

# Summary

## Community Air Monitoring Project Duluth - Denfeld and Lincoln Park



### What we monitored

We monitored air quality for fine particles ( $PM_{2.5}$ ) and air toxics (carbonyls, metals and VOCs) in the Denfeld and Lincoln Park communities in Duluth.

### Why is it important?

People exposed to air pollution are at increased risk for adverse health effects. This can include shortness of breath, asthma attacks, heart attacks or stroke. Studies show that low-income communities might be unfairly affected by pollution from industrial, highway or air traffic sources.

Monitoring in these communities can help us to better understand the community's air quality and how it compares to other monitoring sites.

### Highlights and key findings

#### About this study

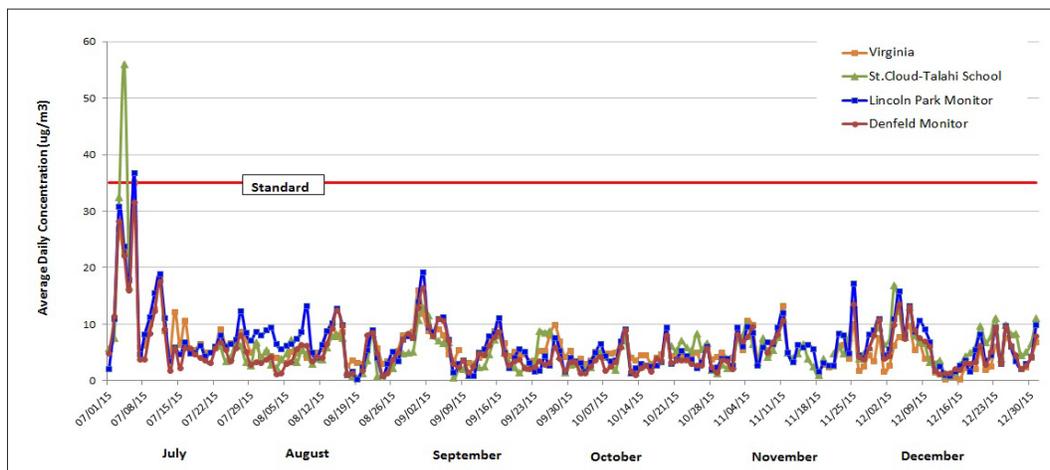
In 2013, the Minnesota Legislature provided funding for a two-year air monitoring study to measure air quality in Minnesota communities where low income communities might be disproportionately impacted by pollution from highway traffic, air traffic, and industrial sources.

- Using and supplementing two existing Duluth air monitoring sites, air quality was monitored from July 1, 2015 to December 31, 2015, in the Duluth communities of:
  - Lincoln Park (MPCA site 7549 Michigan Street) and
  - Denfeld (MPCA site 7554 Laura MacArthur School)
- We compared the monitored data with air quality health standards and compared the data with other air data collected during the same time period at other monitors.
- All average daily  $PM_{2.5}$  values were below the daily  $PM_{2.5}$  standard of 35 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) except for one day July 6, 2015, at the Lincoln Park monitoring site, the average daily  $PM_{2.5}$  value was  $37 \mu\text{g}/\text{m}^3$ . During this week, heavy smoke from fires in Canada contributed to elevated  $PM_{2.5}$  values at many monitors.
- For the Lincoln Park community monitor, of the 70 air toxic chemicals measured for this project, the levels of 28 chemicals were so low that they were not detected by the monitor.
- For the Denfeld community monitor, of the 70 air toxic chemicals measured for this project, the levels of 34 chemicals were so low that they were not detected by the monitor.
- In general, average air toxics values and trends over time were similar or lower between the Denfeld monitor, the Lincoln Park monitor, and other MPCA air monitors. All air tox values in both communities were below any associated standards or health benchmarks.



## Fine particles (PM<sub>2.5</sub>)

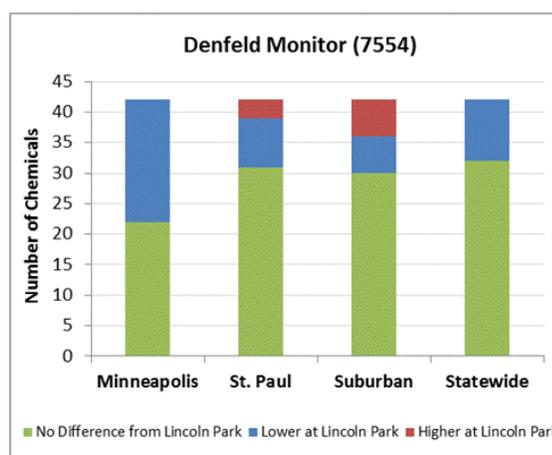
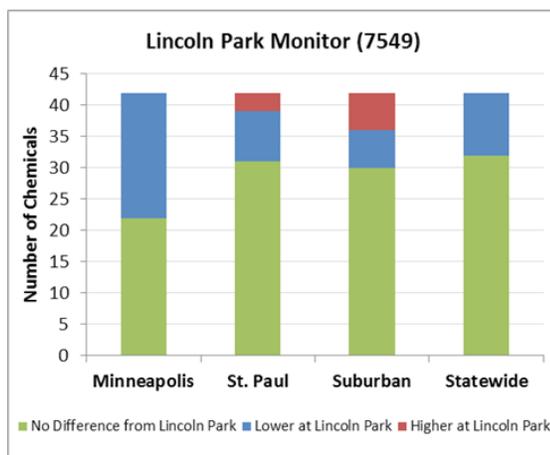
This graph shows the average daily PM<sub>2.5</sub> values at each Duluth monitor and monitors located in Virginia and St. Cloud. The average daily PM<sub>2.5</sub> behavior was similar across the monitors. All average PM<sub>2.5</sub> values were below the daily PM<sub>2.5</sub> standard of 35 µg/m<sup>3</sup> except for one day. On July 6, 2015, at the Lincoln Park monitoring site, the average daily PM<sub>2.5</sub> value was 37 µg/m<sup>3</sup>. During this week, heavy smoke from fires in Canada contributed to elevated PM<sub>2.5</sub> values at many air quality monitors.



## Air toxics

Of the 70 air toxics measured, 42 were detected at the Lincoln Park monitor and 36 were measured at the Denfeld monitor. The majority of air toxics were not different between the two sites. The majority of air toxics measured at both sites were not significantly\* different from levels measured at other monitoring sites.

All air toxic values in both communities were below any associated standard or health benchmark.



\*Kaplan-Meier non-parametric non-detects data analysis

## Project website

For more information on the Community Air Monitoring Project, please visit [www.pca.state.mn.us/air/community-air-monitoring-project](http://www.pca.state.mn.us/air/community-air-monitoring-project) or call either 651-296-6300 or 1-800-657-3864 and ask for air data analysis staff.

More information about the MPCA's Air Monitoring Program is available on the Web at <http://www.pca.state.mn.us/air/air-pollution-monitoring>.

