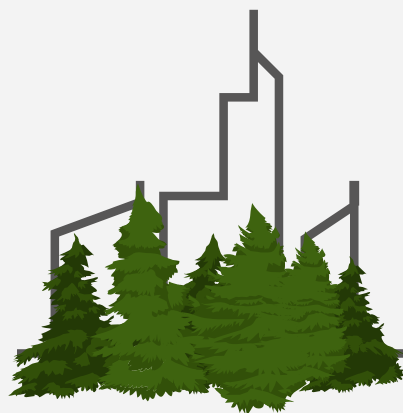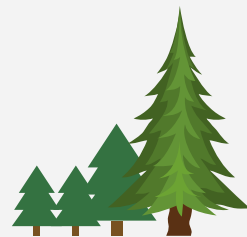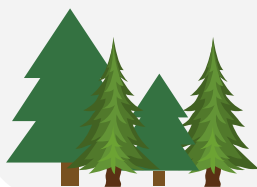# URBAN TREE BENEFITS

Trees and/or green space in a city play a crucial role in maintaining and providing numerous environmental and economic benefits to the community. Trees serve structural and functional benefits, aesthetic beauty, and privacy to people while removing air pollutants, sequestering atmospheric carbon, and managing storm water runoff. In these fact sheets, we illustrate the benefits of urban trees in eight cities out of 46 involved in the Tree City USA program in Arkansas. Community engagement, urban tree care, and urban forest management are essential requirements to become a Tree City USA. These fact sheets provide estimates of urban tree benefits in terms of dollars value and meaningful comparisons, which will increase your understanding of the benefits of city green spaces.

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URBAN TREE BENEFITS
FAYETTEVILLE, ARKANSAS

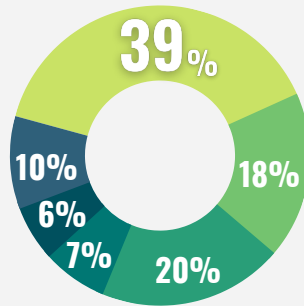Air pollution removal   Carbon sequestration   Clean air/oxygen production   Avoided water runoff   Energy saving
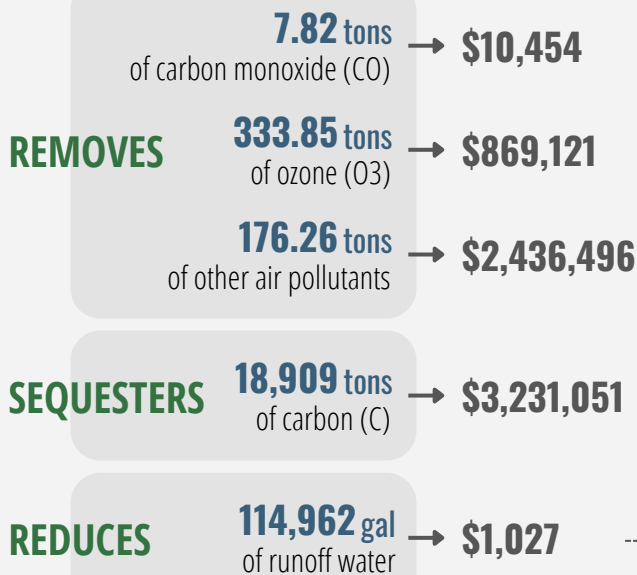
Fayetteville is the second-largest city in Arkansas and is located in Washington County. As of the 2020 census, it had a population of 93,949 in a total area of 55.2 mi^2. The city enrolled in the Tree City USA program in 1995. Urban trees have provided environmental and economic benefits to the communities of Fayetteville for 27 years.

FAYETTEVILLE LAND COVER

- 39% Tree/shrub
- 18% Soil/bare ground
- 20% Grass/herbaceous
- 7%
- 6%
- 10%
- Roads
- Buildings
- Other

ANNUAL URBAN TREE BENEFITS ACCRUED TO FAYETTEVILLE

In total, urban trees in Fayetteville have stored **474,782** tons of carbon, equivalent to **$81,143,807**

REMOVES

7.82 tons of carbon monoxide (CO) → **$10,454**

333.85 tons of ozone (O3) → **$869,121**

176.26 tons of other air pollutants → **$2,436,496**

An average automobile emits about **5.1** short tons of CO2 per year

The trees of Fayetteville take out the CO2 emissions of **13,700 automobiles** each year
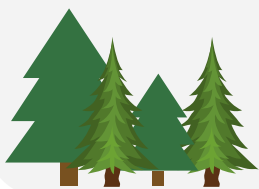
SEQUESTERS

18,909 tons of carbon (C) → **$3,231,051**

REDUCES

114,962 gal of runoff water → **$1,027**

The trees of Fayetteville save water for **1,402 people**

Average water use per person is about **82** gal/day

Prepared by Pradip Saud, Sagar Godar Chhetri, Ana Gutierrez, and Matthew Pelkki

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Data are from i-Tree Canopy
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Contact us at forestbusiness@uamont.edu

URBAN TREE BENEFITS
FORT SMITH, ARKANSAS

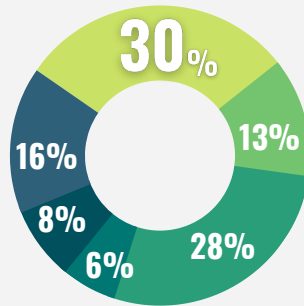Air pollution removal   Carbon sequestration   Clean air/oxygen production   Avoided water runoff   Energy saving
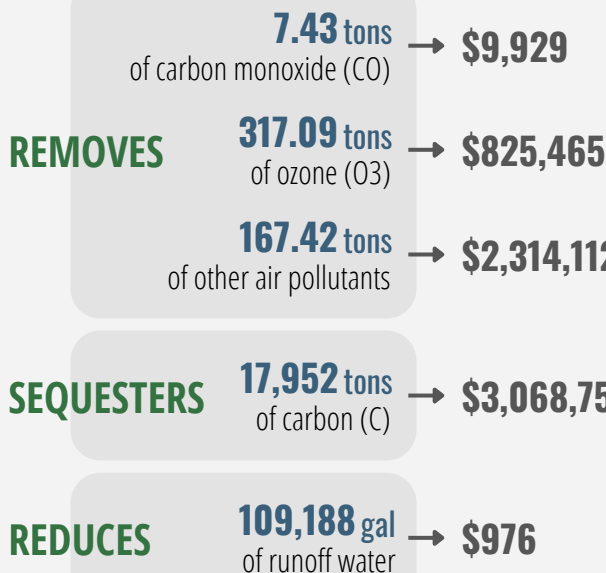
Fort Smith is the third-largest city in Arkansas and is situated in Sebastian County. As of the 2020 census, it had a population of 89,142 in a total area of 68.2 mi^2. The city enrolled in the Tree City USA program in 2006. Urban trees have provided environmental and economic benefits to the communities of Fort Smith for 16 years.

FORT SMITH LAND COVER

- Tree/shrub — 30%
- Soil/bare ground — 13%
- Grass/herbaceous — 28%
- Roads — 6%
- Buildings — 8%
- Other — 16%

ANNUAL URBAN TREE BENEFITS ACCRUED TO FORT SMITH

In total, urban trees in Fort Smith have stored **450,934** tons of carbon, equivalent to **$77,068,006**

REMOVES

7.43 tons of carbon monoxide (CO) → **$9,929**

317.09 tons of ozone (O3) → **$825,465**

167.42 tons of other air pollutants → **$2,314,112**

An average automobile emits about **5.1** short tons of CO2 per year

The trees of Fort Smith take out the CO2 emissions of **13,011 automobiles** each year

SEQUESTERS

17,952 tons of carbon (C) → **$3,068,757**

REDUCES

109,188 gal of runoff water → **$976**

The trees of Fort Smith save water for **1,332 people**

Average water use per person is about **82** gal/day

Prepared by Pradip Saud, Sagar Godar Chhetri, Ana Gutierrez, and Matthew Pelkki

URBAN TREE BENEFITS
LITTLE ROCK, ARKANSAS

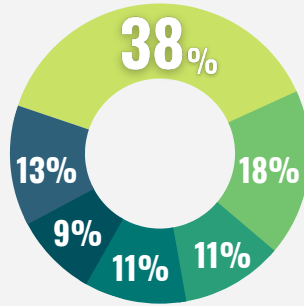Air pollution removal Carbon sequestration Clean air/oxygen production Avoided water runoff Energy saving
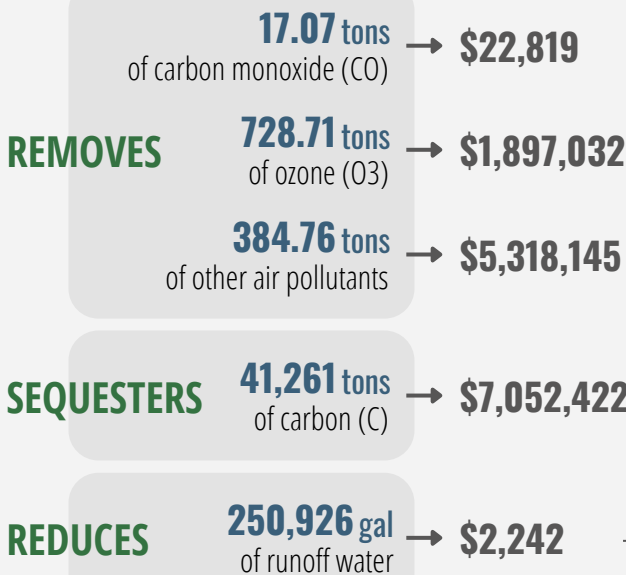
Little Rock is the capital and most populous city of Arkansas and is located in Pulaski County. As of the 2020 census, it had a population of 202,514 in a total area of 123 mi^2. The city enrolled in the Tree City USA program in 2001. Urban trees have provided environmental and economic benefits to the communities of Little Rock for 21 years.

38%
18%
11%
11%
9%
13%

LITTLE ROCK LAND COVER
- Tree/shrub
- Soil/bare ground
- Grass/herbaceous
- Roads
- Buildings
- Other

ANNUAL URBAN TREE BENEFITS ACCRUED TO LITTLE ROCK

In total, urban trees in Little Rock have stored **1,036,299** tons of carbon, equivalent to **$177,112,786**

REMOVES

17.07 tons of carbon monoxide (CO) → **$22,819**

728.71 tons of ozone (O3) → **$1,897,032**

384.76 tons of other air pollutants → **$5,318,145**

An average automobile emits about **5.1** short tons of CO2 per year

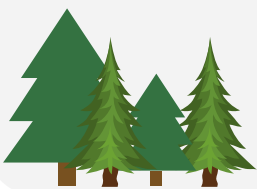The trees of Little Rock take out the CO2 emissions of **29,902 automobiles** each year

SEQUESTERS

41,261 tons of carbon (C) → **$7,052,422**

REDUCES

250,926 gal of runoff water → **$2,242**

The trees of Little Rock save water for **3,060 people**

Average water use per person is about **82** gal/day

Prepared by Pradip Saud, Sagar Godar Chhetri, Ana Gutierrez, and Matthew Pelkki

URBAN TREE BENEFITS
MCGEHEE, ARKANSAS

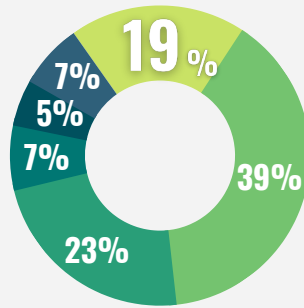Air pollution removal Carbon sequestration Clean air/oxygen production Avoided water runoff Energy saving
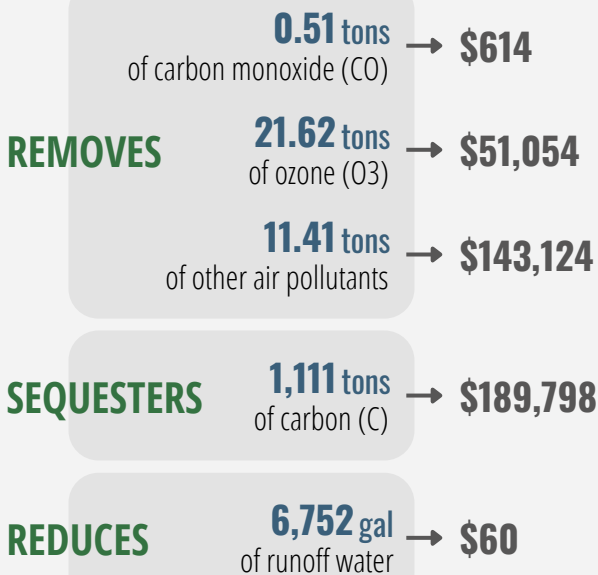
McGehee is located in Desha County. As of the 2020 census, it had a population of 3,849 in a total area of 6.71 mi^2. The city enrolled in the Tree City USA program in 2019. Urban trees have provided environmental and economic benefits to the communities of McGehee for 3 years.

MCGEHEE LAND COVER

- Tree/shrub
- Soil/bare ground
- Grass/herbaceous
- Roads
- Buildings
- Other

19%
39%
23%
7%
5%
7%

In total, urban trees in McGehee have stored **27,885** tons of carbon, equivalent to **$4,766,531**

ANNUAL URBAN TREE BENEFITS ACCRUED TO MCGEHEE

REMOVES

0.51 tons of carbon monoxide (CO) → $614

21.62 tons of ozone (O3) → $51,054

11.41 tons of other air pollutants → $143,124

SEQUESTERS **1,111** tons of carbon (C) → $189,798

REDUCES **6,752** gal of runoff water → $60

An average automobile emits about **5.1** short tons of CO2 per year

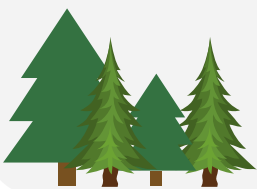The trees of McGehee take out the CO2 emissions of **804 automobiles** each year

The trees of McGehee save water for **82 people**

Average water use per person is about **82** gal/day

Prepared by Pradip Saud, Sagar Godar Chhetri, Ana Gutierrez, and Matthew Pelkki

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Contact us at forestbusiness@uamont.edu

URBAN TREE BENEFITS
MONTICELLO, ARKANSAS

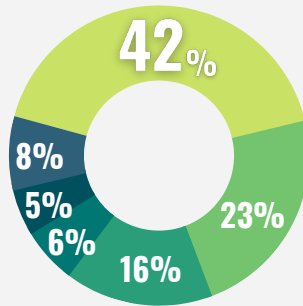Air pollution removal   Carbon sequestration   Clean air/oxygen production   Avoided water runoff   Energy saving
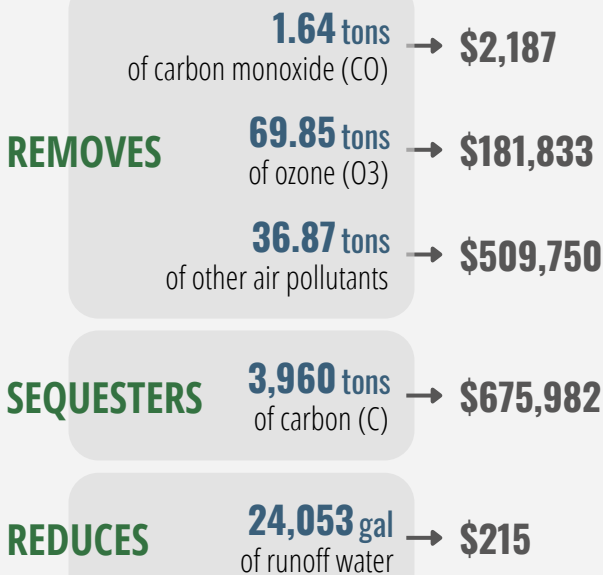
Monticello is one of the largest towns in Southeast Arkansas and is located in Drew County. As of the 2020 census, it had a population of 8,442 in a total area of 10.74 mi^2. The city enrolled in the Tree City USA program in 2008. Urban trees have provided environmental and economic benefits to the communities of Monticello for 14 years.

42%
23%
16%
6%
5%
8%

MONTICELLO LAND COVER
- Tree/shrub
- Soil/bare ground
- Grass/herbaceous
- Roads
- Buildings
- Other

ANNUAL URBAN TREE BENEFITS ACCRUED TO MONTICELLO

In total, urban trees in Monticello have stored **99,330** tons of carbon, equivalent to **$16,976,454**

REMOVES

1.64 tons of carbon monoxide (CO) → **$2,187**

69.85 tons of ozone (O3) → **$181,833**

36.87 tons of other air pollutants → **$509,750**

An average automobile emits about **5.1** short tons of CO2 per year

The trees of Monticello take out the CO2 emissions of **2,865 automobiles** each year

SEQUESTERS

3,960 tons of carbon (C) → **$675,982**

REDUCES

24,053 gal of runoff water → **$215**

The trees of Monticello save water for **293 people**

Average water use per person is about **82** gal/day

Prepared by Pradip Saud, Sagar Godar Chhetri, Ana Gutierrez, and Matthew Pelkki

URBAN TREE BENEFITS
PINE BLUFF, ARKANSAS

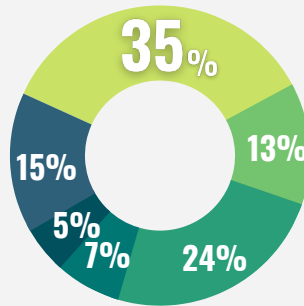Air pollution removal | Carbon sequestration | Clean air/oxygen production | Avoided water runoff | Energy saving
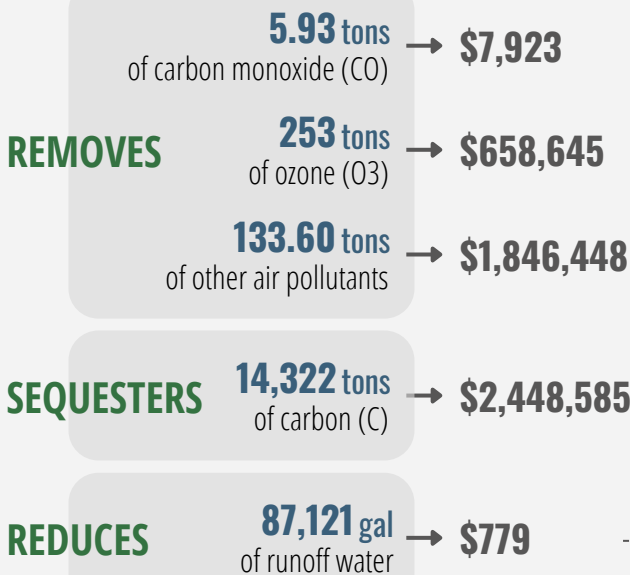
Pine Bluff is the tenth-largest city in Arkansas and is located in Jefferson County. As of the 2020 census, it had a population of 41,253 in a total area of 46.38 mi^2. The city enrolled in the Tree City USA program in 2013. Urban trees have provided environmental and economic benefits to the communities of Pine Bluff for 9 years.

PINE BLUFF LAND COVER

- Tree/shrub — 35%
- Soil/bare ground
- Grass/herbaceous
- Roads
- Buildings
- Other

35% · 13% · 24% · 7% · 5% · 15%

In total, urban trees in Pine Bluff have stored **359,799** tons of carbon, equivalent to **$61,493,152**

ANNUAL URBAN TREE BENEFITS ACCRUED TO PINE BLUFF

REMOVES
- **5.93** tons of carbon monoxide (CO) → **$7,923**
- **253** tons of ozone (O3) → **$658,645**
- **133.60** tons of other air pollutants → **$1,846,448**

SEQUESTERS
- **14,322** tons of carbon (C) → **$2,448,585**

REDUCES
- **87,121** gal of runoff water → **$779**

An average automobile emits about **5.1** short tons of CO2 per year

The trees of Pine Bluff take out the CO2 emissions of **10,383 automobiles** each year
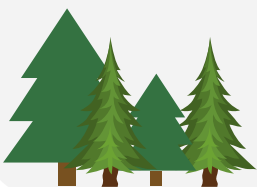
The trees of Pine Bluff save water for **1,062 people**

Average water use per person is about **82** gal/day

Prepared by Pradip Saud, Sagar Godar Chhetri, Ana Gutierrez, and Matthew Pelkki

URBAN TREE BENEFITS
STAR CITY, ARKANSAS

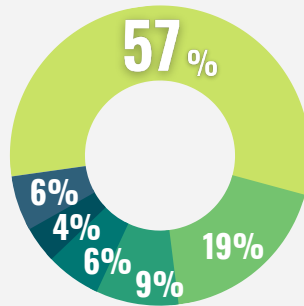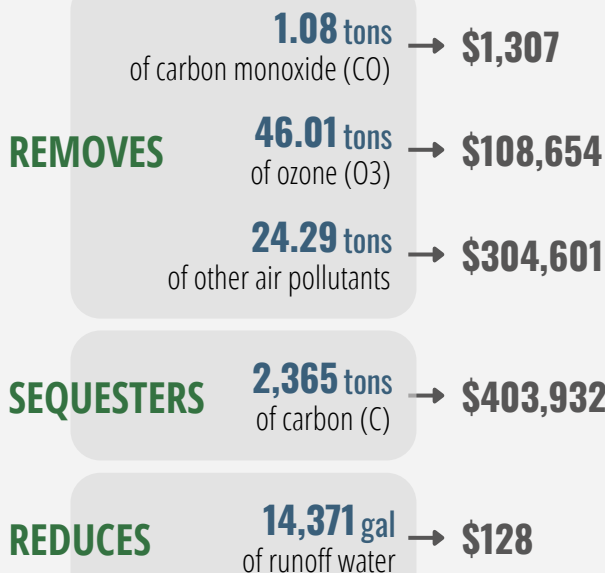Air pollution removal Carbon sequestration Clean air/oxygen production Avoided water runoff Energy saving

Star City is located in Lincoln County. As of the 2020 census, it had a population of 2,173 in a total area of 4.8 mi^2. The city enrolled in the Tree City USA program in 2012. Urban trees have provided environmental and economic benefits to the communities of Star City for 10 years.

57 %

19%

9%

6%

4%

6%

STAR CITY LAND COVER
- Tree/shrub
- Soil/bare ground
- Grass/herbaceous
- Roads
- Buildings
- Other

ANNUAL URBAN TREE BENEFITS ACCRUED TO STAR CITY

In total, urban trees in Star City have stored **59,356** tons of carbon, equivalent to **$10,144,254**

REMOVES

1.08 tons of carbon monoxide (CO) → $1,307

46.01 tons of ozone (O3) → $108,654

24.29 tons of other air pollutants → $304,601

An average automobile emits about **5.1** short tons of CO2 per year

The trees of Star City take out the CO2 emissions of **1,713 automobiles** each year
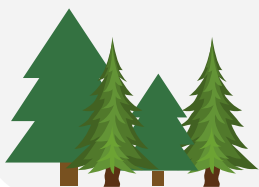
SEQUESTERS

2,365 tons of carbon (C) → $403,932

REDUCES

14,371 gal of runoff water → $128

The trees of Star City save water for **175 people**

Average water use per person is about **82** gal/day

Prepared by Pradip Saud, Sagar Godar Chhetri, Ana Gutierrez, and Matthew Pelkki

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URBAN TREE BENEFITS
WARREN, ARKANSAS

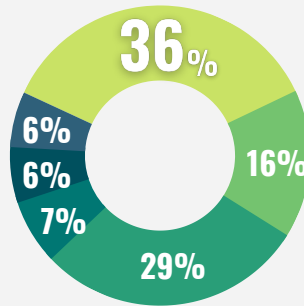Air pollution removal   Carbon sequestration   Clean air/oxygen production   Avoided water runoff   Energy saving
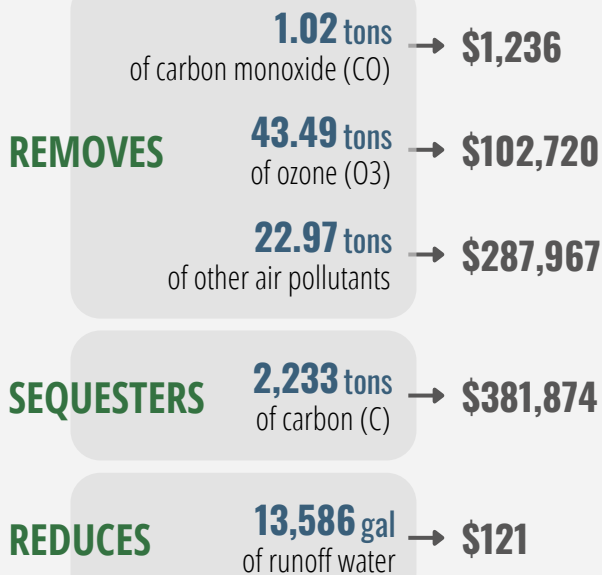
Warren is located in Bradley County. As of the 2020 census, it had a population of 5,453 in a total area of 7.06 mi^2. The city enrolled in the Tree City USA program in 2005. Urban trees have provided environmental and economic benefits to the communities of Warren for 17 years.

WARREN LAND COVER

36% 16% 29% 7% 6% 6%

- Tree/shrub
- Soil/bare ground
- Grass/herbaceous
- Roads
- Buildings
- Other

In total, urban trees in Warren have stored **56,111** tons of carbon, equivalent to **$9,590,294**

ANNUAL URBAN TREE BENEFITS ACCRUED TO WARREN

REMOVES

1.02 tons of carbon monoxide (CO) → **$1,236**

43.49 tons of ozone (O3) → **$102,720**

22.97 tons of other air pollutants → **$287,967**

SEQUESTERS

2,233 tons of carbon (C) → **$381,874**

REDUCES

13,586 gal of runoff water → **$121**

An average automobile emits about **5.1** short tons of CO2 per year

The trees of Warren take out the CO2 emissions of **1,620 automobiles** each year

The trees of Warren save water for **166 people**

Average water use per person is about **82** gal/day

Prepared by Pradip Saud, Sagar Godar Chhetri, Ana Gutierrez, and Matthew Pelkki