

# Changing Climate through Healthy Community Design and Transportation



## FAST FACTS

- Since 1990, greenhouse gas emissions from the transportation sector have risen **16%**.
- Transportation is the **second leading contributor** to greenhouse gas emissions in the U.S.
- Short trips are the most hazardous because the most harmful pollutants are emitted within minutes of starting a car.
- **Half** of trips in the US are 3 miles or less, and over **25%** of our trips are less than 1 mile. Private vehicles are used in as many as **69%** of these short trips.
- **Vehicle pollutants are most concentrated near major roads.** People living close to major roads are at increased risk of chronic diseases (e.g., asthma, cardiovascular disease, cancer) and premature death.
- **Physical inactivity** among U.S. adults has increased approximately **35%** in the last 30 years, while use of auto transportation has increased.
- **Diabetes rates decrease** as neighborhood **walkability increases.**

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. Upstream 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. 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. These conditions have far-reaching environmental, social, agricultural, and economic effects and are ultimately harmful to our health and well-being. Traffic emissions are harmful to our health and contribute to climate change. However, transportation systems and healthy community design offer great opportunities to mitigate climate change and improve health.

## BACKGROUND ON TRANSPORTATION AND HEALTHY COMMUNITY DESIGN

The development of transportation systems in the U.S. has transformed our lives and livelihoods. The advent of transportation has expanded access to jobs, health care, food, goods, and services. Also, transportation allows people to evacuate and seek safety in times of danger. Conversely, lack of access to transportation limits access to needed resources. It also can result in adverse health exposures, such as those caused by walking during periods of extreme heat or poor air quality. Natural disasters caused by climate change can limit access to transportation, hindering safe evacuation. In addition, they can restrict emergency service providers from reaching those who need them. However, increased access to automotive transportation has led to dependence on automobiles and to urban sprawl, where populations are expanding away from urban centers and driving greater distances to workplaces and resources. Dependence on

## CASE STUDY: OLYMPIC-SIZED REDUCTION IN ASTHMA

Transportation practices can influence our health. The more we drive, the more we contribute to harmful air quality. When Atlanta was home to the 1996 Olympics, residents were asked to limit driving to reduce traffic congestion. Traffic—and thus air pollution—decreased substantially. Moreover, there was a significant decrease in pediatric hospital admissions and emergency room visits for asthma. Once the Olympics were over and normal traffic resumed, those rates increased to baseline levels. Less driving and more use of mass transit can lead to improved health for all and, especially, improved respiratory health for children.

## TRANSPORTATION AND DESIGN Impacts on Climate Change and Health

### AUTOMOTIVE TRANSPORTATION



Driving releases harmful pollutants into the environment. People both inside and outside the vehicle are exposed.

**CLIMATE IMPACTS:**  
Increases Traffic, Increases Pollution

**HEALTH IMPACTS:**  
Decreases physical activity  
Increases chronic disease risk  
Worsens existing chronic disease

Many people can be transported at once via mass transit, reducing vehicles on roads. This form of transportation also encourages walking between stops and destinations.

**CLIMATE IMPACTS:**  
Reduces Traffic, Reduces Pollution

**HEALTH IMPACTS:**  
Increases physical activity (slightly)  
Increases safety, Decreases stress  
Increases social interaction

### MASS/PUBLIC TRANSPORTATION



Walking, biking, and rolling to the places we need to go is termed active transportation. People who have options to reach their destinations without driving can have more active lifestyles. Active lifestyles promote healthier lives.

**CLIMATE IMPACTS:**  
Reduces Traffic, Reduces Pollution

**HEALTH IMPACTS:**  
Increases physical activity, Decreases chronic disease risk, Decreases stress, Increases social interaction

### ACTIVE TRANSPORTATION



Communities are designed with health in mind. All modes of transportation, particularly safe forms of active transportation, are weighed. Designs promote green space (including parks or areas with trees and gardens).

**CLIMATE IMPACTS:**  
Decreases Distances Traveled,  
Reduces Pollution

**HEALTH IMPACTS:**  
Decreases chronic disease risk  
Increases safety

### HEALTHY COMMUNITY DESIGN



vehicles is among the top factors that have increased greenhouse gas emissions, which drive climate change and are harmful to our health. Increased automobile dependence has led to more sedentary lifestyles, contributing to rising rates of chronic diseases such as obesity, diabetes, and heart disease. The way we design and build our communities affects our physical and mental health. Many communities are designed for automobiles rather than for residents. Healthy community design practices, however, consider walk-, bike-, and roll-friendly routes when designing or updating communities, allowing people to access necessary amenities safely and practically. This results in improved air quality, health, and quality of life.

## WHAT CAN BE DONE?

*Explore climate-friendly options for commuting:*

- Walk or bike for short trips rather than driving if routes are safe and accessible. Active transportation (biking, walking, and rolling) can reduce greenhouse gas emissions. It can also improve health, increase safety, and save money. Biking in groups can create a safer and more social environment.
- Increase use of mass transportation, including buses, trolleys, light rail (trams), passenger trains, rapid transit (metro/subways), and ferries.
- Use employer-offered programs to reduce driving (e.g., working from home or working compressed schedules).
- If driving, refrain from fast acceleration or idling your car's engine. Also, keep tire pressure at the appropriate level and stay up to date on vehicle maintenance (e.g., tune-ups and oil changes) to reduce excess emissions.

*Participate in a healthy community:*

- Planting trees can help the environment in many ways. For example, it can reduce pollution, cool the environment, and reduce flooding.
- Participate in or establish community gardens to increase access to healthy food and promote green space.

*Resources:*

- For more information on climate solutions and what you can do to reduce your carbon footprint, visit [www.apha.org/climate](http://www.apha.org/climate) and [www.climateforhealth.org](http://www.climateforhealth.org).