



MASSACHUSETTS
CLEAN ENERGY
CENTER®

Massachusetts Climate Careers: Powering the Future

**Understanding and Combating
Climate Change**

Youth Lead the Fight Against Climate Change



Youth climate strike. Creative Commons



Today's Agenda

- **Climate Change**
- **The Big Question and My Climate Goals**
- **Today's Group Activity**
- **Climate Watch and Discussion**
- **Closing Activity**





Opening Activity

Climate Change in the Headlines

U.S. NEWS
Massachusetts city got nearly 10 inches of rain in 6 hours, flooding homes and eroding dams

'How Could This Happen? Canadian Fires Burning Where They Rarely Have Before

Justice & Health

The Depths of Their Discontent: Young Americans Are Distraught Over Climate Change

Dangerous Heat Returns to Central and Eastern U.S. This Week
High heat and humidity could make it feel like 115 degrees Fahrenheit in parts of the country this week, forecasters warned.

Wildfires across western U.S. and Canada force thousands to evacuate
The U.S. Forest Service is at "the highest level of wildfire response possible," as western forests grapple with record-breaking dry timber conditions.

North Andover tallies flood damage at \$30 million
August 22, 2023 By Alison Kuznitz, State House News Service

Fires Have Burned 4.5 Million Acres This Year, Blanketing Much of North America in Smoke
Nearly 90 large fires are raging across the United States, intensifying this year's fire season. The forecast shows no sign of letting up.

Heavy rains damage crops, homes and flood the Connecticut River in western Mass.





The Big Question

How does climate change affect my life and community, and how can I actively participate in its solution?





My Climate Goals

**When you complete this lesson,
you'll be able to:**

1. Identify and explain the consequences of climate change.
2. Identify at least three ways your community can address climate change.
3. Discuss how you can help combat climate change today and in the future.



Climate Watch: Video



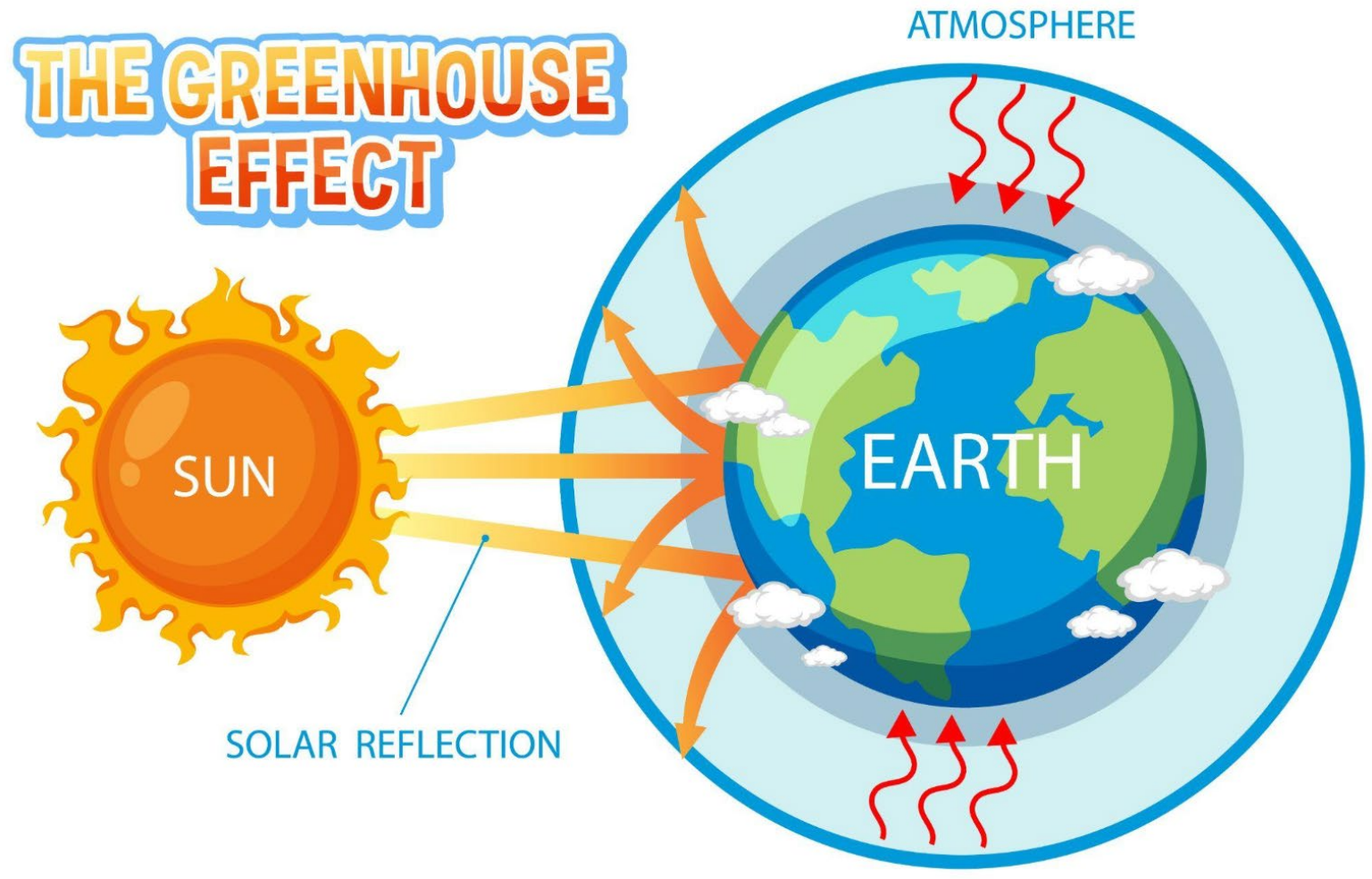


Climate Watch Discussion

Share what you learned from the video, and listen to your classmates' perspectives.

1. What interested you most in the video?
2. How do you see yourself being part of the solution?

What Causes Climate Change?



Greenhouse gases in the atmosphere are like a blanket wrapped around the planet, keeping heat in.

Courtesy XXXXXX





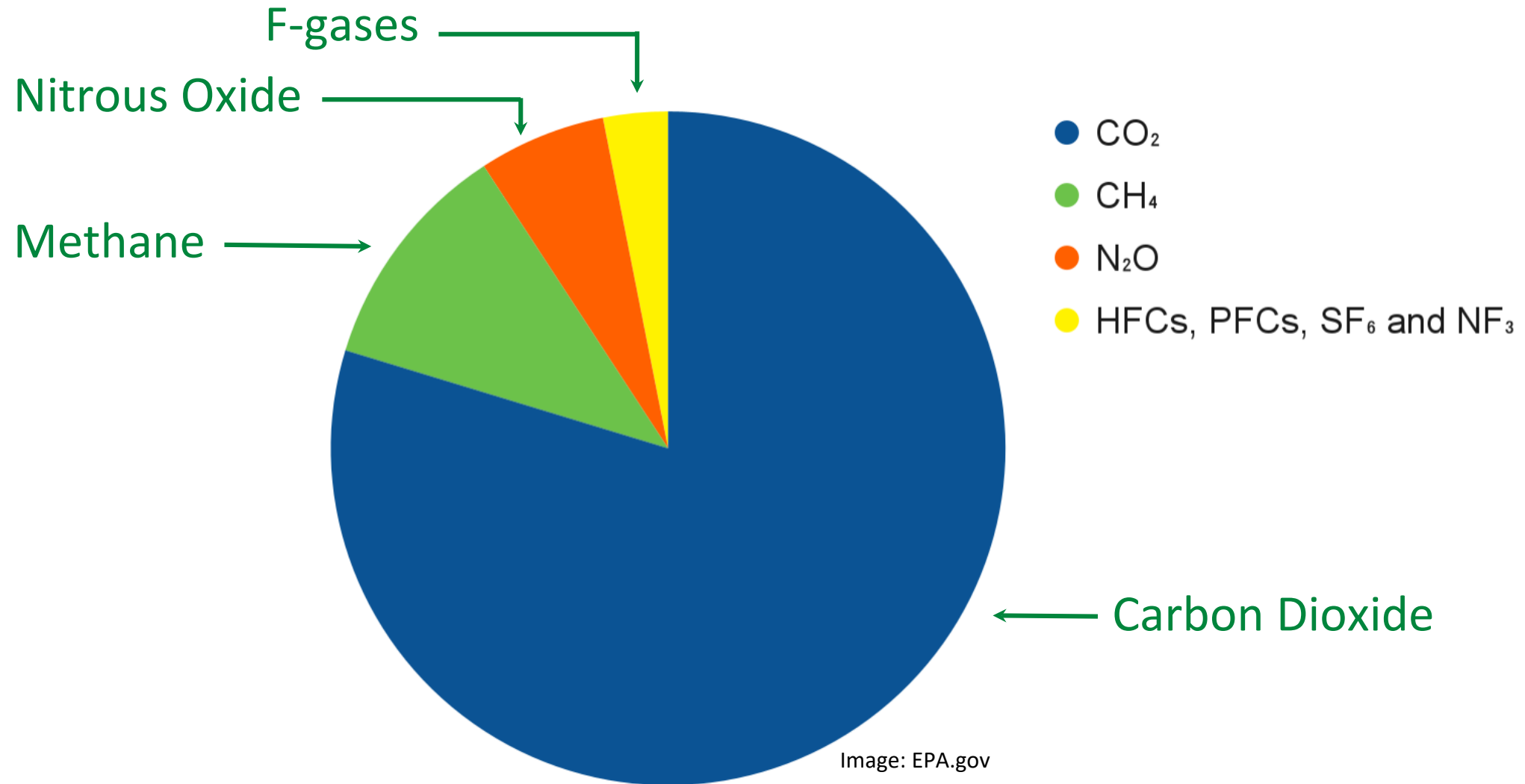
Greenhouse Gas Effect



Video: EPA.gov



Types of Greenhouse Gases



Consequences: Health Risks—Extreme Heat

Fatalities by Weather-Related Hazards 2006–2015

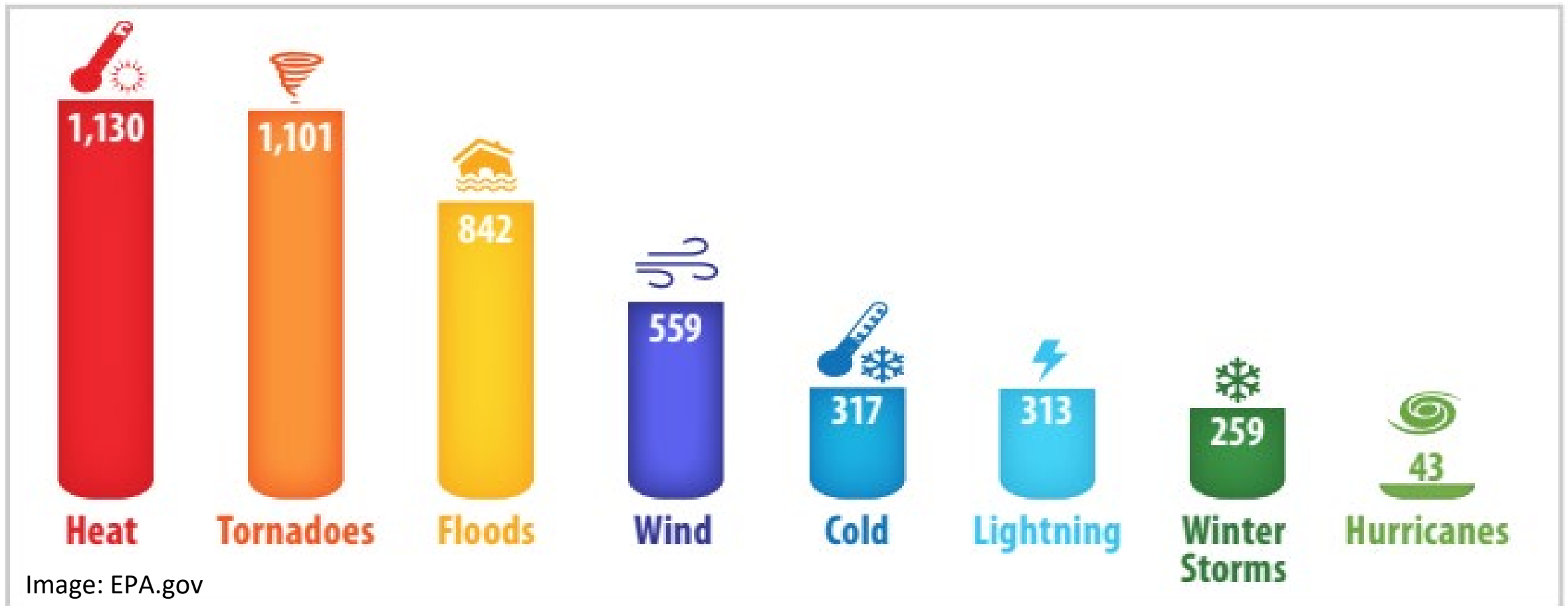


Image: EPA.gov

Consequences: Health Risks— Air Quality

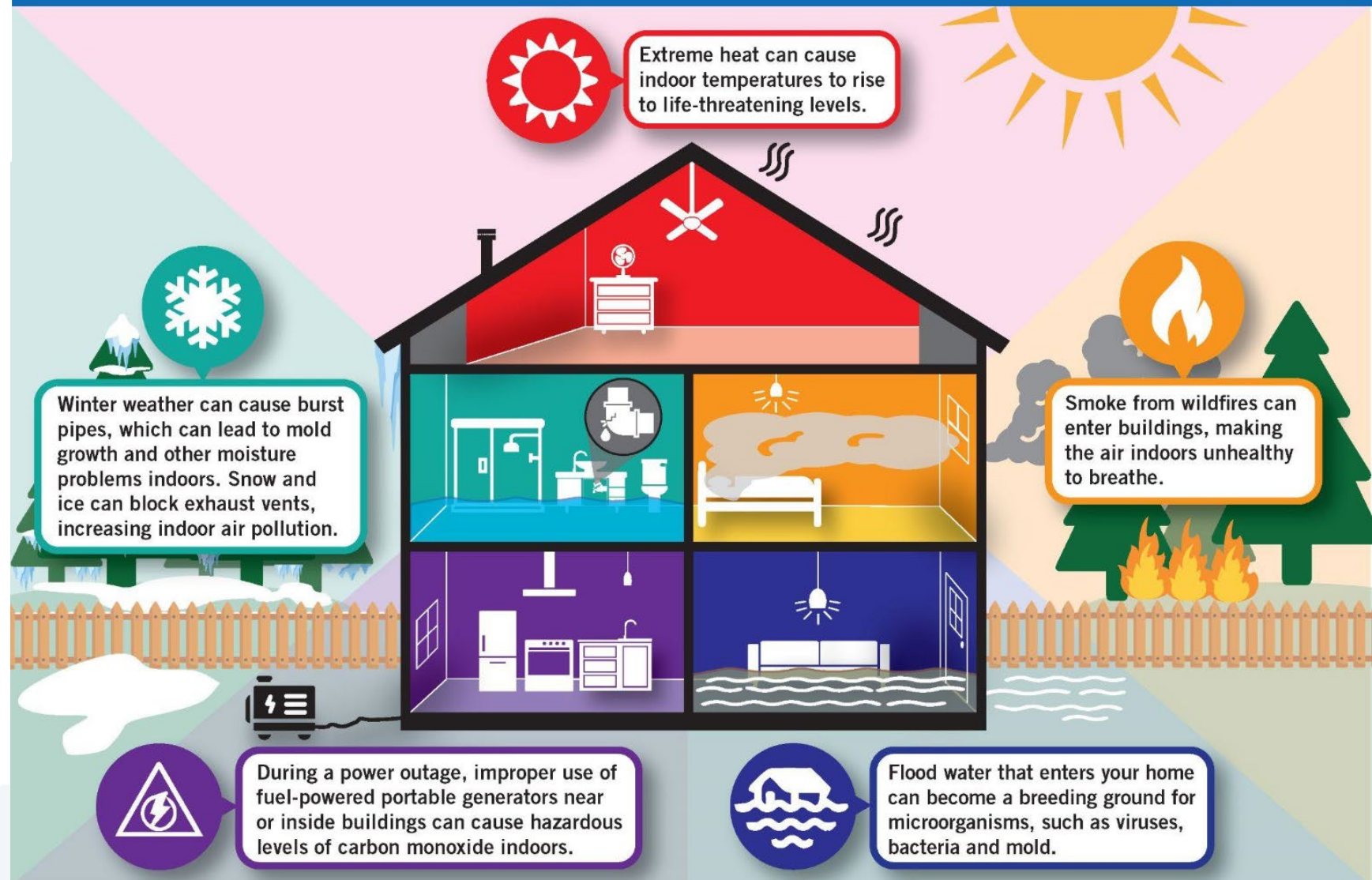
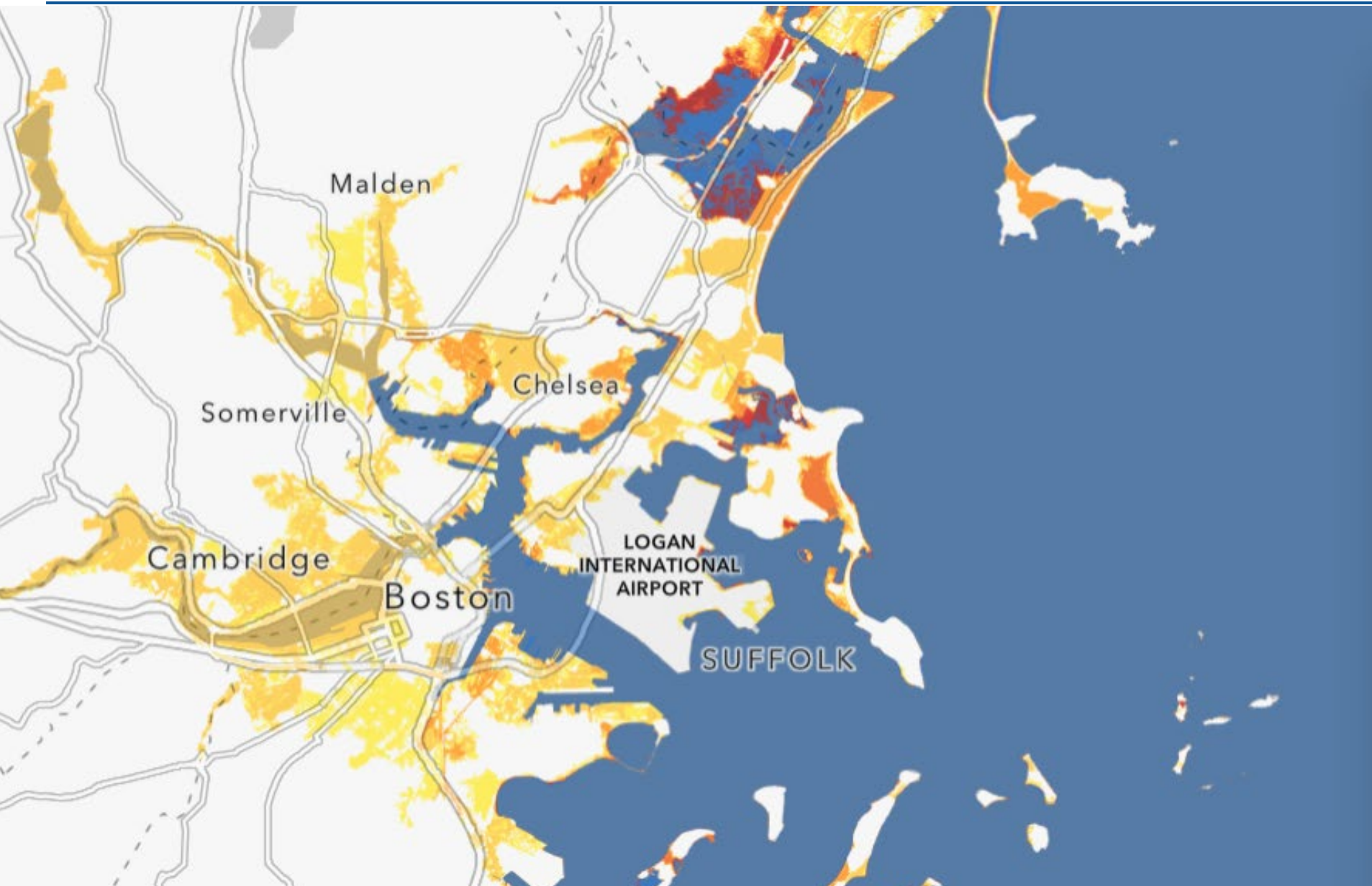


Image: EPA.gov

Learn more at [epa.gov/emergencies-iaq](https://www.epa.gov/emergencies-iaq)

Consequences: Rising Sea Levels

Sea-Level Rise and Coastal Flooding Viewer
Source: MA Office of Coastal Zone Management



Mean Higher High Water (MHHW)

- MHHW
- MHHW + 1 ft Sea Level Rise
- MHHW + 2 ft Sea Level Rise
- MHHW + 3 ft Sea Level Rise
- MHHW + 4 ft Sea Level Rise
- MHHW + 5 ft Sea Level Rise
- MHHW + 6 ft Sea Level Rise

Climate Change Impacts Communities



January 2024





Climate Change Impacts Communities

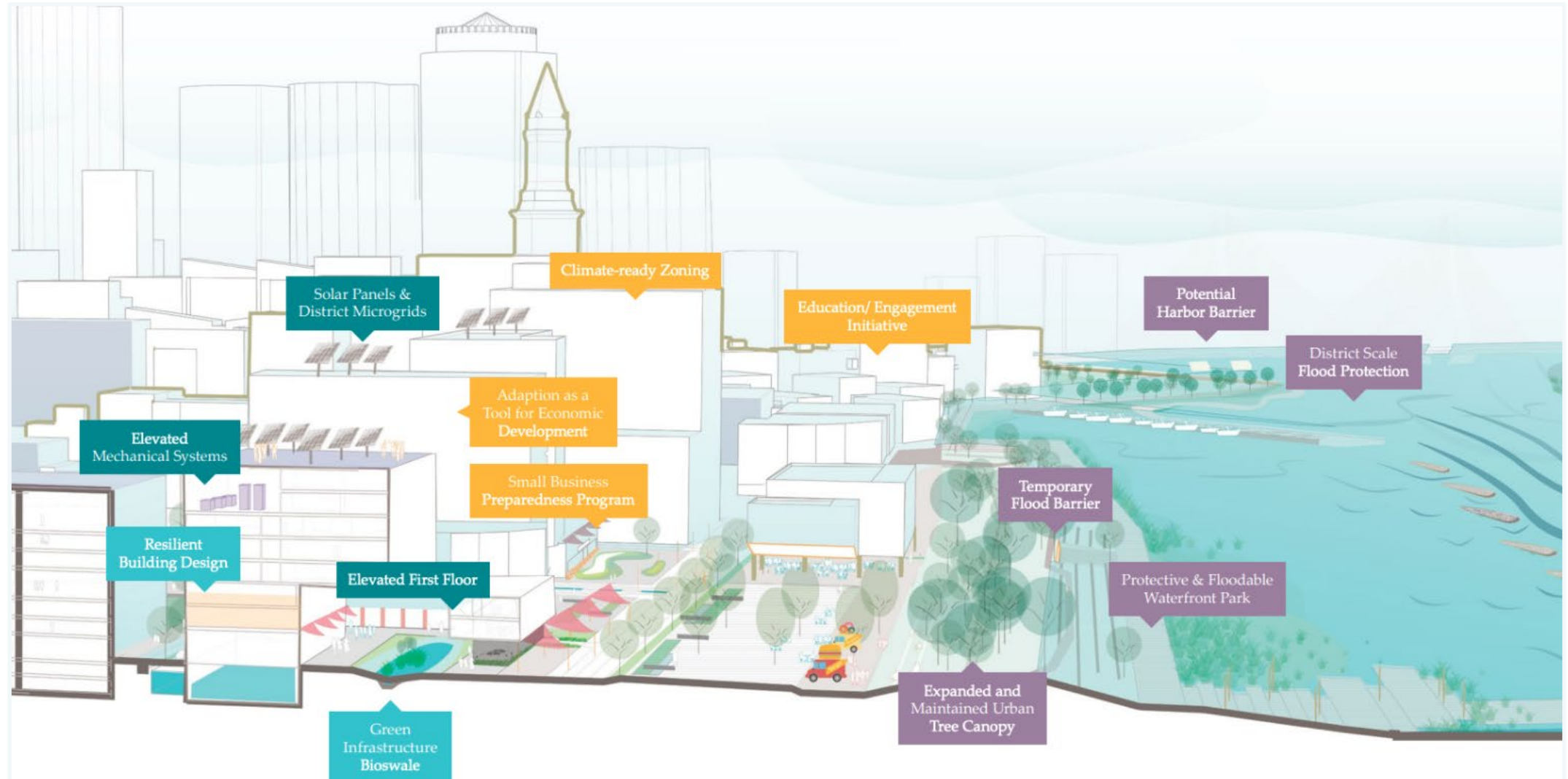
Share what you learned from the video, and listen to your classmates' perspectives.

1. What are some of the ways the flooding impacted individuals?
2. What impact did it have on the community?
3. Consider the image of potential sea-level rise in Boston. What impact will changes like that have on communities there?



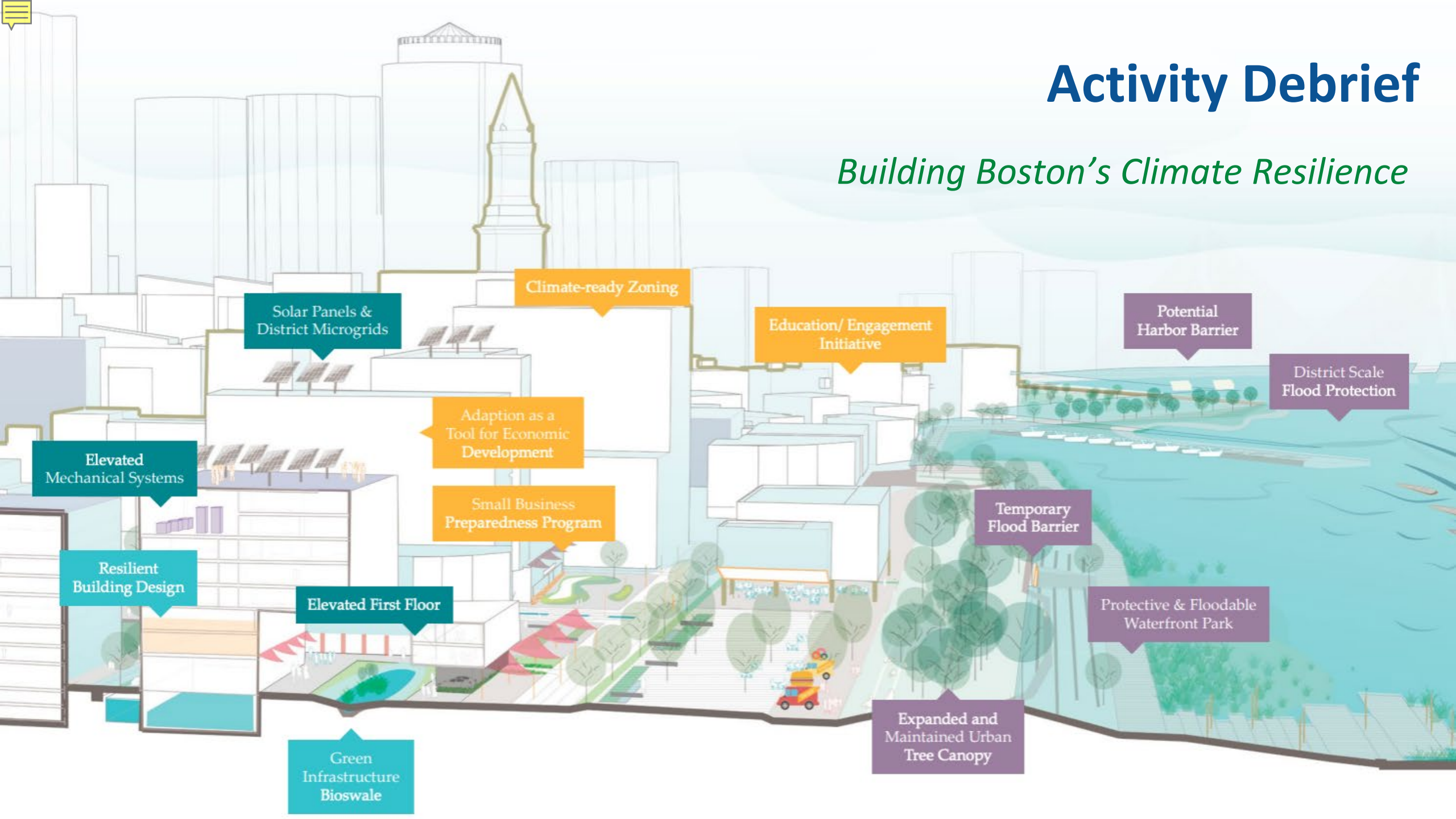
Today's Group Activity

Building Boston's Climate Resilience



Activity Debrief

Building Boston's Climate Resilience



Solar Panels & District Microgrids

Climate-ready Zoning

Education/ Engagement Initiative

Potential Harbor Barrier

District Scale Flood Protection

Adaption as a Tool for Economic Development

Small Business Preparedness Program

Elevated Mechanical Systems

Resilient Building Design

Elevated First Floor

Temporary Flood Barrier

Protective & Floodable Waterfront Park

Green Infrastructure Bioswale

Expanded and Maintained Urban Tree Canopy

Key Points



- Climate change is a long-term shift in global or regional climate patterns, primarily caused by humans.
- Greenhouse gasses in the atmosphere trap heat, making the planet warmer.
- Climate change can lead to health risks from extreme heat and worsening air quality, extreme weather, and sea level rise.
- I can take action to slow climate change.





Closing Activity

Before You Go

1. What is one change you can make immediately that will slow climate change?
2. What are three ways your community can help address climate change?



Lesson Exit Ticket

Reflect on What You Learned Today

Write a sentence or two to share your thoughts about the following questions.

1. What are two consequences of climate change?
2. In what way does climate change affect your life?
3. How does (or how can) your community address climate change?
4. What is one way you will help combat climate change?





MASSACHUSETTS
CLEAN ENERGY
CENTER®

