

Arizona Regional Reference Packet

Maricopa County	1
Climate Impacts	1
Extreme Heat	1
Drought	4
Wildfires	4
Monsoons	4
Pollution Impacts	5
Pollution, Generally	5
Air Pollution	5
Water Pollution	6
Clean Energy	6
Clean Energy Saves Money	6
Maricopa County's Growing Clean Energy Economy	7
Pima County	8
Climate Impacts	8
Extreme Heat	8
Drought	9
Wildfires	9
Monsoons	9
Pollution Impacts	10
Air Pollution	10
Water Pollution	10
Clean Energy	10
Clean Energy Saves Money	10
Pima County's Growing Clean Energy Economy	11

Maricopa County

Climate Impacts

Extreme Heat

- Phoenix is the [ninth-fastest](#) warming city in the nation, and the [city's design](#) makes the heat more dangerous.
- Heat-related [illnesses](#) in Arizona have skyrocketed during the summer months and continue to increase every year.

- As of September 9, Arizona's Maricopa County [confirmed](#) 202 heat-associated deaths, far more than the 175 confirmed by the same time last year.
- Data from the Maricopa County Public Health Department [shows](#) heat-related deaths most often occurred in environments lacking a functioning air conditioning unit, with nearly half of indoor heat deaths occurring in mobile homes.
- Over the next 20 years, Maricopa and Pima counties could see [upwards](#) of 120 additional deaths per 100,000 people from extreme heat
 - Maricopa County could see 56 [additional](#) heat-related deaths per 100,000 people over the next 20 years which is a 64% increase in heat-related deaths every year.
- By 2050, Phoenix is expected to be [almost unlivable](#) due to climate change.
- A recent report [found](#) that Phoenix's Latino and low-income communities experience more extreme heat than white or wealthy communities.
- Arizona is [home](#) to 651,100 outdoor workers, about 22% of the state's workforce, as of August 2021.
 - Arizona outdoor workers could lose up to [\\$2.6 billion](#) in earnings every year due to extreme heat, with the counties of Maricopa, Pima, and Pinal being hit hardest.
 - Construction and extraction workers in Arizona would [lose](#) the most annually at \$627.3 million per year followed by workers in installation, maintenance, and repair occupations at \$532.4 million annually.
 - The average Arizona outdoor worker would see [\\$1,800 per year](#) lost due to extreme heat and workers in Yuma, Maricopa, and Pinal counties would be most affected.
 - Arizona outdoor workers working in protective service occupations would lose the [most annual income](#) at about \$2,600, followed by installation, maintenance, and repair workers at about \$2,300 per year.
 - Arizona outdoor workers risk seeing [15 workdays lost](#) on average due to extreme heat, with Yuma, La Paz, and Maricopa counties hit the hardest.
- Arizona is [expected](#) to suffer worse than the rest of the country under climate change, costing 8% of GDP in Maricopa County alone.

- If [emissions](#) continue to rise unchecked, counties in Arizona could be among the worst hit by climate change, with losses of 10 to 20 percent or more of the counties' GDP.
- In Summer 2023, Maricopa County broke dozens of heat records.
 - Maricopa County [broke](#) its daily high record 29 times during July.
 - Phoenix [broke](#) its daily high record eight times during July: July 3 at 116, July 15 at 118, July 18 at 118, July 19 at 119, July 20 at 119, July 22 at 118, July 25 at 119, and July 26 at 118.
 - Maricopa County [broke](#) its daily high record 22 times during August.
 - Phoenix [broke](#) its daily high record four times during August: August 5 at 116, August 27 at 114, August 28 at 117, and August 29 at 116 degrees.
 - From June 30 to July 30, Phoenix, Arizona, had [31 consecutive days of temperatures above 110 degrees](#).
 - Phoenix had 17 days in July that hit 115 degrees or greater, [breaking](#) the previous record of seven days in August 2020.
 - From July 10 to July 26, Phoenix had [16 consecutive days of overnight lows at or above 90 degrees](#).
 - Phoenix had an average temperature of 102.8 degrees for July—the [hottest month on record for any U.S. city](#).
 - July 19 became Phoenix's [hottest calendar day](#) ever recorded, with a high of 119 degrees and a low of 97.
- In 2022, the City of Tempe had plans to [repurpose](#) one of its buildings into a shelter to help those during climate emergencies, like extreme heat during Arizona's summer months.
 - Being close to a light rail station, Tempe said they wanted to make sure it was [easily accessible](#) for people who would need to use it.
 - When open, the center will primarily be used as a community center, a daily place where people will be able to utilize resources to help find jobs or housing. During stretches of extreme heat, it will also be [used](#) as a temporary cooling center for people to beat the heat.

Drought

- The megadrought that has [gripped](#) the southwestern U.S. for the past 22 years is the worst in at least 1,200 years. Human-caused climate change is a major reason for the current drought's severity.
- Drought and rising temperatures have [lowered](#) the level of the Colorado River, threatening the 40 million Americans in Arizona and six other states who rely on it — including residents of Phoenix, which gets water from the Colorado by aqueduct.
- As of September 19, 2023, 86.1% of people in Maricopa County are [affected](#) by drought.
- In June 2023, Arizona [limited](#) construction around Phoenix as its water supply dwindled.

Wildfires

- There are [995,575 properties](#) – 60% of properties – in Maricopa County that have some risk of being affected by wildfire over the next 30 years.
 - In Maricopa County, [849,482 out of 1,430,681 homes](#) have a severe risk of being affected by wildfires over the next 30 years.
 - In Maricopa County, [26,488 out of 63,101 commercial properties](#) have a severe risk of being affected by wildfires over the next 30 years.
 - In Maricopa County, [1,538 out of 2,765 infrastructure facilities](#) have a major risk of being affected by wildfires over the next 30 years.

Monsoons

- Monsoon season [means](#) parts of Southeastern Arizona are at risk from flash flooding on an almost daily basis from late June or early July through September.
 - In August 2021, at least 10,000 Salt River Project and 2,000 Arizona Public Service customers in metro Phoenix were [without power](#) due to flooding from monsoon rains.
 - In 2017, torrential monsoon rains north of Phoenix, Arizona, led to devastating flash floods that [killed](#) at least nine people.
 - In Phoenix, floodwater submerged streets and overwhelmed entire neighborhoods as the city's water pumps were overpowered. The August 2016 monsoon was [described](#) as a hundred-year event.

- Dust storms during the early monsoon season also [impact](#) Maricopa County's communities, worsening already poor air quality:
 - In July 2018, a dust storm [formed](#) just outside Phoenix and tore a 300-mile path before dying out in southeastern California. The average dust storm usually [dies out](#) after about 25 or 50 miles.

Pollution Impacts

Pollution, Generally

- The [construction of interstates 10 and 17](#) plowed through Spanish-speaking neighborhoods in south Phoenix. The highways displaced 16,000 people, further segregated the city, and harmed the economic prospects for the neighborhoods' Latino residents for generations.
 - The construction led to [years of disinvestment](#), increased noise and air pollution, and reduced home values in the area.
 - The Hispanic community in Phoenix has [fought against](#) these projects for decades and has been ignored.
 - Experts [say](#) the residents who were forced to leave South Phoenix were given inadequate compensation.
- A 2012 [report](#) from the Arizona Republic found that more than 300,000 Phoenix residents were at risk of ingesting dangerous highway pollutants linked to premature death, premature births, and reduced lung function in children.
- In 2018, 262 Arizona children [tested](#) positive for elevated lead levels in their blood, including 164 in Maricopa County, which is home to most of the state's [Latino population](#).

Air Pollution

- According to the American Lung Association's 2023 State of the Air Report, [Phoenix](#) and [Maricopa County's](#) air are among the most polluted in the nation.
- The [Phoenix-Mesa metropolitan area](#) is the 5th most polluted city in the U.S. by ozone, the 7th in annual particle pollution, and 13th in 24-hour particle pollution.
- Maricopa County [received](#) F grades for the number of high ozone days and particle pollution in the American Lung Association's 2023 State of the Air Report.

- In 2016, the Phoenix-Mesa-Scottsdale [area](#) saw 110 days of “degraded” air quality, which made it one of the top five largest metro areas with the most days of smog.

Water Pollution

- Hundreds of [ZIP codes](#) in Arizona are at high risk for lead poisoning. While state toxicologists insist that lead paint is a bigger threat in Arizona than lead in water, according to the CDC there is [no safe level](#) of lead in drinking water.
 - State environmental regulators have found [elevated lead levels](#) in the water of nearly 70 schools in Maricopa County.

Clean Energy

Clean Energy Saves Money

- In Phoenix, 21.37% of all households and 46.53% of low-income households are extremely [energy-burdened](#), meaning their energy burden is more than twice the city median.
- Phoenix [ranks](#) seventh amongst U.S. cities where Latino families face the highest energy burdens. The share of income spent on energy costs is [20%](#) higher for the Hispanic population than it is for the general population.
 - In Phoenix, 34.77% of Latino households are extremely [energy-burdened](#), meaning their energy burden is more than twice the city median.
 - 25% of Hispanic households (94,575) in the Phoenix metropolitan area [experience](#) high energy burdens.
- Families with higher energy burdens are at [greater risk](#) of developing respiratory diseases and stress-related ailments.
- Under a transition to 100% clean energy in the electric, transportation, building, and industrial sectors by 2035, each American household stands to [save](#), on average, between \$1,050 and \$2,585 annually on their energy bills.
- Investment in clean energy and decreased spending on gasoline are [projected](#) to reduce average annual household energy spending by \$95 per year in 2030 and a cumulative \$6.2 billion through 2050 across all households in Arizona.
- With the widespread implementation of zero-emission transportation and electricity resources, Arizona could [experience \\$15.1 billion](#) in cumulative public health benefits by 2050.

- By 2050, Arizona could also [avoid 182,000 lost work days](#).
- Despite regional variances in gas and electricity costs, an analysis from the Union of Concerned Scientists found that charging a vehicle was more [cost-effective](#) than filling up at the pump across 50 major U.S. cities.
 - In Phoenix, the median EV driver could save between [\\$763 and \\$814 per year](#) compared with the cost of driving the average new gasoline vehicle.
 - In Mesa, the median EV driver could save between [\\$729 and \\$819 per year](#) compared with the cost of driving the average new gasoline vehicle.

Maricopa County's Growing Clean Energy Economy

- Since the passage of the Inflation Reduction Act, over \$1.31 billion in investments have been [announced](#) in clean energy projects that will create over 9,000 jobs in Maricopa County.
 - KORE Power is building a gigafactory in Buckeye, AZ, that will create 6,400 jobs. The company's CEO [applauded the IRA's passage](#), saying it provides an "incredible lift" to the gigafactory's development, which hopes to benefit the law's tax credits. Additionally, the company has said that it expects [demand for their batteries to increase](#) because of the IRA's passage.
 - After acquiring Sun Streams 3 from First Solar in February 2021, Longroad Energy completed financing for an Arlington, AZ, project in January 2023. [Longroad's CEO said](#) he believes the IRA will enable future developments and provide benefits to both utilities and ratepayers.
 - In January 2023, the DOI reported that the Ten West Link project would [create](#) 365 union construction jobs. The project is [projected](#) to not only modernize the energy infrastructure in the area but is also expected to strengthen grid reliability, improve efficiency, and potentially lower energy costs for consumers.
- According to E2's Clean Jobs America 2023 [report](#), Maricopa County ranked sixth in the nation for most clean energy jobs. Maricopa County is home to 47,775 clean energy jobs, including 10,239 in renewable generation, 1,705 in energy storage, 33,065 in energy efficiency, and 2,670 in clean vehicles.
- According to E2's Clean Jobs America 2023 [report](#), the Phoenix-Mesa-Scottsdale metropolitan area ranked 13th in the nation for most clean energy jobs. The metropolitan area is home to 49,064 clean energy jobs, including 10,311 in renewable generation, 1,725 in energy storage, 33,613 in energy efficiency, and 3,125 in clean vehicles.

Pima County

Climate Impacts

Extreme Heat

- Tucson is the [fifth-fastest](#) warming city in the nation.
- Temperatures in Tucson are on average 4.5 degrees [warmer](#) now than in 1970.
- Over the next 20 years, Maricopa and Pima counties could see [upwards](#) of 120 additional deaths per 100,000 people from extreme heat.
 - Pima County could see 64 [additional](#) heat-related deaths per 100,000 people over the next 20 years, which is a doubling in heat-related deaths every year.
- Arizona is [home](#) to 651,100 outdoor workers, about 22% of the state's workforce, as of August 2021.
 - Arizona outdoor workers could lose up to [\\$2.6 billion](#) in earnings every year due to extreme heat, with the counties of Maricopa, Pima, and Pinal being hit hardest.
 - Construction and extraction workers in Arizona would [lose](#) the most annually at \$627.3 million per year, followed by workers in installation, maintenance, and repair occupations at \$532.4 million annually.
 - Arizona outdoor workers working in protective service occupations would lose the [most annual income](#) at about \$2,600, followed by installation, maintenance, and repair workers at about \$2,300 per year.
- Arizona is [projected](#) to suffer a 37% loss in crop yields, including a 69% loss in cotton production, due to climate change.
- [Military service members](#) at Arizona bases are at risk from extreme heat impacting their duties:
 - The Tucson International Airport Air Guard Station is projected to experience 76 days over 100 degrees.
- In the summer of 2023, Pima County broke dozens of heat records.
 - Pima County [broke](#) its daily high record 1 time during June.
 - Pima County [broke](#) its daily high record 35 times during July.

- Tucson [broke](#) its daily high record seven times during July: July 6 at 110, July 16 at 111, July 18 at 112, July 19 at 112, July 20 at 112, July 22 at 111, and July 25 at 112.
- Pima County [broke](#) its daily high record 17 times during August.
 - Tucson [broke](#) its daily high record three times during August: August 5 at 110, August 28 at 109, and August 29 at 108.

Drought

- The megadrought that has [gripped](#) the southwestern U.S. for the past 22 years is the worst in at least 1,200 years. Human-caused climate change is a major reason for the current drought's severity.
- Drought and rising temperatures have [lowered](#) the level of the Colorado River, threatening the 40 million Americans in Arizona and six other states who rely on it.
 - The Central Arizona Project [delivers](#) Colorado River water to roughly 6 million people in Maricopa, Pinal, and Pima counties.
- In May 2023, Mayor Regina Romero [signed](#) a multi-year agreement with the Bureau of Reclamation through the Central Arizona Project, significantly reducing Tucson's water allocations from the Colorado River by up to 110,000 acre-feet.
- As of October 2, 2023, 59.2% of people in Pima County are [affected](#) by drought.

Wildfires

- There are [370,391 properties](#) – 85% of properties – in Pima County that have some risk of being affected by wildfire over the next 30 years.
 - In Pima County, [289,921 out of 342,200 homes](#) face an extreme risk of being affected by wildfires over the next 30 years.
 - In Pima County, [2,557 out of 16,578 commercial properties](#) face an extreme risk of being affected by wildfires over the next 30 years.
 - In Pima County, [1,109 out of 1,292 infrastructure facilities](#) face an extreme risk of being affected by wildfires over the next 30 years.

Monsoons

- Monsoon season [means](#) parts of Southeastern Arizona are at risk from flash flooding on an almost daily basis from late June or early July through September.

- In July 2020, parts of Arizona [saw](#) monsoon weather, with flooding in Tucson and the surrounding region requiring multiple swift-water rescues and road closures.

Pollution Impacts

Air Pollution

- According to the American Lung Association's 2023 State of the Air report, the [Tucson-Nogales metropolitan](#) area ranked 41st for high ozone days, 42nd for 24-hour particle pollution, and 30th for annual particle pollution.
- Pima County [received](#) F grades for the number of high ozone days from the American Lung Association's 2023 State of the Air Report.

Water Pollution

- Hundreds of [ZIP codes](#) in Arizona – including 37 in Pima County – are at high risk for lead poisoning. While state toxicologists insist that lead paint is a bigger threat in Arizona than lead in water, according to the CDC there is [no safe level](#) of lead in drinking water.
 - In 2019, Pima County had [55 cases of children younger than 6](#) testing positive for lead exposure.
- In June 2021, groundwater on Tucson's south side was so [contaminated](#) with PFAS “forever chemicals” that a Tucson Water treatment plant was shut down.

Clean Energy

Clean Energy Saves Money

- In Arizona, an average low-income family [spends](#) 6-8% of their income on home energy costs, forcing tough choices between paying energy bills and buying food, medicine, or other essentials.
- In Arizona, the percentage of household income spent on energy among rural low-income households is almost [three times](#) greater than their high-income counterparts.
- During COVID, utility bills [spiked](#) between 20% and 30% for many Arizona families, and in some cases doubled as people became more reliant on at-home air conditioning. The burden of these rising prices falls most heavily on low-income families.

- Arizona businesses could see an [added](#) cost of over \$5,500 for electricity by 2040 due to climate change.
- Families with higher energy burdens are at [greater risk](#) of developing respiratory diseases and stress-related ailments.
- Under a transition to 100% clean energy in the electric, transportation, building, and industrial sectors by 2035, each American household stands to [save](#), on average, between \$1,050 and \$2,585 annually on their energy bills.
- Investment in clean energy and decreased spending on gasoline are [projected](#) to reduce average annual household energy spending by \$95 per year in 2030 and a cumulative \$6.2 billion through 2050 across all households in Arizona.
- With the widespread implementation of zero-emission transportation and electricity resources, Arizona could [experience \\$15.1 billion](#) in cumulative public health benefits by 2050.
 - By 2050, Arizona could also [avoid 182,000 lost work days](#).
- Despite regional variances in gas and electricity costs, an analysis from the Union of Concerned Scientists found that charging a vehicle was more [cost-effective](#) than filling up at the pump across 50 major U.S. cities.
 - In Tucson, the median EV driver could [save about \\$815 per year](#) compared with the cost of driving the average new gasoline vehicle.

Pima County's Growing Clean Energy Economy

- Since the passage of the Inflation Reduction Act, \$1.2 billion in investments have been [announced](#) in clean energy projects that will create 1,150 jobs in Pima County.
 - American Battery Factory announced a [\\$1.2 billion investment](#) to build a lithium battery gigafactory in Tucson, which the company projects will [create 1,000 new jobs](#).
- According to E2's Clean Jobs America 2023 [report](#), the Tucson metropolitan area is home to 6,642 clean energy jobs, including 1,047 in renewable generation, 186 in energy storage, 4,925 in energy efficiency, and 469 in clean vehicles.
- Wide-scale deployment of renewable energy over the next 10 to 15 years would [generate](#) tens of thousands of construction-phase jobs, \$10 billion in earnings and economic activity, and more than 4,000 permanent jobs and \$750 million annually in earnings and additional economic activity across Arizona.

- The Inflation Reduction Act [includes](#) tax credits covering 30% of the costs to install solar panels and battery storage systems, make home improvements that reduce energy leakage, or upgrade heating and cooling equipment. An estimated additional 150,00 Arizona households will install rooftop panels due to the package's tax credits.
- With an average of 296 days of sunshine per year, Pima County has one of the [best solar resources](#) in the world.
- Tucson and Tucson Electric Power Co. [signed](#) a letter of intent to work toward powering 100% of city operations with renewable energy.
 - By 2035, the company [plans](#) to get more than 70% of its power from wind and solar resources and reduce carbon emissions by 80%.
- In Pima County there are [94.5 solar energy projects](#) under construction or operating.