

Wisconsin Regional Reference Packet

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Madison

Climate Impacts

Extreme Heat

- In the summer of 2023, Dane County [broke](#) eight daily high-temperature records.
- In the last decade, Madison [experienced](#) more extremely warm nights than any decade in the previous 70 years.
- Due to climate change, Madison will [experience](#) 14 days above 99 degrees Fahrenheit in 30 years.

Wildfires

- There are [13,142 properties](#) – representing 20% of properties – in Madison that are at risk of being affected by wildfires over the next 30 years.
 - In Madison, [11,333 out of 55,546 homes](#) have a moderate risk of being affected by wildfires over the next 30 years.
 - In Madison, [825 out of 3,803 commercial properties](#) have a moderate risk of being affected by wildfires over the next 30 years.

- In Madison, [25 out of 151 infrastructure facilities](#) have a moderate risk of being affected by wildfires over the next 30 years.

Extreme Rainfall & Flooding

- By 2050, the annual precipitation in Madison is projected to [increase](#) from about 32.8 inches to about 34.9 inches.
- There are [6,480 properties](#) – representing 26% of properties – in Madison that are at risk of being affected by flooding over the next 30 years.
 - In Madison, [8,803 out of 55,546 homes](#) have a moderate risk of being affected by flooding over the next 30 years.
 - In Madison, [1,155 out of 3,803 commercial properties](#) have a moderate risk of being affected by flooding over the next 30 years.
 - In Madison, [17 out of 151 infrastructure facilities](#) have a minor risk of being affected by flooding over the next 30 years.
- In August 2018, 11.63 inches of rain [fell](#) over 24 hours in the area west of Madison.
 - Flash floods [took place](#) throughout the City of Madison making major intersections impassible, and homes were flooded.

Pollution Impacts

Air Pollution

- The Madison-Janesville-Beloit metropolitan area [ranked](#) 65th for high ozone days, 118th for 24-hour particle pollution, and 98th for annual particle pollution.
- In the summer of 2023, smoky, unhealthy air from Canadian wildfires has [led](#) to canceled events and calls for better protections for vulnerable people in Madison.
 - Dane County's air quality was the [worst](#) it's been in decades, reaching very unhealthy levels in parts of the Madison area.
 - On June 28, 2023, Madison Metropolitan School District [canceled](#) all classes and activities, including summer semester classes, athletic practices and programming, and virtual programming.
 - Multiple bands [canceled or postponed](#) their concerts due to unhealthy air quality in Madison.

- In June 2023, Freedom Inc. – a Black and Southeast Asian nonprofit organization – [released](#) a letter highlighting how the worsening air quality in Madison is a health equity issue that disproportionately affects marginalized communities. They also called upon the elected officials of Madison and Dane County to protect the local community by issuing an emergency shelter-at-home order anytime the Air Quality Index climbs above 151.
- As part of the DOT's Low- and No-Emission Vehicle Program, Madison was [awarded](#) over \$37.9 million to buy battery-electric buses to replace older diesel buses, install charging equipment and solar panels to modernize its bus maintenance facility, and develop a workforce training program.

PFAS Contamination

- In 2019, PFAS contamination was [detected](#) in the city of Madison and Dane County in soil, municipal wells, surface water, and groundwater.
- According to the city's 2022 water quality report, Madison's drinking water [meets](#) federal and state health safety standards, but nearly half of the city's wells still contain PFAS chemicals.
- Due to their longtime use of firefighting foams with PFAS, the Truax Field Air National Guard Base and Dane County Regional Airport sites are [contaminated](#) with PFAS.
 - PFAS [washed](#) into the nearby creek and seeped through the soil into the groundwater in the area, impacting a large part of Dane County.

Clean Energy

Clean Energy Saves Money

- While the overall [average energy burden](#) for Madison households is 2%, it is 4% for low-income households, and 10% for extremely low households.
- Investment in clean energy and decreased spending on gasoline are [projected](#) to reduce average annual household energy spending by \$69 per year in 2030 and a cumulative \$3.8 billion through 2050 across all households in Wisconsin.
- With the widespread implementation of zero-emission transportation and electricity resources, Wisconsin could [experience \\$19.2 billion](#) in cumulative public health benefits by 2050. By 2050, Wisconsin could also [avoid 186,000 lost work days](#).

Madison's Growing Clean Energy Economy

- As of December 2023, Dane County, where Madison is located, has [received](#) over \$92 million in funding from the clean energy plan.
 - The Equitable Forestry Stabilization Management and Forestry Career Pathways Program [received](#) \$1.5 million from the USDA's Urban and Community Forestry Program.
 - As part of the DOT's Low- and No-Emission Vehicle Program, Madison was [awarded](#) over \$37.9 million to buy battery-electric buses to replace older diesel buses, install charging equipment and solar panels to modernize its bus maintenance facility, and develop a workforce training program.
 - Madison Metropolitan School District [received](#) \$39 million in funding through the first Clean School Bus Program Grants Competition.
- The clean energy plan is projected to bring over [\\$4 billion](#) of new investment in clean energy generation and storage to Wisconsin by 2030.
- According to E2's Clean Jobs America 2023 [report](#), the Madison metropolitan area is home to 9,698 clean energy jobs, including 968 in renewable generation, 315 in energy storage, 7,603 in energy efficiency, and 734 in clean vehicles.
- In both the Madison and Milwaukee areas, over [60% of the electric power generation workforce](#) was in wind and solar, and over 36,000 workers in the two metro areas were employed in energy efficiency.
- According to the Department of Energy, Madison already has [150 alternative fueling stations](#).
- The City of Madison has [set](#) the goal of reaching 100% renewable energy and net zero carbon emissions for city operations by 2030 and community-wide by 2050.
- The University of Wisconsin-Madison [aims](#) to develop more solar on campus, become a "zero waste" campus by 2040, and achieve net zero carbon emissions by 2048.
- In 2023, Dane County became the first county in Wisconsin — and the fourth in the nation — to [receive](#) 100% of its energy from renewable sources.

Milwaukee

Climate Impacts

Extreme Heat

- Milwaukee County is one of the top five counties in Wisconsin with the [fastest-rising temperatures](#) over the last 100 years.
- Milwaukee has [experienced](#) one of the five fastest-warming winters in major cities across America over the past half-century, with the average temperatures warming by about 6 degrees Fahrenheit.
- December 2023 [marked](#) Wisconsin's warmest and driest on record, with temperatures between 5 and 9 degrees Fahrenheit warmer than average.
- A 2023 mapping campaign [found](#) that heavily developed urban areas of Milwaukee stayed about 10 degrees warmer at night than other parts of the city during hot summer days. The nonprofit group Groundwork Milwaukee also [found](#) a direct link between at-risk neighborhoods and the practice of redlining in Milwaukee.
- Low-income residents and people of color [tend to live](#) and are at [higher heat risk](#) in the center of Milwaukee and along highways.

Wildfires

- There are [4,482 properties](#) – representing 3% of properties – in Milwaukee that are at risk of being affected by wildfires over the next 30 years.
 - In Milwaukee, [3,751 out of 130,601 homes](#) have a moderate risk of being affected by wildfires over the next 30 years.
 - In Milwaukee, [241 out of 9,061 commercial properties](#) have a moderate risk of being affected by wildfires over the next 30 years.
 - In Milwaukee, [19 out of 230 infrastructure facilities](#) have a moderate risk of being affected by wildfires over the next 30 years.

Extreme Rainfall & Flooding

- There are [11,736 properties](#) – representing 13% of properties – in Milwaukee that are at risk of being affected by flooding over the next 30 years.
 - In Milwaukee, [15,723 out of 130,601 homes](#) have a moderate risk of being affected by flooding over the next 30 years.

- In Milwaukee, [3,032 out of 9,061 commercial properties](#) have a major risk of being affected by flooding over the next 30 years.
- In Milwaukee, [29 out of 230 infrastructure facilities](#) have a major risk of being affected by flooding over the next 30 years.

Pollution Impacts

Air Pollution

- In the American Lung Association's 2023 State of the Air report, Milwaukee County [received](#) an F grade for the number of high-ozone days.
- The Milwaukee-Racine-Waukesha metropolitan area [ranked](#) 31st for high ozone days, 118th for 24-hour particle pollution, and 46th for annual particle pollution.
- Children who live in 53205, a predominately Black ZIP code on Milwaukee's Near North Side, [visit](#) the emergency department for asthma 20 times more than children living just a 15-minute drive away in the predominately white suburb of Whitefish Bay.

Water Pollution

- In 2017, Milwaukee started replacing its 73,000 lead water service lines. Six years later, around [67,000 of the water lines are still in use](#).
- In Wisconsin, communities of color and low-income families are [disproportionately affected](#) by lead poisoning.
- Lead poisoning also [disproportionately affects](#) Black and Hispanic/Latinx children relative to their white peers, further contributing to disparities such as academic achievement gaps.
- Milwaukee is set to [receive](#) more than \$30 million in funding through the state's Safe Drinking Water Loan Program as part of ongoing efforts to replace lead pipes.

Clean Energy

Clean Energy Saves Money

- Milwaukee [ranks](#) #6 on a list of U.S. cities where Black families face the highest energy burdens.

- In Milwaukee, 23.81% of all households and 43.08% of low-income households are extremely [energy-burdened](#), meaning their energy burden is more than twice the city median.
- In Milwaukee, 24.09% of Latino households are extremely [energy-burdened](#), meaning their energy burden is more than twice the city median.
- In Milwaukee, 46.13% of Black households are extremely [energy-burdened](#), meaning their energy burden is more than twice the city median.
- Investment in clean energy and decreased spending on gasoline are [projected](#) to reduce average annual household energy spending by \$69 per year in 2030 and a cumulative \$3.8 billion through 2050 across all households in Wisconsin.
- With the widespread implementation of zero-emission transportation and electricity resources, Wisconsin could [experience \\$19.2 billion](#) in cumulative public health benefits by 2050. By 2050, Wisconsin could also [avoid 186,000 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 Milwaukee, the median EV driver could save between [\\$745 per year](#) compared with the cost of driving the average new gasoline vehicle.

Milwaukee's Growing Clean Energy Economy

- As of December 2023, Milwaukee has [received](#) over \$563 million in funding from the clean energy plan.
 - The Milwaukee-Waukesha Metro Area [received](#) \$1 million from the EPA's Climate Pollution Reduction Grants program.
 - The EPA's Environmental Justice Government-to-Government (EJG2G) program [selected](#) the City of Milwaukee Environmental Collaboration Office to receive \$1 million.
 - The EPA's Environmental Justice Collaborative Problem Solving (EJCPS) Program [selected](#) Reflo Inc., a non-profit organization in Wisconsin, to receive \$500,000 to support Milwaukee community-based organizations in delivering environmental internships for high school students.
 - The Growing Milwaukee's Tree Canopy and Community Resilience project [received](#) \$12 million from the USDA's Urban and Community Forestry Program.

- The clean energy plan is projected to bring over [\\$4 billion](#) of new investment in clean energy generation and storage to Wisconsin by 2030.
- Since the passage of the Inflation Reduction Act, \$450 million in investments have been [announced](#) in clean energy projects that will create 100 jobs in Milwaukee.
 - EV manufacturing in Wisconsin has grown significantly since the clean energy plan was passed. In May 2023, Ingeteam also announced it would add [100 new jobs](#) to its Milwaukee EV charger manufacturing facility.
 - Black Mountain Storage's [\\$450 million American Pharoah battery storage project](#) was approved by the Milwaukee City Plan Commission, adding 1,200 MW of storage capacity and further contributing to the Badger State's battery storage boom.
- According to E2's Clean Jobs America 2023 [report](#), the Milwaukee-Waukesha-West Allis metropolitan area is home to 23,087 clean energy jobs, including 2,072 in renewable generation, 637 in energy storage, 19,120 in energy efficiency, and 1,216 in clean vehicles.
- By 2030, the City of Milwaukee [aims](#) to reduce community greenhouse gas emissions by at least 45%
- The City of Milwaukee [aims](#) to achieve net zero greenhouse gas emissions by 2050 or earlier.

La Crosse - Eau Claire

Climate Impacts

Extreme Heat

- In 2024, Downtown La Crosse is [expected](#) to experience seven hot days, which is considered to be any day above a "feels like" temperature of 101 degrees Fahrenheit. Due to a changing climate, Downtown La Crosse will [experience](#) 15 days above 101 degrees Fahrenheit annually in 30 years.
- In 2024, La Crosse is [expected](#) to experience seven hot days, which is considered to be any day above a "feels like" temperature of 100 degrees Fahrenheit. Due to a changing climate, La Crosse will [experience](#) 14 days above 100 degrees Fahrenheit annually in 30 years.
- In 2024, Eau Claire is [expected](#) to experience seven hot days, which is considered to be any day above a "feels like" temperature of 98 degrees Fahrenheit. Due to a

changing climate, Eau Claire will [experience](#) 14 days above 98 degrees Fahrenheit annually in 30 years.

- In the winter of 2023-2024, La Crosse [experienced](#) its second-warmest winter on record. From December 2023 to March 19, 2024, La Crosse County [broke](#) 14 daily high temperature records.
- 2023 was Eau Claire's [eighth warmest year](#).
 - In September 2023, Eau Claire [recorded](#) the first high temperature of 100 degrees since 2011.

Wildfires

- There are [11,916 properties](#) – representing 73% of properties – in La Crosse that are at risk of being affected by wildfires over the next 30 years.
 - In La Crosse, [9,059 out of 12,258 homes](#) have a moderate risk of being affected by wildfires over the next 30 years.
 - In La Crosse, [474 out of 682 commercial properties](#) have a moderate risk of being affected by wildfires over the next 30 years.
 - In La Crosse, [33 out of 46 infrastructure facilities](#) have a minor risk of being affected by wildfires over the next 30 years.
- There are [10,981 properties](#) – representing 48% of properties – in Eau Claire that are at risk of being affected by wildfires over the next 30 years.
 - In Eau Claire, [9,002 out of 19,163 homes](#) have a moderate risk of being affected by wildfires over the next 30 years.
 - In Eau Claire, [731 out of 1,380 commercial properties](#) have a moderate risk of being affected by wildfires over the next 30 years.
 - In Eau Claire, [38 out of 76 infrastructure facilities](#) have a moderate risk of being affected by wildfires over the next 30 years.

Extreme Rainfall and Flooding

- There are [3,078 properties](#) – representing 38% of properties – in La Crosse that are at risk of being affected by flooding over the next 30 years.
 - In La Crosse, [4,700 out of 12,258 homes](#) have a major risk of being affected by flooding over the next 30 years.
 - In La Crosse, [247 out of 682 commercial properties](#) have a moderate risk of being affected by flooding over the next 30 years.

- In La Crosse, [6 out of 46 infrastructure facilities](#) have a minor risk of being affected by flooding over the next 30 years.
- There are [2,342 properties](#) – representing 20% of properties – in Eau Claire that are at risk of being affected by flooding over the next 30 years.
 - In Eau Claire, [3,727 out of 19,163 homes](#) have a moderate risk of being affected by flooding over the next 30 years.
 - In Eau Claire, [459 out of 1,380 commercial properties](#) have a major risk of being affected by flooding over the next 30 years.
 - In Eau Claire, [10 out of 76 infrastructure facilities](#) have a moderate risk of being affected by flooding over the next 30 years.
- The rapid melting of snow from warming temperatures is [causing](#) many rivers to be flooded, including the Chippewa River in Eau Claire.
- In 2019, the Mississippi River at La Crosse saw its [longest-duration](#) flooding event in recorded history.
- In April 2023, the Mississippi River [crested](#) at about 16 feet in La Crosse, reaching the third-highest level since record-keeping began in 1874.

Pollution Impacts

Air Pollution

- According to the American Lung Association’s 2023 State of the Air Report, the Eau-Claire-Menomonie metropolitan area [ranked](#) 62nd for 24-hour particle pollution and 106th for annual particle pollution.
- According to the American Lung Association’s 2023 State of the Air Report, the La Crosse-Onalaska metropolitan area [ranked](#) 118th for 24-hour particle pollution and 123rd for annual particle pollution.
- In the summer of 2023, multiple counties in Wisconsin, including Eau Claire and La Crosse, were [designated](#) as “unhealthy” on the U.S. Air Quality Index due to smoke from Canadian wildfires.

PFAS Contamination

- PFAS have been [detected](#) in public wells across Wisconsin, including in Eau Claire and La Crosse.
 - As of May 2020, four [confirmed](#) cases of PFAS contamination were found, including in La Crosse Waterworks in Wisconsin.

- Eau Claire and La Crosse have [shut down](#) municipal wells due to PFAS contamination.
 - In 2021, officials in Eau Claire shut down half its 16 municipal wells over PFAS [contamination](#). Across the state, PFAS have [poisoned](#) drinking water supplies, surface water in lakes and streams, air, soil, and wildlife like deer and fish that the state's residents eat.
- As part of the U.S. EPA's Drinking Water State Revolving Fund, Wisconsin [received](#) nearly \$139 million for essential drinking water infrastructure upgrades in 2023.

Clean Energy

Clean Energy Saves Money

- Investment in clean energy and decreased spending on gasoline are [projected](#) to reduce average annual household energy spending by \$69 per year in 2030 and a cumulative \$3.8 billion through 2050 across all households in Wisconsin.
- With the widespread implementation of zero-emission transportation and electricity resources, Wisconsin could [experience \\$19.2 billion](#) in cumulative public health benefits by 2050. By 2050, Wisconsin could also [avoid 186,000 lost work days](#).
- The organization Solar on La Crosse Schools raises money to bring solar power to campuses in the La Crosse School District, which has already [saved](#) \$33,000 in electricity costs over two years.
- The USDA's Rural Energy for America Program (REAP) [awarded](#) CVG, a farming operation in Eau Claire, \$58,400 to install a small solar electric array. The project will replace 62,041 kilowatt-hours per year (87% of the farm's energy use) and is expected to save \$6,364 per year.

La Crosse - Eau Claire Region's Growing Clean Energy Economy

- As of December 2023, La Crosse and Eau Claire have [received](#) over \$15 million in funding from the clean energy plan.
- The clean energy plan is projected to bring over [\\$4 billion](#) of new investment in clean energy generation and storage to Wisconsin by 2030.
- According to E2's Clean Jobs America 2023 [report](#), the La Crosse-Onalaska metropolitan area is home to 1,693 clean energy jobs, including 84 in renewable generation, 27 in energy storage, 1,422 in energy efficiency, and 159 in clean vehicles.

- According to E2's Clean Jobs America 2023 [report](#), the Eau Claire metropolitan area is home to 2,010 clean energy jobs, including 99 in renewable generation, 44 in energy storage, 1,669 in energy efficiency, and 182 in clean vehicles.
- In 2019, the City of La Crosse Common Council [passed](#) a resolution to reach carbon neutrality community-wide in energy and transportation by 2050.
- In 2022, the City of La Crosse completed its Climate Action Plan, which aims to [reduce](#) community-wide GHG emissions by 40% to 50% below 2019 levels by 2030 and achieve carbon neutrality by 2050.
- As part of its Community Climate Action & Resilience Plan (CARP), the Eau Claire County government and community [aim](#) to reach carbon neutrality by 2050 with incremental drawdown targets of 5% by 2020, 25% by 2030, 30% by 2040, and 40% by 2050.
 - As part of its CARP, the Eau Claire County government also [aims](#) to obtain 100% renewable energy by 2050 and assist the community in achieving 100% renewable energy by 2050.