

# CONSERVATION FACT SHEET



## City of Duncan

SDWIS ID: OK1010809

County: Stephens

OCWP Basin: Beaver-Cache Region, Basin 26



### Existing Supplies

Surface water from Waurika Lake MCD, Lake Humphreys, and Lake Fuqua.

### Population and Demand Projections

Projection	2020	2030	2040	2050	2060
Population	22,762	22,973	23,235	23,607	24,070
Demand (AFY)	5,056	5,103	5,161	5,244	5,347

Source: OCWP; AFY: acre-feet per year

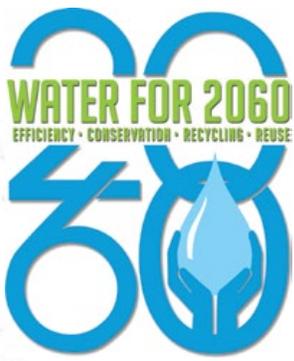
### Future Water Shortages

Basin 26 in south-central Oklahoma was identified as one of the state’s water supply “hot spots” in the 2012 Oklahoma Comprehensive Water Plan. Basin 26 has fully allocated surface water supplies, and groundwater is known to have water quality issues.

### Reducing Water Needs Through Conservation: Basin 26

Conservation Activities	2060 Surface Water Gap, AFY	2060 Surface Water Gap Probability, %
2012 Update to OCWP Existing Condition	110	88
With enhanced conservation programs in Duncan, Comanche, and Stephens County RWD #3	40	76

**Conservation** programs can reduce potable water demands, which in turn can reduce fresh water supply use. Indoor conservation measures can reduce year-round demands, while outdoor conservation helps dampen the peak demands that often drive capital water supply and infrastructure projects. Conservation measures reduce water demand through every day activities, while drought management actions are those we take in response to short term reductions in supply (like Comanche’s mandatory water use restrictions through the recent severe drought conditions, or temporary responses to infrastructure failures).



## Conservation Programs

Duncan already has implemented several conservation measures, such as metering customers' water use, reducing non-revenue water, and on-going public education activities. Additional conservation programs were analyzed for potential water savings and implementation costs. The conservation measures in the table are those that were identified as being potentially effective for implementing in Duncan's service area. If these programs are implemented, Duncan could see a 5% reduction in its fresh water use by 2020.

Conservation Activities	Estimated Cumulative Water Savings through 2020 (AFY)	Estimated Cumulative Program Cost through 2020 (\$)	Estimated Unit Cost (\$/AF saved)
High efficiency fixture ordinance	20	\$0	\$0
Permanent odd/even outdoor watering ordinance	Undefined <sup>1</sup>	\$0	N/A
Expanded public information/education programs <sup>2</sup>	101	\$52,000 <sup>3</sup>	\$400
Implement conservation water rates	26	\$25,000 - \$50,000 <sup>4</sup>	\$1,400
Water audits	27	\$77,000 <sup>5</sup>	\$2,900

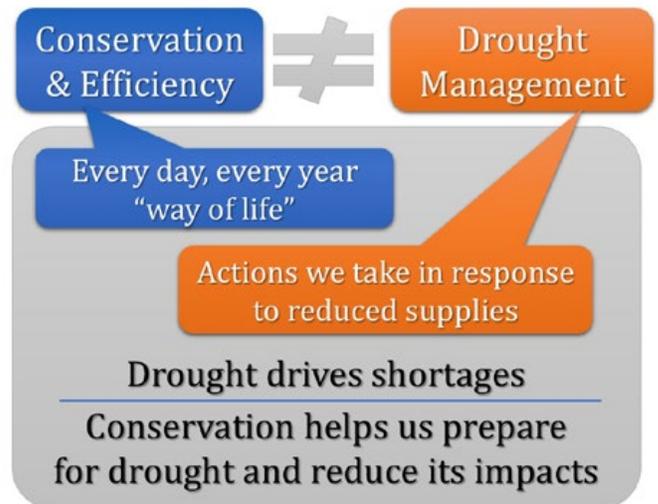
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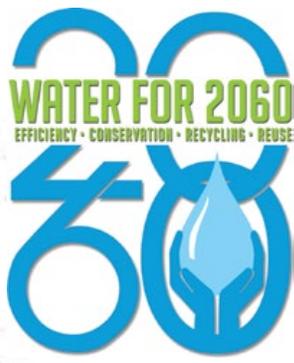
1. Making odd/even watering restrictions permanent may not result in water savings. However, it can reduce peak demands and defer or reduce the need for infrastructure capacity expansions.
2. Enhances the visibility of water issues and supports other conservation programs.
3. Includes development and distribution of communication materials, presentations to civic and student groups, tours of water facilities, etc. (approx. \$10,000/year).
4. Cost to conduct a one-time cost-of-service and rate study.
5. Costs to conduct audits for 105 households per year (94 single family and 11 multi-unit households, approx. \$19,300/year).

## Statewide Applicability

Conservation can reduce fresh water demands cost-effectively, using measures and programs that are tailored to each community. In many cases, demand reductions through conservation are less expensive than implementing new sources of supply. In most areas, a combination of conservation and new supplies can be used to efficiently and cost-effectively meet current and future demands. In Basin 26, this analysis demonstrated that even modest reductions in demand (5%) can result in significant reductions in anticipated supply shortages. Similar results would be expected in other basins across Oklahoma.

### Conservation helps reduce the impacts of the next drought





# CONSERVATION FACT SHEET



US Army Corps  
of Engineers®

## Comanche Public Works

SDWIS ID: OK2006905

County: Stephens

OCWP Basin: Beaver-Cache Region, Basin 26



### Existing Supplies

Surface water from Waurika Lake.

### Population and Demand Projections

Projection	2020	2030	2040	2050	2060
Population	1,711	1,733	1,755	1,777	1,821
Demand (AFY)	485	491	497	504	516

Source: OCWP; AFY: acre-feet per year

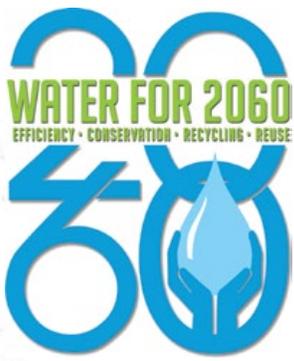
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### Reducing Water Needs Through Conservation: Basin 26

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With enhanced conservation programs in Duncan, Comanche, and Stephens County RWD #3	40	76

**Conservation** programs can reduce potable water demands, which in turn can reduce fresh water supply use. Indoor conservation measures can reduce year-round demands, while outdoor conservation helps dampen the peak demands that often drive capital water supply and infrastructure projects. Conservation measures reduce water demand through every day activities, while drought management actions are those we take in response to short term reductions in supply (like Comanche's mandatory water use restrictions through the recent severe drought conditions, or temporary responses to infrastructure failures).



## Conservation Programs

Comanche Public Works already has implemented several conservation measures, such as metering customers' water use and public education. Additional conservation programs were analyzed for potential water savings and implementation costs. Based on feedback received from staff, the following programs were combined into a conservation program and used to estimate potential water savings. If these programs are implemented, Comanche could see a 25% reduction in its fresh water use by 2020.

Conservation Activities	Estimated Cumulative Water Savings through 2020 (AFY)	Estimated Cumulative Program Cost through 2020 (\$)	Estimated Unit Cost (\$/AF saved)
High efficiency fixtures ordinance	1.5	\$0	\$0
Reduce non-revenue water	25	\$15,000 <sup>2</sup>	\$600
Public information and education programs <sup>1</sup>	56	\$3,500 <sup>3</sup>	\$700
Water audits	3	\$5,000 <sup>4</sup>	\$1,700
Conservation water rates	3	\$25,000-\$50,000 <sup>5</sup>	\$12,500

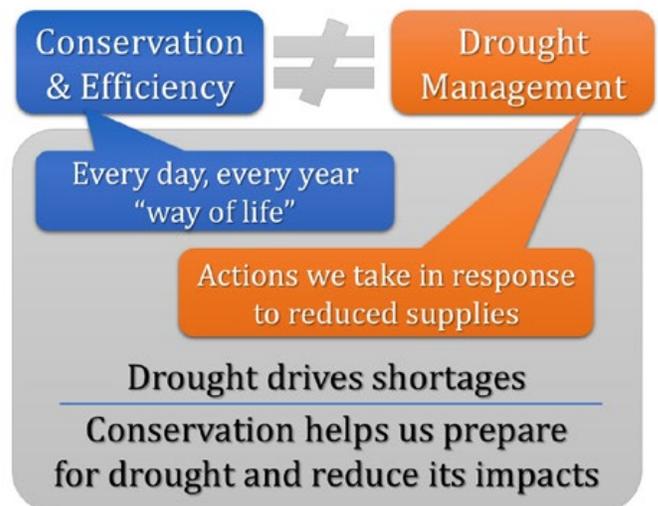
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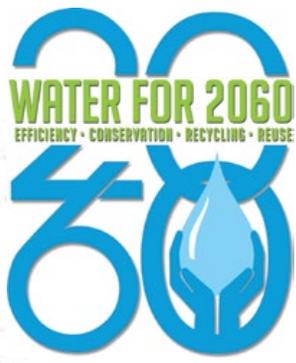
1. Enhances the visibility of water issues and supports other conservation programs.
2. Costs associated with distribution system leak detection and repair program.
3. Includes development and distribution of communication materials, presentations to civic and student groups, tours of water facilities, etc. (approx. \$700/year).
4. Costs to conduct audits for 5 households per year (4 single family and 1 multi-unit households, approx. \$1,000/year).
5. Cost to conduct a one-time cost-of-service and rate study.

## Statewide Applicability

Conservation can reduce fresh water demands cost-effectively, using measures and programs that are tailored to each community. In many cases, demand reductions through conservation are less expensive than implementing new sources of supply. In most areas, a combination of conservation and new supplies can be used to efficiently and cost-effectively meet current and future demands. In Basin 26, this analysis demonstrated that even modest reductions in demand (5%) can result in significant reductions in anticipated supply shortages. Similar results would be expected in other basins across Oklahoma.

**Conservation helps reduce the impacts of the next drought**





# CONSERVATION FACT SHEET



## Stephens County Rural Water District #3

SDWIS ID: OK2006905

County: Stephens

OCWP Basin: Beaver-Cache Region, Basin 26



### Existing Supplies

Groundwater.

### Population and Demand Projections

Projection	2020	2030	2040	2050	2060
Population	1,629	1,644	1,663	1,690	1,722
Demand (AFY)	136	137	139	141	144

Source: OCWP; AFY: acre-feet per year

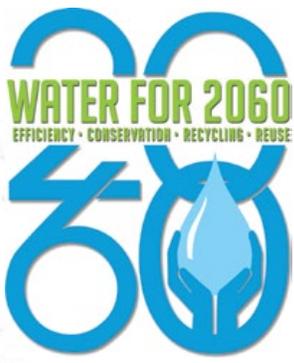
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## Conservation Programs

Stephens County RWD #3 already has implemented several conservation measures, such as metering customers' water use and reducing non-revenue water. Additional conservation programs were analyzed for potential water savings and implementation costs. Based on feedback received from staff, the following programs were combined into a conservation program and used to estimate potential water savings. If these programs are implemented, Stephens County RWD #3 could see a 13% reduction in its fresh water use by 2020.

Conservation Activities	Estimated Cumulative Water Savings through 2020 (AFY)	Estimated Cumulative Program Cost through 2020 (\$)	Estimated Unit Cost (\$/AF saved)
Public information and education programs <sup>1</sup>	15	\$2,900 <sup>2</sup>	\$200
Water audits	1.0	\$4,000 <sup>3</sup>	\$4,000
Conservation water rates	1.3	\$25,000-\$50,000 <sup>4</sup>	\$28,800

**Notes:**

- Enhances the visibility of water issues and supports other conservation programs.
- Includes development and distribution of communication materials, presentations to civic and student groups, tours of water facilities, etc. (approx. \$600/year).
- Costs to conduct audits for 5 households per year (4 single family and 1 multi-unit households, approx. \$1,000/year).
- Cost to conduct a one-time cost-of-service and rate study.

## Statewide Applicability

Conservation can reduce fresh water demands cost-effectively, using measures and programs that are tailored to each community. In many cases, demand reductions through conservation are less expensive than implementing new sources of supply. In most areas, a combination of conservation and new supplies can be used to efficiently and cost-effectively meet current and future demands. In Basin 26, this analysis demonstrated that even modest reductions in demand (5%) can result in significant reductions in anticipated supply shortages. Similar results would be expected in other basins across Oklahoma.

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