



EPA National Emissions Inventory

Air Pollution Webquest

Introduction

The quality of air can vary widely depending where you live. While nearly any area will experience some level of air pollution, the types and amounts of each can change depending on what is nearby. This webquest will help you identify some of the major point sources of pollution in your area.

Background

The Clean Air Act, originally passed in 1963 then amended in 1970 and 1990, established acceptable air quality levels for *criteria pollutants*. For each pollutant listed, identify the chemical formula (if applicable) and describe its physical properties. **www.epa.gov/air/urbanair/**

Pollutant	Chemical Symbol	Physical Characteristics	Health Effects
Sulfur dioxide	SO ₂	Colorless, foul-smelling gas that is produced by burning fossil fuels.	Increased risk of respiratory disease. Worsens asthma.
Carbon monoxide			
Nitrogen oxides			
Ozone			
Particulate Matter			
Lead			

Accessing Local Facility Data

1. Visit the 2008 Emissions Inventory Database at <https://www.epa.gov/air-emissions-inventories/2011-national-emissions-inventory-nei-data> or <https://goo.gl/wfXN8e>
2. Scroll down to the “Maps and Fusion Tables” section.
3. Click on the “table” link for the air pollutant you would like to analyze first.
4. Click on “filter,” then select “state.” Choose your state from the checklist.
5. Click the filter tab again, this time selecting “county”. Choose your county from the checklist.
6. The list should show all source of that pollutant in your county, starting with the largest producer.

In the tables below, list the top five emissions facilities in your county for each air pollutant. Give the amount of emissions in tons and its NAICS description. Use the given street address to mark the location of the top three facilities for each pollutant on your map on the last page.

Sulfur Dioxide (SO₂)

Site Name	Annual Emissions (in tons)	NAICS Description

Carbon Monoxide (CO)

Site Name	Annual Emissions (in tons)	NAICS Description

Nitrogen Oxides (NO_x)

Site Name	Annual Emissions (in tons)	Description

Volatile Organic Compounds (VOCs)

Site Name	Annual Emissions (in tons)	Description

Particulate Matter 10 Microns (PM₁₀)

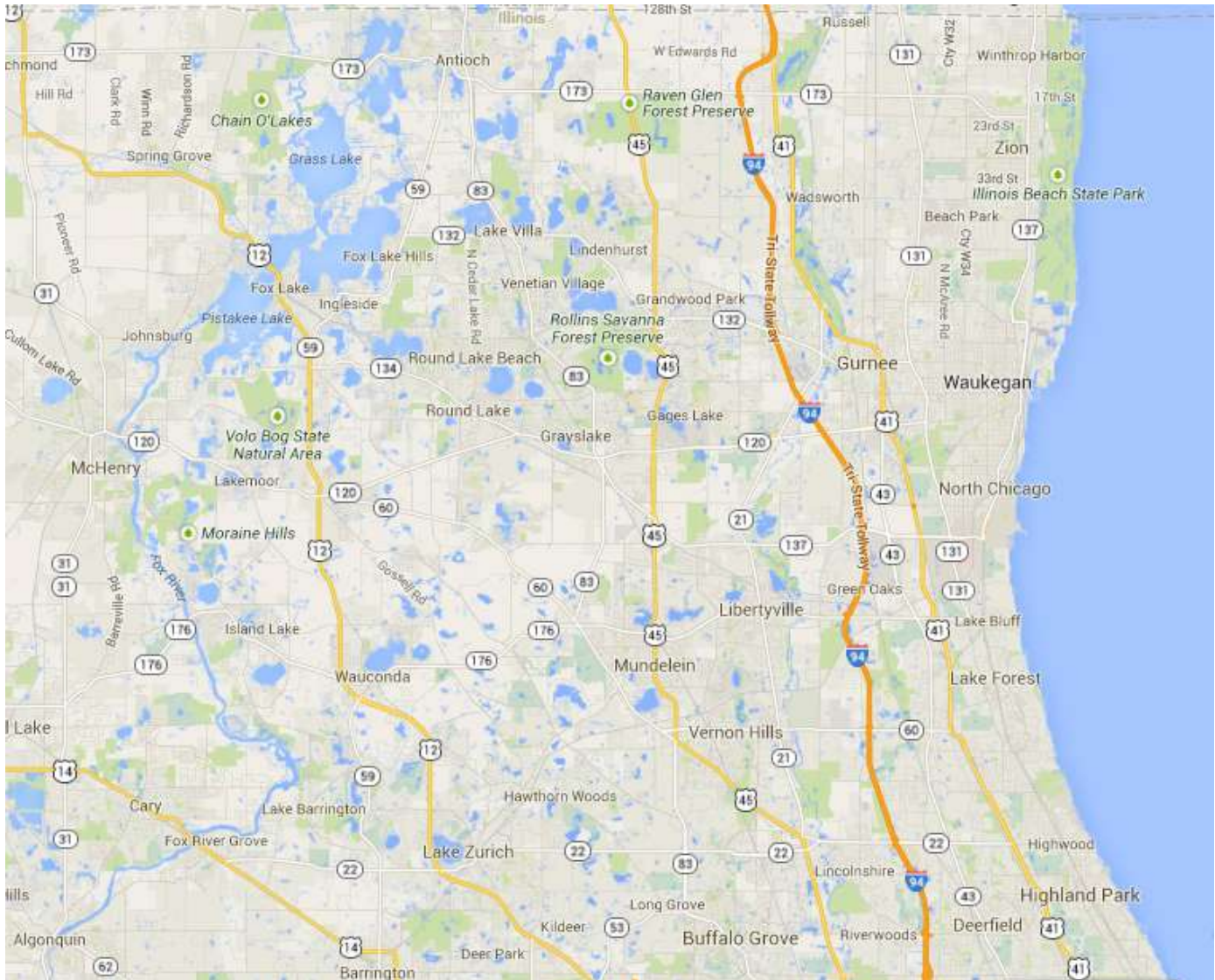
Site Name	Annual Emissions (in tons)	Description

Particulate Matter 2.5 Microns (PM_{2.5})

Site Name	Annual Emissions (in tons)	Description

Pollution Map

Go to the live wind map at hint.fm/wind and zoom in to see the current wind currents in your county. Take a pencil and lightly draw arrows showing the direction of these wind currents.



Conclusion Questions

1. Are the pollutants described in this activity primary or secondary pollutants? Explain the difference.
2. What city or area in your county had the highest concentration of air pollution-emitting facilities?
3. Acid rain is produced when nitrogen oxides and sulfur dioxides react with water in the air. Given the wind patterns as currently shown on your map, what area(s) would possibly be affected by acid rain due to air pollution in the county?