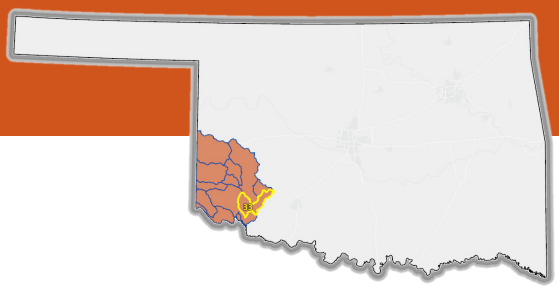
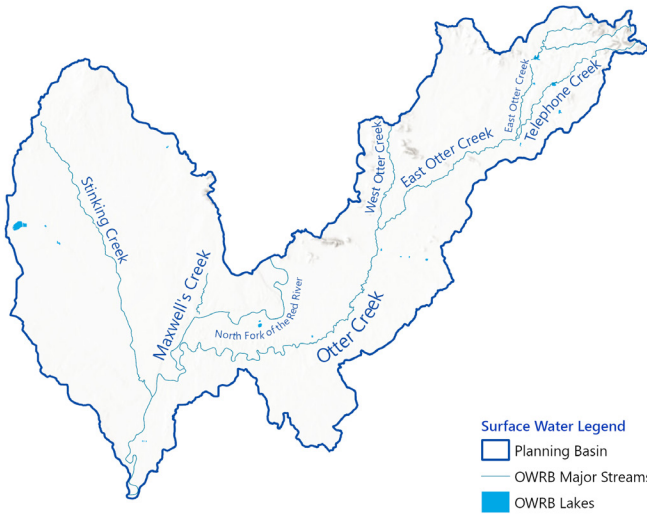
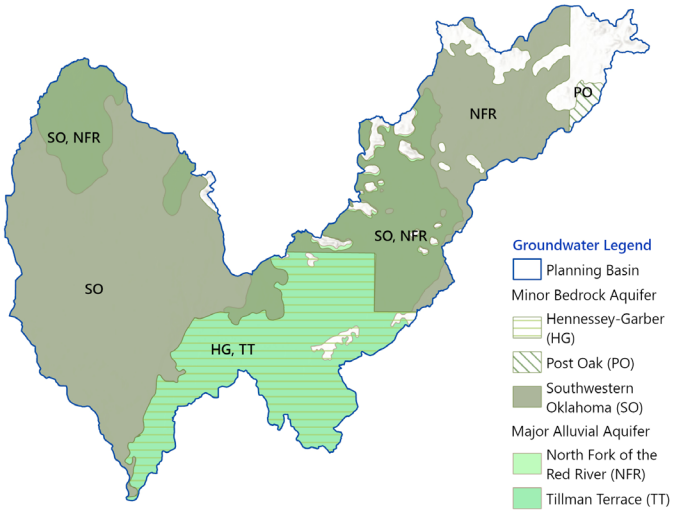
BASIN 33

Lower North Fork Red River - 2 / Southwest Region







*Interactive maps can be viewed through the OCWP dashboards, accessible at **oklahoma.gov/owrb/water-planning***

SUMMARY

- Basin 33 - Lower North Fork Red River - 2 demands are supplied by a combination of surface water, groundwater, and out-of-basin supplies.
- Water demand (withdrawal) is projected to decrease by 1,960 acre-feet per year (5%) between 2020 and 2075.
- Physical surface water gaps are projected in Basin 33 as early as 2030 and will diminish by 2060.
- Physical alluvial groundwater depletions are projected in Basin 33 as early as 2030 and will continue through 2075.
- Physical bedrock groundwater depletions are projected in Basin 33 as early as 2030 and will continue through 2075.
- Basin 33 is projected to have surface water available for appropriation through 2075.
- Basin 33 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
  - Stormwater capture and use (PS, SSI). WM WSS
  - Water reuse (PS, SSI). WM WSS
  - Water transfers (all sectors). WM WSS

OWRB Water Planning Page
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

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Population

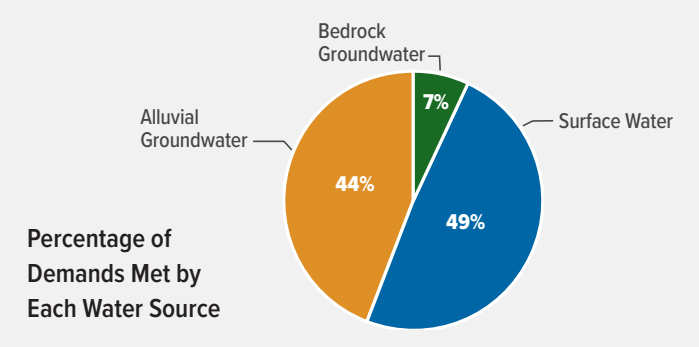
How is the population expected to change in the future?

2020	2030	2035	2045	2060	2075
7,599	7,046	6,676	6,035	5,099	4,128

Water Demand Projections

How much water is needed to meet Oklahomans' needs?

Basin 33 accounts for approximately 14% of the overall water demands of the Southwest Region.



Total Demand by Sector (AFY)

	2020	2030	2035	2045	2060	2075
Self-supplied Domestic	16	15	15	14	12	11
Self-supplied Industrial	-	-	-	-	-	-
Crop Irrigation	32,297	32,969	33,016	33,071	33,076	33,076
Livestock	269	261	260	253	243	234
Oil & Gas	18	18	18	18	18	18
Public Supply	5,023	4,554	4,266	3,794	3,072	2,324
Thermoelectric Power	-	-	-	-	-	-
Total	**37,623**	**37,816**	**37,575**	**37,149**	**36,421**	**35,663**

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[1]
	2030	2035	2045	2060	2075	2075
Surface Water Gap	2	2	1	-	-	0%
Alluvial Groundwater Depletion	226	248	125	56	3	1%
Bedrock Groundwater Depletion	2,556	2,560	2,562	2,556	2,548	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? [1]	Is there a downstream mainstem restriction? [2]	Estimated Groundwater available for appropriation in 2075 (AFY)
62,700	No	No	419,010

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 33 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	Potentially Effective with Local Variability
Reuse	PS, SSI	Partially Effective - Shortages Remain
Water Transfers	All sectors	Effective at Meeting Future Demands

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.