

*Credit: NASA, Global temperatures in 2100 based on historic temperatures & GHG emissions*

# **Climate Change and Health in IL: Breathing in a New Climate**

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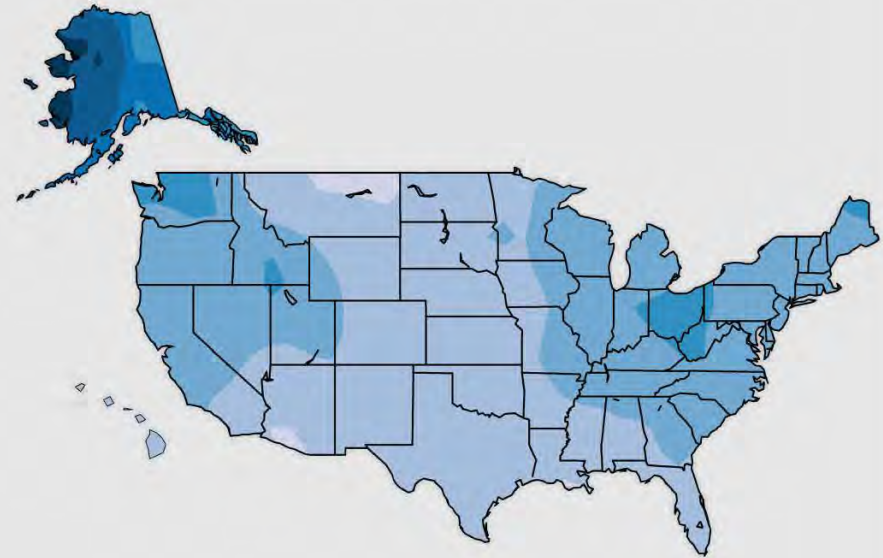


# Projected Change in Heavy Precipitation Events

Rapid Emissions Reductions (RCP 2.6)



Continued Emissions Increases (RCP 8.5)



Future Change Multiplier







Chicago, IL 2013



Johnston City, IL 2017



Wateska, IL 2015



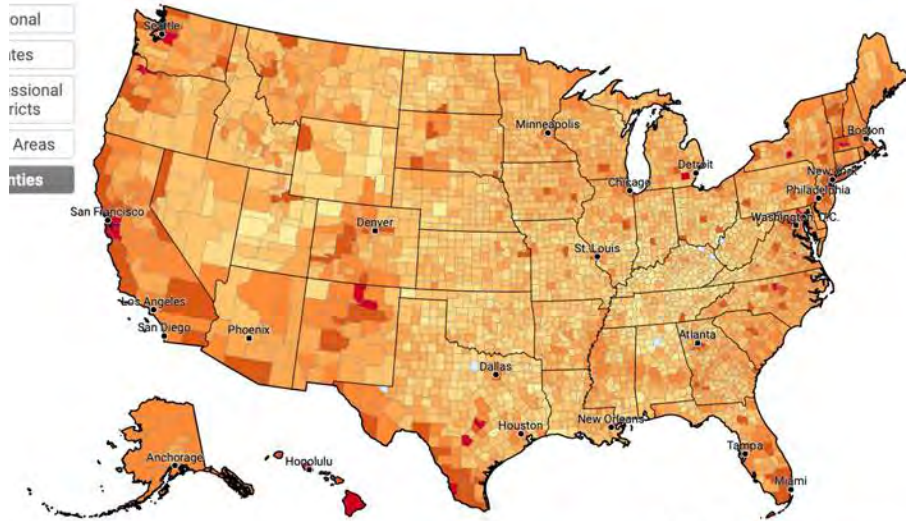
Gurnee, IL 2017



# Yale Program on Climate Change Communication: Opinion Maps, 2020

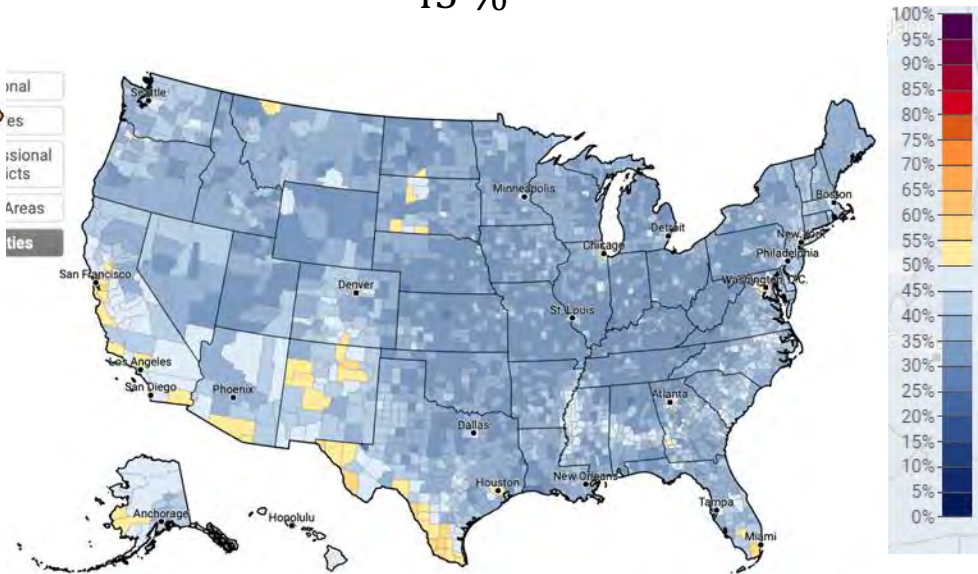
Estimated % of adults who think global warming is happening

72 %



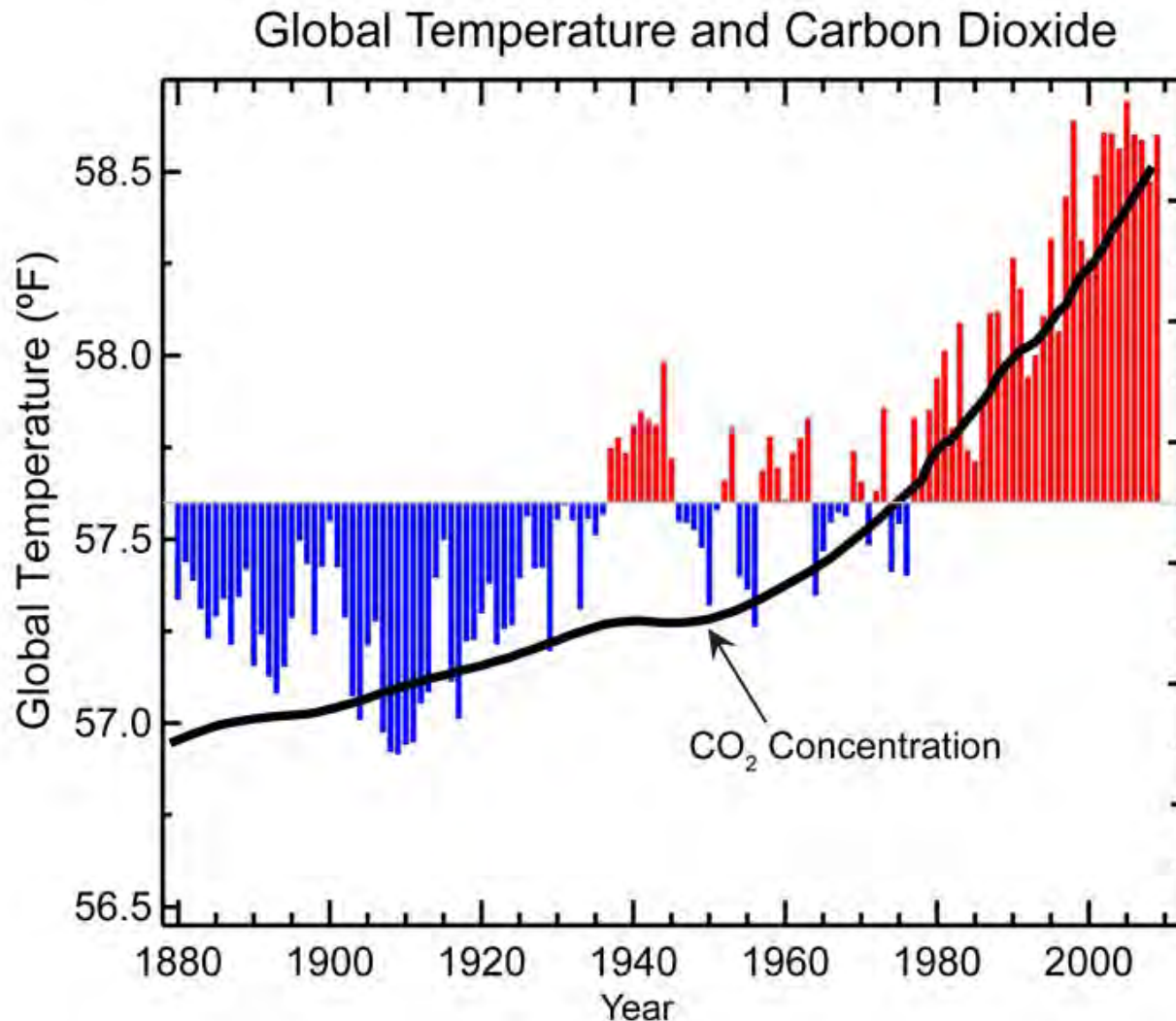
Estimated % of adults who think global warming will harm them personally

43 %

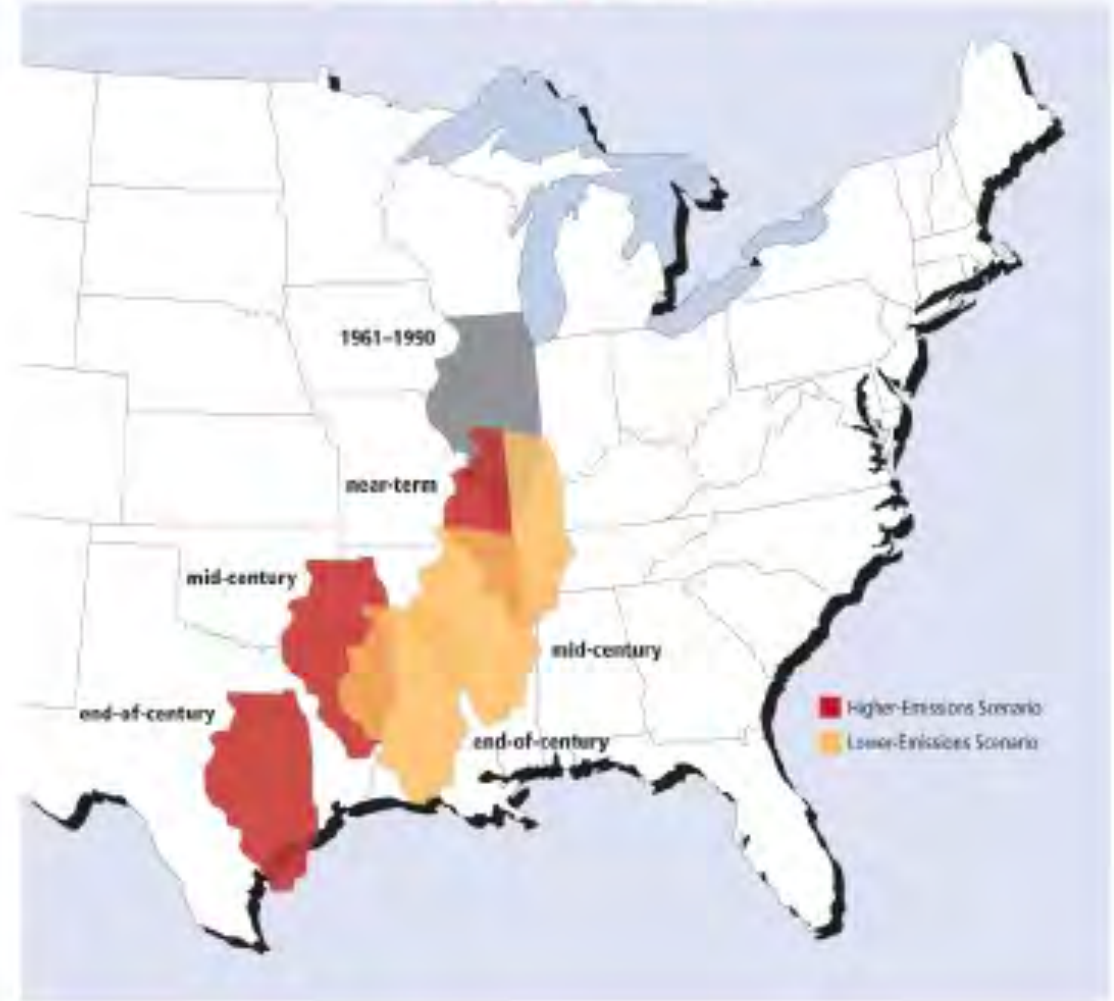


<https://climatecommunication.yale.edu/visualizations-data/ycom-us/>

Fact: CO<sub>2</sub> has increased dramatically  
Fact: Global temperature has increased

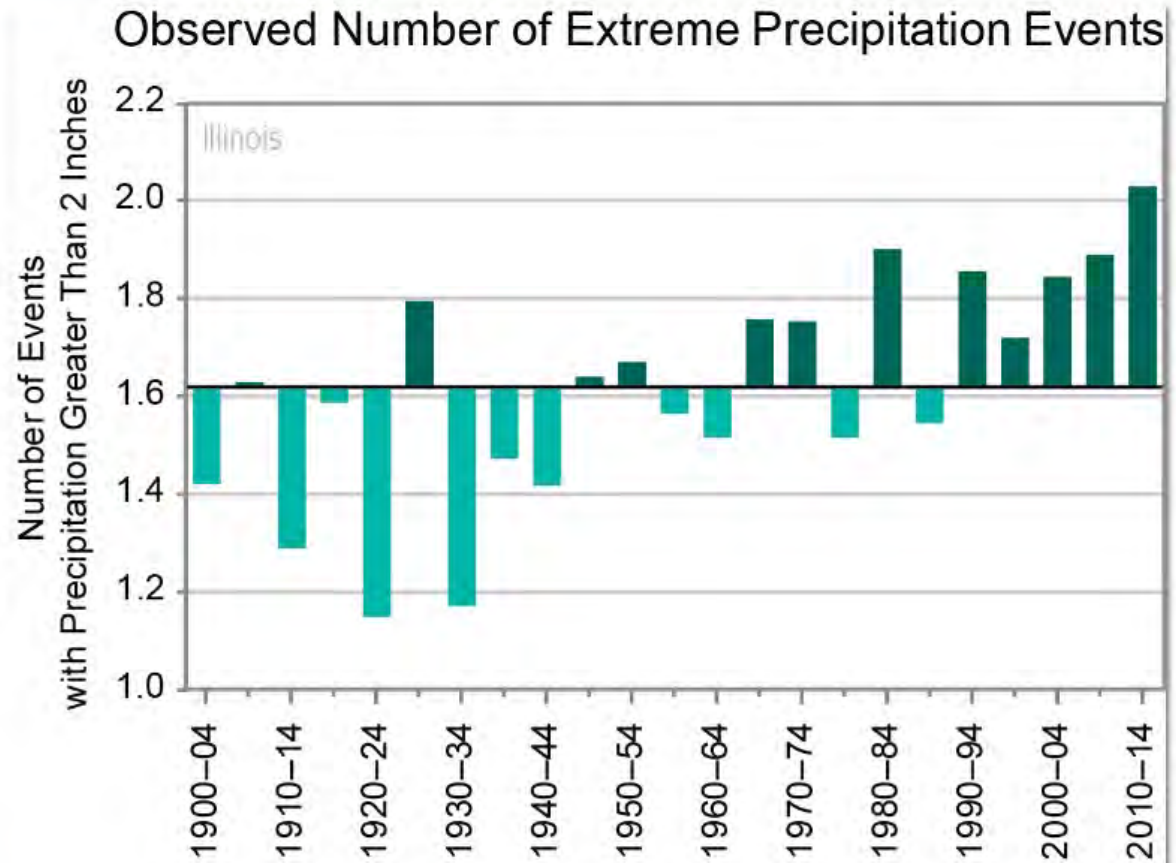


# Migrating Illinois Climate



<https://www.ucsusa.org/sites/default/files/2019-09/midwest-climate-impacts.pdf>

# Observed Number Days with Extreme Precipitation Events in IL





# CLIMATE CHANGING HEALTH

in Illinois

## Environmental Changes



Heat Waves



Floods



Droughts



Worsening Air Quality

## Health Conditions



Tick and Mosquito Diseases



Injuries and Infections



Respiratory Problems from Mold



Heat Stroke and Exhaustion



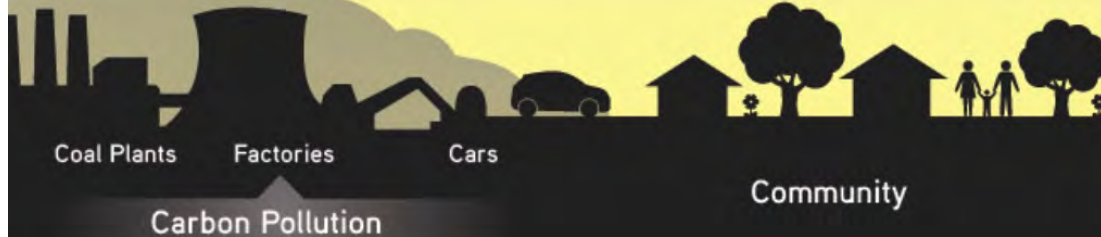
Contaminated Drinking Water



Mental Health



Worsening Allergies and Asthma







An aerial photograph of a city skyline, likely New York City, showing numerous skyscrapers. The image is hazy, suggesting air pollution. A white oval is overlaid in the upper right corner, containing the text "RESPIRATORY HEALTH" in bold, black, uppercase letters.

**RESPIRATORY  
HEALTH**



# Snapshot of Illinois Asthma Data

- 1.3 million noninstitutionalized adults have or had asthma
- 13.6 % of children currently have asthma
- 19,968 hospitalizations with asthma as a primary diagnosis
- 72,810 emergency department visits with asthma as the primary diagnosis
- \$383.3 million spent on asthma hospitalizations
- 183 asthma deaths in 2010

# Illinois Disparities



## Gender

Asthma prevalence in women is **nearly 2x higher** than men.

Male 6.2%

Female 10.4%


## Ethnicity

Asthma prevalence among Hispanic adults is **nearly 2x lower** compared to non-Hispanic Blacks and is lower than non-Hispanic White.

Hispanic 5%

Non-Hispanic White 8.5%

Non-Hispanic Black 10.8%



## Income

Asthma prevalence among adults in the lowest income bracket (<\$15,000) is **nearly 2x higher** compared to adults with income >\$50,000.

>\$50K 6.9%

<\$15K 13.5%

Data Source: U.S. Centers for Disease Control and Prevention, U.S. Behavioral Risk Factor Surveillance System, accessed September 2018.

<sup>†</sup>Current Asthma is self-reported based on the responses to two questions: 1. Have you ever been told you have asthma? 2. Do you still have asthma?

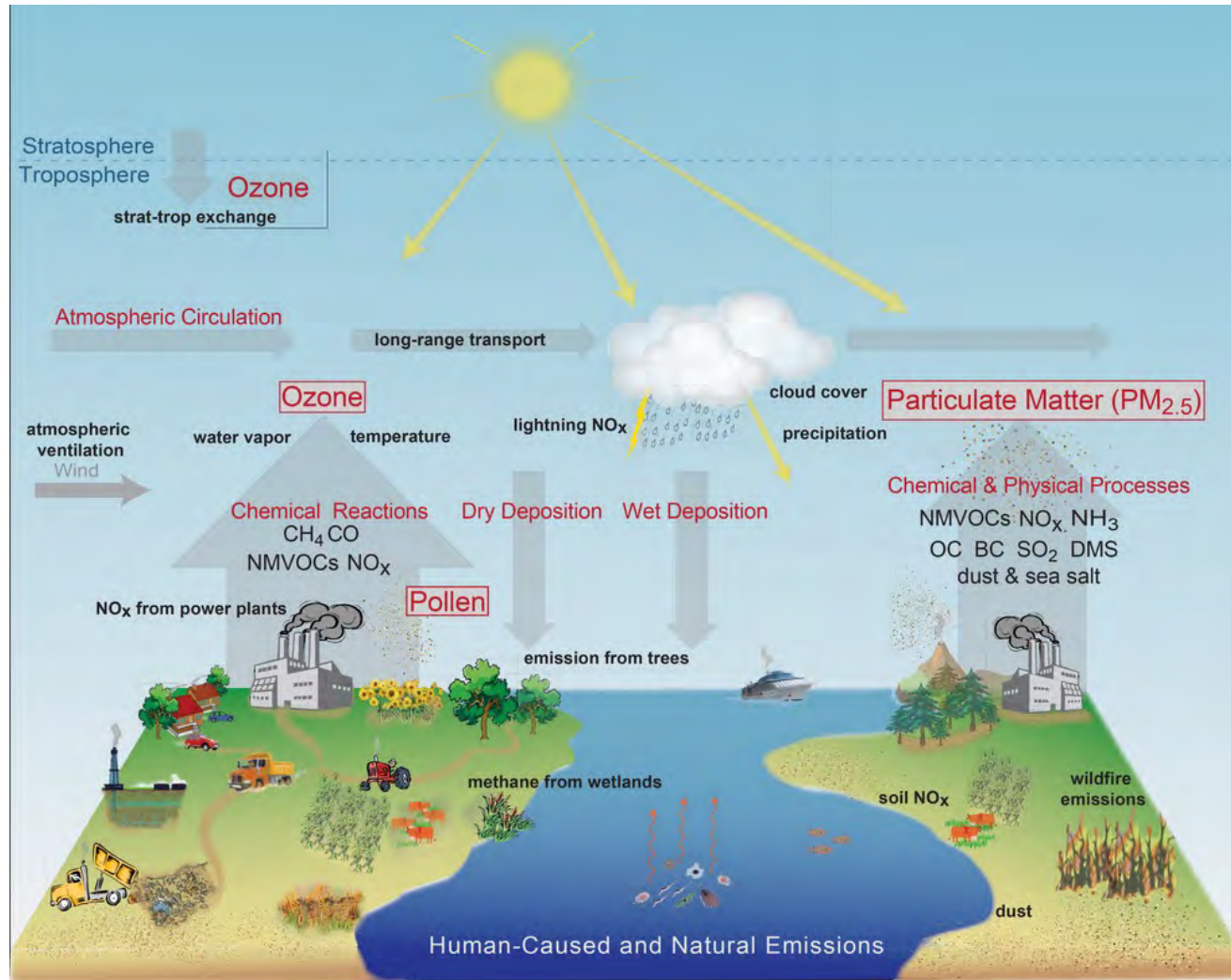
Adults is defined as age 18 and over.

# Climate Change and Air Quality

Higher concentration of ozone pollution

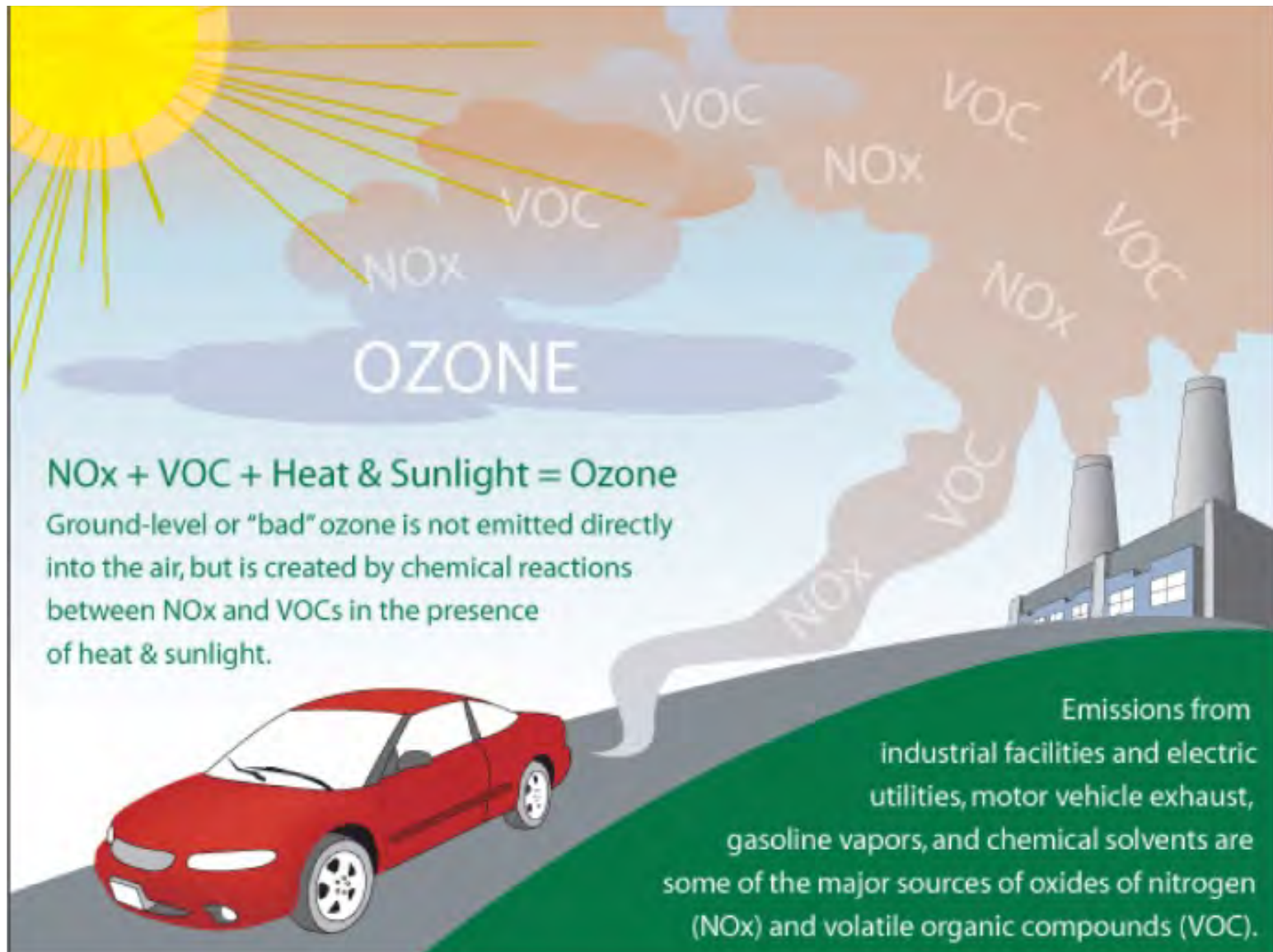
Increase in PM<sub>2.5</sub> from Wildfires

Increase in allergens



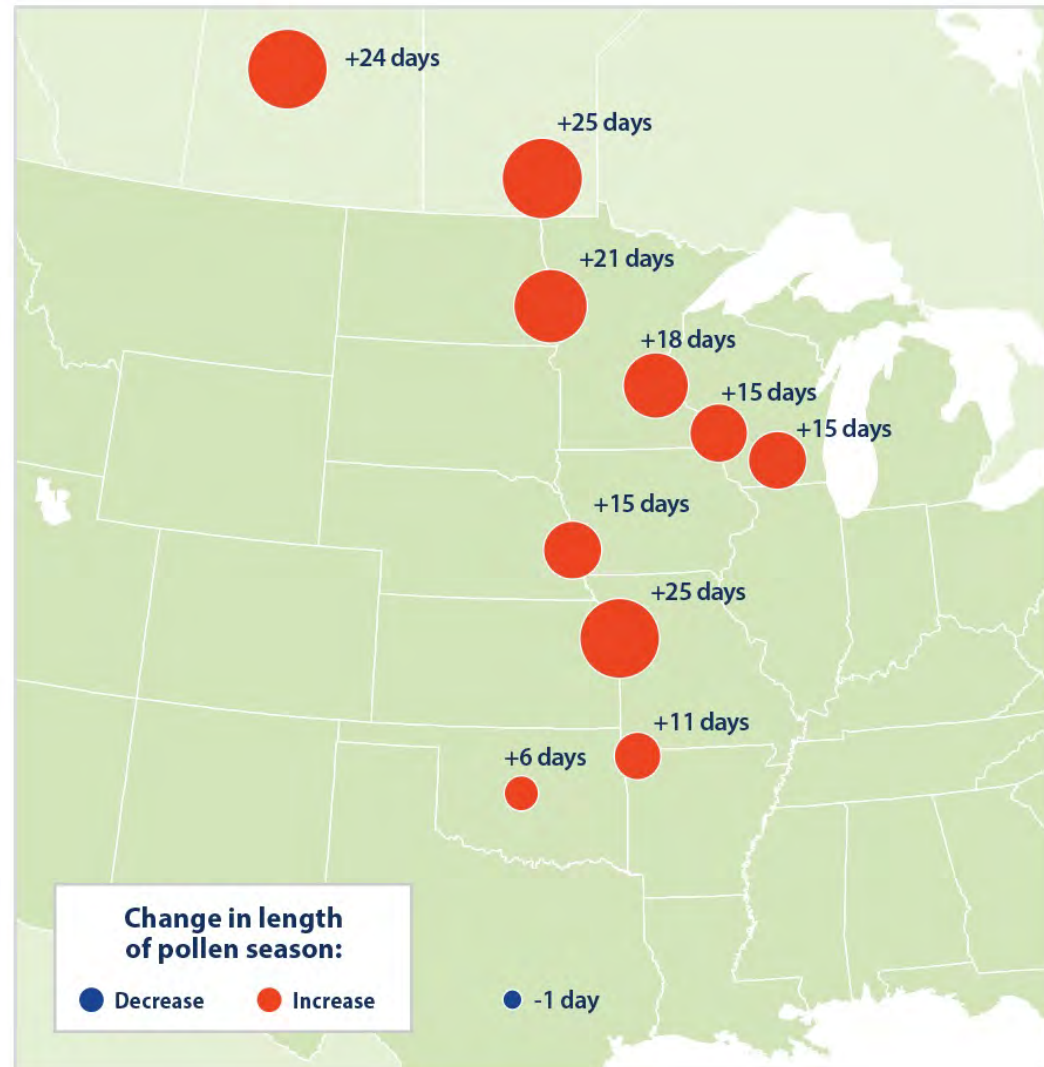


# Worsening Ozone Pollution



# Longer Allergy Seasons

- Warmer temperatures = pollen producing plants flower earlier and longer
- Longer hay fever season, more ragweed in the air
- Warming temperatures



# Western Wildfires prompts air quality alert for Chicago in July 2021



**NWS Chicago** ✓  
@NWSChicago



An Air Quality Alert for tomorrow (Monday, July 26th) has been issued for the Chicago metro. Individuals with chronic respiratory issues should limit prolonged outdoor activity. For more information, visit [airnow.gov](https://airnow.gov).



## Air Quality Alert for the Chicago Metro

Limit prolonged outdoor activity if you have a chronic respiratory issue



### WHAT

Poor air quality from elevated ozone levels and fine particles from western U.S. and Canadian wildfire smoke

### WHERE

Chicago metropolitan area counties in Illinois

### WHEN

All day tomorrow (Monday, July 26<sup>th</sup>)

### ACTIONS

- ✓ Anyone with pulmonary or respiratory diseases such as asthma should limit prolonged outdoor activity.



Visit [airnow.gov](https://airnow.gov) for more information

National Weather Service - Chicago

[Weather.gov/Chicago](https://weather.gov/Chicago)

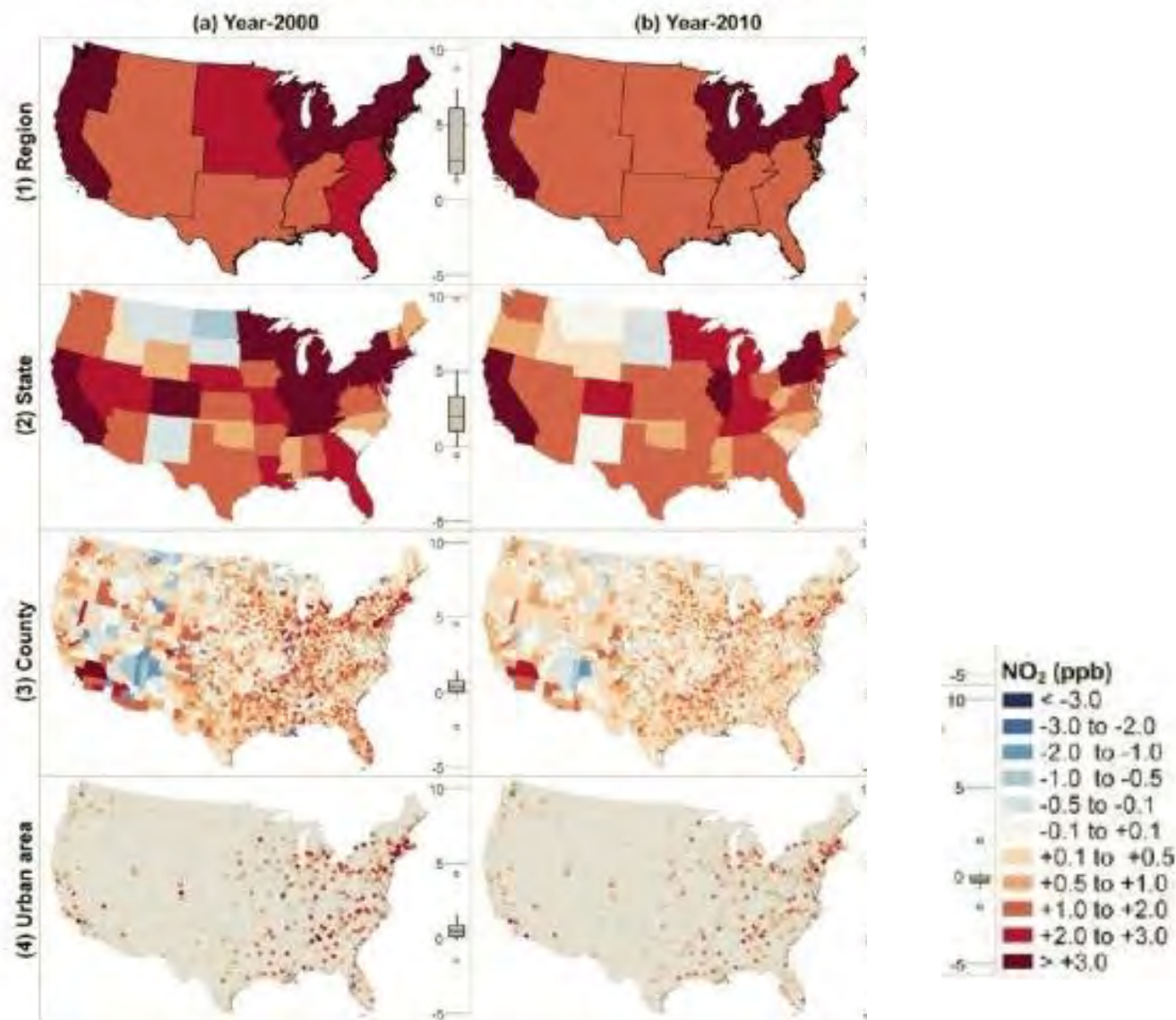
Sunday, July 25, 2021 2:50 PM CDT

3:23 PM · Jul 25, 2021



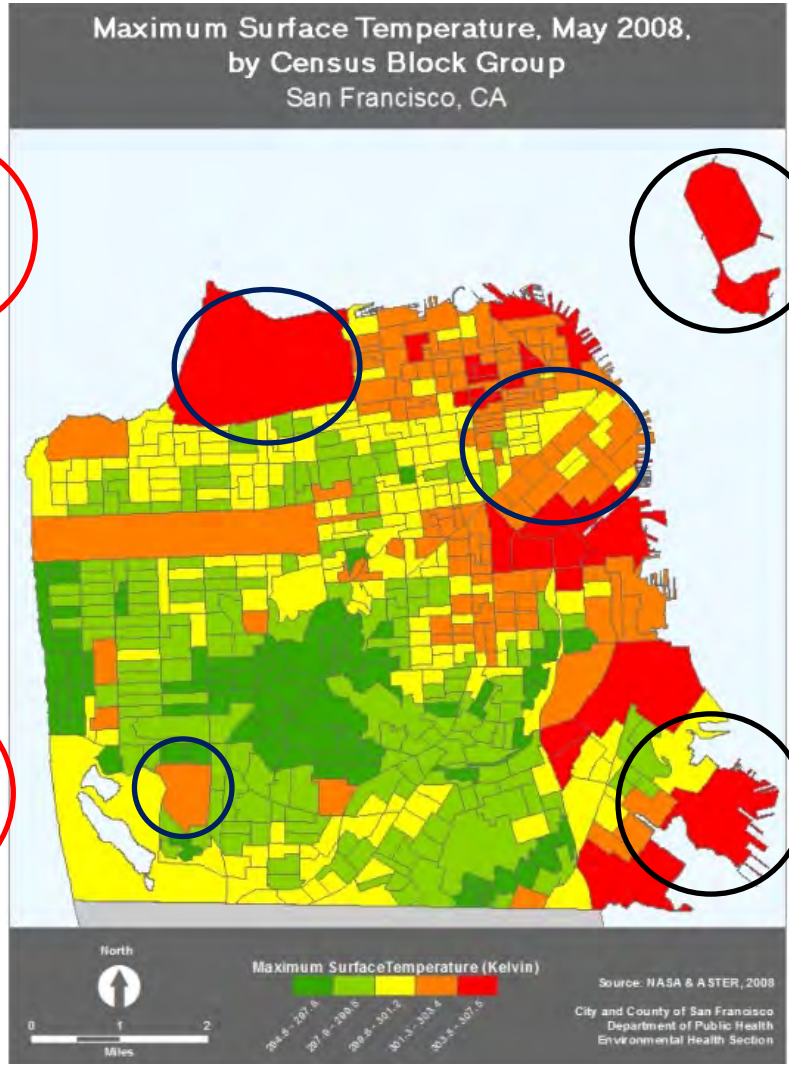
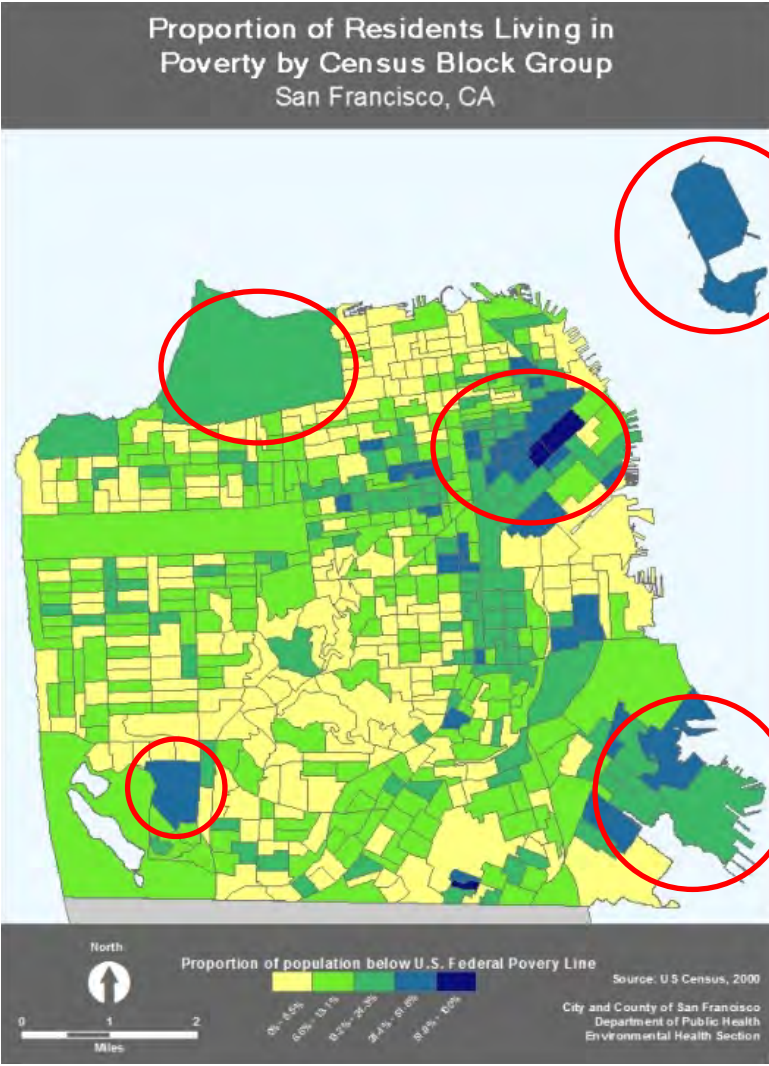


# People of color exposed to more pollution from cars, trucks, power plants over 10 yrs



Lara P. Clark, Dylan B. Millet, and Julian D. Marshall. Changes in Transportation-Related Air Pollution Exposures by Race-Ethnicity and Socioeconomic Status: Outdoor Nitrogen Dioxide in the United States in 2000 and 2010. *EHP*, 2017

# Populations and Risk Factor Maps for Adverse Health Outcomes from Extreme Heat



# Policies to improve the public health system to address climate change

Climate and Health Protection Act

Build Back Better Act

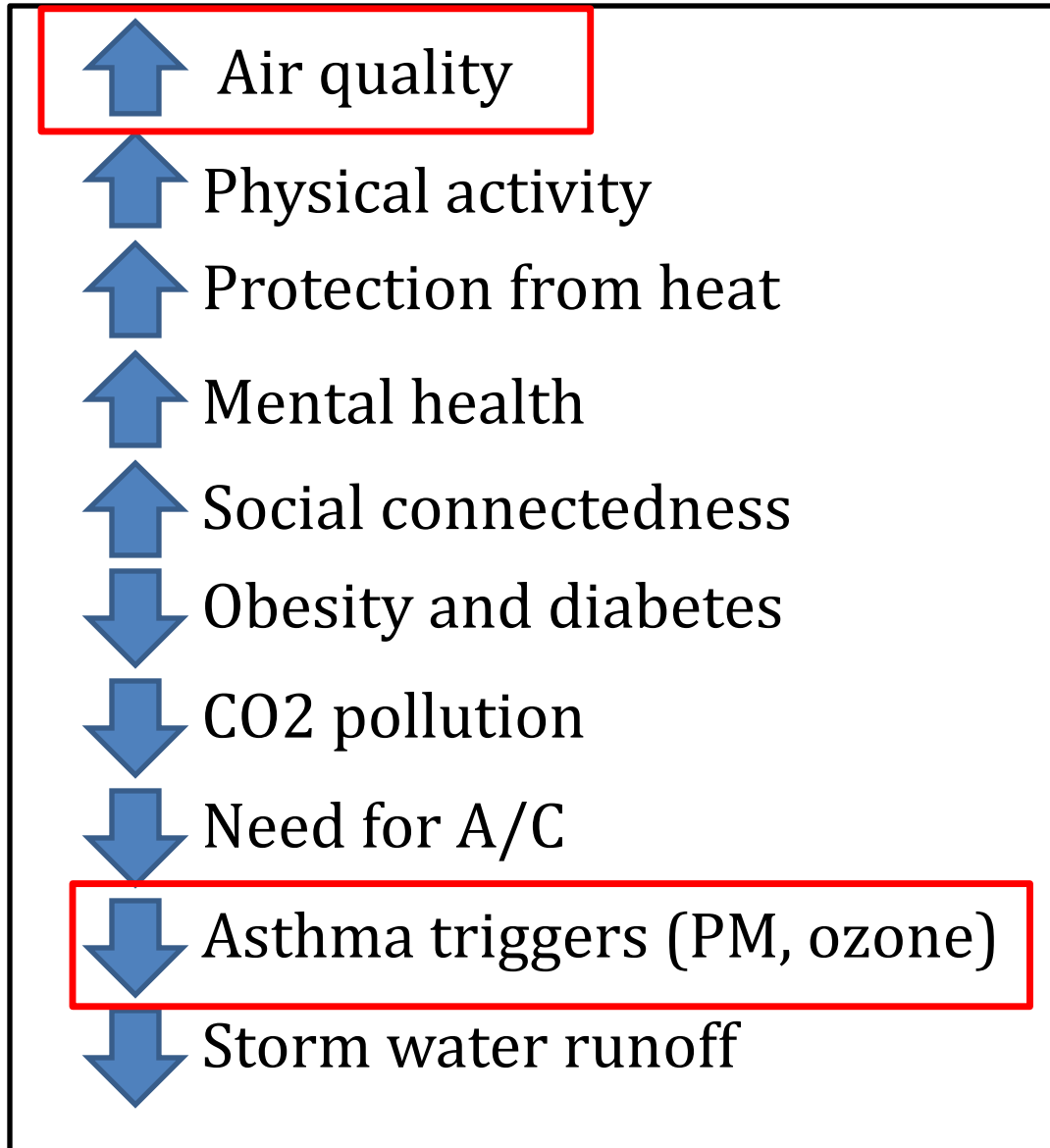
Chicago's updated Climate Action Plan

Survey: <https://www.chicago.gov/city/en/sites/climate-action-plan/home/get-involved.html>

Metropolitan Mayors Caucus Climate Action Plan for the Chicago Region



# Co-benefits of Reducing Greenhouse Gas Emissions



# Thank You! Questions?



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