

Managing road traffic noise

Road Traffic Noise

In a growing state like Queensland, road traffic noise can be experienced by many people living along motorways, highways and major arterial roads.

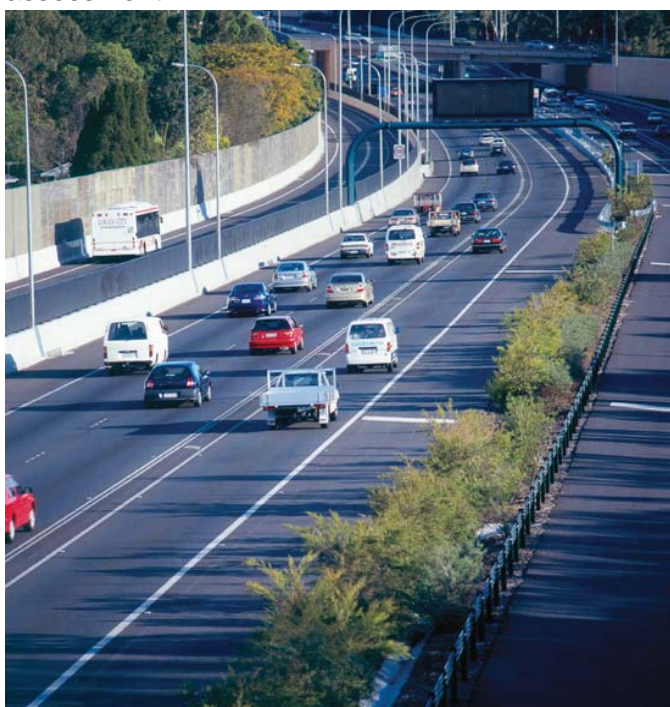
Transport and Main Roads has policies and strategies to assess the levels of noise and manage these across the State-controlled road network. The department also provides advice to households on actions they can take to reduce the effect of road traffic noise on their home lives.

Road traffic noise criteria

The department's *Transport Noise Management: Code of Practice* outlines how to manage the impact of road traffic noise on the community.

This Code of Practice provides guidance and instruction for the assessment, design and management of road traffic noise impacts.

As a general guide, if a road traffic noise level of over 68 L₁₀(18h) dB(A) is recorded or calculated at a residence for existing road and traffic conditions, the department may further investigate the impact of road traffic noise on other residences in that area and consider possible noise reducing treatments. This investigation is known as a road traffic noise assessment.



What is a Road Traffic Noise Assessment?

A road traffic noise assessment is used to:

- determine the existing acoustic environment
- predict the road traffic noise impact over a 10-year period
- recommend treatments for noise reduction
- provide advice on the integration of noise reduction treatments and visual amenity (including aesthetics)
- integrate the above issues to produce a design that conforms to good environmental management practice.

What measures are available to reduce noise?

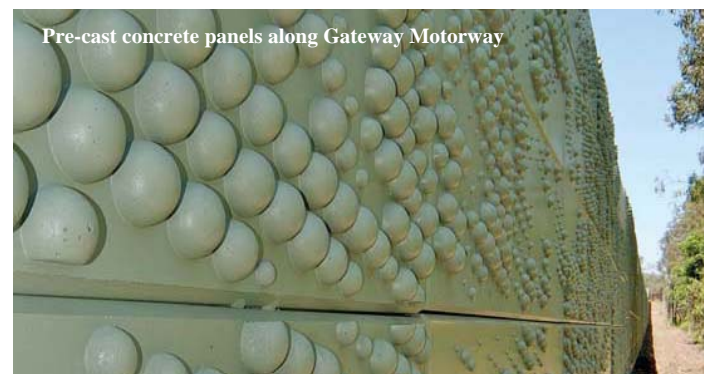
Following a road traffic noise assessment and depending on the situation, the department may consider treatments such as:

- wider reserves for new road corridors
- erecting noise barriers with suitable landscaping
- resurfacing the road.

The department can only consider properties which are affected by existing or planned State-controlled roads.

In general, arterial roads, highways and motorways fall into this category. Local roads and streets are mostly the responsibility of local government and are managed in accordance with their respective road traffic noise policies. Further information about the assessment, design and management of the impact of road traffic noise along State-controlled roads can be found in the department's publication *Transport Noise Management: Code of Practice* at

www.tmr.qld.gov.au



Pre-cast concrete panels along Gateway Motorway

Noise barriers

Noise barriers work by interrupting the path of sound waves. Effective noise barriers typically reduce noise levels by 5 to 12 decibels [dB(A)], reducing the perceived loudness of traffic noise by as much as one half.

The types of noise barriers used include absorptive panels and reflective panels. They can be made of timber (palings, planks, plywood sheets), concrete (reinforced, prestressed), masonry (stone, concrete), steel, aluminium, transparent (acrylic, toughened glass). Earth mounds and vegetation are also used.

The choice of noise barriers depends on many factors, including acoustic and visual considerations, safety requirements, public amenity and maintenance requirements. Noise barriers have added advantages as they can discourage deliberate trespassing and keep people and animals away from roads. Security for adjacent housing, pedestrians and cyclists on shared path systems are considered when designing noise barriers.



Transparent noise barrier along Tugan Bypass

Noise barriers and urban design

Noise barriers are designed and constructed to not only suit the acoustic requirements, but to also consider the important issues of aesthetics and visual appearance.

Noise barriers are urban design elements that must be consistent and integrated with the design treatments and finishes developed for other structures on a project. This is achieved by developing a range of materials, finishes, colours, textures, patterns and detailing that is consistently applied to all structural elements along a length of road. Colour finishes should match the Colorbond® range of colours to assist in graffiti management and provide consistency across the road network.

Generally noise barriers should be plain, simple, uniform structures, monochromatic and constructed in the one material type. This is to relegate barriers to the visual background, visually integrating them within the existing natural and urban surroundings. Screening of noise barriers with dense vegetation is favoured.

However for barriers at highly visible locations, adjacent lower speed environments and wherever landscape treatments cannot be provided as screening, a higher quality of urban design treatment and finish may be considered (refer images). Such treatments present opportunities for the local community to be involved in the development of aesthetic features. These may involve textured patterns, sculptural relief and other elements that symbolise local, regional or national landscape, urban or cultural character and identity.



Noise barrier along Centenary Hwy Extension at Richlands



Noise barrier with pattern along Joint Levee Rd in Mackay