

NOISE MANAGEMENT

The existing motorway features noise walls along the majority of its length.

A detailed noise and vibration impact study has been undertaken for the proposed M2 Upgrade to assess future traffic noise impacts and mitigation requirements.

Noise levels have been predicted for two future scenarios:

1. Baseline scenario: M2 operating in 2011 without the proposed upgrade.
2. Future design scenario: M2 operating in 2021 with the proposed upgrade in place.

These noise predictions have been compared to the project's noise goals in accordance with NSW Government guidelines for the management of traffic noise. See Step 1 of the process to consider noise impacts (far right).

As traffic levels on the upgraded motorway increase over time, operational noise is also predicted to increase.

Noise walls and low noise road pavement would be used to minimise these predicted noise impacts. Where it is not feasible to use these measures to reduce noise levels below the project's noise goals, architectural property treatments would be considered for affected residences.

Issues

- Modification and relocation of some existing noise walls will take place inside the M2 boundary, to accommodate the widening works and new ramps.
- Increase in noise due to increasing traffic volumes.

Mitigation measures

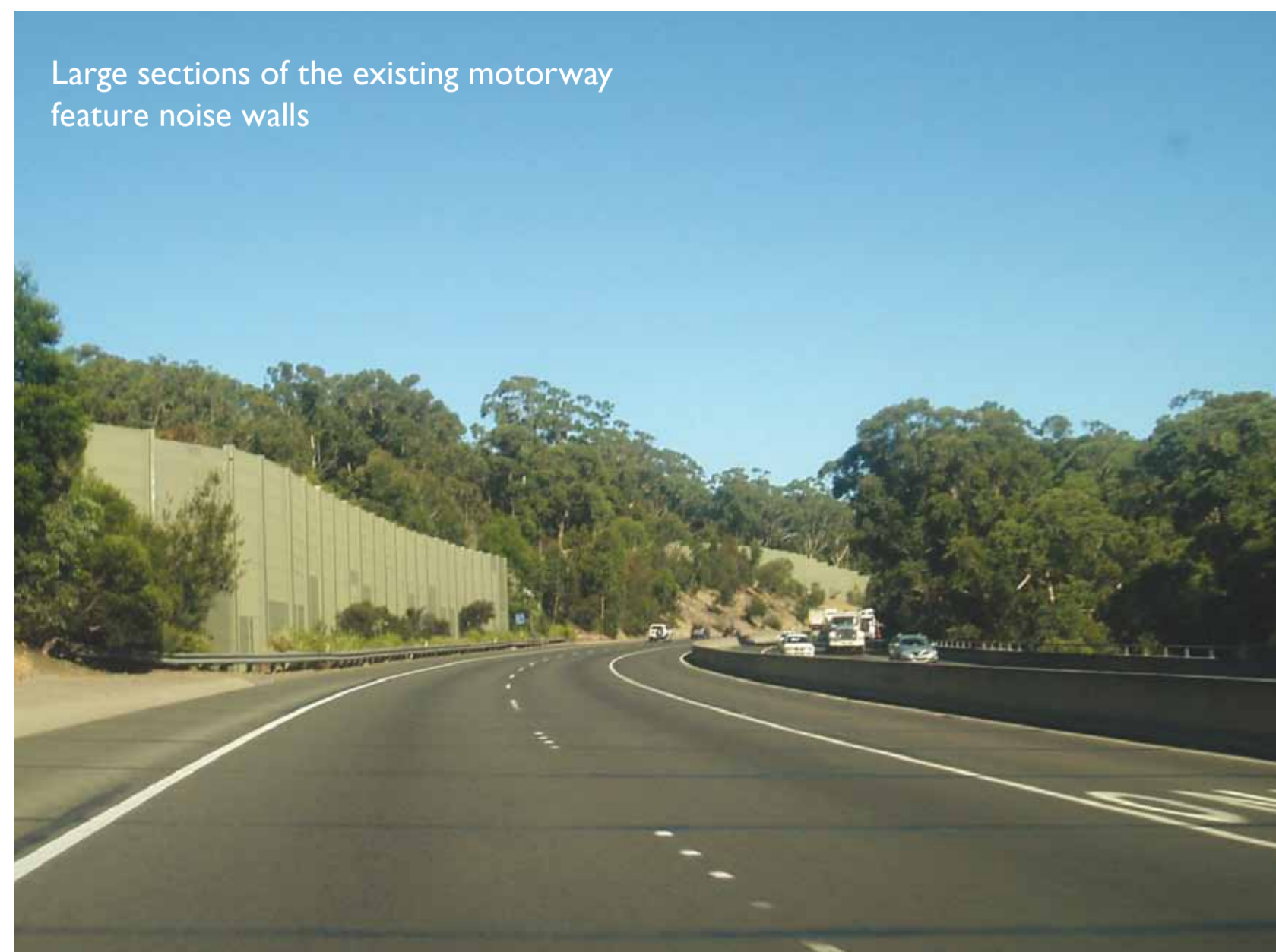
- Relocating 22 noise walls.
- Relocating and increasing the height of one noise wall.
- Constructing two new noise walls in the Macquarie Park/North Ryde area.
- Assessing 91 properties for architectural treatment requirements, for example double glazing windows.
- Constructing a low noise road pavement.

The following table shows the general location of proposed noise wall changes. More details can be found in section 9 of the environmental assessment.

Table of noise wall changes

Noise wall reference	General location
Relocating 22 noise walls	
NW-E-1001	At the rear of properties in Livingstone, Craig and Horwood Avenues, Baulkham Hills
NW-E-1002	At the rear of properties in Mill Drive, Renown and Barclay Roads
NW-E-1003	Adjacent to Darling Mills Forest (east end)
NW-E-2001	East of Kirkham Street
NW-E-2002	Near Sutherland Road, Cheltenham
NW-E-2003	At the rear of properties on Woodvale Avenue
NW-E-3001	Near properties at Busaco Road
NW-E-3002	West of Khartoum Road
NW-W-1001	At the front and across the road of properties at Junction Road
NW-W-1002	At the rear of properties on Hepburn Road and Dale Place
NW-W-1003	At the rear of properties on Yale Close
NW-W-1004	Behind bushland at the rear of the Royal Institute for Deaf and Blind Children (North Rocks Road, North Rocks)
NW-W-1005	Behind bushland near properties at Gossell Grove, North Rocks
NW-W-1006	At the rear of properties on Wiltshire Avenue, Carlingford
NW-W-2001	At the rear of properties on Lamorna Avenue, Orchard Road and Lynbrae and Finlay Avenues, Carlingford
NW-W-2002	At the rear of properties on Ferndale Avenue
NW-W-2003	Near properties at Murray Farm Road
NW-W-2004	Near properties at Kent Street
NW-W-2005	Across the road to properties on Somerset Street, near Derby Street
NW-W-2006	Across the road to properties at the eastern end of Somerset Street
NW-W-3002	At Talavera Road east of Culloden Road
NW-W-3003	At Talavera Road west of Christie Road
Relocating and increasing the height of one noise wall	
NW-E-1002	At the rear of properties in Renown Road
Constructing two new noise walls	
NW-E-3003	Adjacent to Lane Cove Road exit ramp
NW-W-3001	East of Waterloo Road and west of Vimiera Road

Refer to the concept design posters for a map of noise wall change locations.



Large sections of the existing motorway feature noise walls

Process to consider noise impacts

Step 1 – Define noise goals

Determine noise goals in accordance with relevant guidelines:

- *Environmental Criteria for Road Traffic Noise* – NSW DECCW.
- *Environmental Noise Management Manual* – NSW RTA.

Goals are not mandatory levels.

Step 2 – Develop noise model

Develop noise model for existing conditions.
Check model accuracy using existing noise levels obtained from noise monitoring.
Amend noise model to reflect the upgraded road features.

Step 3 – Predict noise levels

At each property in the study area:

- predict noise levels for the 'do nothing' scenario (existing road and noise controls).
- predict noise levels for the 'upgraded' scenario 10 years from base year.
- predict changes in noise levels over a 10 year period.

Compare results to noise goals for the proposal.

Step 4 – Identify additional noise source controls

Consider appropriate noise source controls including:

- Road resurfacing using low noise pavement.
- New noise walls.
- Increases in noise wall heights.

Step 5 – Assess additional noise controls

Predict noise levels for every house and building in the study area. Compare revised noise level predictions to the noise goals for the proposal.

Step 6 – Optimise additional noise controls

Assess the predicted noise benefits from proposed controls against visual impacts, over-shadowing, constructability and cost.
Revise and optimise the proposed controls.

Step 7 – Predict final noise levels

Predict final noise levels with optimised noise controls in place at every house and building in the study area.

Step 8 – Identify and address residual noise impacts

Identify properties where noise levels are still predicted to exceed the noise goals, even with optimised noise controls in place.
Consider architectural property treatments (for example double glazing) to those properties that are still predicted to exceed the project noise goals.