

Secondary Streets Pose Primary Threat to Air Quality

Final Study of the Arden and Watt Area Indicates Burned Oil Fumes from Car Exhaust May Pose a Significant Health Threat

SACRAMENTO — A third and final report on poor air quality downwind of Watt Avenue at Arden Way shows that very fine and ultra fine toxic particles from cars, which can be inhaled deep into the lungs, can be higher on secondary streets than downwind of heavily traveled freeways like I-5 in Sacramento.

Issued by the Health Effects Task Force (HETF) of Breathe California of Sacramento-Emigrant-Trails, the report suggests burning oil in car exhaust may be a more significant health threat than earlier believed. Existing studies that show burned oil fumes from car exhaust is even more toxic than burned oil fumes from diesels and also contains the single worst cancer-causing agent in the air, benzo-a-pyrene. However, data on the toxicity of car exhaust is lacking, even though auto smoke bears similarities to diesel exhaust — estimated by the California Air Resources Board to account for 70 percent of all cancer causing toxic air contaminants in California.

“Just because people may live along residential streets instead of freeways doesn’t mean that they’re safe from the harmful effects of car exhaust particulate. However, there are strategies that we can take to minimize the risk to health posed by particulate pollution, and that’s the good news from this study,” said Professor Thomas Cahill of the University of California, Davis.

Because pollution on secondary streets is dominated by cars, the most effective mitigation is to repair or eliminate the roughly 10 percent of oil-burning gross emitting cars from the highway by methods including enhanced smog checks as in last year’s AB1870. This would immediately reduce pollution near secondary streets by roughly two-thirds. In addition, the report also cautions city and county officials against considering street widening as a solution to traffic. Widening would actually increase pollution by attracting higher levels of vehicle traffic to secondary streets near homes and schools. However, there are strategies outlined in the report that can prevent the effects of poor air quality from particulate pollution. These include:

- Adjusting signal timing at Watt Avenue and Arden Way to reduce vehicle congestion and idling cars directly upwind from Arden Middle School.. Encouraging alternative transportation can also reduce pollution-causing traffic congestion.
- Planting vegetation and/or installing barriers on medians and right-of-ways to help filter particulate waste from homes and schools. Ongoing HETF studies show that vegetation is very efficient at removing the most dangerous very fine and ultra fine particles from the air. A row of deodar cedars has already been planted near Arden Middle School.
- Upgrading indoor filters for homes and schools to electrostatic filters. The report shows the newer electrostatic filters reduced indoor very fine/ultra fine particulate pollution by as much as 75 percent at Arden Middle School.

The study states that ultimately, while costly and challenging, providing more distance between roads, and homes and schools is the most effective mitigation tactic. This would favor new vegetated parkways as a way to move traffic rather than widening existing streets.

“This most recent study by the Health Effects Task Force highlights how particulate pollution deserves attention as one of Sacramento’s leading health threats. But hopefully, where we can focus attention, we can also generate momentum toward innovative solutions that will benefit everyone in our region,” said Larry Greene, air pollution control officer for the Sacramento Metropolitan Air Quality Management District.

This report is the only one conducted in California that by measuring mass as well as the chemical composition of fine and ultra fine particulate pollution from vehicles was able to separately establish particles from burned oil from fuel combustion. Of four sites studied, the Arden and Watt area, including Arden Middle School, had somewhat higher levels of very fine particulate mass than the comparisons sites, although comparison measurements were not made at the same time. . The comparison sites studied included the area surrounding the Crocker Art Museum next to I-5, downtown at 13th and T Street, and the railyard in Roseville.

The health impacts of particulates is critical because health studies have demonstrated that very fine and ultra-fine inhaled particulates can lodge deep inside the lungs and then enter

the blood stream. From there, toxic particulates can cause adverse health effects on both the lung and heart.

Led by Cahill, the three part study's results and recommended mitigation strategies support further studies into air quality and innovations to reduce the risk from particulate pollution.

The HETF is composed of a group of ten air quality and health experts who have for the last 13 years volunteered their skills and expertise for Breathe California of Sacramento-Emigrant Trails. Other notable studies include identifying the effect of fine particles on ischemic heart disease in the Central Valley in 1997.

Several agencies provided data in support of the HETF research effort. These include the CalEPA/Air Resources Board, the California Dept. of Health Services, Sacramento County Department of Transportation and the University of California, Davis through Dr. Cahill and the Delta Group. The Arden Middle School Task Force, with representatives of key governmental agencies, San Juan Unified School District and Peggy Piccardo, Principal of Arden Middle School, also provided vital oversight and guidance throughout the third phase of the HETF studies.

The entire three part study was made possible through grants from the Sacramento Metropolitan Air Quality Management District.

Breathe California of Sacramento-Emigrant Trails leads a wide variety of efforts and programs to promote clean air and healthy lungs. For more information, call (916) 444-5900 or visit www.sacbreathe.org.

[Click here](#) to view the study.

###