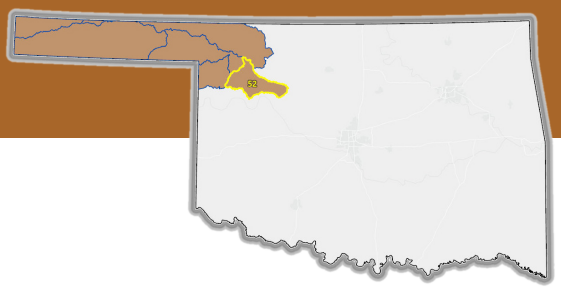
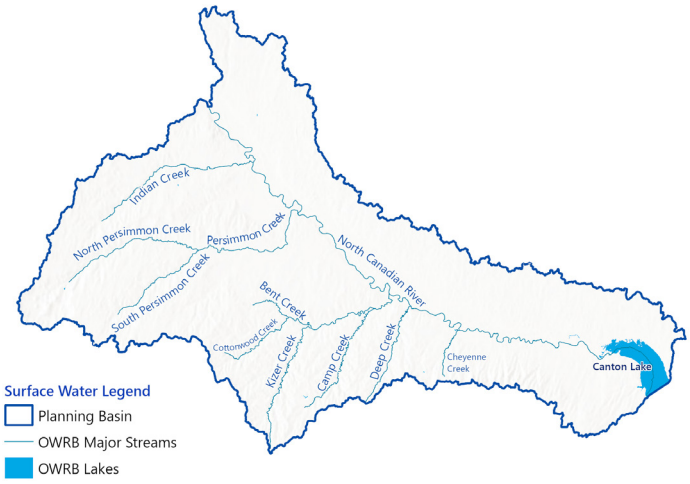
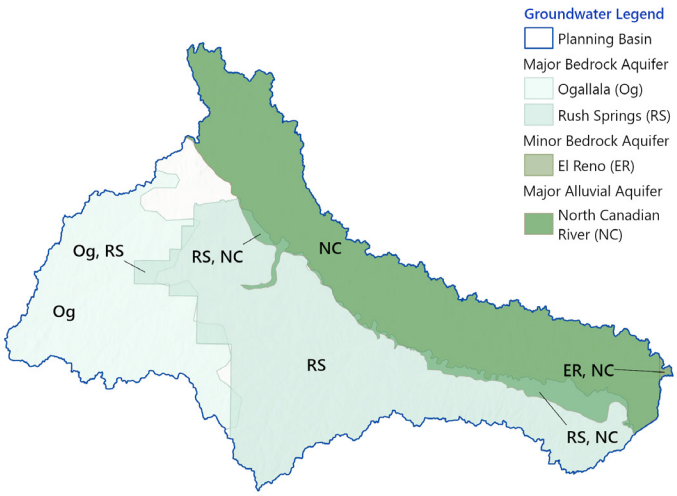
BASIN 52

Upper North Canadian River - 1
Northwest Region







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

SUMMARY

- Basin 52 - Upper North Canadian River - 1 demands are supplied by a combination of surface water and groundwater.
- Water demand (withdrawal) is projected to increase by 2,956 acre-feet per year (23%) between 2020 and 2075.
- Physical surface water gaps are projected in Basin 52 as early as 2030 and will continue through 2075.
- Physical alluvial groundwater depletions are projected in Basin 52 as early as 2030 and will continue through 2075.
- Physical bedrock groundwater depletions are projected in Basin 52 as early as 2030 and will continue through 2075.
- Surface water is fully allocated, limiting diversions to existing permitted amounts.
- Basin 52 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

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Population

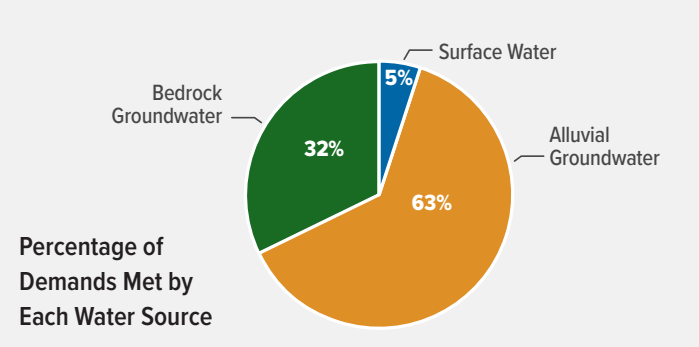
How is the population expected to change in the future?

2020	2030	2035	2045	2060	2075
10,790	11,054	11,175	11,585	12,590	13,222

Water Demand Projections

How much water is needed to meet Oklahomans' needs?

Basin 52 accounts for approximately 2% of the overall water demands of the Northwest Region.



Total Demand by Sector (AFY)

	2020	2030	2035	2045	2060	2075
Self-supplied Domestic	110	116	118	126	143	155
Self-supplied Industrial	-	-	-	-	-	-
Crop Irrigation	10,124	12,022	12,104	12,283	12,579	12,893
Livestock	1,164	1,158	1,165	1,163	1,163	1,170
Oil & Gas	624	624	624	624	624	624
Public Supply	755	768	773	793	847	877
Thermoelectric Power	164	111	106	136	159	179
Total	**12,942**	**14,798**	**14,890**	**15,126**	**15,515**	**15,898**

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	8	8	6	6	6	7%
Alluvial Groundwater Depletion	784	823	699	665	733	42%
Bedrock Groundwater Depletion	2,840	2,869	2,943	3,064	3,185	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)
-	No	No	785,180

1. If, yes – basin wholly or partially subject to the provisions of the 2016 Water Settlement Agreement.
2. 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 52 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.