SIERRA CLUB AIR TOXICS CAMPAIGN

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Protecting Children from School Bus Diesel

PROBLEM: It's a common experience to see and smell a black cloud of smoke rising from behind a diesel bus. We know that diesel exhaust contains potent carcinogens and that diesel particulates increase the risk of asthma and lung disease as well as cancer.

CHILDREN ARE PARTICULARLY VULNERABLE:

- Children are particularly sensitive to the effects of toxic particulates. As compared to adults they have greater breathing frequency; smaller airways; more frequent mouth breathing and more asthma, allergies and respiratory illness. Their lungs are still developing.
- According to the U.S. EPA, diesel exhaust aggravates asthma, emphysema and bronchitis. Diesel exhaust exacerbates allergies. Based on human exposure studies as well as lab data, the US EPA has concluded diesel is a probable carcinogen.[1]
- Although breathing diesel exhaust may not impair lung function in adults, recent studies demonstrate that particulate pollution impairs development of the lungs in children.[2]
- In Minnesota, asthma is the leading cause of absenteeism among school children. Hospitalizations for asthma in Minnesota citizens under the age of 20 is increasing.[3]
- The Natural Resources Defense Council and University of California Berkeley School of Public Health have estimated that children are exposed to diesel exhaust levels within school buses that are as much as 4 times higher than in nearby vehicles. These exposures to children pose as much as 23 to 46 times the cancer risk considered significant under federal law.[4]
- Yale University's Dr. John Wargo recently found that particulate pollution in school buses is 5 to 15 times higher than at nearby monitoring sites. Bus idling, bus queuing and closed windows increased the concentrations of particulates inside school buses.[5]

WHY DIESEL IS HAZARDOUS TO CHILDREN AND ADULTS:

- Diesel contains 40 toxic chemicals including 15 substances identified by the United States Environmental Protection Agency as carcinogens, such as arsenic, benzene, formaldehyde, dioxin and polycyclic aromatic hydrocarbons (PAHs).[6]
- Diesel engines emit more than three-fourths of the fine particles less than 2.5 microns in diameter) from all vehicles. (U.S. EPA).
- Fine particle pollution significantly increases the risk of death from heart and lung disease, causing at least 70,000 deaths a year in the United States.[7]

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[1] U.S. EPA, DRAFT Health Assessment Document for Diesel Exhaust, July 2000.
[2] Gauderman et al, "Association Between Air Pollution and Lung Function Growth in Southern California Children," Am. J. Resp. & Crit. Care Med., Vol. 162, p1383, 2000.
[3] Presentation by Cecilia Erickson, School Nurses' Association for Children's Environmental Health Working Group, November 28, 2001. Presentation by Marian Marbury, Sc. D., Minnesota Department of Health at MPCA Seminar "Asthma: a Growing Public Health Problem," September 13, 2001.
[4] Natural Resources Defense Council, No Breathing in the Aisles: Diesel Exhaust Inside School Buses, January 2001.
[5] Wargo, "Children's Exposure to Diesel Exhaust on School Buses," Environment and Human Health, Inc. February 2002.
[6] U.S. EPA, Health Assessment Document, *op cit*.

- Federal regulators have estimated that diesel exhaust is responsible for as many as 125,000 cancers nationwide.[8]
- Studies in California reveal that more than 70 percent of the risk of cancer from air pollution comes from diesel exhaust.[9]

ACTION PROPOSED FOR THE STATE OF MINNESOTA TO REDUCE CHILDREN'S EXPOSURE TO SCHOOL BUS DIESEL

1. The Minnesota Department of Children Families and Learning should do the following:
   a. Provide information to local school districts on the health risks to schoolchildren of diesel exhaust and ways in which these risks can be reduced, including:
      • Reducing or eliminating idling of buses
      • Parking buses away from children's gathering places and building intake valves
      • Increasing maintenance of buses and/or using biodiesel fuels to reduce emissions
      • Retrofit of buses and purchasing new cleaner buses to reduce emissions
   b. Make recommendations for future incentives and resources for school districts to purchase buses that use cleaner fuels and technologies.
   c. Develop sample contracts that schools may use with contractors to reduce diesel fuel emissions
2. School districts in Minnesota should inform parents at the beginning of each school year of diesel emissions risks and the steps that their child's school has taken to protect children from exposure.
3. School bus idling and parking school buses near school air intake should be prohibited.

MINNESOTA LAGS BEHIND, FEDERAL GOVERNMENT SUPPORTS CHANGE

- Across the country, from Pennsylvania and Texas to Wisconsin and Indiana, local school districts have purchased approximately 2,674 clean alternative fuel buses.[10] In a recent report issued by the Union of Concerned Scientists, Minnesota was rated "Behind the Curve," at a "C-Minus" to "D-Plus" for the level of pollution from our school bus fleets.[11]
- The US EPA's "Tools for Schools" program to improve air quality in schools recommends eliminating bus idling and parking buses away from school air intake valves.[12]
- The US EPA recommends retrofit of diesel buses currently in use to reduce particulate emissions.[13]
- The U. S. Department of Energy recommends natural gas buses as part of its Clean Cities Program, citing the Natural Resources Defense Council research and other key sources.[14]

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[7] Minnesota Pollution Control Agency, Air Quality in Minnesota, January 2001, citing American Lung Association and Harvard School of Public Health Analysis.
[8] State and Territorial Air Pollution Program Administrators/Association of Local Air Pollution Control Officials, Cancer Risk from Diesel Particles, March 15, 2000.
[9] California Air Resources Board, Risk Reduction Plan to Reduce Particulate Emissions from Diesel-Fueled Engines and Vehicles, September 2000.
[10] NRDC Report, *op cit*., at p. 24
[11] Pollution Report Card: Grading America's School Bus Fleets at http://www.ucusa.org
[12] US EPA Indoor Air Quality, "Tools for Schools" http://www.epa.
[13] US EPA, Heavy-Duty Diesel Emission Reduction Project Retrofit/Rebuild Component, June 1999.
[14] US Department of Energy, "Alternative Fuel School Buses Earn high Marks," Alternative Fuel News, Vol. 5, No. 3, Nov. 2001.