Assessing Urban Air Quality

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MINNESOTA POLLUTION CONTROL AGENCY

The Game Plan

- Why we're doing this
- About the project
- What we need from you

Why are we doing this?

To better understand small-scale differences in urban air quality

Availability of newer sensor technology to monitor air quality

The Minnesota Legislature provided funding*

Cost-saving in the long run

LCCMR: Legislative-Citizen Commission on Minnesota's Resources

About the project

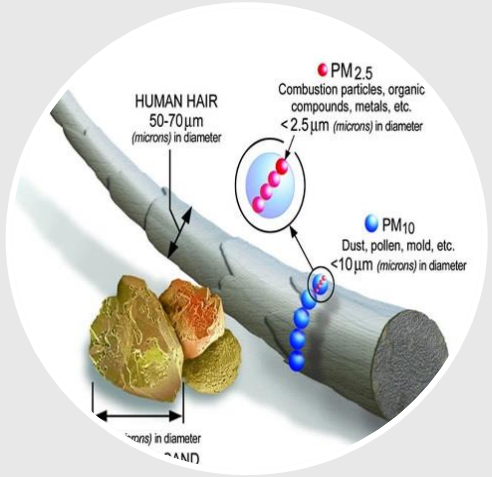
The Assessment of Urban Air Quality project will be launched in January, 2018

The nuts and bolts

- 50 air quality monitors
- At least 1 in each Minneapolis and St. Paul ZIP code
- Sensors will be placed on Xcel utility poles at 8-10ft high
- Monitoring will be conducted for 2 years

Your input will help us decide where to install monitors

What are we monitoring?

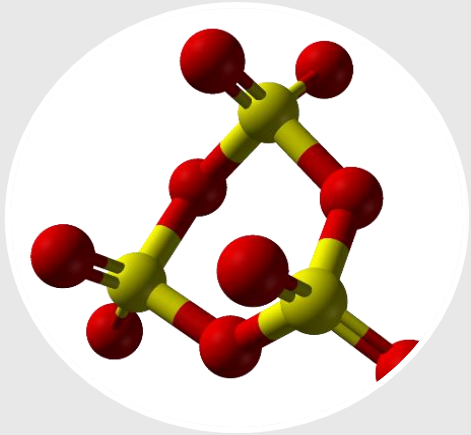


Fine particles ($PM_{2.5}$)

A mix of solid particles and liquid droplets in the air – 30x smaller than a human hair

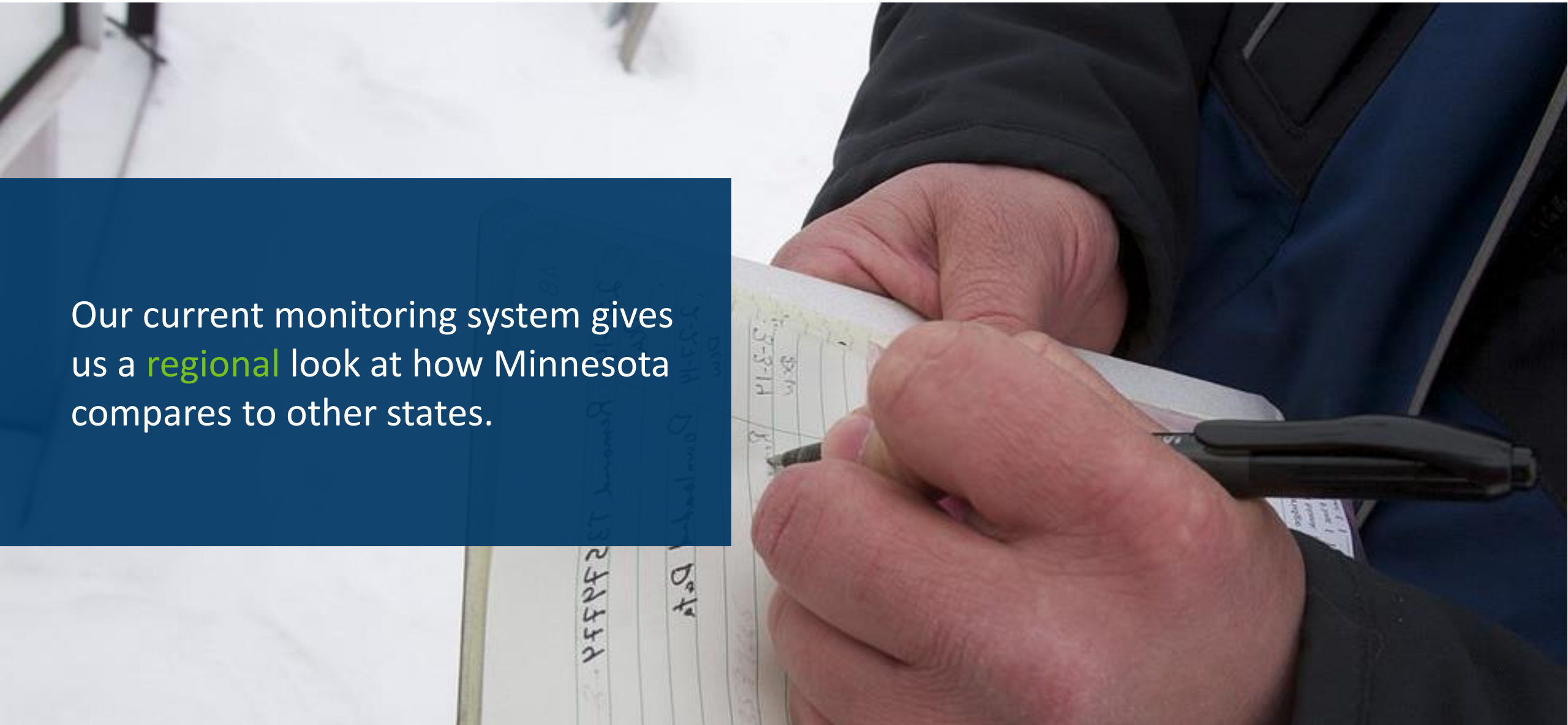
Ground-level Ozone

When chemicals and other pollutants mix with sunlight and heat – aka “smog”



- **Nitrogen oxides (NO_x)**
- **Sulfur dioxide (SO_2)**
- **Carbon monoxide (CO)**

Our current monitoring network



Our current monitoring system gives us a regional look at how Minnesota compares to other states.

Current Monitors

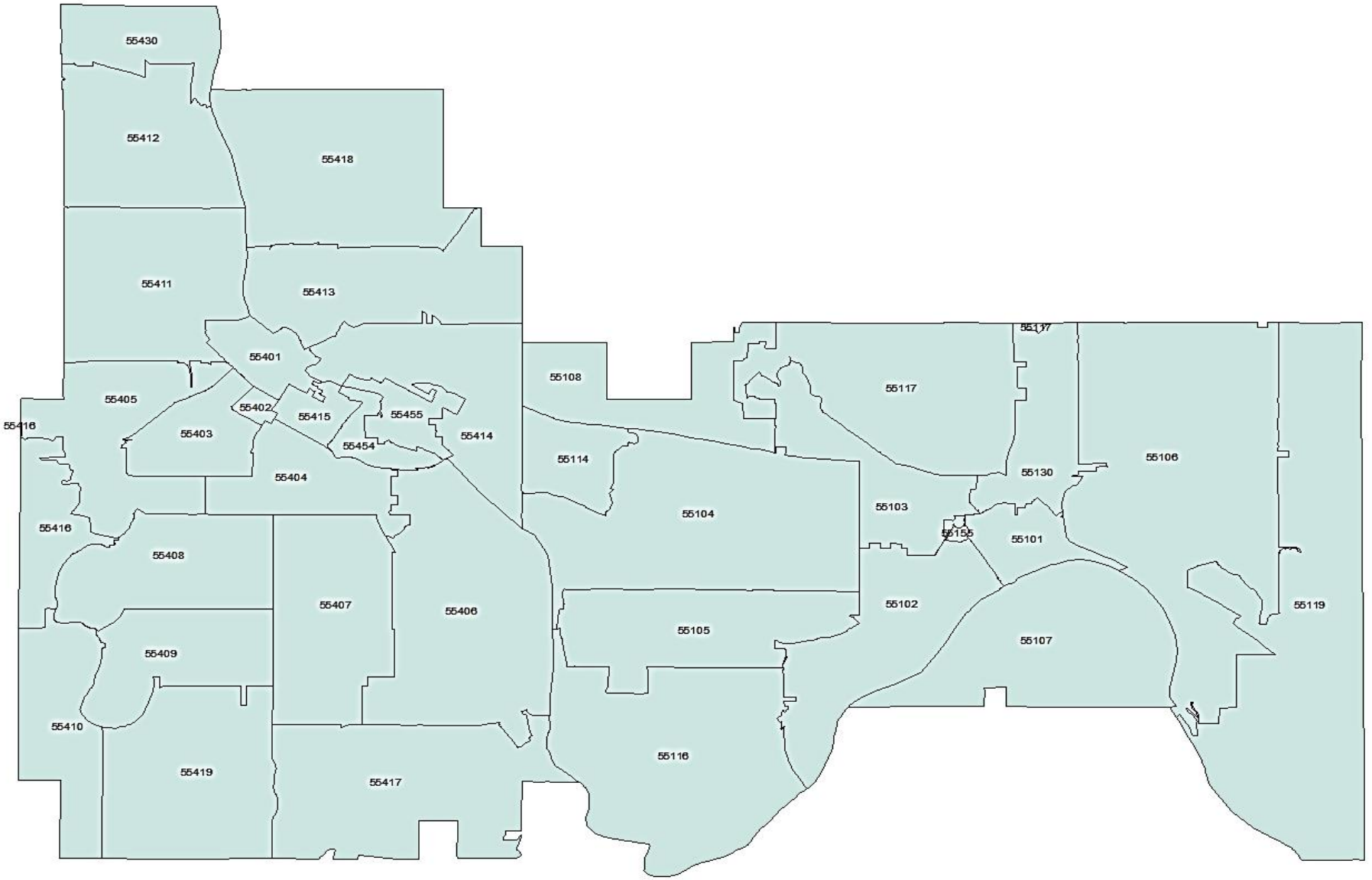
- Expensive & big
- Strict EPA guidance for placement & maintenance
- Regional-scale monitoring
- Main purpose:
  - Regulatory
  - Air Quality Index
  - Trends over time

Main purpose of current monitors: Does Minnesota meet federal & state air quality standard benchmarks?

The new sensors

Quick install
Little maintenance
Solar-powered

Study area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Why Minneapolis and St. Paul?

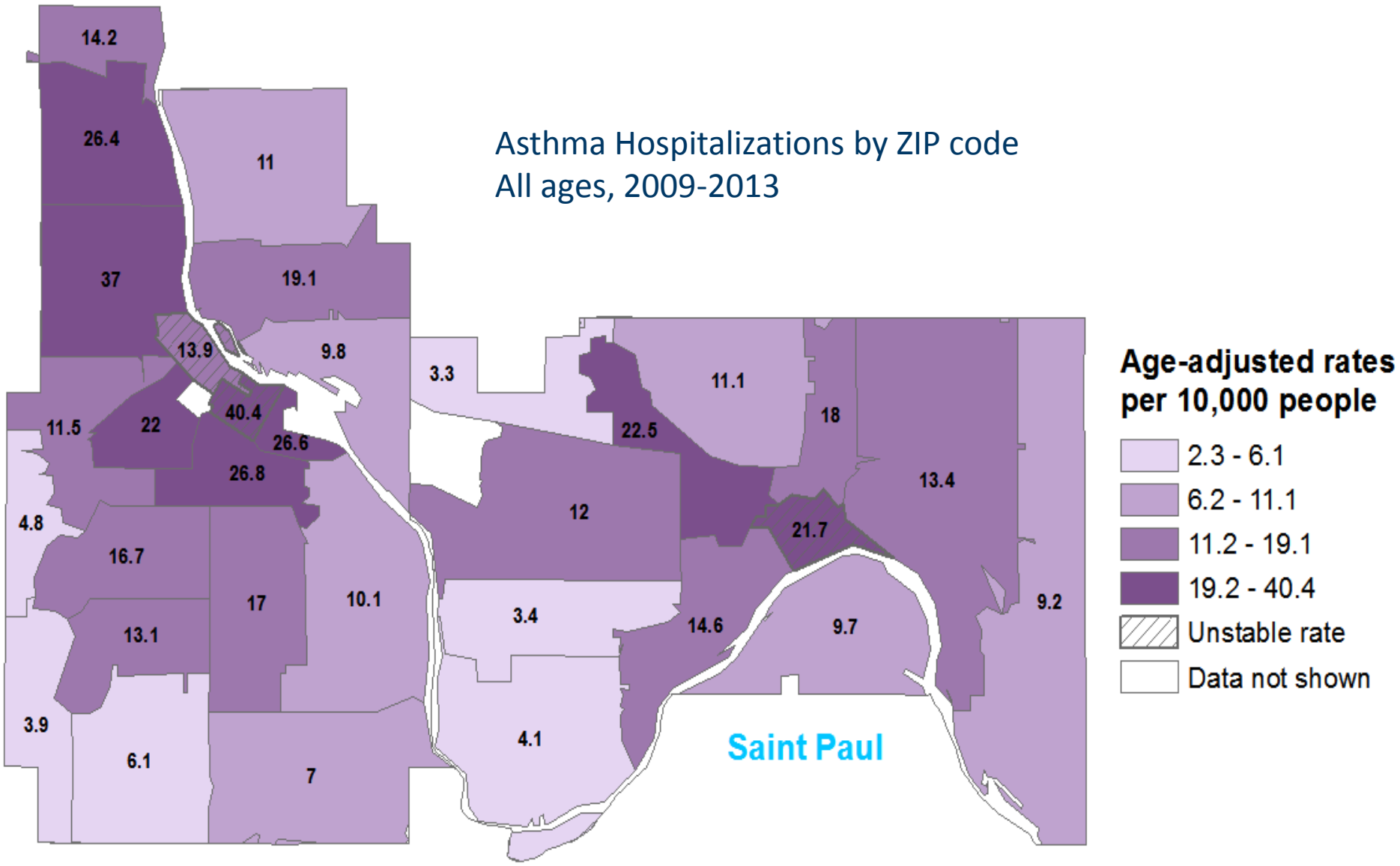
Disparities in air pollution-related health impacts in the metro area

- Rates of hospitalizations & emergency department visits
- Rates of asthma

Asthma rates for children living in the Twin Cities metro are 67% higher than for children living in Greater Minnesota.

Health effects of concern

Asthma Hospitalizations by ZIP code
All ages, 2009-2013



Data will inform air quality concerns

Partners and Collaborators

- Minnesota Department of Health
- City of Minneapolis
- City of Saint Paul
- Minnesota State University, Mankato
- Xcel Energy

Is there a specific location you would like to see a monitor?

Grab a dot!

Dense residential neighborhoods

Near schools, daycares and senior housing

Near parks and outdoor recreation

Thank you!

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