

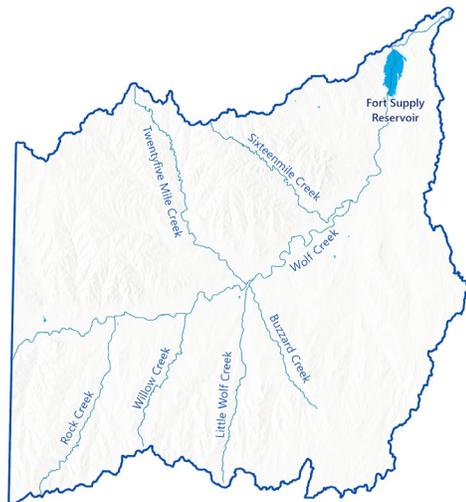
BASIN 54

Upper North Canadian River - 3 Northwest Region



Surface Water Legend

- Planning Basin
- OWRB Major Streams
- OWRB Lakes



Groundwater Legend

- Planning Basin
- Major Bedrock Aquifer
- Ogallala (Og)
- Major Alluvial Aquifer
- North Canadian River (NC)



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

SUMMARY

- Basin 54 - Upper North Canadian River - 3 demands are supplied by a combination of surface water and groundwater.
- Water demand (withdrawal) is projected to increase by 568 acre-feet per year (4%) between 2020 and 2075.
- Physical surface water gaps are projected in Basin 54 as early as 2030 and will continue through 2075.
- Physical alluvial groundwater depletions are projected in Basin 54 as early as 2030 and will continue through 2075.
- Physical bedrock groundwater depletions are projected in Basin 54 as early as 2030 and will continue through 2075.
- Basin 54 is projected to have surface water available for appropriation through 2075.
- Basin 54 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**
 - 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



Population

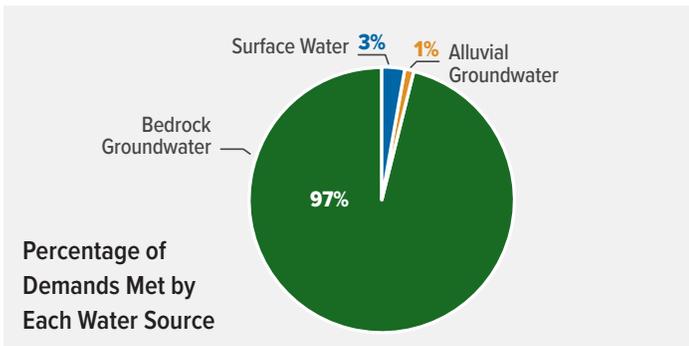
How is the population expected to change in the future?

2020	2030	2035	2045	2060	2075
3,702	3,762	3,749	3,751	3,873	3,882

Water Demand Projections

How much water is needed to meet Oklahomans' needs?

Basin 54 accounts for approximately 3% of the overall water demands of the Northwest Region.



Total Demand by Sector (AFY)

	2020	2030	2035	2045	2060	2075
Self-supplied Domestic	82	84	83	82	83	82
Self-supplied Industrial	-	-	-	-	-	-
Crop Irrigation	14,199	14,747	14,747	14,747	14,747	14,747
Livestock	737	740	747	751	761	775
Oil & Gas	412	412	412	412	412	412
Public Supply	464	475	469	458	461	447
Thermoelectric Power	-	-	-	-	-	-
Total	15,896	16,458	16,459	16,452	16,464	16,464

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	1	1	1	1	1	4%
Alluvial Groundwater Depletion	2	2	2	2	2	4%
Bedrock Groundwater Depletion	10,611	10,611	10,606	10,612	10,608	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)
1,200	No	Yes	456,470

- 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 54 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	Ineffective 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	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.