



Figure 1. Image from VISIT Milwaukee.

Milwaukee County Climate Action 2050 Plan

Vulnerability Assessment Survey Results Memo

Achieving Net Zero Carbon Emissions While Advancing Equity, Justice, and Community Resilience



Introduction

In January 2023, Milwaukee County published and distributed an online survey on climate change and extreme weather impacts in Milwaukee County. The survey was conducted to understand residents' experiences with extreme weather events and their concerns about the impacts of climate change on the county's infrastructure, economy, and public health.

The survey received a substantial number of responses, with over 755 people participating. The respondents represented a good age distribution and near-equal gender representation. However, it's important to note that the survey respondents are not fully representative of Milwaukee County's population. The survey respondents predominantly identified as White/Caucasian (90%) and from zip codes with higher average incomes and education levels. Additionally, geographically, despite receiving responses from all but one zip code, most respondents lived in zip codes closer to the lakefront. The overrepresentation of respondents from these areas and underrepresentation of respondents from communities which experience systemic racism and classism should be kept in mind when reviewing the summary of survey results below, as the responses do not represent the full diversity of Milwaukee County. Nonetheless, the survey responses provide some valuable insights into how many residents perceive climate change and the impacts of extreme weather events on their lives and communities.



Figure 2. Image from VISIT Milwaukee.

Key Findings

1. Though respondents feel they have sufficient access to food and energy, they are concerned about food and energy systems' ability to respond to extreme weather impacts and they lack confidence in the ability of County government to protect vulnerable populations.
2. The impacts of climate change that respondents were most worried about were extreme weather events, water resources, food resources, ecosystem damage, and energy.
3. The most commonly reported extreme weather events that respondents experienced were extreme temperatures, extreme weather (including storms, extreme wind, and tornadoes), flooding, and mild winters. These events had various impacts on transportation, property, finances, health, and work/school attendance.
4. Many places in Milwaukee County were identified as vulnerable to climate change. These included the Lake Michigan shoreline, green spaces, roads, floodplains, rivers, and neighborhoods.
5. Respondents expressed a strong desire for the Milwaukee County government to prioritize public transportation improvements, including expanding bus routes, adding light or heavy rail options, improving service reliability, and addressing safety concerns.
6. Finally, respondents suggested several ways in which the Milwaukee County government can protect their community from climate change. The most popular suggestions were to prioritize green transportation, increase the use of clean energy, preserve green spaces, improve infrastructure, plan ahead for emergencies, and conserve water.

Overall, this suggests that Milwaukee County residents who are represented in the survey responses are aware of the risks of climate change and concerned about the impacts of extreme weather events on their community. They

want the county government to take action to protect the community, including by prioritizing public transportation, conserving green spaces, and investing in clean energy. These findings can be useful in guiding future policy decisions and community outreach efforts related to climate change and extreme weather impacts in Milwaukee County. To gain a fuller understanding of Milwaukee residents' perceptions of climate change and extreme weather, future engagement opportunities will be planned with a focus on maximizing participation by communities underrepresented in the survey.

Confidence in Systems to Adapt to Climate Change

Based on the survey results, a majority of respondents believe that climate change has an impact on their quality of life in Milwaukee County. While most respondents feel that they have sufficient access to healthy and affordable food and enough energy to meet their household needs, they do not feel that there are enough affordable housing options or sufficient and reliable public transportation options in Milwaukee County. Additionally, most respondents lack confidence in the ability of the transportation system or food, water, and energy supplies to adjust and respond to extreme weather. They also lack confidence in Milwaukee County government's ability to protect vulnerable populations in the face of extreme weather. Finally, there was a split among respondents on whether Milwaukee County government strives to protect vulnerable populations, with 35% agreeing, 35% answering neutral, and 30% disagreeing. This indicates that there may be room for improvement in communication and transparency about the County's efforts to address the needs of vulnerable populations in the face of climate change impacts.

Climate Change Impacts of Highest Concern

When analyzing respondents' main concerns about impacts of climate change, extreme weather emerged as both respondents' primary concern and a crosscutting theme. In these responses, extreme weather included episodes of extreme heat and cold, warmer winters, drought, excessive rainfall, and severe storms. Respondents most frequently expressed concern about impacts of increasingly frequent and severe extreme weather events on various aspects of their lives and communities, including water and food resources, ecosystem damage, and energy resiliency. Common concerns were flooding risks to coastal populations, access to shelter for houseless individuals during episodes of extreme temperatures, inclement weather impacting road safety, and an influx of climate refugees from other regions exacerbating resource strain.

Water resources appeared as the second most common concern, with respondents expressing worries about water scarcity, droughts, and the health, cleanliness, and water rights of Lake Michigan. This concern broadly overlapped with the third most common concern, food scarcity, because of the need for water resources to grow food locally. Next was ecosystem damage, with respondents listing impacts of biodiversity loss, diminished wildlife, damaged crops and livestock, degraded air quality, and a reduction in trees and green areas in public spaces. Finally, energy was the fifth most common theme, with respondents expressing concern about the resiliency of the power grid and its ability to handle strains during extreme heat events and severe storms.

Common Experiences with Climate Change and Extreme Weather

When Milwaukee County respondents were asked about their personal experiences with climate change and extreme weather, four main types of events emerged from their responses. Extreme temperatures were the most frequently mentioned event type, closely followed by extreme weather, which included severe storms, blizzards, strong winds, and tornados. Flooding and milder winters were the third and fourth most reported event types experienced by respondents, respectively.

Respondents also shared stories detailing the impacts of these events. Transportation disruptions and property damage were most frequently mentioned. Respondents reported road closures, ruined vehicles, sewerage overflows, and repeatedly flooded basements during heavy rainfall events. They also shared experiences with downed trees, burst pipes from extreme cold, and power outages.

These events often resulted in increased costs for respondents, such as higher energy bills and the need to replace damaged infrastructure or replace food lost during a power outage. Health impacts were also mentioned, such as heat stroke and asthma due to poor air quality. Finally, many respondents reported that transportation disruptions caused by extreme weather affected their ability to make it to work or that their children’s schools closed due to insufficient heating or cooling in the building.

Vulnerable Areas and Infrastructure Types

Respondents identified several areas and types of infrastructure in Milwaukee County that are vulnerable to the impacts of climate change. The areas mentioned most frequently were the Lake Michigan lakefront and shoreline, as well as the county's green spaces, including parks and trails. Respondents also expressed concerns about the vulnerability of roads to extreme temperatures, which can cause potholes, and the vulnerability of rivers and low-lying areas to flooding and erosion. Additionally, some respondents expressed concerns about the vulnerability of housing or neighborhoods to the impacts of climate change, such as extreme heat.

Improving Transportation Access, Reliability, and Safety

In response to the survey question about improving access to transportation in Milwaukee County, respondents suggested a shift away from car-centric projects like freeway expansion and towards more sustainable transit options. The most common suggestions included expanding bus routes and access to the HOP streetcar, as well as adding light or heavy rail options. The cost of public transportation was also a frequent concern, with suggestions to increase funding for public transit and raise taxes to support these changes.



Figure 3. Image from VISIT Milwaukee.

Improving reliability was another common theme, with suggestions to increase the frequency of buses and improve green transportation options by electrifying the transit system and creating better charging infrastructure. Funding for public transit was also seen as unreliable, with respondents suggesting ways to secure consistent funding for public transportation. Finally, safety was a concern, with suggestions to better protect bike lanes, improve traffic safety and road conditions, provide shelter at transportation stops, and make city design more pedestrian friendly.

Strategies to Protect Communities

Respondents suggested several strategies that Milwaukee County government can undertake to protect their communities from the impacts of climate change. The most cited strategy is the promotion of green transportation, with respondents suggesting the expansion of mass transit, incentives for carbon-free transportation, and

electrification of county fleets. Additionally, respondents requested the county limit highway expansions and increase the availability of charging infrastructure.

Another important strategy that emerged was the promotion of clean energy, with respondents advocating for an increase in renewable energy sources. Many also emphasized the importance of preserving and creating green spaces, including planting more trees and implementing bioswales to reduce stormwater runoff. Additionally, respondents urged the county to invest in infrastructure improvements, such as ensuring that buildings and bridges are resilient to the impacts of climate change.

Other strategies suggested include planning for climate change emergencies and incorporating climate change considerations into urban planning. Finally, respondents emphasized the importance of protecting water resources, including conserving water, preventing water pollution, and protecting water rights.