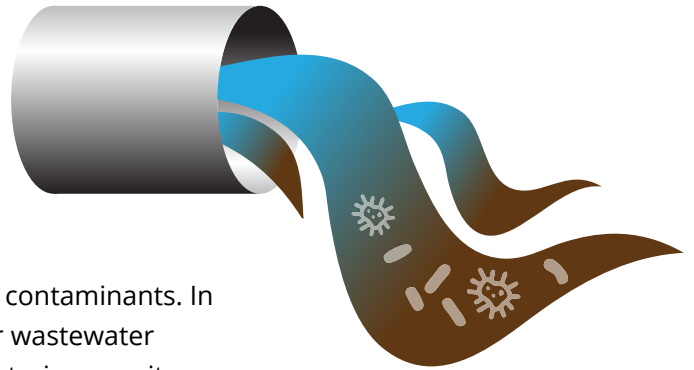# WARMER WATER AND
FLOODING
INCREASE THE RISK OF ILLNESS AND INJURY

Climate change poses many risks to human health. Some health impacts of climate change are already being felt in the United States. We need to safeguard our communities by protecting people's health, wellbeing, and quality of life from climate change impacts. Many communities are already taking steps to address these public health issues and reduce the risk of harm.

BACKGROUND

When we burn fossil fuels, such as coal and gas, we release carbon dioxide (CO_2). CO_2 builds up in the atmosphere and causes Earth's temperature to rise, much like a blanket traps in heat. This extra trapped heat disrupts many of the interconnected systems in our environment.

Climate change also affects human health by impacting the quality and safety of both our water supply and our recreational water. As the earth's temperature rises, surface water temperatures in lakes and oceans also rise. Warmer waters create a more hospitable environment for some harmful algae and other microbes to grow. Climate change can also lead to heavier downpours and floods. Flood waters often contain a variety of contaminants. In some cases, floods can overwhelm a region's drainage or wastewater treatment systems, increasing the risk of exposure to bacteria, parasites, and other unhealthy pollutants.

THE CLIMATE-HEALTH CONNECTION

Warmer waters and flood conditions introduce a number of public health concerns.

☼ Certain marine bacteria that make humans sick are more likely to survive and grow as oceans get warmer. *Vibrio parahaemolyticus* is responsible for diarrheal illnesses linked with consuming raw or undercooked oysters from the Gulf of Mexico. *Vibrio vulnificus* causes vomiting, diarrhea, and abdominal pain in healthy adults. *Vibrio vulnificus* is more severe than *Vibrio parahaemolyticus* and is responsible for most of the seafood-related deaths in the United States. Both can also cause serious infections through contact with contaminated water while swimming.

- *Naegleria fowleri* (sometimes referred to as a "brain-eating ameba") is a microbe that can be present in soil and warm freshwater. It usually infects people when contaminated water enters the body through the nose. Infections are occurring farther north, and warming waters may increase this risk.

- Heavy downpours may increase exposures to diseases in drinking and recreational water. Floodwaters can contain disease-causing bacteria. They can also contain parasites and viruses. In addition, they can become contaminated with other harmful pollutants including agricultural waste, chemicals, and raw sewage.

- Flooded materials in homes, schools, and businesses can cause mold to grow and be inhaled, contributing to respiratory problems.

ACTIONS WE CAN TAKE
TO PREPARE FOR CLIMATE CHANGE

We can responsibly manage the problems facing our environment by taking sensible steps toward protecting human health and safety. Whether measures are meant to reduce future climate change impacts or address the health impacts of climate change that are happening already, early action provides the greatest health benefits. It makes sense to invest in creating the strongest climate-health adaptation and preparedness programs we can.

Reducing the release of heat-trapping gases like CO_2 can help protect our health and wellbeing by decreasing impacts on our climate system. Activities that reduce the amount of heat-trapping CO_2 in the atmosphere are many of the same things we already know prevent health problems. Active modes of transport like biking or walking can help reduce traffic-related air pollution and encourage physical activity, which has public health benefits including reduced rates of obesity, heart disease, and diabetes.

ACTIONS WE CAN TAKE
TO PROTECT OUR WATER

We also can take actions to prepare our communities for present and future effects of climate change. In fact, some communities are already implementing effective programs to address climate-sensitive health issues associated with water quality. Cities like Philadelphia and Chicago have initiatives to convert non-absorbent land cover (concrete) to "green cover" (plants) that more efficiently absorb water. Portland, Oregon, has updated its laws to ensure that new buildings have designs and features that manage stormwater on-site.

Sensible steps to manage health threats associated with poor water quality could include:

- Public health agencies monitoring and testing drinking and recreational water for harmful contaminants.
- Health officials tracking disease rates to help protect communities from risks.
- Local governments and utility agencies taking steps to better manage stormwater and improve drinking water quality.
- Public health agencies developing and implementing climate adaptation plans.
- Private well owners monitoring water quality annually.

APHA
AMERICAN PUBLIC HEALTH ASSOCIATION
For science. For action. For health.

CDC
U.S Department of
Health and Human Services
Centers for Disease
Control and Prevention