

# Traffic Noise



**8%** of people in the UK are extremely disturbed by traffic noise, with **55%** bothered to some extent (1)

But with the right measures in place, annoyance caused by traffic noise could be cut by **70%** (2).

## Lower speeds

- Cutting the urban speed limit from 30mph to 20mph could reduce traffic noise by more than 50% (3).
- Cutting the motorway speed limit from 70mph to 60 mph could cut noise by more than 25% (3).

## Quieter Road Surfaces

- The use of quieter road surfaces could halve the noise from traffic. Quieter road surfaces like porous asphalt cost more than traditional road surfaces but are 3-10 times more cost-effective than mitigation measures such as home insulation or the construction of noise barriers (4).

## Noise Barriers

- These can be expensive but are essential at noise hot spots. At their best, they can cut noise by 75%.

## Electric Vehicles

- Greater use of electric and hybrid vehicles will cut noise. However, they come with two important caveats. First, tyre noise will still be present – this means that electric vehicles will only cut car noise up to speeds of about 35mph; above that tyre noise dominates. Second, it remains uncertain how much noise will be deliberately added to electric vehicles – and the tone of it - so people can hear them coming. But, even with these caveats, electric vehicles should cut noise levels in built-up areas quite noticeably. They will not do so on many rural 'A' roads where the current speed limit is higher. In economic terms they do have an important advantage over measures like quieter road surfaces, insulation and noise barriers, in that the cost falls on the manufacturers and the users rather than on the public purse.

## Traffic Reduction

- Traffic volumes affect noise. 200 vehicles passing in one hour sound half as loud as 2000. So volumes need to fall fairly significantly to have a noticeable effect. But a cut in traffic even by a small amount could improve noise levels by reducing the overall number of noise events. However, even here, speed reduction is crucial. Traffic noise will not fall automatically with a drop in vehicles numbers if it simply allows the remaining traffic to speed up.

| Reduction in traffic volumes | Reduction in noise (LAeq) |
|------------------------------|---------------------------|
| 10%                          | 0.5 decibels              |
| 20%                          | 1.0 decibels              |
| 30%                          | 1.6 decibels              |
| 40%                          | 2.2 decibels              |
| 50%                          | 3.0 decibels              |
| 75%                          | 6.0 decibels              |

This assumes no changes in speed, traffic composition or driving patterns (Source: Ellebjerg 2008a: 11, Table 2.1)

## Traffic Mix

- Traffic mix is an important factor in both overall noise and noise peaks. Heavy vehicles, mopeds and motorcycles are disproportionately noisy. At 30 km/h (19mph) one heavy vehicle can emit as much noise as 15 cars. However, light vehicles dominate traffic noise because they account for most of the traffic. Even on roads where there is a greater percentage of heavy traffic, cars will still usually dominate noise levels because of their higher speeds (Ellebjerg 2008a).

Given the amount of noise caused by light vans and lorries, as well as the growth in home deliveries due to the Internet, the growth in cargo bikes could play an important role in noise reduction.



## References:

- (1). [file:///C:/Users/Dell/Downloads/12378\\_SummaryReportV1.0.pdf](file:///C:/Users/Dell/Downloads/12378_SummaryReportV1.0.pdf)
- (2). den Boer and Schroten, 2007
- (3). Speed and Road Traffic Noise, Paige Mitchell, UK Noise Association, 2009
- (4). The Danish Road Noise Strategy, Danish Environmental Protection Agency, 2003

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