

A Response to Government's Proposed Measures
to Curb Road Noise Impact submitted to
LegCo Panel on Environmental Affairs and LegCo Panel on Transport
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Jointly submitted by
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and
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- a. The feasibility of introducing traffic management measures to restrain heavy vehicles from using certain roads at certain times*

It is feasible to introduce traffic management measures to restrain heavy vehicles from using certain roads at certain times. In fact, one of the very important components in road traffic noise generation is the percentage and absolute number of heavy vehicles on the road. If these vehicles are restrained from using those roads, especially roads with high gradients, close to the sensitive receivers (i.e., people in residential areas, hospital and schools etc.) during the nuisance hours, the impact of road noise on people will be very much reduced. Any vehicles that have three or more axles can be classified as heavy vehicles. These vehicles include construction trucks, container trucks and buses. According to TD's figures, there are about 2900 heavy goods vehicles and 10000 buses. It appears that the modern buses are much quieter than the old models and the heavy goods vehicles. And, it is probably not feasible to restrain buses from running their franchised routes. Therefore, there are only 2900 heavy goods vehicles that could be affected by restraint measures. With careful identification of sensitive locations and times, it is feasible to impose restraint measures on these vehicles. For example, ban these vehicles driving along roads with speed limits of 50 kph or below in residential areas during the nighttime. This type of measure is common in many countries including China Mainland. In fact, this measure has been imposed in the Peak and Mid-levels area for traffic reasons. In brief, it is feasible to restrain heavy vehicles from using certain roads at certain times. Furthermore, it should be noted that vehicles should be restrained on the basis of their noise emission levels but not solely on their size. For example, some minibuses and modified motor cycles do emit excessive noise.

- b. The feasibility of eliminating transport noise at source during the earliest stages of planning and designing new transport projects*

There is much overseas experience in constructing low noise transport infrastructure, including building depressed roads, paving low noise pavement materials, providing a buffer between the roads/railways and the sensitive receivers as well as covering the infrastructure. These experiences can certainly be employed to Hong Kong, in particular in the development of new towns. As long as there are clear guidelines on the design of roads/ railways, engineers will have no problem of following the guidelines. However, there is an obvious discrepancy in the current Environmental Impact Assessment Ordinance, EIAO. The EIAO specifies 70dB(A) as the controlling

criteria for residential dwellings. It however falls short of distinguishing the conditions before and after the implementation of a new road. The example below illustrates this point. When a new road emits additional noise to an already noisy environment (say from 67dB(A) to 71 dB(A)), massive noise mitigation measures will be required to reduce the road noise (sometimes even to below the original noise level). Whereas for an originally quiet environment (at 50dB(A)), a new road bringing with it a resulting noise level of 69dB(A) will end up with no noise mitigation because it meets the requirements of the EIAO. How absurd!! On the other hand, road traffic noise is produced by the engine and the exhaust as well as the tyre contact with the road surface. At low speed, the engine and exhaust noise predominate but at higher speeds, tyre noise is more important. In general, diesel engine is noisier than petrol and LPG engines. And, electric vehicles have very low motor noise. Mufflers in vehicles have to be well maintained to ensure the compliance of the regulatory noise level. To reduce tyre noise, bituminous pavements are better than concrete pavements and open-textured bituminous surfaces can reduce traffic noise up to 10 dBA.

c. The feasibility of repeated and lengthy exposures of high levels of traffic noise on people and their health.

There are many reports in journal papers and standard textbooks giving evidence of noise damage to health. There does not appear to be any dispute on this. Medical experts are more appropriate to discuss this issue.

d. Others

- (i) A noise exposure index should be devised to monitor the effects of the noise abatement measures. The index can simply be the product of noise level and the number of sensitive receivers. The noise exposure index can also be used to prioritize noise abatement schemes.
- (ii) Noise barriers as proposed by Government are effective means to reduce road traffic noise but they may look awful. These barriers can be more environmentally friendly if they are constructed using certain percentage of recycled materials, for example, using shredded waste tyres sandwiched in well-designed noise barrier compartments. The visual impact of these barriers should be emphasized.
- (iii) Speeding generates excessive noise especially on trunk roads. If restraint measures are considered to reduce traffic noise, measures to reduce speed including traffic humps on local roads and speed detection cameras on trunk roads should prove effective.
- (iv) A systematic survey on noise level should be conducted by the Highways Department and Environmental Protection Department to identify locations where noise barriers/ traffic management measures are needed and to find out whether the noise barriers/ traffic management measures are technically feasible and beneficial.