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RESPONSE TO TRANSPORT AND HEALTH IN LONDON BY STEPHED GLAISTER, DAN GRAHAM, ED HOSKINS

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The report makes a range of assumptions about the effects of air pollution on health which have the effect of minimising potential impacts. At the same time it mentions other potential impacts of transport on health only in passing.

The population of London is taken as 7.7 million on **page 41** but at the same time London is included as a world mega city, the definition of which is over 10 million inhabitants. The data for mega cities from the AIRC web site is a secondary quotation from WHO/UNEP data of 1992. The particulate measures are mainly suspended particulate matter rather than fine particles as Pm_{10} measurements were only introduced in 1991. It would surely be more appropriate to compare London with other European cities, however, even in this instance there would be substantial problems with comparability because of different methods used. Continuous Pm analysers may produce substantially different data from those produced by manual gravimetric methods.

If London is deemed to have a population of over 10 million, for the purposes of comparison with other mega cities, the same population should be used for calculating the magnitude of air pollution effects on London's population.

On **page 41**, in calculating deaths brought forward attributable to traffic related air pollution in London it is assumed that only 25% of Pm_{10} and 2% of sulphur dioxide are attributed to traffic in London. However, on **page 29**, the 1996 NETCEN estimates give much higher proportions. Whilst evidence is presented on **page 34** that there have been substantial reductions in Pm_{10} from vehicles between 1992 and 1997, it is not clear that the assumption of a dramatic reduction from 1996 to the present day is appropriate. An added complication, which is briefly referred to in the text, is the contribution of even finer particulates ($Pm_{2.5}$ or below). There is insufficient long-term data to determine whether these very fine particles are declining at the same rate as Pm_{10} overall. Some advanced diesel engines which have lower Pm_{10} outputs produce large amounts of ultra fine particles, the health impact of which is not yet known.

The other difficulty which is also briefly alluded to in the text is that the most important public health effects of particulates are probably due to long-term exposure, not to short-term exposure to peaks which as COMEAP have stated, merely brings forward the deaths of mainly elderly people. US studies, for example, those by Dockery and colleagues and Schwartz have demonstrated the potential effects of long-term exposure on mortality and morbidity. On page 42, the possibility that such long-term exposure may shorten life by an average of a year or so is raised. This is a substantial impact and it is the potential long-term effects that have been used as the basis of the numbers of deaths attributed to transport in a study of Austria, Switzerland and France which is quoted in the report on Transport and Health by WHO European Centre on Environment and Health. The recent work of the SAPALDIA Team in Switzerland shows that long-term exposure to air pollution, particularly fine particulates, is consistently associated with a reduction in lung function.

On **page 43**, a figure of one extra patient admitted to hospital with respiratory disease in a city with a population of a million is given for an increase in particulate air pollution from 20 micrograms per cubic metre to 50 micrograms per cubic metre. It is not clear what time period is being referred to and the estimate seems low in relation to the figures given on **page 41**.

It is of particular concern that the authors have not attempted to undertake a sensitivity analysis but have consistently used assumptions which tend to minimise the impact of air pollution on health. However, given that the authors themselves clearly consider that air pollution is not a substantial health problem, it is then surprising to note that they spend so little time on assessing the potential for health improvement by increasing exercise which is only dealt with in a cursory fashion on **page 73**. In addition to reducing cardiovascular risk, increased exercise for children should help to reduce childhood obesity which has substantially increased from recent years. There is also quite good evidence that increasing exercise can help to reduce depression. It is surprising that the authors did not place more reliance on the WHO report on Transport and Health which deals with these issues in a much more comprehensive way. The section on

noise is also unsatisfactory in that it does not seem appropriate to use complaints about traffic noise as an indication of the magnitude of noise. Again, the WHO report gives a much fuller discussion of the problem.