MAKING THE CONNECTION:
Climate Change & Mental Health

The burning of fossil fuels causes the release of carbon dioxide, which builds up in the atmosphere and causes Earth's temperature to rise — **this is climate change**. The burning of fossil fuels produces heat-trapping toxins that are released into the air, harming our health downstream. The Earth's average temperature has increased by nearly 1.5°F in the last century, with recent years being the warmest on record. Here in Ann Arbor, we've experienced a nearly 1.0°F increase in temperature over the last century. However, climate change refers to the lasting disruption of our weather patterns, not just temperature increases. Some of these weather-related changes include increased floods and droughts, wildfires, intense storms, heat waves, and rising sea levels. Climate change is already causing an increase in the intensity, duration, and return frequency of most natural disasters – trends that are projected to continue. These conditions have far-reaching environmental, social, agricultural, and economic effects and are ultimately harmful to our health and well-being, including our mental health and wellness.

BACKGROUND ON MENTAL HEALTH

Mental health encompasses emotional, psychological, behavioral, and social well-being. It determines how people cope with the normal stress of life and function within their community. Mental illness, on the other hand, adversely affects one's thinking, feelings, and/or behaviors. Climate change can cause and intensify stress and anxiety, adversely affecting mental health. For example, events such as extreme storms or extreme heat can lead to depression, post-traumatic stress disorder, anger, and even violence.

Climate change can also create situations that disrupt treatment of existing conditions by preventing individuals for accessing their medications or by rendering the treatment ineffective (i.e., interfering with the body's ability to thermoregulate). Everyone is at risk, but not everyone is affected equally. Groups that are especially vulnerable to the mental health impacts of climate change include children, the elderly, outdoor workers, athletes, and women. Also at risk are disadvantaged groups, those with existing mental illness, and those with close ties to the land, including farmers and tribal communities.

CLIMATE CHANGE IN ANN ARBOR

Rising Temperatures:
Average air temperature in A2 has increased by nearly 1°F since the 1900s and is expected to rise 3°F to 7°F by 2050.

Hot Days:
Ann Arbor is likely to experience 12 to 36 more days per year over 90°F by mid-century and 30 to 42 more days per year over 90°F by end of-century.

More Precipitation:
Total annual precipitation has increased by over 44% since the 1950s and will likely continue to increase in the future, though types of precipitation will vary (i.e., more winter precipitation in the form of rain or ice).

More Extreme Precipitation:
The total volume of rain falling during extreme events has increased by 37% since 1981 and the number of heavy rainfall events has increased by over 41% since the 1950s. These trends are both projected to continue increasing.

FAST FACTS

• More than 40 million adults in the U.S. suffer from a mental illness.
• Victims of natural disasters are at an increased risk of anxiety, depression, PTSD, and suicide.
• 25-50% of people exposed to an extreme weather disaster are at risk of adverse mental health effects.
• Up to 54% of adults and 45% of children suffer depression after a natural disaster.
• 49% percent of the survivors of Hurricane Katrina developed an anxiety or mood disorder, and 1 in 6 developed PTSD. Suicide and suicidal ideation more than doubled.
• Puerto Rico is experiencing a 30% increase in self-inflicted deaths, a 246% increase in calls to suicide hotlines, and a significant increase in emergency room visits for substance abuse problems compared to the previous year, largely due to the effects from Hurricane Maria.
• After a record drought in the 1980s, the suicide rate doubled, including more than 900 farmers in the Upper Midwest.
• Ecological grief – grief from the loss or anticipated future loss of physical ecosystems, environmental knowledge, and cultural identity – is on the rise.
• Climate-related natural disasters are increasing damaging critical infrastructure, thereby diverting resources from public health, putting pressure on individual resources, and impairing social cohesion, all of which can ultimately contribute to negative mental health outcomes.

This document is based on a document created by the American Public Health Association, American Psychological Association, Climate for Health, and ecoAmerica.

THE MENTAL HEALTH IMPACTS OF CLIMATE CHANGE:

IMMEDIATE IMPACTS
Natural disasters are sudden in their onset and include destructive storms, floods, wildfires, and extreme heat. Natural disasters may cause posttraumatic stress disorder (PTSD), anxiety, depression, and stress. Self-harm, including substance abuse and suicidal ideation, may also occur.
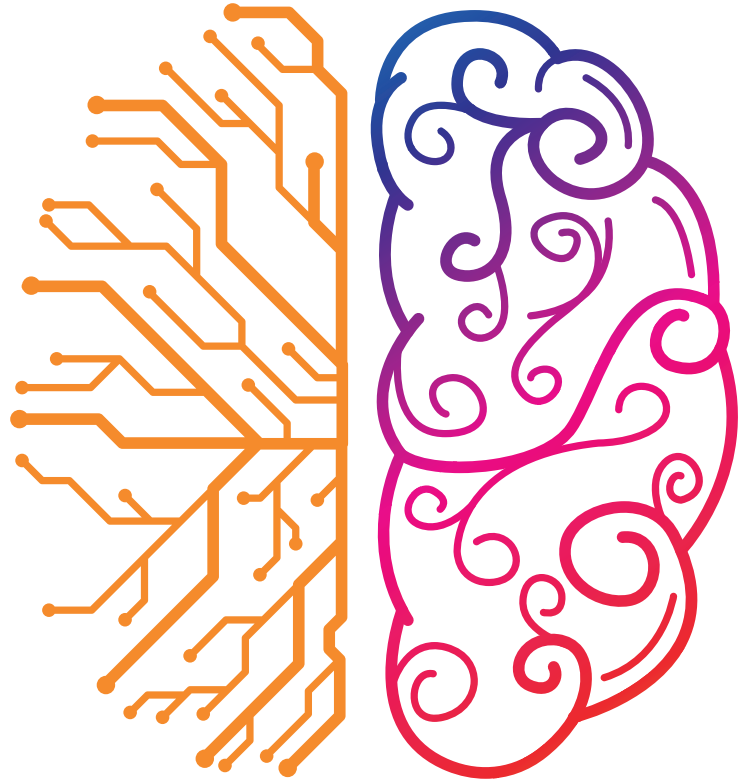
GRADUAL IMPACTS
Slowly progressing, long-term conditions associated with climate change include rising temperatures, elevated sea levels, and changing precipitation patterns. Chronic stress can result from the gradual impacts of climate change. For example infectious diseases, chronic diseases (asthma and allergies), nutritional deficiencies, and injuries can contribute to stress.

INDIRECT IMPACTS
Climate change can affect the way we think about ourselves, each other, and the world. After a climate event or resulting displacement, people may experience a diminished sense of self, difficulty relating to others, diminished social interaction, and solastalgia. Community impacts include domestic abuse, child abuse, and violence (e.g., assault and civil conflict). Economic insecurity and physical damage are other potential effects.

LOCAL RESOURCES

Help prepare yourself, your family, and your neighborhood for climate change and natural disasters by undertaking the following steps:

PREPARE FOR EMERGENCIES:
• Prepare in advance for emergencies by having and practicing an emergency plan. Include food, water, flashlights, and a first aid kit in emergency preparedness kits. Also consider including items, such as books and games, that can help reduce stress. If you are taking medication for a mental health condition (or other health conditions), get your refills ahead of the storm if possible. Learn more about preparing an emergency preparedness kit here: **ready.gov/make-a-plan**

• Evacuate ahead of a disaster if at all possible. Evacuating early reduces the risk of stress/anxiety symptoms. The further one evacuates from the site of a disaster, the less severe the mental health impacts are likely to be.

• Check in on vulnerable neighbors during extreme weather.

SEEK TREATMENT:
• Mental health conditions are often stigmatized, but treatment for them can be effective and enhance overall well-being. Seek treatment if you or someone you know may be suffering from a persistent and/or debilitating mental health condition.
• Be aware of mental health services such as counseling and therapy. Also keep in mind informal means of care such as self-care and spiritual and community-based services.

• Engage in healthy coping behaviors and seek comfort in community events following a weather-related disaster.

• Monitor signs of behavioral and psychological changes in children. Such changes include an inability to speak, bed-wetting, stress or fright when not in danger, and self-harm. Watching excess television coverage of an extreme weather event can cause distress.

BUILD RESILIENCE:
• Apply for a Sustaining Ann Arbor Together neighborhood grant to enhance local sustainability while building connections with your neighbors. Learn more at **a2gov.org/sa2t**.

• Learn more about Resilience Hubs and consider working with the Ann Arbor Office of Sustainability and Innovations to launch one in your neighborhood.

• Reduce your contribution to climate change by implementing energy saving strategies. Learn more and gain energy saving tips at **a2energy.org**.