

# Warkworth to Wellsford

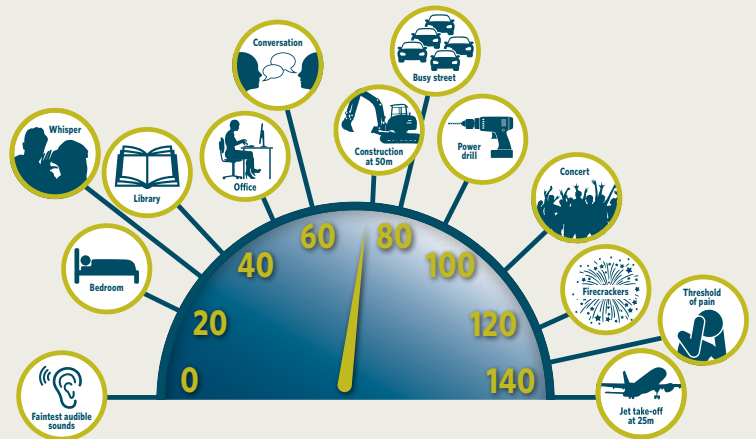
## MANAGING NOISE AND VIBRATION FACT SHEET

Noise and vibration can be a consequence of activities associated with the transport network. This includes noise generated by vehicles using the road as well as noise and vibration associated with construction and maintenance activities. If not properly managed, noise and vibration can cause disturbance to people and communities.

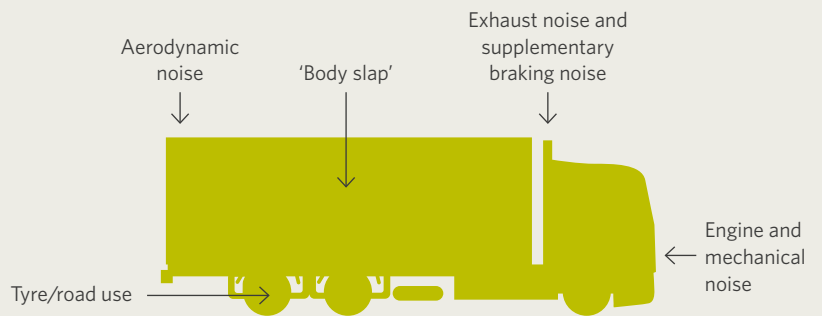
We aim to be a good neighbour, taking our social and environmental responsibility seriously, including the management of noise and vibration. This is reflected in external and internal NZ Transport Agency strategy and policy documents. For any project, we undertake noise monitoring to understand the baseline noise environment and we assess the potential effects of both construction and operation of the road. Acoustic specialists measure and predict noise across the project adhering to independent standards produced by Standards New Zealand. The Standards outline methods for measuring, predicting and assessing road-traffic and construction noise and determining appropriate mitigation.

### TYPICAL SOUND LEVELS

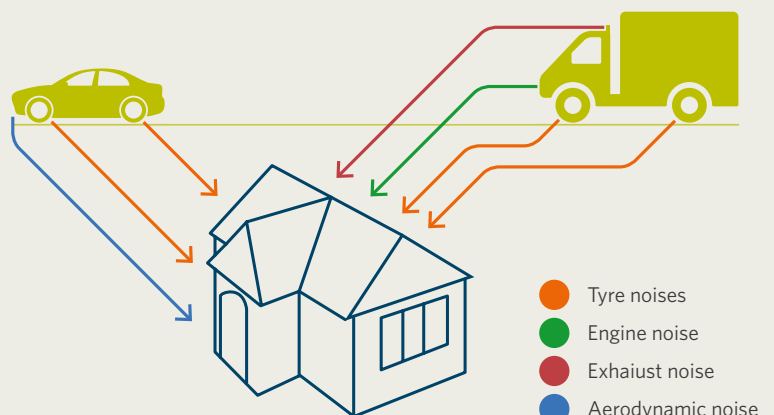
Traffic volume, traffic speed, the number of large freight vehicles and the road surface are all key factors contributing to the noise level.



### NOISE SOURCES FROM A TRUCK



### ROAD TRAFFIC NOISE SOURCES



### DID YOU KNOW?

Road noise ranges from a daily average level of about 50dB for a quiet suburban street to about 75dB for a busy urban arterial.

A vacuum cleaner at 70dB is about twice as loud as a normal conversation at 60dB.

Sound sources cause changes in air pressure which can be detected by our ears and can also be measured by a sound level meter.

## THE WARKWORTH TO WELLSFORD PROJECT

The Indicative Alignment travels west of Warkworth and east of both Wellsford and Te Hana, connecting back into the existing State Highway 1 north of Maeneene and Waimanu Roads.

The new road is being built to take regional through traffic, particularly heavy traffic, away from the existing state highway. This will result in less noise and pollution and safer access for pedestrians and other road users wanting to conduct business or community activities in Wellsford and Te Hana. However, there will be an increase in noise levels at residential locations within proximity of the

project as a result of introducing a highway to an area with low ambient noise levels.

The project team has developed an understanding of the environment, ground conditions and potential impacts on properties and the wider communities. This follows receipt of feedback from the first phase of engagement and the information from technical investigation work.

Noise monitoring has been conducted at various locations along the Indicative Alignment to provide a baseline and a noise model has been built to predict both existing noise levels and traffic noise levels generated from the project.

Technical assessments have been undertaken to support applications for the project approvals. The technical assessment for noise considers both the predicted changes in noise levels and the predicted future noise levels. Methods to mitigate potential adverse noise effects will be identified and preferred mitigation methods recommended. The alignment may be shifted within the proposed designation boundary during detailed design and the assessment will consider the consequences of this. Relevant designation conditions to monitor and manage noise and vibration during construction and operation will also be drafted and proposed for the Council hearing.

### TYPES OF SURFACING

A smooth surface of open graded porous asphalt (OGPA) contains voids that provide paths for air to escape from beneath rolling vehicle tyres, which reduces the amount of sound generated. This surface is 4 to 6 dB quieter than chip seal.

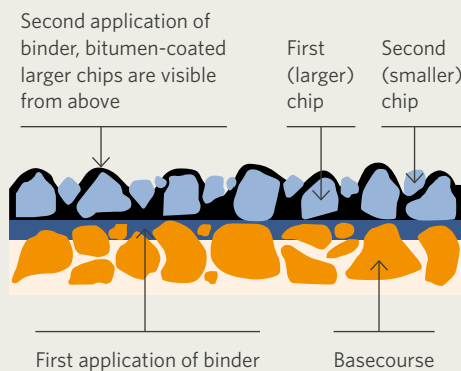
### DID YOU KNOW?

While the road surface can have a significant effect on traffic noise this can also be impacted by:

- surface features or how smooth the ride is for vehicles using it
- joints where a road has been patched or resurfaced and joints with an existing road
- whether the road is wet
- the speed traffic is travelling at
- types of traffic.

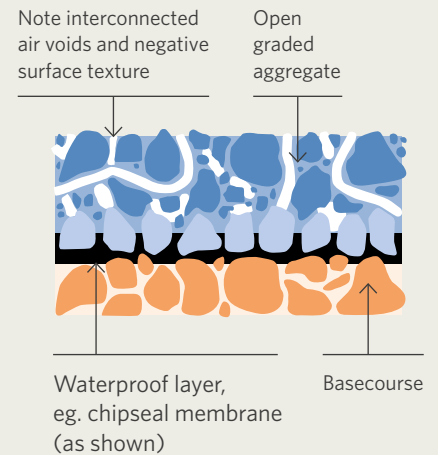
### TWO-COAT SEAL

A two-coat chipseal has two applications of binder and two applications of chip, the second smaller in size to the first. The smaller chip of the second coat locks and supports the larger chip of the first coat.



### OPEN GRADED POROUS ASPHALT (OGPA)

OGPA has fewer fine aggregates than other asphalt surfaces, and typically has between 15 and 25% voids.



## HOW WE MANAGE NOISE AND VIBRATION

The Transport Agency is able to draw on a range of methods to manage noise created by road traffic, road construction and maintenance. To mitigate noise from vehicle traffic, we can employ low-noise road surfaces, noise barriers such as walls and fences (primarily in urban areas) as well as landscaped earth. We also use design approaches such as design speed, road gradient and intersection layout to manage the noise levels generated by traffic.

Mitigation for traffic noise follows a 'best practicable option' approach. Noise specialists work with the design team and other specialists to recommend mitigation measures. Because most noise is generated from tyre contact with the road, low noise road surfaces can be used where necessary. In rural settings, landscaped earth rather than engineered barriers are generally preferred to retain rural character if further mitigation is needed.

Construction and maintenance can consist of activities such as earthworks, rock blasting and drilling, construction of ramps and bridge structures, building pavements and heavy vehicle movements. The Transport Agency and its partners aim to avoid or reduce, as far as is practicable, the disturbance to communities from noise and vibration during construction and maintenance through early communication, timing of activities and best practice techniques.



### CONTACT US

If you have any questions, you can contact us on:

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**More information can be found at: [www.nzta.govt.nz/warkworth-wellsford](http://www.nzta.govt.nz/warkworth-wellsford)**