



April 21, 2011

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## Ohio Environmental Council's Comments on Proposed redesignation of central Ohio in meeting the 1997 national fine particulate matter standard

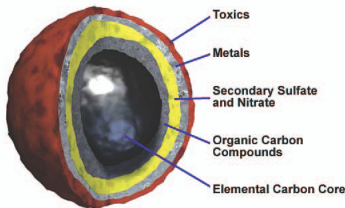
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The Ohio Environmental Council (OEC) is a statewide, nonprofit environmental organization whose mission is to secure healthy air, land, and water for all who call Ohio home. On behalf of our over 100 environmental and conservation member organizations and thousands of members throughout the state of Ohio, the Ohio Environmental Council respectfully submits the following comments on the proposed redesignation of central Ohio in meeting the 1997 PM 2.5 standard.

Particulate matter comes from a variety of sources: cars, diesel trucks, diesel buses, planes, trains, and heavy duty construction equipment. These emissions are from a variety of sectors. It is our understanding that the 2009 Statewide Annual Emission Inventory used the U.S. EPA's Mobile 6.2 model. More recently-2010-the U.S. EPA revamped the model to add more variables and has changed the model to MOVES.

In Franklin County estimates for 2015 from the non road contribution of PM 2.5 are 486.25 tons and the on road contributing 352.28 tons. Together, these two sectors contribute the majority of PM 2.5. One major source of PM 2.5 is diesel engines. Diesel exhaust contains formaldehyde, benzene, volatile organic compounds, particulate matter, nitrogen oxides, and more 40 known air toxins. Below is a simplified diesel particle.

### Diesel Particle

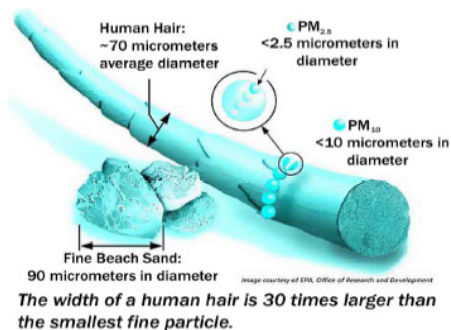


Diesel particles are carbon at their core with toxics and carcinogenic substances attached to their surfaces.

(Source: CATF)

This deadly stew is 3 times higher than the combined total cancer risk from all other air toxics.

PM 2.5 is a serious problem in Ohio. PM 2.5 is 1/30<sup>th</sup> the width of a human hair and when breathed, bypasses the body's natural defenses to get lodged in the lungs or go into the blood stream. Below is a graph demonstrating PM 2.5's small size:



This pollutant can contribute to asthma attacks, heart and lung disease, respiratory-related hospital visits and preventable death.

The Clean Air Task Force, from an analysis by ABT Associates using U.S. EPA-based methodology, projects that 2010 saw the following health impacts (in the U.S.):

### Adults

- 21,000 Premature Deaths
- 27,000 Non-Fatal Heart Attacks
- 410,000 Asthma Attacks
- 12,000 Chronic Bronchitis
- 2,400,000 Work Loss Days (WLD)
- 14,000,000 Minor Restricted Activity Days (MRAD)

### Children

- 15,000 Asthma ER Visits
- 29,000 Acute Bronchitis
- 330,000 Lower Respiratory Symptoms
- 270,000 Upper Respiratory Symptoms

The annual number of deaths associated with diesel pollution is more than drunk driving, firearm homicide, HIV/AIDS and workplace deaths-see below.

- 2<sup>nd</sup> hand smoke: 38,000
- Power Plant Emissions: 24,000

- Diesel soot: 21,000**
- Drunk driving: 17,000
- Firearm homicide: 11,000
- HIV/AIDS: 9,000
- Workplace: 5,000

(Source: Clean Air Task Force)

Additionally, fine particles from diesel engines impact central Ohioans' health:

- 84 Premature Deaths
- 118 Non-Fatal Heart Attacks
- 3,018 Asthma Attacks
- 57 Chronic Bronchitis
- 12,772 Work Loss Days (WLD)
- 74,055 Minor Restricted Activity Days (MRAD)

The lifetime cancer risk from diesel soot in Franklin County is 223 times greater than the EPA's acceptable cancer level of 1 in a million.

Furthermore, asthma, occurrences of which often are tied to poor air quality, is the most frequent admitting diagnosis at Nationwide Children's Hospital. Franklin County has 16.5% of children diagnosed with asthma that is higher than the state average of 15.4% and the federal average of 14%.

Below are a few of the many studies that have looked at the deadly toll from diesel emissions:

- A 2009 OSU College of Public Health (Dr. Sun) study revealed exposure to diesel exhaust increases angiogenesis and vasculogenesis-one of the fundamental mechanisms for solid tumor growth.
- A 2004 study of highway patrol officers exposed over a shift, particulate matter was linked to irregular heartbeats and increases in blood inflammatory markers (source: Particulate matter exposure in cars is associated with cardiovascular effects in healthy young men; American Journal of Respiratory and Critical Care Medicine, v. 169, p. 934-940)
- A 2007 Harvard study of 54,000 workers in the trucking industry found a higher risk in heart disease in the trucking industry compared to the general U.S. population: a 49% higher risk in drivers, a 32% higher risk in dock workers, and a 34% higher risk in shop workers (source: Cause-specific mortality in the trucking industry. Environmental Health Perspectives, v. 115, no. 8. p. 1192-1196)
- A 2010 study correlates prenatal freeway traffic proximity in California and incidence of autism. The risk of autism is nearly double (86% increase) inside 1,000 feet. Diesel exhaust could be a risk factor. (source: Health effects of real-world exposure to diesel exhaust in persons with asthma. Res Rep Health Eff Inst. 2009 Feb; (138): 5-109; discussion 111-23).
- Case control study (pub. American Journal of Industrial Medicine) 2001, 50% excess risk of colon cancer in men related to exposure to diesel engine emissions.
- CARB School Bus Exposure Study (2003)-"self pollution" is a source of exposure; Increased child's lifetime cancer risk due to diesel PM by 4%.
- Yale Study (Feb 2002)-Children's exposure to PM on school buses is as much as 5-15 times higher than background levels [on buses not retrofitted with emission controls].

The monetized value of health impacts from diesel soot in Ohio are projected at \$5.1 billion a year.

Moreover, there are environmental damages particle polluting causes to our already impacted wetlands, streams, wildlife, and climate. Black carbon is a basis for particulate matter. Studies have revealed that black carbon is about 2,000 times more potent a greenhouse gas than carbon dioxide over a 20 year period. According to the U.S. EPA over 37% of land-based PM in the U.S. comes from construction equipment. Additionally, diesel emissions contribute to the deadening of our waterways, smog, and crop damage.

The Agency projects that PM 2.5 emissions from on-road mobile sources will drop from 968.60 tons in 2008 to 486.25 in 2015. The Agency incorporated a 15% margin of safety when coming up with the projected numbers. The agency states a 15% margin of safety is justified because the variation in VMT forecast; expected modifications to TDM and mobile emission models and total decrease in emissions from all sources.

Several questions remain: did the modeling take into account the economic recession when not as many new trucks may have been purchased/used on the road? Did it take into account the possibility that not as many construction projects occurred over the three year span? Did the modeling over emphasize the 2007 on road diesel emission rule and its impact? Did the model take into account the anti-module transportation option environment we now face? Did the model take into account the growing trend of using outdoor wood fired boilers (which contribute to PM 2.5 emission)?

The Ohio EPA and many groups in Ohio, including OEC, have made great strides in cleaning the air. But we should not rest on our laurels. No doubt the air is cleaner than it was before but the real question is has state government done enough? We know that the full health benefits from the onroad and nonroad diesel clean up regulations won't be felt for another 20-30 years. In the meantime 11-12 million existing diesel engines continue to turn out the deadly pollutants. Maybe 1 million or 1.5 million have been cleaned up; but that still leaves a substantial number of dirty diesel engines out there.

If accepted, the redesignation took us more than 14 years to meet the standard. As we move forward we can't afford to wait another 14 years to meet any newer standard that may come out. We must do everything feasible to achieve maximum reductions in diesel pollution.

Additional steps the Ohio EPA and state government can take to reduce the death toll from diesel engines:

- \*Fund the Diesel Emission Reduction Grant program in the amount of \$20 million a year;
- \*Adopt clean construction requirements on all public works projects that require 85% or more reduction in pollution from the construction vehicles;
- \*Adopt a no-idling law with no more than idling for 5 minutes in a 60 minute time frame with few exceptions;
- \*Adopt an E-check-like program for on road diesel trucks;
- \* (Re)invest in Truck Stop Electrification; and
- \*Develop a low/no interest program that targets tier zero construction vehicles to be replaced with tier 3 or 4.

Additionally, adopt strong rules regulating the OWB menace.

In short, we need the Kasich Administration and the General Assembly to step up and make Ohio a leader in the Midwest instead of a laggard when it comes to cleaning up poor air quality. We know that every dollar invested in diesel cleanup yields anywhere from \$12 to \$20 in health care savings. The days of dirty, deadly, diesel emissions are numbered, let's put the final nail in the coffin by adopting strong measures that protect the public's health. Thank you again for this opportunity to comment on this important issue.

Sincerely,

David R. Celebrezze  
Dir. of Air & Water  
Special Projects