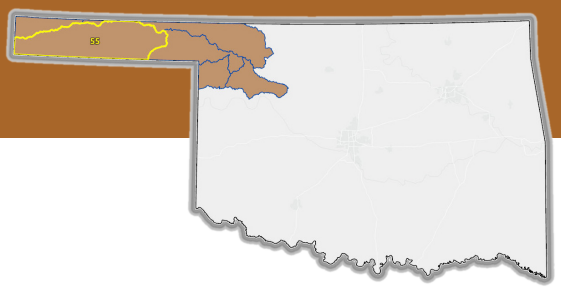
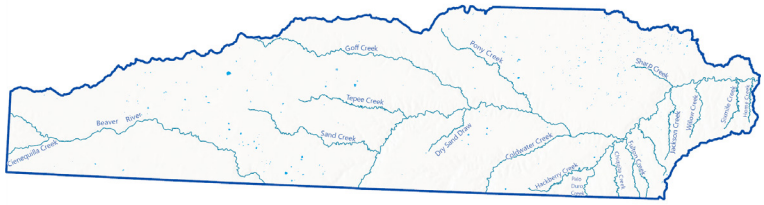
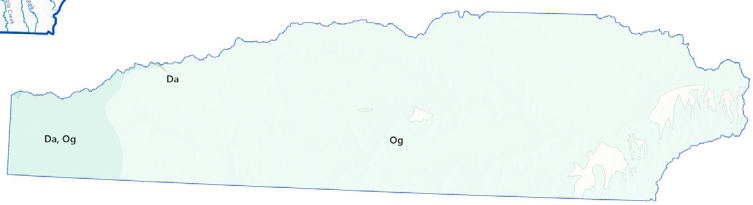
BASIN 55

North Canadian Headwaters Northwest Region







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

SUMMARY

- Basin 55 - North Canadian Headwaters demands are supplied by a combination of surface water and groundwater.
- Water demand (withdrawal) is projected to increase by 14,730 acre-feet per year (3%) between 2020 and 2075.
- Physical surface water gaps are projected in Basin 55 as early as 2030 and will continue through 2075.
- There are no alluvial groundwater demands in this basin.
- Physical bedrock groundwater depletions are projected in Basin 55 as early as 2030 and will continue through 2075.
- Surface water is fully allocated, limiting diversions to existing permitted amounts.
- Basin 55 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

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

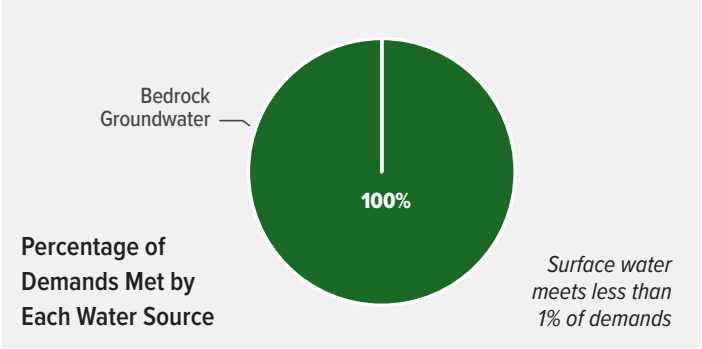
How is the population expected to change in the future?

2020	2030	2035	2045	2060	2075
23,288	22,251	22,144	21,887	21,290	20,600

Water Demand Projections

How much water is needed to meet Oklahomans' needs?

Basin 55 accounts for approximately 69% of the overall water demands of the Northwest Region.



Total Demand by Sector (AFY)

	2020	2030	2035	2045	2060	2075
Self-supplied Domestic	108	105	102	96	93	86
Self-supplied Industrial	2,946	2,872	2,866	2,853	2,787	2,718
Crop Irrigation	420,589	427,859	429,099	431,302	433,699	434,735
Livestock	10,257	10,425	10,567	10,768	11,096	11,495
Oil & Gas	210	210	210	210	210	210
Public Supply	2,895	2,753	2,732	2,681	2,596	2,491
Thermoelectric Power	-	-	-	-	-	-
Total	**434,006**	**444,225**	**445,576**	**447,910**	**450,481**	**451,736**

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	4	5	9	12	14	58%
Alluvial Groundwater Depletion	-	-	-	-	-	No AGW Demand
Bedrock Groundwater Depletion	422,563	423,861	426,128	428,605	429,749	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	3,752,410

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 55 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	Ineffective 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.