

IMPROVING KIDS' ENVIRONMENT



Fine Particulate

You can't see it but it can kill you!

Martindale-Brightwood CARE Project
Share the Vision Meeting
February 25, 2010



Fine Particulate



- What is particulate matter (PM)?

PM is "a complex mixture of extremely small particles and liquid droplets" made up of many components, including acids, organic chemicals, metals, and soil or dust particles.

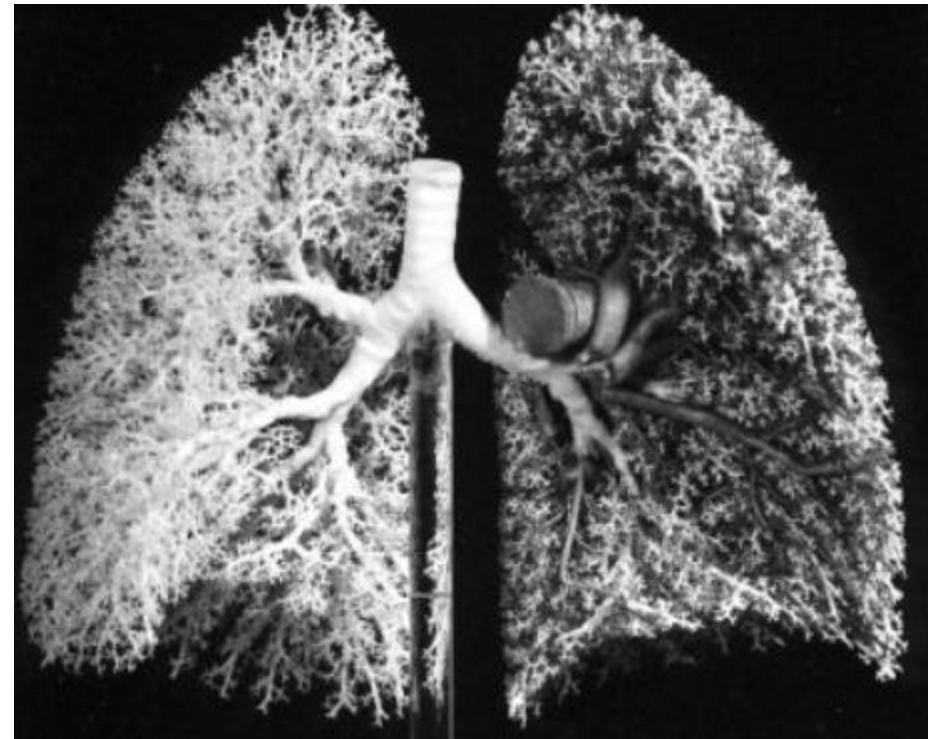
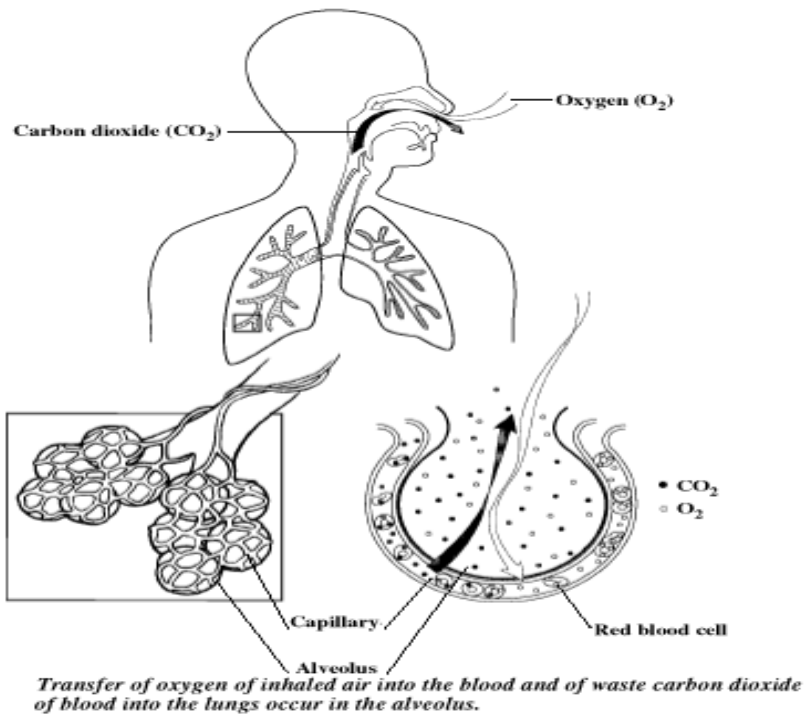
- Why is PM important?

The size of particles is directly linked to the potential for causing health problems—those smaller than 10 micrometers in diameter are the particles that generally pass through the throat and nose and enter the lungs.

IMPROVING KIDS' ENVIRONMENT

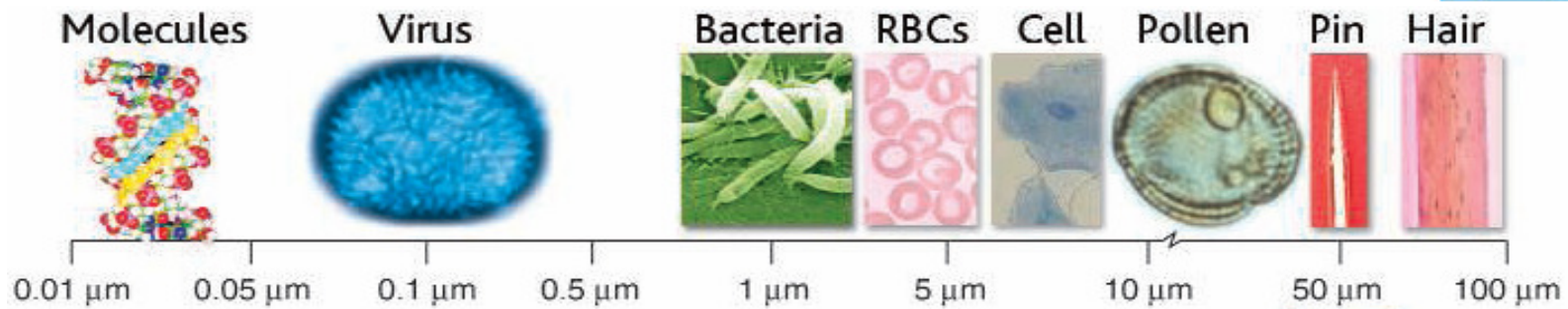


Fine Particulate

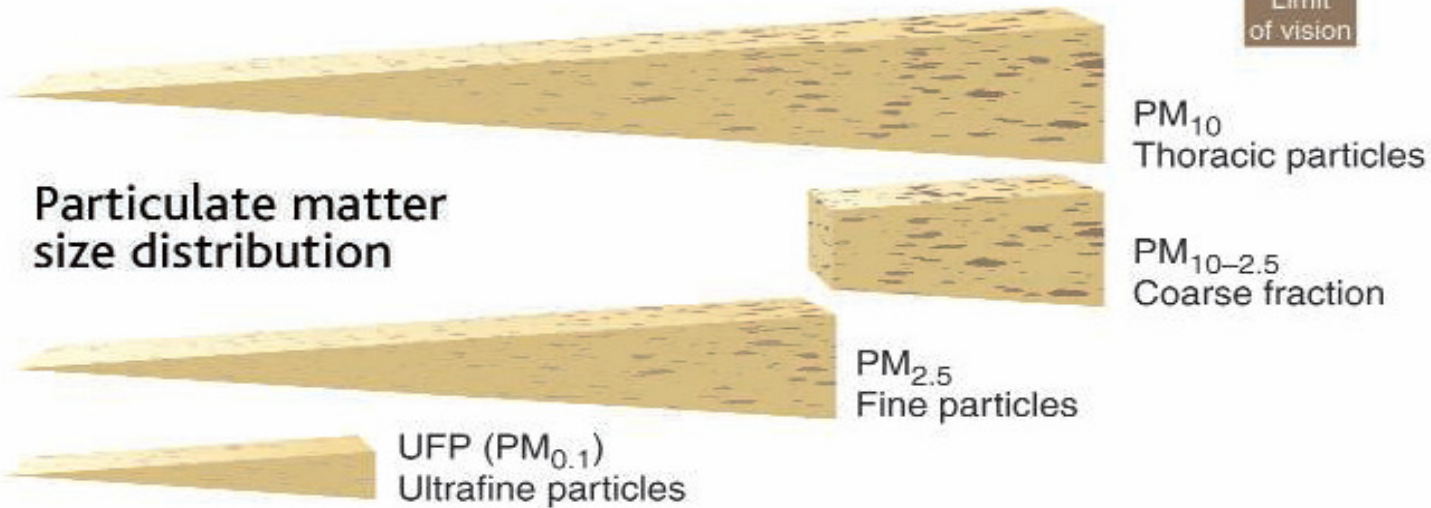




Fine Particulate



Particulate matter size distribution





Fine Particulate

PM 2.5

- PM 2.5 or smaller is called "fine particles"—these can be directly emitted from vehicles.
- PM 2.5 and other air toxics from mobile sources contain chemicals that can have harmful effects on health and well-being:
 - Metals
 - Organic Carbon
 - Acids –from nitrates and sulphates
 - Toxic Chemicals
- The EPA estimates that mobile (car, truck, and bus) sources of air toxics account for as much as half of all cancers attributed to outdoor sources of air toxics. However, this is not based on actual cancer cases but models that predict cancer cases based on current levels of mobile emissions.





Fine Particulate



- EPA sets regulations based on advice from the Science Advisory Committee. There is no “bright line”.
 - The standard is based on the best scientific judgment of the committee.
 - The standard continues to be lowered as more is learned about the health risks.
-



Fine Particulate

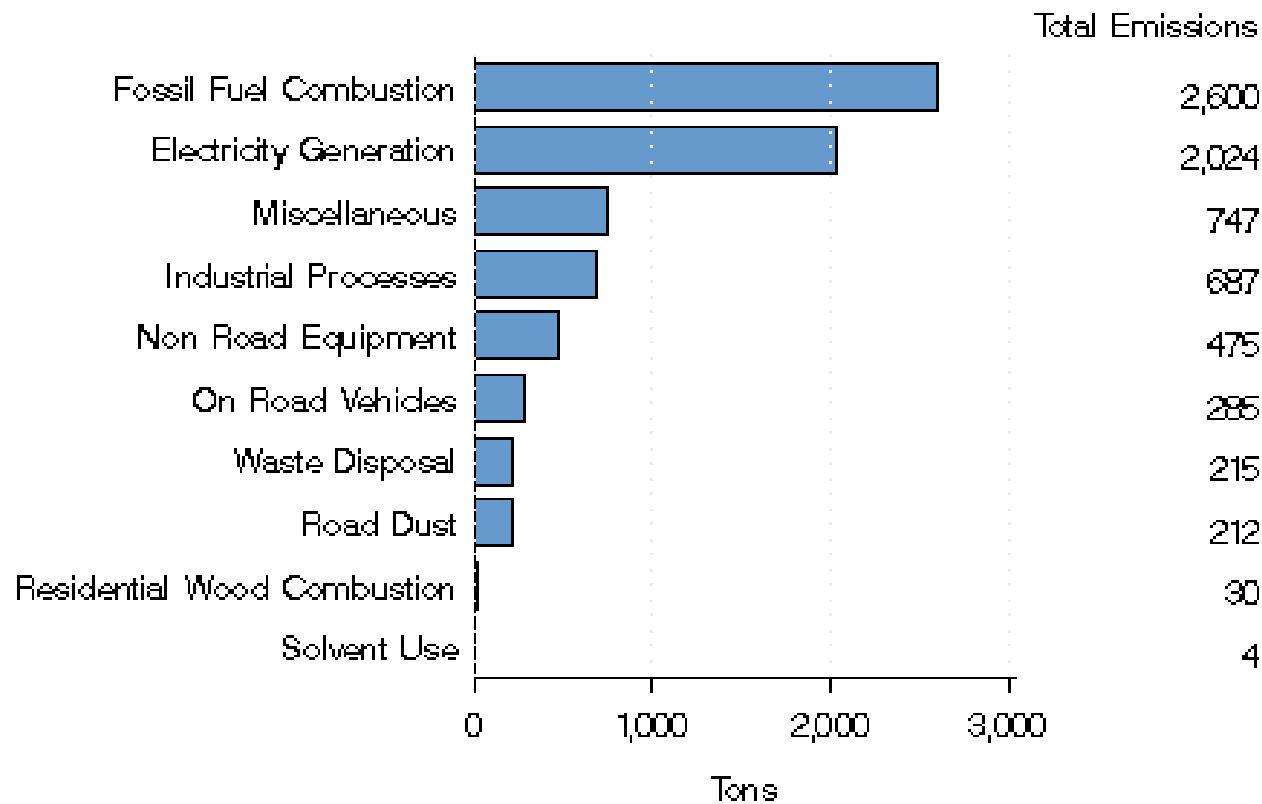
- Current standards are:
 - Annual Standard: 15.0 ug/m³
 - 24-Hour Standard: 35ug/m³.
- New recommended standard:
 - Annual Standard: 12 to 14 ug/m³.
 - 24-Hour Standard: 25 to 35 ug/m³.
- There is a PM 2.5 monitor at Washington Park.
- Indianapolis will have trouble meeting the new standard.





Fine Particulate

PM2.5 Emissions by Source Sector
in Marion County, Indiana in 2005





Fine Particulate Health Effects



The fine particle standard is important for the protection of human health.

- Fine particles are linked to daily mortality. Positive associations were observed with all-cause mortality, as well as mortality from respiratory disease, cardiovascular disease, and diabetes, and deaths in persons over age 65.
- Ischemic strokes increase as PM levels increase.
- Low levels of PM trigger hospital admissions for congestive heart failure.
- Particulate pollution increases risk of heart attacks in the elderly.
- Particle pollution increases women's risk of developing and dying from coronary heart disease.



Fine Particulate Health Effects



- Children's hospital admissions spike with increases in outdoor air pollution.
 - Respiratory emergency department visits rise with peaks in air pollution.
 - Air pollution lowers lung function of asthmatic children.
 - Children living near interstate highways have lower lung function than those living farther away.
 - Vehicle exhaust contributes to elevated blood pressure.
-



Fine Particulate Health Effects



- Air pollution increases risk of preterm birth.
 - Prenatal exposure to urban air pollutants can cause genetic alterations linked to increased cancer risk.
 - Long-term fine particle exposure in California linked to lower birth weight and infant mortality.
 - Living closer to high traffic roads may increase the risk of spontaneous abortion in certain women. The association was seen only with African-Americans, not with women of other races.
-

IMPROVING KIDS' ENVIRONMENT



NOW FOR SOME



GOOD

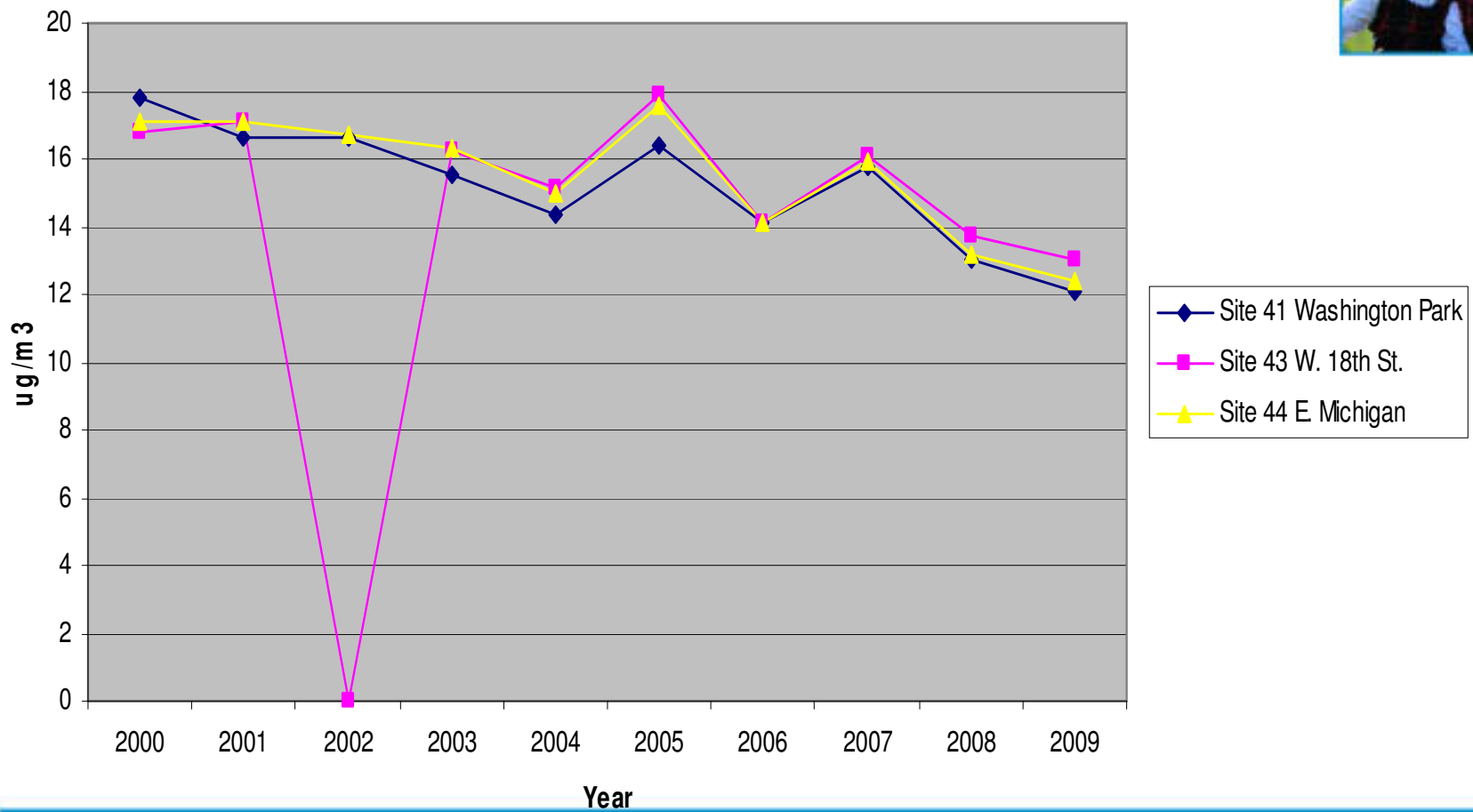
NEWS

IMPROVING KIDS' ENVIRONMENT



Fine Particulate

PM 2.5 ANNUAL AVERAGES

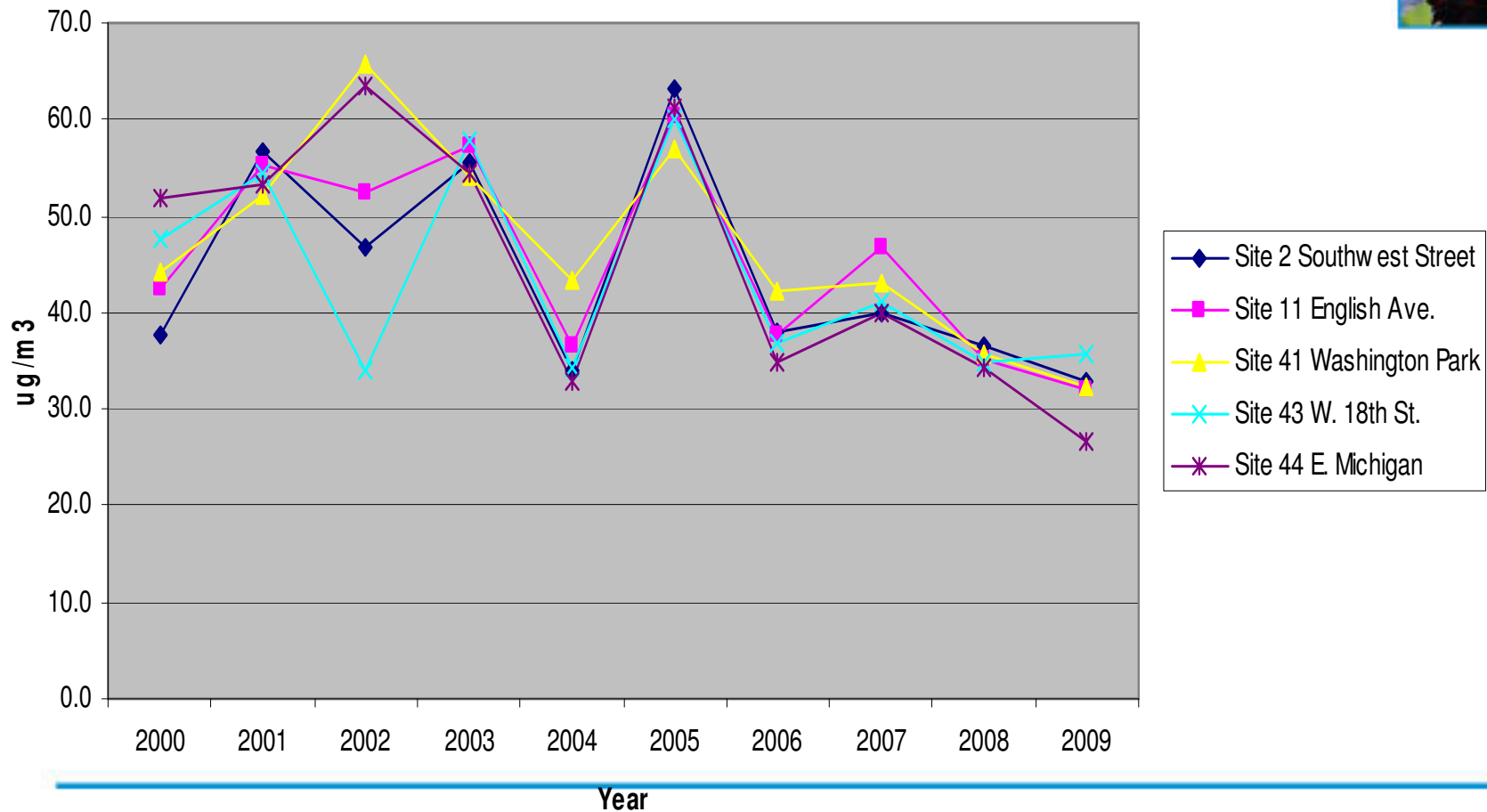


IMPROVING KIDS' ENVIRONMENT



Fine Particulate

PM 2.5 24 HR HIGHS FOR INDIANAPOLIS





What We Can Do To Reduce Fine Particle Pollution



- Do not idle your car or truck for more than 1 minute. This will also save you gas!
- Do not use a burn barrel or burn trash or leaves.
- Kerosene or gas space heaters can be dangerous.
- Wood stoves and fireplaces produce fine particle pollution.



What We Can Do To Reduce Fine Particle Pollution



- Smoking is dangerous to the smoker and those around the smoker, especially infants and toddlers!
- Report odors and air pollution to Mayor's Action Center (327-4MAC).
- Report dust from dirty roads (327-4MAC).
- Report dust from construction and demolition sites.
- If your gas furnace has a yellow flame, it needs repair.



What MBEJC Can Do To Reduce Fine Particle Pollution



- Have Martindale-Brightwood declared a No Idle Zone by the city
- Get businesses to post No Idle signs
- Ask city to synchronize traffic lights at Keystone
- Plant screens of trees along I-70
- Promote pollution reduction education for local businesses