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NEW HEI REPORT ON EXPOSURE TO TRAFFIC FINDS EVIDENCE OF HEALTH EFFECTS IN CHILDREN NEAR MAJOR ROADS, AND CONTINUING DATA GAPS

(Boston, January 13, 2010) A new report by a Special Panel of the Health Effects Institute (HEI)¹ – of the most comprehensive and systematic review of the worldwide traffic emissions and health science to date – has found that there are substantial gaps in what we know about exposure to traffic air pollutants and their health effects, but there is sufficient evidence that exposures to traffic-related air pollution cause asthma exacerbation in children and suggestive evidence that they might cause other health effects. The Report, published today at www.healtheffects.org, noted that the zones most impacted by traffic-related pollution are up to 300 to 500 meters from highways and other major roads, and calculated that for large cities in North America that would include 30% to 45% of the population.

The Panel was convened by the HEI Board of Directors to examine the rapidly growing body of studies purporting to show a relationship between exposure to traffic and disease, and systematically reviewed over 700 worldwide studies of emissions from motor vehicles and exposure to and health effects of traffic-related air pollution. The Panel was chaired by Dr. Ira Tager of The University of California Berkeley School of Public Health and included a dozen national and international experts in emissions, exposure, epidemiology, statistics, and public health (List below). An initial Preprint of the report was presented at the HEI Annual Conference in Portland, Oregon in May 2009; this final comprehensive report has undergone editorial revision and extensive quality assurance and quality control to ensure that the data presented and reviewed are of the highest possible quality.

¹ The Health Effects Institute is an independent, non-profit research institute funded jointly by government and industry to provide credible, high quality science on air pollution and health for air quality decisions. HEI sponsors do not participate in the selection, oversight or review of HEI science, and HEI’s reports do not necessarily represent their views.

Overall, the Panel concluded:

- Many countries have implemented more stringent emission controls and made steady progress in reducing the emissions from motor vehicles and improving air quality. However, the rapid growth of the world's motor-vehicle fleet, the expansion of metropolitan areas, and the increasing dependence on motor vehicles have resulted in an increase in the fraction of the population living and working in close proximity to busy highways and roads — counteracting to some extent the benefits of pollution-control regulations and technologies.
- Based on a synthesis of the best available evidence, the Panel identified an exposure zone within a range of up to 300 to 500 meters from a highway or a major road as the area most highly affected by traffic emissions and estimated that 30% to 45% of people living in large North American cities live within such zones.
- Many aspects of the epidemiologic and toxicologic evidence relating adverse human health effects to exposure to primary traffic-generated air pollution remain incomplete. However, using rigorous criteria to assess cause and effect, the Panel concluded that the evidence is sufficient to support a causal relationship between exposure to traffic-related air pollution and exacerbation of asthma among children.
- The Panel also found suggestive evidence of a causal relationship with onset of childhood asthma, non-asthma respiratory symptoms, impaired lung function, total and cardiovascular mortality, and cardiovascular morbidity, although the data were not sufficient to support causality. For a number of other health outcomes, there was limited evidence of associations, although the data were either inadequate or insufficient to draw firmer conclusions.
- The Panel's conclusions should be considered in the context of the continuing progress to reduce emissions from motor vehicles. Since the epidemiology studies are based on past estimates of exposure from older vehicles, they may not provide an accurate guide to estimating health associations in the future.
- In light of the large number of people residing within 300 to 500 meters of major roads, the Panel concluded that the sufficient and suggestive evidence for these health outcomes indicates that exposures to traffic-related pollution are likely to be of public health concern and deserve public attention.

The Panel also identified a number of top priority research needs to fill key gaps in our understanding of emissions, exposure, and health.

The full report of HEI Traffic Panel is available for download at www.healtheffects.org. Questions may be directed to Dan Greenbaum, President of HEI, (617 488 2331) or Bob O'Keefe, Vice President (617 488 2334), who can ensure that Dr. Tager and other members of the Panel are available as needed to answer them.

The HEI TRAFFIC REVIEW PANEL

Ira Tager, Chair, *Professor of Epidemiology, School of Public Health, University of California, Berkeley; member, HEI Research Committee*

Kenneth Demerjian, *Director, Atmospheric Sciences Research Center; Professor, Department of Earth and Atmospheric Sciences, State University of New York; member, HEI Research Committee*

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Michael Jerrett, *Associate Professor, Division of Environmental Health Sciences, School of Public Health, University of California, Berkeley*

Frank Kelly, *Professor of Environmental Health and Director of Environmental Research Group, King's College, London, U.K.*

Lester Kobzik, *Professor of Environmental Health, Harvard School of Public Health*

Nino Künzli, *Professor of Social and Preventive Medicine, Public Health University of Basel, Institute of Social and Preventive Medicine at the Swiss Tropical Institute, Basel, Switzerland*

Brian Leaderer, *Susan Dwight Bliss Professor of Public Health, Division of Environmental Health Science, Yale University School of Public Health; former member, HEI Review Committee*

Thomas Lumley, *Associate Professor, Department of Biostatistics, University of Washington School of Public Health and Community Medicine*

Frederick W. Lurmann, *Manager of Exposure Assessment and President Emeritus, Sonoma Technology, Inc.*

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Jonathan Samet, *Director, Professor, and Flora L. Thornton Chair, Department of Preventive Medicine, Keck School of Medicine, University of Southern California*

Michael Walsh, *Consultant on vehicle emission and fuels issues worldwide; former head of the U.S. EPA Office of Mobile Source Pollution Control*

Maria Costantini, *Principal Scientist, Health Effects Institute, Project Leader*

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