Summary of ambient air monitoring in Southeast Chicago

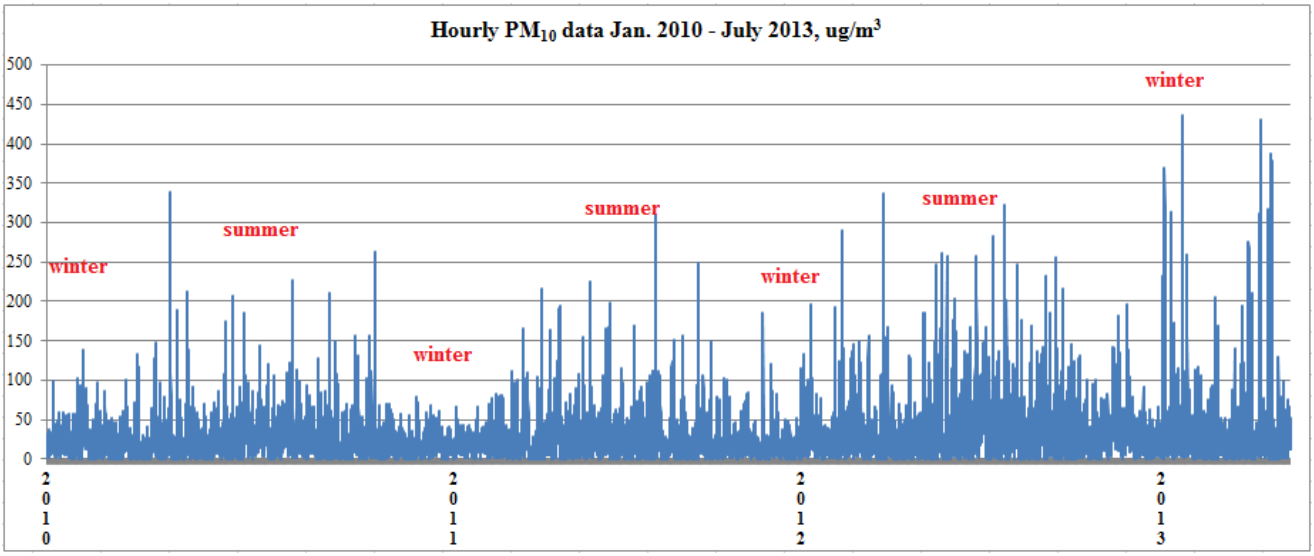
Motria Caudill, EPA-R5-ARD, October 28, 2013

Monitoring overview – IEPA operates an air monitoring station at George Washington High School at 3535 East 114th Street. Reported pollutants include fine particulate matter ($PM_{2.5}$), inhalable particulate matter (PM_{10}), lead (Pb-NAAQS), and toxic metals as total suspended particulates (TSP). EPA R5-ARD has evaluated long-term data trends at this site and shared findings with R5-OECA and community groups. $PM_{2.5}$ data are below the NAAQS and trending downward. PM_{10} and Lead are also below the NAAQS. Manganese (Mn) is above EPA's Reference Concentration (RfC) for neurological health effects. Mn data analyses suggest the source(s) are to the west and southwest of the monitoring station; multiple facilities are currently under investigation by ARD-AECAB. Other toxic metals are below levels of concern.

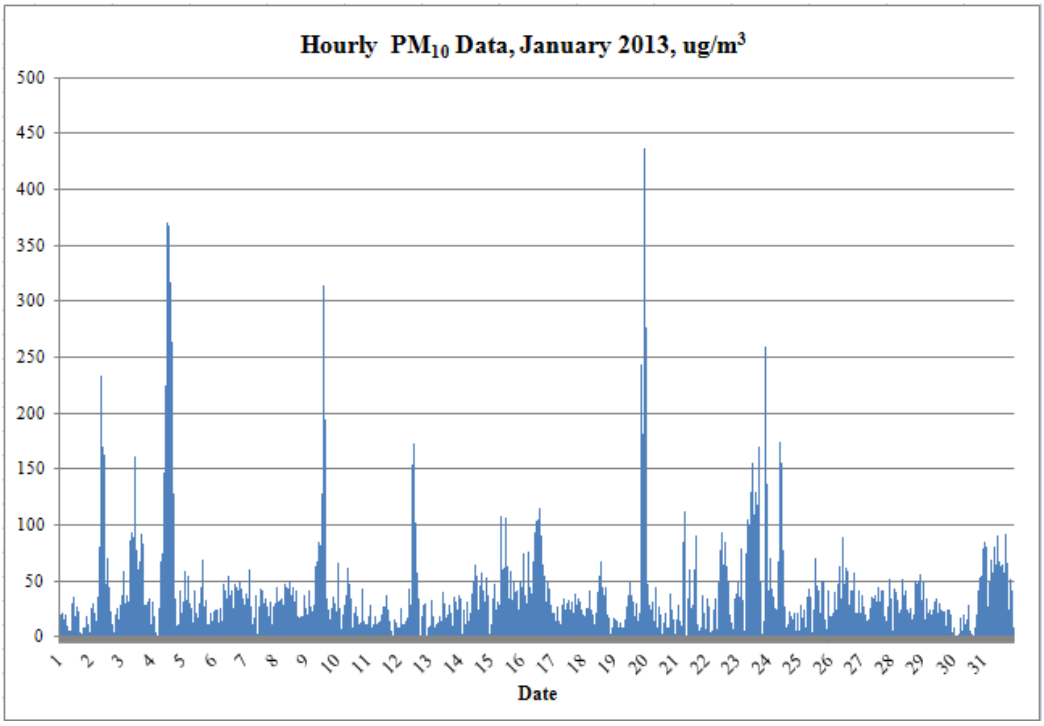
Location of IEPA air monitor station and PM sources near Washington H.S.

Details of PM_{10} monitoring – IEPA reports continuous hourly PM_{10} measurements at this site. Following a typical temporal pattern, PM_{10} measurements are higher in the warmer months and lower in the winter because windblown soil and industrial dust are suppressed by snow and ice

cover. This pattern is seen during 2010-12 in the below figure. PM_{10} levels are unusally high in the early part of 2013, most notably in January – a typically low-PM_{10} period.



Peak PM_{10} periods in early 2013 are depicted below. The highest values are associated with west and northwest winds – in some cases the monitor was directly downwind of KCBX South. These PM_{10} spikes may potentially be matched with activity data from local industry or records of citizen complaints.



Continuous PM_{10} monitoring at this site is ongoing. Note that the monitor is nearly one mile away from the KCBX site, which is not ideal for measuring maximum impacts. If further investigation is warranted, then PM_{10} fenceline monitoring at KCBX would be preferred.