



## **Noise pollution from road traffic**

Number 44, 2023

Part of the [Tranzinfo Hot Topics](#) series, this issue offers a selection of recent material on the growing problem of noise pollution from road traffic, its effects on health and the environment, and what can be done to mitigate it.

### **Contents:**

[The impact of traffic noise Solutions](#)

### **The impact of traffic noise**

[Road noise makes your blood pressure rise -- literally](#)

American College of Cardiology, March 2023

New research has established a link between exposure to road traffic noise and an increased risk of hypertension, even after adjustment for air pollution.

[Even weak traffic noise has a negative impact on work performance](#)

Chalmers University, Sweden, 22 May 2023

New research from Chalmers University of Technology shows that as little as 40 decibels of traffic noise – the typical level of background noise in an office environment or kitchen – has a detrimental effect on cognitive performance.

[Study links transportation noise to higher risk for suicides](#)

Medical Xpress, 29 March 2023

Swiss researchers have evaluated the association of transport noise with suicide in Switzerland. Every 10 dB increase of average road traffic noise at home, risk for suicides rises by 4%, according to the study.

### [Traffic noise: It sounds 'like gunshots ... it wakes up dogs, it wakes up babies'](#)

Sydney Morning Herald, 8 March 2022

The noisiest spots in Sydney are along the Western Distributor (A4) and Cahill Expressway (M1). The city entrance to the Harbour Bridge is the worst, near 100dB. Anything greater than 85dB is potentially hazardous depending on pressure and duration, say Australian experts.

### [Traffic noise impairs songbirds' abilities](#)

BBC News, 3 February 2021

The sound of passing cars diminishes birds' ability to find food, according to a US study.

### [Transport noise linked to increased risk of dementia, study finds](#)

The Guardian, 9 September 2021

Exposure to noise from road traffic and railways is associated with an increased risk of dementia, according to a new study involving two million adults, conducted over more than a decade.

### [Why noise pollution is bad for your heart](#)

BBC News, 16 March 2021

In the last decade, a growing body of research has linked noise from aircraft and road traffic to a heightened risk for a number of cardiovascular illnesses.

### [The other type of car pollution that harms us all](#)

Streetsblog USA, 14 September 2020

A group of Italian researchers has studied the impact of automobile noise on human health, citing health effects ranging from psychological to cardiovascular problems.

### [Number of Europeans exposed to harmful noise pollution expected to increase](#)

European Environment Agency, 5 March 2020

Road traffic is the top source of noise pollution in Europe, and at least one in five Europeans are currently exposed to noise levels considered harmful to their health, according to the European Environment Agency's (EEA) environmental noise pollution [report](#).

### [Sydney Traffic Noise and Urban Greenery Maps](#)

University of NSW, 2019

The project aims to map urban greenery and traffic noise in the Sydney CBD.

[Back to top](#)

## Solutions

### [Hoons on notice in Sydney: noise-activated cameras to be installed at hot spots](#)

Drive, 28 June 2023

Sydney's Bayside Council is set to begin a trial of noise-activated cameras to detect loud cars and motorcycles in the area.

### [Outlook to 2030 — Can the number of people affected by transport noise be cut by 30%?](#)

European Environment Agency briefing, 23 September 2023

The best practice case studies outlined in this briefing show how measures such as reducing traffic speed limits, redesigning roadways, creating low-noise emission zones, and retrofitting trains with quiet brakes and pads could contribute to achieving the 2030 target.

### [An innovative approach for the development of sound absorbing material using industrial wastes](#)

Laxmi, V et al., Construction and Building Materials, vol. 369, March 2023

For sound absorbing panels as noise barriers, a research study is carried out to design and develop a composite mix using industrial waste as Fly Ash (FA), Waste Tyre Rubber (WTR) granules with cement.

### [Noise performance of chip seal pavements](#)

Donavan, PR & Canello, CJ, Transportation Research Record, 2023, doi.org/10.1177/03611981231176548

Increasing numbers of local and state highway agencies are using chip seals for highway pavement maintenance owing to their relatively low cost and simplicity of application. These surfaces can significantly increase both exterior traffic noise levels and interior noise for vehicle occupants. To minimize the tire-pavement noise generated by chip seals, the California Department of Transportation (Caltrans) has conducted research on different chip seal pavement designs.

### [The co-benefits of electric mobility in reducing traffic noise and chemical air pollution: Insights from a transit-oriented city](#)

Tsoi, KH et al., Environment International, vol. 178, 108116, 2023

While electric vehicles are known to have lower noise profiles, the impacts of electric mobility on traffic noise, especially for electrified heavy-duty vehicles, have not been thoroughly examined. This study aims to examine the impacts of both electric light-duty vehicles and electric buses on traffic noise levels in a highly urbanized city.

### ['Acoustic aggression': Paris installs radars to curb traffic noise from hell](#)

The Age, 22 February 2022

Sensors, or 'sound radars', are being installed in Paris in a trial to detect and take pictures of vehicles making excessive noise.

### [Sound wave-bending innovation cuts noise pollution](#)

EU WHISSPER project, 2022

Exposure to traffic noise is escalating across Europe, impacting the health of millions of citizens. An innovation that 'bends' sound waves away from homes, schools and workplaces could provide a solution.

### [Comparison of road noise policies across Australia, Europe, and North America](#)

Perna, M et al., Int J Environ Res Public Health., vol. 19, no. 1, 2022

Developing innovative noise policies that build on international best practices is difficult when policies around the world differ along many dimensions, ranging from different sources covered to different levels of governance involved. This is particularly critical in the context of road traffic, identified as one of the main culprits leading to noise-associated complaints and health issues. In this article, we document the wide range of specifications observed in road traffic policies and propose a methodology to compare noise limits across noise policies.

### [Analysis of the impact of pavement surface mixture on traffic noise and related public health](#)

Qing, L et al., US Department of Transportation, University Transportation Centers Program, 2022

Road traffic noise is a harmful environmental pollutant that affects public health. Reducing the tire-pavement noise by appropriate design of a sustainable pavement may reduce the road traffic noise. This study developed and applied a procedure to predict the road traffic noise and resulting health impact from the design parameters of open-graded asphalt concrete (OGAC) and evaluated the impact of including seashell in OGAC on its mechanical and acoustic performance.

### [Project identifies best measures to address transport noise pollution](#)

Duxfield, I, Eltis, 4 October 2021

The EU's Phenomena project aimed to identify and assess measures to reduce the detrimental effect of transport noise on health. The project has released its [findings](#).

### [Cutting back on noise and dust at roadworks thanks to innovation](#)

Highways England, 23 November 2020

Highways England has created a purpose-designed machine to carry out roadworks in a safer, more environmentally-sound and efficient way that also creates less noise, dust and vibrations.

### [RMIT Acoustic design innovations for managing motorway traffic noise by cancellation and transformation](#)

Lacey, J et al., RMIT & Transurban, 2017

The research by RMIT was the first international example of applying 'noise transformation' using live electroacoustic technology in noise-affected environments to improve community perception of urban noise.

[Back to top](#)

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