

18. Noise

The concept design has been developed to allow the RTA to meet its commitment of minimising the impacts of the Pacific Highway upgrade program on the natural and built environment for both the construction and operational phases.

The broad description of the local acoustic environment, based on existing landuse, to be traversed by the highway upgrade route can be described as predominantly rural or forestry, with small areas of rural residential. The settlements of Corindi and Corindi Beach in the southern end of the route are the major settlements in the area. Smaller and more isolated settlements are found at the northern end of the Project in the Halfway Creek and Wells Crossing areas.

The lower levels of residential occupation produce lower traffic volumes at the northern end of the route. Consequently the higher volumes of traffic are found at the southern end of the route where the majority of commercial and residential properties are located.

Overall traffic volumes are lower at the northern end of the route and heavy vehicles comprise a larger proportion of traffic. Furthermore, heavy vehicles make up a much higher proportion of total traffic at night time. This is also the time where there is less ambient noise and therefore the impacts of the heavy vehicle noise would be greater.

18.1 Noise goals

A preliminary noise and vibration assessment was undertaken prior to route selection with the objective of enabling the selection of the preferred route and concept design to identify and address areas where new noise impacts will be imposed on the surrounding environment. The concept design has allowed for the mitigation measures indicated in the preliminary noise and vibration assessment, however noise monitoring and modelling has not been undertaken. This monitoring and modelling will need to be undertaken during the environmental assessment and detailed design phases of the project.

The NSW Department of Environment and Climate Change's website lists the environmental criteria for road traffic noise as aiming to:

- Institute a more comprehensive and effective approach to managing road traffic noise.
- Refocus the approach to mitigating road traffic noise from relatively late in the road development process to a much earlier stage.
- Encourage the range of strategies that should be applied to reducing traffic noise, and prevent over-reliance on engineering noise controls, such as noise barriers.
- Revise the noise level targets so that the methodology and levels provide criteria that can assess noise impacts and recognise the benefits of all noise mitigation measures.

These criteria are also incorporated into the "Environmental Criteria for Road Traffic Noise Manual (Environmental Planning Agency, 1999)".

Possible abatement treatments include noise barriers, noise mounds, quieter pavement surfaces and architectural acoustic treatments for individual residences. Where adverse noise impacts are likely to be imposed on residential areas, the effectiveness of measures such as noise wall and mounds would be examined. Where the impacts are to be imposed on isolated properties and where noise barriers or mounds are not feasible, individual acoustic treatments should be considered, where reasonable and feasible.

18.1.1 Construction noise

Construction of the highway upgrade would impose noise impacts on the surrounding areas. The primary sources of noise impacts for surrounding areas will result from:

- Construction plant and equipment.
- Construction vehicles.
- Blasting techniques.
- Comparative proximity to the works.
- Duration of construction in an area.
- Night-time work.

18.1.2 Operational noise

The upgrade of the highway will result in changes to the acoustic environment of the area produced by the existing highway. The upgrade of the highway has the potential to produce positive changes to the existing acoustic environment, together with negative impacts that will need to be addressed in the detailed design and environmental assessment. Further assessment would be undertaken following opening of the project to confirm the predicted impacts.

Positive changes to the acoustic environment can be expected as a result of:

- Improving the vertical grade, thereby reducing vehicle revving and braking noise on climbs and descents.
- Newer pavement material.

18.2 Noise impacted residences

The southern portion of the route contains the larger residential settlements of Corindi and Corindi Beach along with the Darlington Beach Resort and Lorikeet Tourist Park and Home Village. The southern portion of the route is also the location where overall traffic volumes are higher. Therefore, the majority of noise management and mitigation measures will be required in this area.

Noise management for impacted residences would be carried out in accordance with the RTA's Environmental Noise Management Manual. Further assessment and mitigation measures for noise impacted residences would be carried out during the preparation of the detailed design for the project.

18.3 Recommended noise mitigation measures

18.3.1 Construction

Sections 5, 9 and 10 of the RTA's Environmental Noise Management Manual outline techniques and management options for controlling construction and maintenance noise and vibration.

It is envisaged that these requirements will be addressed and incorporated into the Construction Environmental Management Plan for the construction phase of the project. A component of the Construction Environmental Management Plan should include a Noise and Vibration Management Plan.

Consultation with affected residents prior to the commencement of construction works will be an important factor in minimising the impacts caused by construction noise. The management options detailed in the RTA's Environmental Noise Management Manual will need to be incorporated into the strategy for consultation with affected residents.

The Construction Environmental Management Plan and the accompanying Noise and Vibration Management Plan will need to detail management measures to address:

- Noise from construction plant and equipment.
- Time and duration of blasting.
- The development of a blasting schedule to minimise noise and vibration impacts.
- Providing adequate consultation and warning / preparation for affected property owners.
- Limiting duration of heavy equipment / blasting etc in any one locality as much as possible.
- Complaints management.

18.3.2 Operation

A preliminary noise and vibration assessment has been undertaken to inform the concept design. The concept design strategy has been developed with the aim of reducing potential operational noise impacts by reducing vertical grades and increasing buffers from residential areas wherever possible.

The detailed design phase, the environmental assessment and the ensuing environmental approvals will inform the requirements for operational noise management measures. Management measures that will require detailed assessment during these phases could include:

- Low noise pavement material.
- Architectural noise treatments.
- Noise mounds.
- Noise barriers.