



Outdoor Air Quality Data for Kane County

Presented by:

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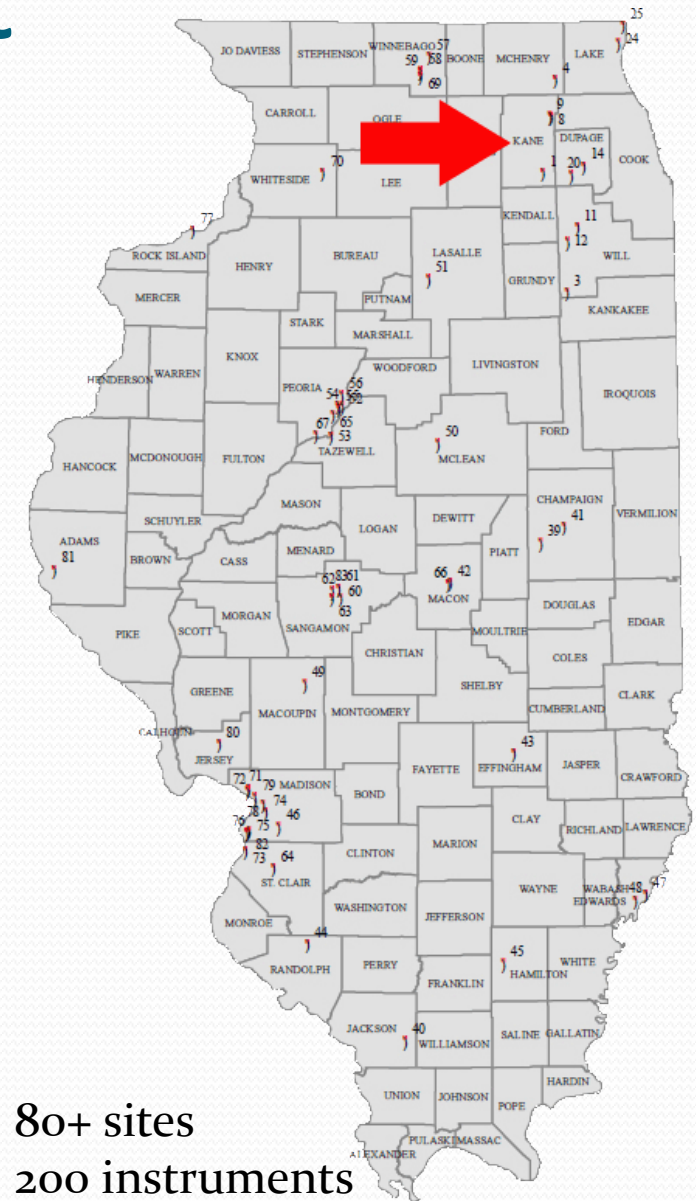
Presentation contains data and materials from the IEPA 40th Annual Air Quality Report for 2010
<http://www.epa.state.il.us/air/air-quality-report/2010/index.html>

IEPA Annual Report



Criteria Pollutants

- Particulate matter
PM 2.5 / PM 10
- Ozone
- Sulfur dioxide
- Nitrogen dioxide
- Carbon monoxide
- Lead



80+ sites
200 instruments

National Ambient Air Quality Standards

Pollutant	Source	Health Effects
PM ₁₀	Fossil fuel combustion, industrial processes, fugitive dust	Increased rates of respiratory disease (asthma, bronchitis, emphysema), heart attacks, and cancers
PM _{2.5}	Fossil fuel combustion, photochemical atmospheric reactions	
SO ₂	Fossil fuel combustion, petroleum refining, ore smelting	Respiratory irritation and inflammation
CO	Motor vehicles, fossil fuel combustion	COHb, heart attack, CVD
O ₃	Complex atmospheric interaction between sunlight and combustion byproducts	Respiratory irritant
NO ₂	Coal, oil, gas, fuel combustion	Respiratory irritant pulmonary edema
Pb	Industry (smelters, battery mfg, iron/steel production)	IQ loss, learning / behavioral disabilities, developmental

National Ambient Air Quality Standards

Table 1: Summary of National and Illinois Ambient Air Quality Standards

Pollutant	Averaging Time	Standard	
		Primary	Secondary
Standard units are micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) and parts per million (ppm)			
Particulate Matter 10 micrometers (PM_{10})	24-hour	150 $\mu\text{g}/\text{m}^3$	Same as Primary
Particulate Matter 2.5 micrometers ($\text{PM}_{2.5}$)	Annual Arithmetic Mean	15.0 $\mu\text{g}/\text{m}^3$	Same as Primary
	24-hour	35 $\mu\text{g}/\text{m}^3$	Same as Primary
Sulfur dioxide	1-hour*	75 ppb	None
	3-hour	None	0.5 ppm
Carbon Monoxide	1-hour	35 ppm	None
	8-hour	9 ppm	None
Ozone	1-hour	0.12 ppm	Same as Primary
	8-hour	0.075 ppm	Same as Primary
Nitrogen Dioxide	Annual Arithmetic Mean	53 ppb	Same as Primary
	1-hour*	100 ppb	None
Lead	Rolling 3-Month Mean	0.15 $\mu\text{g}/\text{m}^3$	Same as Primary

The $\text{PM}_{2.5}$ standards are referenced to local conditions of temperature and pressure rather than standard conditions (760 mm and 25 deg C).
 Note: The State of Illinois has not adopted the $\text{PM}_{2.5}$ or 8-hour ozone standards at this time.
 *New standard established starting 2010

Illinois Standards

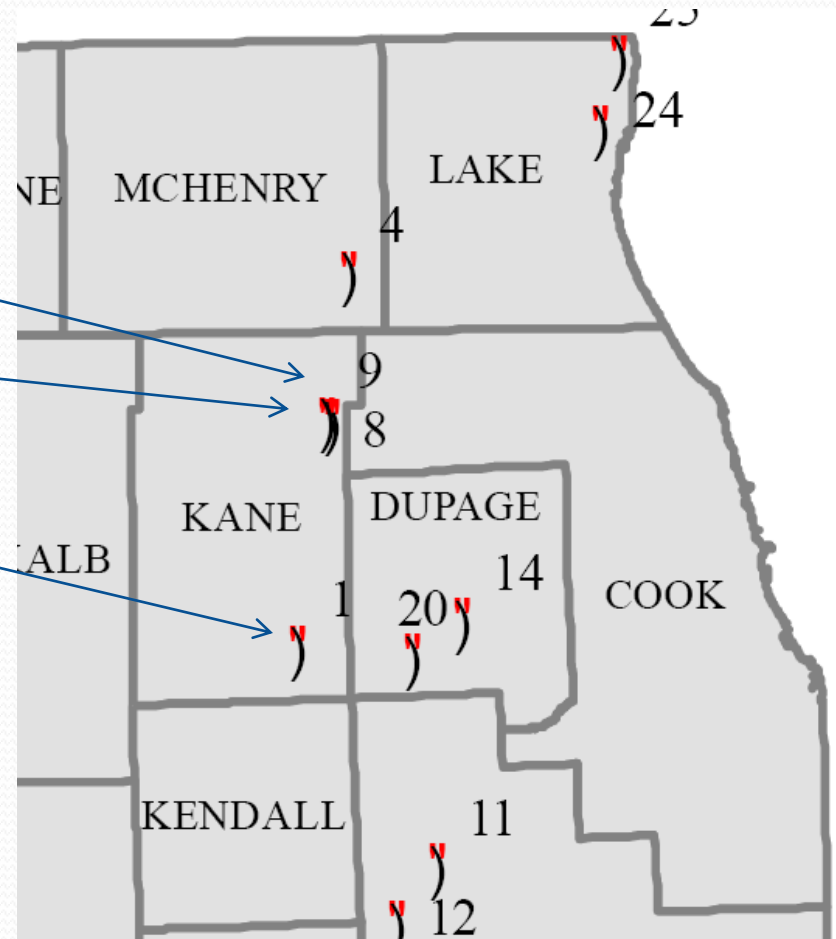
Table 2: Illinois Air Pollution Episode Levels

Pollutant	Advisory	Yellow alert	Red Alert	Emergency
Particulate Matter micrograms per cubic meter	2-hour 420	24-hour 350	24-hour 420	24-hour 500
Sulfur Dioxide parts per million	2-hour 0.30	4-hour 0.30	4-hour 0.35	4-hour 0.40
Carbon Monoxide parts per million	2-hour 30	8-hour 15	8-hour 30	8-hour 40
Nitrogen Dioxide parts per million	2-hour 0.40	1-hour 0.60	1-hour 1.20	1-hour 1.60
		or	or	or
		24-hour 0.15	24-hour 0.30	24-hour 0.40
Ozone parts per million	1-hour 0.12	1-hour 0.20	1-hour 0.30	1-hour 0.50

Air Quality Stations in Kane County

Aurora-Elgin Sector

1. Larsen Junior HS?
Ozone
2. McKinley School
PM 2.5
3. Aurora Health Dept
PM 2.5



2010 Results for Kane Sites

Ozone

- 1-hr standard (0.12 ppm)
 - ZERO exceedances state-wide
- 8-hr standard (0.075 ppm)
 - 41 total site exceedances over 23 days statewide
 - 1 day for Elgin site at .077 ppm

PM_{2.5}

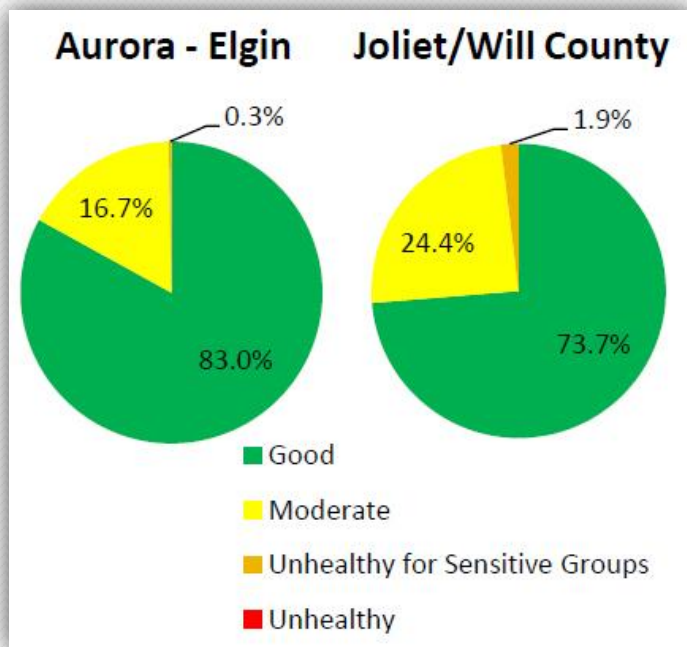
- 24-hr standard (35 ug/m³)
 - 31 total site exceedances over 8 days statewide
 - ZERO exceedances at KC sites



Air Quality Index Number

Descriptor Category Color Codes

Good 0-50	Unhealthy 151-200
Moderate 51-100	Very Unhealthy 201-300
Unhealthy for Sensitive Groups 101-150	Hazardous 301-500



“Active children and adults, and people with respiratory disease, such as asthma, should **avoid** prolonged outdoor exertion; everyone else, especially children, should **limit** prolonged outdoor exertion”

What does this mean to HPC?

- Does the data demonstrate a community concern?
- Does the *lack* of data / monitoring stations in Kane raise concerns?
- Can this data be used to improve existing agendas or policies?
 - e.g. AQI notification policy at KCHD to raise awareness, promote action
- Is ambient air quality and related issues a coalition cause worth pursuing?
- What can be done *locally* to improve broader air quality objectives?

