklahoma (WO)  
 Major Alluvial Aquifer  
 North Fork of the Red River (NFR)  
 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 34 - Lower North Fork Red River - 3 demands are supplied by a combination of surface water and groundwater.
- Water demand (withdrawal) is projected to increase by 531 acre-feet per year (5%) between 2020 and 2075.
- Physical surface water gaps are projected in Basin 34 as early as 2030 and will continue through 2075.
- Physical alluvial groundwater depletions are projected in Basin 34 as early as 2030 and will continue through 2075.
- Physical bedrock groundwater depletions are projected in Basin 34 as early as 2030 and will continue through 2075.
- Basin 34 is projected to have surface water available for appropriation through 2075.
- Basin 34 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 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

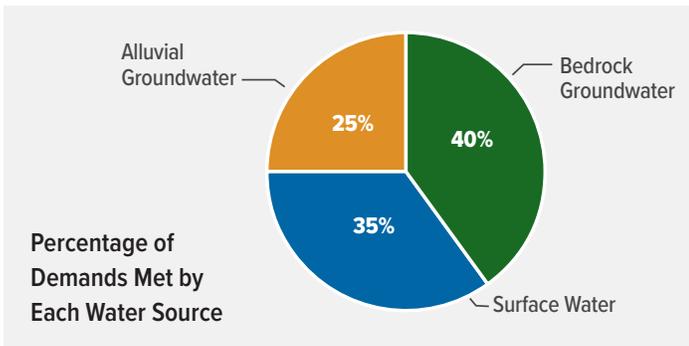
How is the population expected to change in the future?

2020	2030	2035	2045	2060	2075
10,788	10,395	10,132	9,607	8,984	8,227

## Water Demand Projections

How much water is needed to meet Oklahomans' needs?

Basin 34 accounts for approximately 5% of the overall water demands of the Southwest Region.



### Total Demand by Sector (AFY)

	2020	2030	2035	2045	2060	2075
Self-supplied Domestic	8	7	7	7	6	5
Self-supplied Industrial	-	-	-	-	-	-
Crop Irrigation	6,702	7,331	7,439	7,553	7,564	7,564
Livestock	830	805	803	781	751	725
Oil & Gas	53	53	53	53	53	53
Public Supply	3,255	3,199	3,185	3,121	3,109	3,031
Thermoelectric Power	-	-	-	-	-	-
<b>Total</b>	<b>10,848</b>	<b>11,394</b>	<b>11,488</b>	<b>11,516</b>	<b>11,483</b>	<b>11,379</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	187	249	315	310	303	31%
Alluvial Groundwater Depletion	137	151	163	164	157	34%
Bedrock Groundwater Depletion	20	20	15	16	14	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)
20,000	No	No	804,980

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 34 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	May Increase Shortages - Use with Other Strategies
Increase Reliance on In-Basin Groundwater	All sectors	Effective When Paired with Demand Management / Agriculture Options
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.