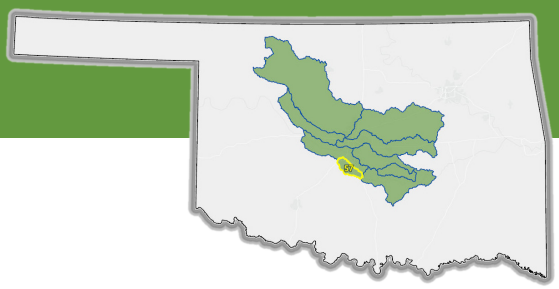
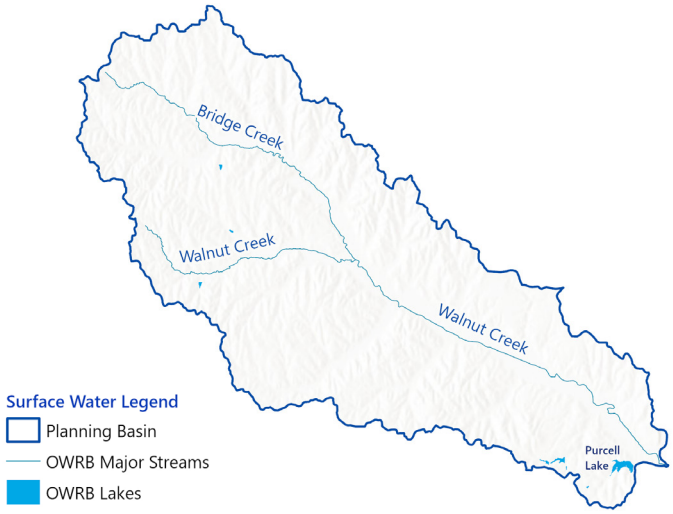
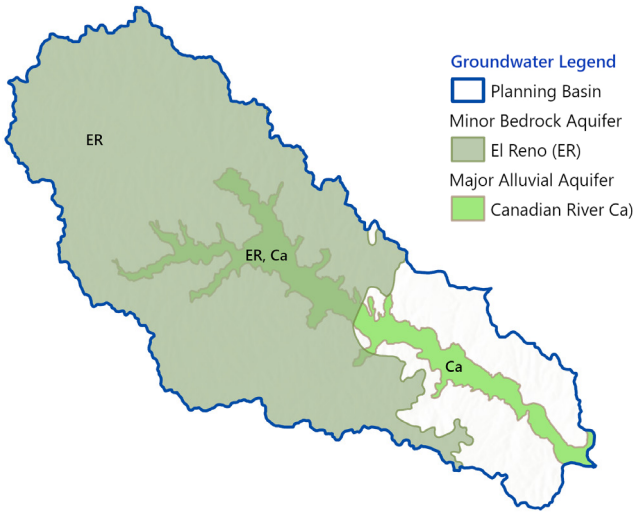
BASIN 57

Lower Canadian River - 2 / Central Region







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

SUMMARY

- Basin 57 - Lower Canadian River - 2 demands are supplied by a combination of surface water and groundwater.
- Water demand (withdrawal) is projected to increase by 330 acre-feet per year (13%) between 2020 and 2075.
- Physical surface water gaps are projected in Basin 57 as early as 2030 and will continue through 2075.
- Physical alluvial groundwater depletions are projected in Basin 57 as early as 2030 and will continue through 2075.
- Physical bedrock groundwater depletions are projected in Basin 57 as early as 2030 and will continue through 2075.
- Basin 57 is projected to have surface water available for appropriation through 2075, but its permitting may be subject to provisions of the 2016 Water Settlement Agreement.
- Basin 57 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

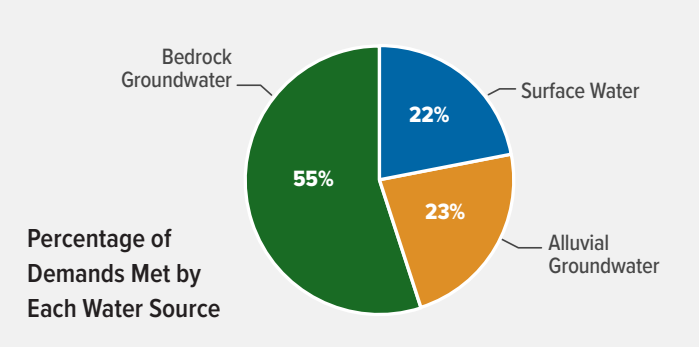
How is the population expected to change in the future?

2020	2030	2035	2045	2060	2075
13,630	13,827	13,932	14,334	14,995	15,728

Water Demand Projections

How much water is needed to meet Oklahomans' needs?

Basin 57 accounts for approximately 1% of the overall water demands of the Central Region.



Total Demand by Sector (AFY)

	2020	2030	2035	2045	2060	2075
Self-supplied Domestic	654	662	667	683	711	743
Self-supplied Industrial	-	-	-	-	-	-
Crop Irrigation	120	242	240	237	236	236
Livestock	305	297	296	289	279	271
Oil & Gas	343	343	343	343	343	343
Public Supply	1,116	1,132	1,139	1,170	1,220	1,277
Thermoelectric Power	-	-	-	-	-	-
Total	**2,538**	**2,676**	**2,685**	**2,722**	**2,789**	**2,869**

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	110	109	109	108	109	28%
Alluvial Groundwater Depletion	7	9	20	38	60	35%
Bedrock Groundwater Depletion	1,432	1,439	1,465	1,510	1,564	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)
41,700	Yes	No	230,100

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 57 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 When Paired with Demand Management/ Agriculture Options
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.