

Michigan Regional Reference Packet

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Metro Detroit

Climate Impacts

Extreme Heat

- Due to warming temperatures caused by climate change, Detroit is [projected](#) to see 255 deaths annually from extreme heat between 2020 and 2029.
- 86% of Detroit residents [experience](#) at least 8 degrees Fahrenheit of more heat due to the urban heat island effect.
- A 2021 study [found](#) that 47% of Detroit homes had no or partial access to air conditioning, which heightens the risks of heat-related illnesses and death as the climate warms.
- Detroit has been [warming](#) at a rate of about 0.4 degrees Fahrenheit per decade since 1960.
- The winter season in Detroit has [warmed](#) by more than 5 degrees since the 1970s.
 - Wintertime warming has [cascading effects](#) on human health, such as the lengthening of allergy season, an increase in mosquito days, and unstable lake ice cover.
- Since the 1970s, Detroit’s growing season for agriculture has [extended](#) by nearly a month. Warmer winters can mean more plant disease, [resulting](#) in decreased agricultural yield and quality.

Wildfires

- There are [1,886 properties](#) in Detroit that have some risk of being affected by wildfires over the next 30 years.
 - In Detroit, [832 out of 228,682 homes](#) have a moderate risk of being affected by wildfires over the next 30 years.
 - In Detroit, [50 out of 16,913 commercial properties](#) have a moderate risk of being affected by wildfires over the next 30 years.
 - In Detroit, [6 out of 294 infrastructure facilities](#) have a moderate risk of being affected by wildfires over the next 30 years.

Extreme Rainfall & Flooding

- There are [38,865 properties](#) – representing 21% of all properties – in Detroit that are at risk of being affected by flooding over the next 30 years.
 - In Detroit, [44,282 out of 228,682 homes](#) have a moderate risk of being affected by flooding over the next 30 years.
 - In Detroit, [8,162 out of 16,913 commercial properties](#) have a major risk of being affected by flooding over the next 30 years.
 - In Detroit, [57 out of 294 infrastructure facilities](#) have a moderate risk of being affected by flooding over the next 30 years.
- Precipitation in Detroit has been [increasing](#) by 0.95 inches per decade since 1960.
- In June 2021, heavy rains [stranded](#) drivers and flooded basements around Detroit with nearly six inches of rain in 24 hours, more than twice the rainfall that the region typically gets in an entire month.
 - The extreme rainfall and flooding [led](#) to disaster declarations in four Detroit-area counties and 67,000 damage claims with the Federal Emergency Management Agency.
 - Several pump stations that move water out of the east side of Detroit [failed](#) that day due to electrical issues.
- In 2016, 2019, and 2020, major rainfall [caused](#) severe flooding in Detroit.
- In 2014, four to six inches of rain [left](#) Detroit with \$1.8 billion in direct flood damages.
- A 2021 study [found](#) that more than half of almost 4,000 Detroit homes surveyed had experienced recurrent flooding between 2012 and 2020.

- Among the Detroit homes included in the study, [84% that had flooded](#) in the past were found to have mold in the basement.
- An additional [55.4% of homes](#) that had not flooded during those years still had moldy basements — underscoring the fact that more frequent, climate-induced rainfall can pose problems.
- [74.4% of households](#) that had flooded in recent years reported having at least one adult in the home who had been diagnosed with asthma.

Pollution Impacts

Air Pollution

- According to the American Lung Association’s 2024 State of the Air Report, the Detroit-Warren-Ann Arbor metropolitan area [ranked](#) 33rd for high ozone days, 35th for 24-hour particle pollution, and 13th for annual particle pollution.
- Southwest Detroit has the [highest levels](#) of air pollution in Michigan and ranks among the top five percent in the country.
- A 2017 [report from the NAACP](#) showed that in Detroit, 2,402 Black children have asthma attacks due to natural gas pollution per year, missing 1,751 days of school as a result.

Water Pollution

- For decades, the Detroit River [received](#) untreated waste discharges from industrial use, and inputs from urban development and stormwater runoff. These pollution sources have contributed to high levels of bacteria, PCBs, polycyclic aromatic hydrocarbons, metals, oils, and greases.
- A 2023 study [found](#) that freshwater fish across the country have high levels of per- and polyfluoroalkyl substances, or PFAS. In Detroit, where some residents use fish as a source of protein, the PFAS levels were more than six times as much as the national median level.
- A 2018 study [found](#) that the health risks associated with eating polluted fish affect the Black community more than any other group fishing on the Detroit River.
 - The study also [found](#) that communities of color are less likely to be aware of the risks of consuming contaminated fish because of the State of Michigan’s failure to warn them successfully.

- A 2014 study [found](#) that fishers who ate their catch from the Detroit River had 2.5 times more mercury and two times as many PCBs in their system, compared to the average American.

Clean Energy

Clean Energy Saves Money

- Among 48 of the largest U.S. cities, Detroit [ranked 10th](#) as the city with the highest energy burden for Latino households.
- In Detroit, 57.1% of low-income households are extremely [energy-burdened](#), meaning their energy burden is more than twice the city median.
- In Detroit, 38.96% of Latino households are extremely [energy-burdened](#), meaning their energy burden is more than twice the city median.
- In Detroit, 44.49% of Black households are extremely [energy-burdened](#), meaning their energy burden is more than twice the city median.
- 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 \$90 per year in 2030 and a cumulative \$8.7 billion through 2050 across all households in Michigan.
- With the widespread implementation of zero-emission transportation and electricity resources, the Detroit-Warren-Ann Arbor could [experience \\$29.2 billion](#) in cumulative public health benefits and [avoid 268,000 lost work days](#) by 2050.
- 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 Detroit, the median EV driver could save between [\\$770 per year](#) compared with the cost of driving the average new gasoline vehicle.

Detroit's Growing Clean Energy Economy

- Since the passage of the clean energy plan, over \$35 million in investments have been [announced](#) in clean energy projects that will create 1,050 jobs in Detroit.

- In September 2023, Fortescue Metals announced it would invest [\\$35 million](#) to open an EV battery systems and components manufacturing facility in Detroit, Michigan. The facility will create [600 jobs](#) in its first phase. The new facility will [directly benefit](#) from the clean energy plan's tax credits for battery module manufacturing.
- As of December 2023, Detroit has [received](#) over \$341 million in funding from the clean energy plan – that's money going to communities all across the state to promote climate resiliency and reduce pollution.
 - The Detroit-Warren-Dearborn Metro Area [received](#) \$1 million in funding under the EPA's Climate Pollution Reduction Grants program.
 - In September 2023, Detroit [received](#) a total of over \$12 million from the Urban and Community Forestry Grants.
 - The Detroit Resilient Tree Canopy Initiative (DRTCI) was [awarded](#) \$3 million to increase tree canopy coverage, improve landscape restoration, and inform long-term sustainability strategies.
 - The Greening of Detroit [received](#) over \$9.6 million to accelerate the number of trees planted in underserved neighborhoods in Detroit.
 - The DOT [awarded](#) \$104.6 million to a project in Detroit through the Nationally Significant Multimodal Freight & Highway Projects Program (INFRA).
 - As part of the DOT's Rebuilding American Infrastructure with Sustainability and Equity (RAISE) program, the Michigan Department of Transportation [received](#) \$25 million to create a multimodal corridor in Downtown and Corktown Detroit.
 - In 2023, One Love Global [received](#) \$500,000 for the Building Power among Black and Brown Youth for Water and Public Health Equity in Detroit project as part of the EPA's Environmental Justice Collaborative Problem Solving (EJCPS) Program.
- The City of Detroit [aims](#) to power 100% of municipal electricity usage with clean energy by 2034.
- The City of Detroit also [aims](#) to transition its light-duty vehicle fleet to 100% zero-emission vehicles by 2034.

Mid-Michigan

Climate Impacts

Extreme Heat

- In 2024, Lansing is expected to [experience](#) seven hot days, which is considered to be any day above a “feels like” temperature of 96 degrees Fahrenheit.
- Due to climate change, Lansing will [experience](#) nine days above 100 degrees Fahrenheit in 30 years.
- Since 1970, temperatures in Lansing have [increased](#) by 3.5 degrees Fahrenheit.
- Climate change is making pollen seasons longer and more intense. In Lansing, pollen season has [increased](#) by 33 days since 1970.
- In winter 2023-2024, Lansing experienced an average temperature of 33.3 degrees Fahrenheit, making it the [warmest winter on record](#).
 - Only [15 days](#) in the 91-day 2023-24 winter season saw below-average temperatures.
 - On February 27, 2024, temperatures reached a high of 72 degrees, marking the [warmest winter day on record](#), breaking a [century-old record](#) high.
 - Lansing reported only [22.5 inches](#) of snow during the 2023-24 winter season, which was 16 inches below normal.

Wildfires

- There are [2,767 properties](#) in Lansing that are at some risk of being affected by wildfires over the next 30 years.
 - In Lansing, [2,211 out of 37,997 homes](#) have a moderate risk of being affected by wildfires over the next 30 years.
 - In Lansing, [206 out of 2,179 commercial properties](#) have a moderate risk of being affected by wildfires over the next 30 years.
 - In Lansing, [7 out of 83 manufacturing facilities](#) have a moderate risk of being affected by wildfires over the next 30 years.
- There are [1,443 properties](#) – 46% of properties – in South Lyon that have some risk of being affected by wildfire over the next 30 years.

- In South Lyon, [1,185 out of 2,653 homes](#) have a moderate risk of being affected by wildfires over the next 30 years.

Extreme Rainfall, Flooding, & Storms

- There are [7,126 properties](#) – representing 16.4% of all properties – in Lansing that are at risk of being affected by flooding over the next 30 years.
- The annual precipitation in Lansing is [projected to increase](#) from about 31.9 inches to 34 inches by 2050.
- Intense precipitation in the spring and fall combined with drier conditions in the summer is [negatively impacting farmers](#) in the Greater Lansing area and across the state of Michigan. These impacts include increased floods, decreasing harvest sizes, heavy soil erosion, and soil depletion.
- In August 2023, a [tornado](#) with winds that reached up to 125 mph hit Lansing, killing one person and injuring three others. The tornado was [one of seven](#) in a severe storm that killed five people and left hundreds of thousands of people without power.

Pollution Impacts

Air Pollution

- According to the American Lung Association’s 2024 State of the Air Report, the Lansing-East Lansing metropolitan area [ranked](#) 94th for worst annual particle pollution.
- In June 2023, Lansing [experienced](#) “very unhealthy” air quality levels as a result of the Canadian wildfires which distributed high levels of fine particulate matter in the air.

Water Pollution

- There are two inactive coal ash landfills [located](#) in Mid-Michigan.
 - The Eckert Plant located in Lansing [contained](#) one unregulated pond and one unregulated landfill.
 - In 2020, the Lansing Board of Water and Light [detected](#) high levels of lithium, boron, TDS, and molybdenum leaching from the site and [contaminating](#) local privately owned water wells.

- The North Lansing Landfill [contained](#) one unregulated landfill. The Environmental Protection Agency [found](#) evidence of damage from groundwater contamination at this site.
- Several sites in the Greater Lansing area [tested positive](#) for PFAS, including the Lansing Airport Hanger and the Grand Ledge Army Aviation Support Facility.
- In January 2022, beef raised on a farm near the Huron River watershed in Livingston County [tested positive](#) for PFAS. The source of the PFAS contamination was identified as crops grown with fertilizer made from contaminated wastewater biosolids.
- Since 1992, the Grand River, which cuts through downtown Lansing, has been [experiencing](#) heightened levels of E. coli bacteria contamination from sewer overflows. Climate-change-induced heavy downpour events have been [identified](#) as a cause of the overflows, and local public service officials estimate it will take the city another ten years and over \$500 million to reduce combined sewer overflows.

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 \$90 per year in 2030 and a cumulative \$8.7 billion through 2050 across all households in Michigan.
- With the widespread implementation of zero-emission transportation and electricity resources, Michigan could [experience \\$51.4 billion](#) in cumulative public health benefits and [avoid 466,000 lost work days](#) by 2050.
- Schools across the Greater Lansing area [have received](#) federal investments to replace existing buses with new zero emission and clean school buses.
 - In January 2024, Lansing Public Schools [received](#) \$5.925 million from President Biden's Bipartisan Infrastructure Law's Clean School Bus Program to buy 15 clean-powered school buses.
 - In March 2024, Lansing School District [received](#) \$1.73 million for five buses, and Stockbridge Community Schools [received](#) \$800,000 for four buses.

Mid-Michigan's Growing Clean Energy Economy

- Since the passage of the clean energy plan, over \$2.7 billion in investments have been [announced](#) in clean energy projects that will create 4,125 jobs in Michigan's 7th Congressional District.
 - In December 2023, Norm Fasteners [announced](#) it would invest \$77 million to establish a bolt and fastener manufacturing facility in Bath Charter Township, Michigan. The facility will create [200 jobs](#) manufacturing fasteners for Michigan-manufactured EVs.
 - The Shyft Group announced a [\\$16 million expansion](#) to existing facilities in Charlotte, Michigan. With this expansion, the company plans to add [680 new jobs](#) making commercial electric vehicles and boost production to 3,000 EVs per year, starting in mid-2023.
 - GM and LG Energy Solution [invested](#) \$2.6 billion to open the third Ultium Cells battery manufacturing plant in Lansing, Michigan. The plant was [supported](#) by a \$2.5 billion loan from the Department of Energy's Loan Programs Office, which was funded in part by the Inflation Reduction Act. The plant will employ [1,700 full-time workers](#) and [create 1,500 construction jobs](#).
 - In June 2023, DESign [announced](#) it would establish its U.S. headquarters and manufacturing operations in New Hudson, Michigan, and invest [\\$19 million](#) in the facility. The project will create [45 new jobs](#) in advanced auto projects, such as manufacturing assembly equipment for Ford and Lincoln EVs.
- The Lansing Board of Water and Light [aims](#) to provide 50% clean energy and be carbon neutral by the year 2040.
 - To help reach this goal, the board [released](#) a plan for a \$750 million project to build 650 megawatts of renewable energy.

Flint-Saginaw

Climate Impacts

Extreme Heat

- In 2024, Flint is expected to [experience](#) seven hot days, which is considered to be any day above a "feels like" temperature of 97 degrees Fahrenheit.

- Due to climate change, Flint will annually [experience](#) 15 days above 97 degrees Fahrenheit in 30 years.
- In 2024, Saginaw is expected to [experience](#) seven hot days, which is considered to be any day above a “feels like” temperature of 99 degrees Fahrenheit.
- Due to climate change, Saginaw will annually [experience](#) 14 days above 99 degrees Fahrenheit in 30 years.
- In June 2024, Flint and Saginaw [faced](#) excessive heat warnings and heat advisories with peak heat indices of 95 to 100 degrees Fahrenheit.
- In August 2023, four Flint Community School buildings [closed](#) due to extreme heat and a lack of updated air conditioning systems.
- A 2021 study from the University of Michigan School for Environment and Sustainability [found](#) environmental hazards, such as the urban heat island effect, were inequitably distributed across Michigan, with low-income residents and people of color facing the largest burdens.
 - [Census tracts](#) in Detroit, Grand Rapids, Flint, Saginaw, Lansing, and Kalamazoo, which have the largest concentrations of minority and low-income residents, are key hotspots for environmental hazards.
 - People in hotspots are [more likely to encounter health risks](#) like cancer from living near hazardous waste facilities, heavily trafficked highways, and Superfund sites.
 - It is no coincidence that census tracts [identified](#) in the SEAS project overlap with previously redlined areas in Michigan.

Wildfires

- There are [599 properties](#) in Flint that are at some risk of being affected by wildfires over the next 30 years.
 - In Flint, [265 out of 37,236 homes](#) have a moderate risk of being affected by wildfires over the next 30 years.
- There are [904 properties](#) in Saginaw that are at some risk of being affected by wildfire over the next 30 years.
 - In Saginaw, [589 out of 18,229 homes](#) have a moderate risk of being affected by wildfires over the next 30 years.

Extreme Rainfall & Flooding

- There are [6,732 properties](#) – representing 12.2% of all properties – in Flint that are at risk of being affected by flooding over the next 30 years.
- There are [4,726 properties](#) – representing 18% of all properties – in Saginaw that are at risk of being affected by flooding over the next 30 years.

Pollution Impacts

Air Pollution

- According to the American Lung Association's 2024 State of the Air report, the Saginaw-Midland-Bay City metropolitan area [ranked](#) 190th for annual particle pollution.

Water Pollution

Lead Contamination

- In April 2014, the Flint water crisis began when the city switched its drinking water supply from Detroit's system to the Flint River.
 - [Officials failed](#) to add corrosion controls to the tap water, which allowed lead and other chemicals to leach from the old, worn pipes into the drinking supply.
 - Months after the water system's switch, [testing showed](#) increased and alarming levels of lead in the blood of some Flint children. The contaminated water [doubled](#)—and in some cases, tripled—the incidence of elevated blood lead levels in the city's children. Nearly 30,000 children [were exposed](#) to toxic lead.
 - Lead contamination in Flint's water supply [caused](#) neurological problems in children, including brain damage, learning and behavioral issues, and developmental delays. Neurological damage to the children of Flint is [overwhelming](#) the city's public school system, where the rate of children who qualify for special needs instruction has doubled in recent years.
 - The switch also [exposed](#) residents to the bacteria that causes legionnaires' disease, leading to as many as 115 deaths.
 - An October 2021 study [found](#) that the children born to mothers who were exposed to the contaminated water in Flint had a significantly lower birth weight on average compared to those in other cities, and Black babies have been disproportionately impacted by the exposure.

- According to the EPA, there is [no safe level](#) of lead exposure.

Area of Concern

- The Saginaw River and Bay was [designated](#) as an Area of Concern (AOC) under the 1987 Great Lakes Water Quality Agreement.
 - Contaminants in the AOC [include](#) dioxins, furans, PCBs, chloride, chloride, metals, acids, and excessive nutrients, such as nitrogen and phosphorus.
 - Sources of these pollutants [include](#) industrial, municipal and stormwater discharges, as well as agricultural runoff.

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 \$90 per year in 2030 and a cumulative \$8.7 billion through 2050 across all households in Michigan.
- With the widespread implementation of zero-emission transportation and electricity resources, Michigan could [experience \\$51.4 billion](#) in cumulative public health benefits and [avoid 466,000 lost work days](#) by 2050.
- The City of Flint [received](#) \$1 million from the EPA's Environmental Justice Government-to-Government (EJG2G) program to create a community engagement process for the Flint Climate Change and Resiliency Plan.

Flint and Saginaw's Growing Clean Energy Economy

- Since the passage of the clean energy plan, over \$2 billion in investments have been [announced](#) in clean energy projects that will create 2,221 jobs in Michigan's 8th Congressional District – which includes Flint and Saginaw.
 - In February 2024, SK Siltron [received](#) a \$544 million loan from the Department of Energy's Loan Programs Office to expand silicon carbide wafer manufacturing in Bay City. The expansion will [create](#) 200 construction jobs and 200 permanent operations jobs manufacturing wafers for EV power electronics. SK Siltron will [partner with Delta College](#) through the Michigan New Jobs Training Program to train local workers in wafer manufacturing.
 - In February 2024, Corning [announced](#) plans for a solar component manufacturing facility that would create 1,151 new jobs and see a capital investment of up to \$900 million in Saginaw County, Michigan. The [average](#)

[hourly wage for jobs at the facility would be \\$28](#), compared with the region's median hourly wage of \$19.09.

- In August 2023, Plastic Omnium [announced](#) it would invest \$171.2 million to design and develop hydrogen storage systems for medium- and heavy-duty transit in Grand Blanc Township, Michigan. Plastic Omnium will offer [internships and co-op opportunities](#) through cooperation with local universities and work with community colleges to develop skilled labor positions.
- According to E2's Clean Jobs America 2023 [report](#), Flint is home to 3,356 clean energy jobs, including 264 in renewable generation, 30 in energy storage, 1,593 in energy efficiency, and 1,462 in clean vehicles.
- According to E2's Clean Jobs America 2023 [report](#), Saginaw is home to 2,901 clean energy jobs, including 1,070 in renewable generation, 18 in energy storage, 1,165 in energy efficiency, and 642 in clean vehicles.

Grand Rapids

Climate Impacts

Extreme Heat

- In 2024, Grand Rapids is expected to [experience](#) seven hot days, which is considered to be any day above a “feels like” temperature of 96 degrees Fahrenheit.
- Due to climate change, Grand Rapids will annually [experience](#) 16 days above 96 degrees Fahrenheit in 30 years.
- On June 2, 2023, Grand Rapids Gerald R. Ford International Airport [broke](#) a daily high record at 91 degrees.
- On June 3, 2023, Grand Rapids Gerald R. Ford International Airport [broke](#) a daily high record at 90 degrees.

Wildfires

- There are [4,454 properties](#) in Grand Rapids that have some risk of being affected by wildfires over the next 30 years.
 - In Grand Rapids, [3,762 out of 51,819 homes](#) have a moderate risk of being affected by wildfires over the next 30 years.

- In Grand Rapids, [216 out of 3,483 commercial properties](#) have a moderate risk of being affected by wildfires over the next 30 years.
- In Grand Rapids, [9 out of 125 infrastructure facilities](#) have a moderate risk of being affected by wildfires over the next 30 years.

Extreme Rainfall & Flooding

- There are [11,306 properties](#) – representing 19.12% of all properties – in Grand Rapids that are at risk of being affected by flooding over the next 30 years.
- In April 2024, the Department of Transportation [announced](#) that the Michigan Department of Transportation will receive \$12 million from the Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation (PROTECT) discretionary grant program to upgrade storm drainage and surface infrastructure to reduce future flooding on 28th Street, an important transportation and freight corridor in Grand Rapids.

Pollution Impacts

Air Pollution

- According to the American Lung Association's 2024 State of the Air report, Kent County [received](#) F grades for the number of high-ozone days and failing grades for annual particle pollution.
- According to the American Lung Association's 2024 State of the Air report, the Grand Rapids-Kentwood-Muskegon metropolitan area [ranked](#) 25th for high ozone days, 105th for 24-hour particle pollution, and 57th for annual particle pollution.

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 \$90 per year in 2030 and a cumulative \$8.7 billion through 2050 across all households in Michigan.
- With the widespread implementation of zero-emission transportation and electricity resources, Michigan could [experience \\$51.4 billion](#) in cumulative public health benefits and [avoid 466,000 lost work days](#) by 2050.

Michigan's 3rd Congressional District's Growing Clean Energy Economy

- Since the passage of the clean energy plan, over \$28 million in investments have been [announced](#) in clean energy projects that will create 155 jobs in Michigan's 3rd Congressional District – which includes Grand Rapids.
 - In March 2024, Weller Truck Parts [announced](#) it had renovated its Byron Township factory to add remanufacturing space for EV components. The expansion will create 130 new jobs at the factory.
 - In March 2023, Concept Metals Group [announced](#) it would open a new facility in Spring Lake to produce battery tray components for GM EVs. The \$15.5 million facility will [create](#) 25 new jobs.
- As of June 2024, Grand Rapids has [received](#) over \$62 million in funding from the clean energy plan – that's money going to communities to promote climate resiliency and reduce pollution.
 - In 2023, Friends of Grand Rapids Parks [received](#) \$5 million from the USDA's Urban and Community Forestry Grants to increase tree equity in the Greater Grand Rapids area.
- According to E2's Clean Jobs America 2023 [report](#), Grand Rapids is home to 14,590 clean energy jobs, including 1,163 in renewable generation, 1,856 in energy storage and grid, 8,033 in energy efficiency, and 3,378 in clean vehicles.

Northern/Upper Peninsula

Climate Impacts

Extreme Heat

- In 2024, Traverse City is expected to [experience](#) seven hot days, which is considered to be any day above a “feels like” temperature of 94 degrees Fahrenheit.
- Due to climate change, Traverse City will [experience](#) 13 days above 94 degrees Fahrenheit annually in 30 years.
- During the 2023-2024 winter, Traverse City [experienced](#) 11 days that set or tied all-time winter highs.

- Since 1970, the lowest coldest day of the year in Traverse City has [warmed](#) by 13.8 degrees Fahrenheit.
- On February 27, 2024, Traverse City [recorded](#) its hottest winter day at 73 degrees Fahrenheit.
- February 2024 was also the warmest February on [record](#) for Traverse City, with an average temperature of 34.6 degrees Fahrenheit.
- In 2024, Alpena is expected to [experience](#) seven hot days, which is considered to be any day above a “feels like” temperature of 92 degrees Fahrenheit.
- Due to climate change, Alpena will [experience](#) 13 days above 92 degrees Fahrenheit annually in 30 years.
- Since 1970, the lowest coldest day of the year in Alpena has [warmed](#) by 7.8 degrees Fahrenheit.
- Warming winter temperatures have threatened winter activities and tourist activities in Michigan’s Upper Peninsula.
 - In February 2024, Michigan’s longest sled dog race, the UP200, was [canceled](#) for the second year in a row due to warm weather.
 - Thinner lake ice is [expected](#) to cause shorter and more dangerous fishing seasons and [threaten](#) skating, skiing, and sledding activities.
 - The Upper Peninsula’s tourism industry [brings in](#) nearly \$1.5 billion to the region annually and employs about 16.5% of the region’s workforce. However, unseasonably warm weather, less snowfall, and muddy trails [threaten](#) the winter tourism industry across the region.
- Warming temperatures are negatively impacting the Great Lakes.
 - The Great Lakes are [expected](#) to experience a decline in ice coverage of 5% per decade.
 - This past winter, the Great Lakes [reached](#) a maximum ice cover of 16%, which is less than a third of the normal 52% ice coverage.

Wildfires

- There are [38 properties](#) in Traverse City that have some risk of being affected by wildfires over the next 30 years.
 - In Traverse City, [12 out of 7,080 homes](#) have a moderate risk of being affected by wildfires over the next 30 years.

- In Traverse City, [22 out of 1,002 commercial properties](#) have a moderate risk of being affected by wildfires over the next 30 years.
- In Traverse City, [1 out of 48 infrastructure facilities](#) have a minor risk of being affected by wildfires over the next 30 years.
- There are [309 properties](#) in Alpena that have some risk of being affected by wildfires over the next 30 years.
 - In Alpena, [257 out of 4,693 homes](#) have a moderate risk of being affected by wildfires over the next 30 years.
 - In Alpena, [44 out of 487 commercial properties](#) have a moderate risk of being affected by wildfires over the next 30 years.
 - In Alpena, [6 out of 23 infrastructure facilities](#) have a moderate risk of being affected by wildfires over the next 30 years.

Extreme Rainfall & Flooding

- There are [2,082 properties](#) – representing 29.5% of all properties – in Traverse City that are at risk of being affected by flooding over the next 30 years.
- There are [3,409 properties](#) – representing 65.9% of all properties – in Alpena that are at risk of being affected by flooding over the next 30 years.

Pollution Impacts

Air Pollution

- According to the American Lung Association's 2024 State of the Air report, Benzie County and Schoolcraft County each [received](#) C grades for the number of high-ozone days.
- A 2021 study [found](#) that one in 1,000 people living in Menominee have an excess lifetime risk of cancer from industrial pollutants. This was 9.9 times above the EPA's acceptable risk limit.

Water Pollution

- New Buffalo Reef, located in Michigan's Upper Peninsula, has been [polluted with copper residue](#). During the early 1900s, mining companies dumped copper mining waste called stamp sands along the shoreline of Gay township. These sands have since smothered fish that spawn along the Keweenaw Peninsula coastline.

- A 2024 report from the New Buffalo Reef Task Force [estimated](#) that it would cost at least \$2.1 billion to remove the sands and deposit them in a new landfill.

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 \$90 per year in 2030 and a cumulative \$8.7 billion through 2050 across all households in Michigan.
- With the widespread implementation of zero-emission transportation and electricity resources, Michigan could [experience \\$51.4 billion](#) in cumulative public health benefits and [avoid 466,000 lost work days](#) by 2050.

Michigan's 1st Congressional District's Growing Clean Energy Economy

- Since the passage of the clean energy plan, over \$453 million in investments have been [announced](#) in clean energy projects that will create 459 jobs in Michigan's 1st Congressional District.
 - In December 2022, Lear Corporation [announced](#) a \$28 million expansion of its Traverse City, Michigan, manufacturing facility to increase manufacturing capacity for battery pack components. Lear will manufacture battery disconnect units and other battery subsystems for GM's Ultium EVs at the plant. The expansion will add 79 new jobs [paying](#) an average hourly wage of over \$20 per hour, plus benefits.
 - In March 2024, Highland Copper [passed](#) a key funding hurdle for its Copperwood Mine in Gogebic County, Michigan. The mine will increase the domestic copper supply, a key input for the clean energy transition. Highland Copper invested \$425 million in the mine, which is projected to create 380 jobs. The mine will also provide over \$15 million per year in local, county, and state tax revenue and increase business spending in Michigan by over \$130 million per year.