

Our Climate is Changing

Climate Change Vulnerabilities in Milwaukee and Beyond



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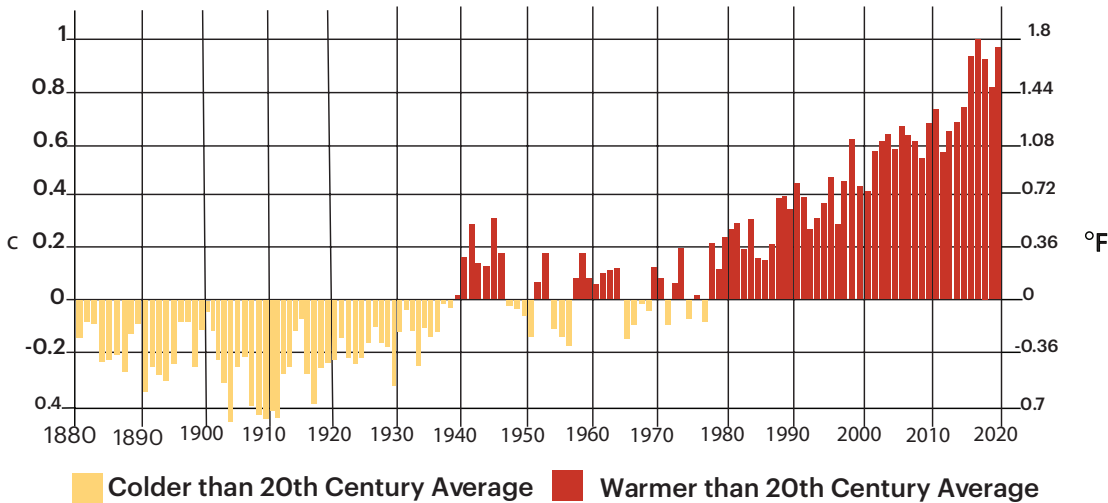
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Our world is warming and our climate is changing rapidly, impacting the world and Milwaukee, with extreme temperatures, storms, and flooding. Climate change is caused by a rise in global temperatures due primarily to the burning of fossil fuels, such as coal, oil, and gas, which spill excessive amounts of carbon dioxide and other greenhouse gases (GHGs) into our atmosphere. Without dramatic action to fight climate change, many more parts of our world could become unlivable within a few generations.

Global Temperature from 1880-2019ⁱ



Health



Climate change is expected to **cause an additional 5 million deaths worldwide between 2030 and 2050** due to heat stress, malaria, hunger, and other illnesses. This problem will disproportionately impact those with existing health conditions, lack of access to affordable health care, as well as Black, Indigenous, and other communities of color.ⁱⁱ

Displacement



In 2017, **over 22 million people were displaced from their homes** due to extreme weather events, such as wildfires and hurricanes, and that number is estimated to rise **above 1.2 billion people by 2050**.ⁱⁱⁱ

Too Hot to Live



By 2070, **3.5 billion people could be exposed to a mean average temperature above 84 degrees**, currently experienced on 0.8% of Earth mostly in the Sahara Desert, but that **will cover 19% of the Earth** without dramatic action to fight climate change.^{iv}

Political Conflict



Studies on climate and conflict have found that humanmade climate change could substantially **increase global violent crime, civil conflict, and political instability**, mostly due to higher temperatures and extremes in rainfall (either too little or too much), which in turn lead to resource scarcity and economic depletion.^v

CLIMATE CHANGE IMPACTS IN MILWAUKEE



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Extreme Weather and Flooding

- Catastrophic flooding in July 2010 in the Milwaukee area caused over **\$30 million in damage** to homes and businesses and caused hundreds of job losses.^{vi} Flooding across Wisconsin in August 2018 caused more than **\$208 million in damage.**^{vii}
- Currently, **19,413 properties in Milwaukee County are at risk of flooding** and that risk will increase in the future.^{viii}
- In Wisconsin, what was considered a **100-year flooding** event in 1961 now occurs about every **40 years.**^{ix}

Heat Waves

- **Extreme heat is more deadly** to Wisconsinites **than all other weather disasters combined**, as heat can lead to heat stroke, dehydration and worsen chronic diseases.^x
- Milwaukee County reported **91 heat-related deaths during a heatwave in 1995.**^{xi} The greatest health risks occur with **extended heat events or excessive nighttime temperatures.**^{xii}
- By 2050, experts predict that Milwaukee will see **3 times as many days with a heat index above 105 degrees.**^{xiii}
- Higher temperatures **also increase violent crime.**^{xiv}



Hunger

- Climate change will likely **worsen existing food insecurity** due to limited local food availability, price increases, interrupted transportation, and diminished food safety.^{xv}
- Many people **in Milwaukee already experience hunger and food insecurity. In 2020, 15% of Milwaukee County residents were food insecure**, compared to a national average of 13%.^{xvi}
- **Nearly 42% of children in Milwaukee County received FoodShare (food stamps)**, while 82% were determined to be economically disadvantaged.^{xvii}

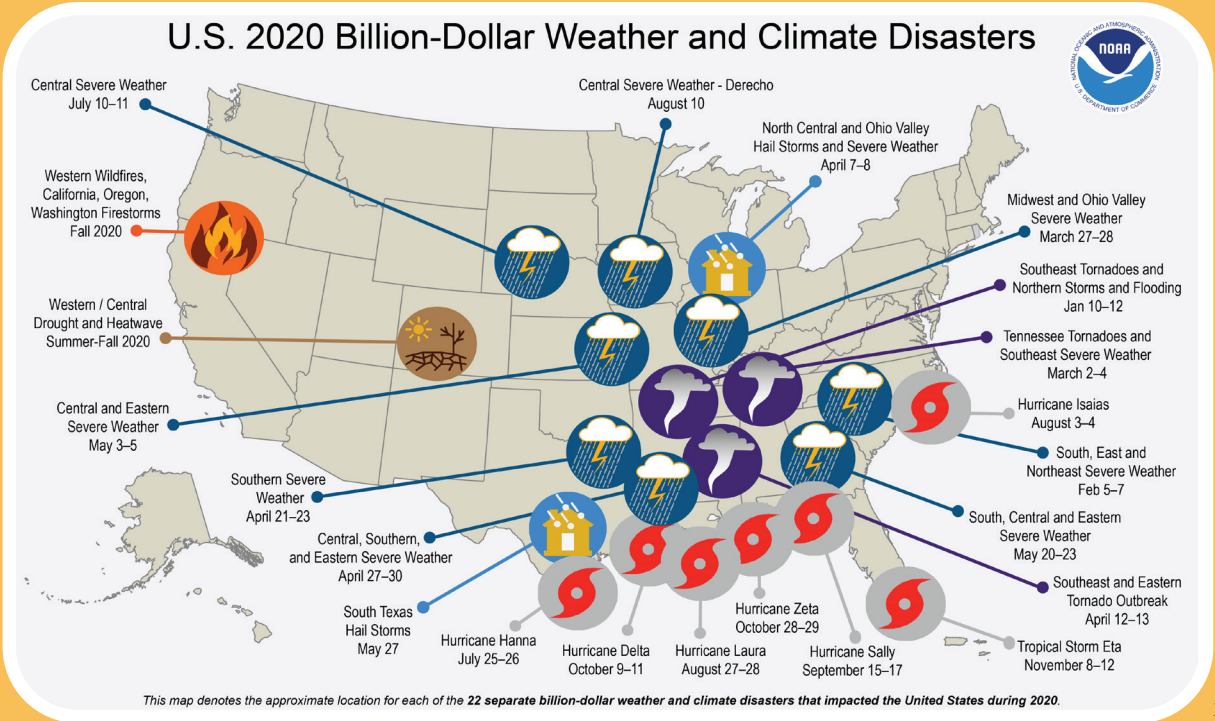


Health Impacts

- Flooding can lead to future health issues, such as **mold growth that exacerbates asthma symptoms.**^{xviii}
- Warmer, wetter weather means that ticks and mosquitoes are becoming more widely distributed in Wisconsin. **Tick bites can cause the debilitating Lyme disease, and mosquito bites can cause potentially deadly neuroinvasive disease from West Nile virus and La Crosse encephalitis.**^{xix}
- The U.S. Centers for Disease Control already reported a **25% increase** in neuroinvasive disease from West Nile virus in 2018.^{xx}



CLIMATE CHANGE IMPACTS AROUND THE WORLD



Scientists warn of an **economic recession caused by major economic impacts of climate change by 2100**. Two causes include more frequent crop failures and disturbances to major trade routes. Without decisive federal and local climate action, the report warns, climate-related isasters **will cost taxpayers hundreds of billions of dollars**.^{xxi}



Jonas Gratzer/LightRocket via Getty Images

Sea-Level Rise

- In the U.S., an estimated **13 million people will be displaced by sea-level rise alone by the year 2100**.^{xxiii} With only moderate cuts in GHGs, many of the world's largest cities could face **over 6 feet of flooding by 2050**:
 - Miami** - 6.2 million people
 - New York City** - 8.4 million people
 - San Francisco Bay Area** – 7.75 million people
 - Shanghai, China** – 27 million people
 - Mumbai, India** – 20.6 million people.^{xxiv}
- Higher sea levels also lead to **dangerous storm surges**. When a storm surge arrives at the same time as high tide, as it did with **Superstorm Sandy in 2012**, it can raise water levels **20 feet above mean sea level**.^{xxv}

Extreme Heat

Heat Waves are one of the weather phenomena most clearly caused by humanmade global climate change, and **are the most deadly**.^{xxvi} For example, it is estimated that over **70,000 people died** in the 2003 European heat wave.^{xxvii} If the **world warms by 2°C** – warming which scientists project may be reached in **20 to 30 years** – there will be widespread **food shortages, fatal heat waves, and crop failures** throughout the Global South.^{xxviii}



P. Ravikumar/Reuters via NYTimes

Mobilizing to Fight Climate Change Can Help Milwaukee

The good news is that fighting climate change can also create significant economic and environmental benefits.

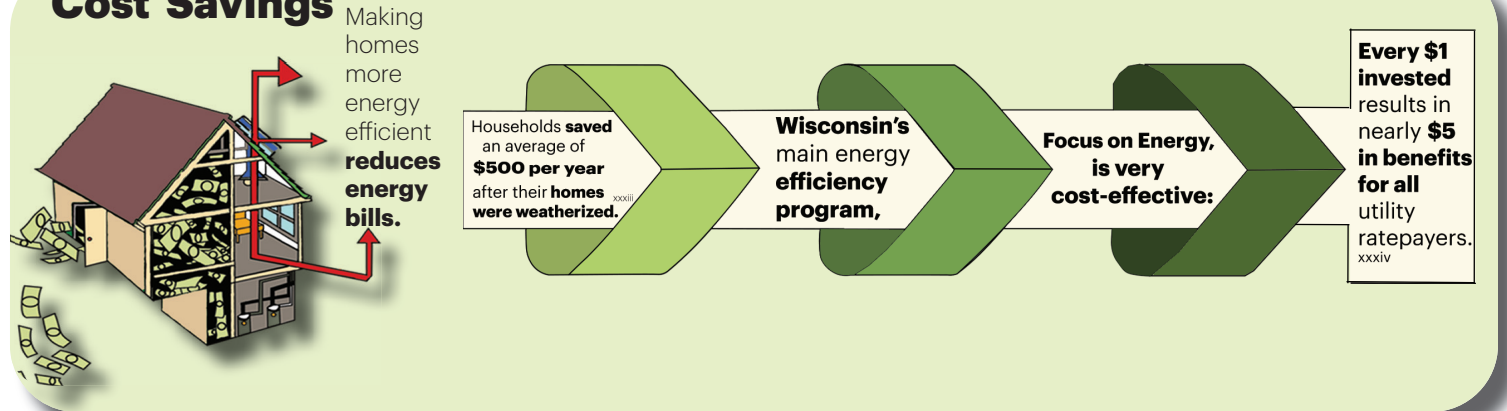
Jobs and Economic Development

- Before the COVID-19 pandemic hit, there were **76,600 clean energy jobs in Wisconsin**, with **23,748 in the greater Milwaukee area.**^{xxix}
- In-state production of **100% clean energy** would create **162,000 good, high-paying jobs in Wisconsin.**^{xxx}
 - The median income **for a Solar Installer in Wisconsin is \$73,393 per year.**^{xxxi}
 - The median income **for an Energy Efficiency Specialist is \$55,537 per year.**^{xxxii}



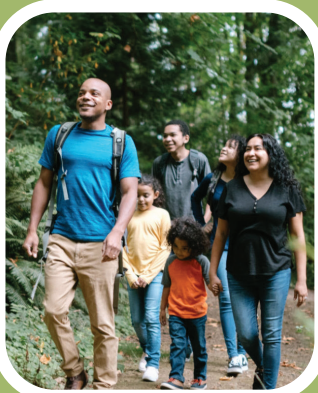
Robert Nickelsberg/Getty Images

Cost Savings



Improved Health and Quality of Life of Life

- Producing **100% clean energy in Wisconsin** would reduce air pollution, saving **\$21 billion every year** due to avoided health damages.^{xxxv}
- A decline in the use of gasoline-powered vehicles, through increased use of transit, biking and walking, and electric vehicles, will **reduce local air pollution.**
- Planting more trees is a key climate change strategy, as **trees absorb GHGs and cool the environment** through evapotranspiration.
- Increased tree cover has been found to **decrease nearby air temperatures by up to 9° Fahrenheit.**^{xxxvi}
- Studies also show a **strong relationship between more tree canopy and lower levels of crime.**^{xxxvii}



RyanJLane via Getty Images

bit.ly/MKEClimateSources

How to get involved

Join the fight against climate change! **Visit city.milwaukee.gov/climate/Climate-Plan** to learn about and provide feedback on **Milwaukee's Climate and Equity Action Plan.**

The City of Milwaukee Environmental Collaboration Office also runs many programs to help you save money and reduce pollution through cleaner, more efficient energy use.