October 2019

Oxley Highway to Kundabung Pacific Highway upgrade Post Construction Operational Noise Report frequently asked questions

What has been the operational noise process up to this point?

The effect of road traffic noise on residents as a result of the upgraded highway was first examined in the Environmental Assessment, which was released in September 2010. This assessment identified residents affected by road traffic noise and those eligible for noise treatment based on the concept design of the new highway.

In February 2016, the Operational Noise Management Report (ONMR) was released. This report reviewed the noise mitigation measures for the detailed design of the upgrade to decide if further noise mitigation measures were required. All properties eligible for at-residence noise mitigation have now been treated.

As part of the Planning and Infrastructure Minister's Conditions of Approval for the project, an operational noise report must be completed after the project opens. This report has now been completed and recently published.

What is the purpose of the Post Construction Operational Noise Report?

The Post Construction Operational Noise Report compares actual road traffic noise levels from the highway upgrade against the predicted road traffic noise levels used in the project design. The report verifies if the road traffic noise modelling carried out during the detailed design phase of the project was accurate and acceptable to predict road traffic noise. This modelling considers traffic volumes, highway route, surrounding landscape (topography), traffic speed, percentage of heavy vehicles, road surface, the distance and height of surrounding buildings and weather.

The model predicts road traffic noise levels 10 years on from the opening of the upgrade highway.

The report is prepared by specialist noise consultants in line with NSW Environment Protection Authority (EPA) guidelines. The EPA and Department of Planning, Industry and Environment review the report to ensure its accuracy.

What are the results of the report?

The report found noise level measurement shows good correlation between noise level predictions for the 'As Built' noise model.

All 70 properties identified in the report for noise mitigation have received the appropriate level of treatment as determined by the maximum exceedance level above the traffic noise criteria. One property was identified for further review to determine if additional treatment was required. This review was completed in May 2019 and no further treatments are proposed.

The report shows the project complies with the relevant environmental obligations relating to operational noise.

Will my property receive at residence noise mitigation treatment?

No properties require additional treatment, above that already provided and no new properties were identified in the report as requiring noise mitigation.

Will other noise mitigation measures be introduced?

No. The report shows the project complies with the relevant environmental obligations in relation to operational noise. Therefore, no other noise mitigation measures are required.

What are the 'road traffic noise goals' for this project?

The EPA set road traffic noise goals for NSW. The noise goals differ depending on whether the highway is redeveloped using the same alignment or if the highway is built on a new alignment. The Oxley Highway to Kundabung upgrade redeveloped sections of existing highway and also built highway on a new alignment.

This means the relevant road traffic noise criteria for the Oxley Highway to Kundabung upgrade is:

Table 1:

Type of development	**Noise level criterion**		**Where the criteria are already exceeded**
	Day (7am – 10pm)	**Night (10pm – 7am)**	
New highway/ freeway or arterial road corridor	$L_{Aeq,15hr}$ 55dBA	$L_{Aeq,9hr}$ 50dBA	The new road should be designed so as not to increase existing road traffic noise levels by more than 0.5 decibels.
Redevelopment of existing highway/ arterial road	$L_{Aeq,15hr}$ 60dBA	$L_{Aeq,9hr}$ 55dBA	The redevelopment should be designed so as not to increase existing road traffic noise levels by more than 2 decibels. .

The solutions to reduce road traffic noise are identified and developed during the design phase of the project. These can include:

- Low noise pavement
- Noise walls and mounds
- At house noise treatments.

The mitigation measures used on this project are summarised in the Operational Noise Management Report (ONMR), which was published in 2016, and is available on the project website.

How does a property qualify for at house noise treatment?

At house noise treatment was identified for those properties that were predicted to exceed noise levels outlined in the above table (Table 1).

Criteria for treatment is based on predicted noise levels 10 years after opening, meaning if noise at a property is expected to exceed the criteria in 2028, the property would be eligible for at house noise treatment.

When did noise monitoring take place?

Road traffic noise monitoring was carried out over a minimum period of 10 days between 23 October and 5 November 2018.

Where was the noise monitoring done?

Noise monitoring was carried out at 12 locations across the length of the project. These locations are a combination of monitoring locations previously used during the detailed design phase and locations adjacent to the new highway.

Unattended noise loggers were supplemented with attended measurements at the same locations and observations recorded to assist in quantifying the acoustical environment at each monitoring location.

While it wasn't practical to monitor at every house, sufficient locations were monitored to validate the noise model. The noise model considers all properties regardless of whether the property was one of the noise monitoring locations.

The results from the 10 days of noise monitoring were then compared against what was predicted by the post construction noise model, and this process is part of the noise model validation process.

The 12 noise monitoring locations are shown on the site plan in Figure 1 (page 11) and Appendix B of the Post Construction Operational Noise Report.

Who was responsible for providing at house noise treatment?

Roads and Maritime is responsible for providing treatment to eligible properties. An eligible property was any property identified in the ONMR or during the project's detailed design phase which exceeded the road traffic noise criteria and had Development Application approval prior to the project's approval in February 2012.

Properties which received development approval after the project's approval are required to install their own road traffic noise treatment measures.

How many houses were identified for treatment and how many additional houses require treatment?

A total of 70 properties across the length of the project were identified in the ONMR or during the detailed design phase to receive at house noise treatment. The operational noise compliance assessment verified all properties treated have received the appropriate level of treatment and no additional properties have been identified for noise mitigation.

Engine brake noise

Engine brakes are fitted to slow down heavy vehicles. Engine brakes improve vehicle safety by reducing the load on brakes during a steep descent. They can also extend the life of the vehicle brakes and reduce maintenance costs. However, it is this compression brake design that often creates the engine break 'bark' and causes annoyances to the community.

In response to community concerns there are a number of initiatives being carried out by the NSW Government to help with investigation and action on this issue. They include:

- Working on a range of education and enforcement measures to reduce noise from freight vehicles
- Developing and trialling noise cameras to detect vehicles with excessive engine compression brake noise
- Working closely with other states, territories and the National Transport Commission to implement a national standard for engine brakes. This standard was approved by the Australian Transport Council in 2007 and reviewed by the National Transport Commission in May 2013.

If the National Transport Commission prepares amendments to the National Heavy Vehicle Legislation to provide for regulation of engine brake noise, it may provide an opportunity to assist in enforcement. The NSW Government is following this process closely.

Can road speed limits be changed to reduce road traffic noise levels?

The purpose of the Pacific Highway upgrade was to improve safety and increase traffic efficiency by delivering a four-lane, divided road with a speed of 110km/h.

Lowering speed limits to reduce traffic noise is generally not effective or preferred. Lowering traffic speed from 100km/h to 80km/h reduces traffic noise by roughly 1.5 decibels, if the traffic volume remains the same. Most people can't detect a change of one or two decibels in the noise level. Substantial speed reductions would be necessary to achieve substantial noise reductions.

On high-speed roads such as motorways, halving the average speed leads to a reduction of up to 5–6 decibels in the traffic noise level. It is not reasonable to upgrade a highway and then limit the speed to 50 to 60 km/hr.

Can low noise pavement be added to some sections of the highway?

No. The concrete pavement used on this section of highway has joints cut in it to control cracking of the concrete and allow for small amounts of movement at the joints over time. If we placed a low noise surface such as asphalt over this type of concrete pavement the asphalt would crack at each joint. The cracks would then deteriorate under highway traffic. As asphalt deteriorates it generates more noise. To ensure asphalt remains a low noise surface in this situation, substantial maintenance would be required.

If you need help understanding this information, please contact the Translating and Interpreting Service on 131 450 and ask them to call us on1800 232 290.