

12 November 2009

MWH Global
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Attention: Denise Anderson

Dear Denise

RICCARTON ROAD UPGRADE—NOISE ASSESSMENT

As requested, we have undertaken a review of possible noise effects resulting from an upgrade to Riccarton Road in Mosgiel.

Our assessment has been based on the drawings showing alignment Option 4b. This alignment is a slight refinement of option 4 which we have previously considered in detail. These options, in part, have come about as a result of our visit to site with other project consultants. The proposed alignment has been developed with issues such as noise in mind.

Discussion

The proposed upgrade to Riccarton Road is aimed at improving road safety by increasing carriageway and shoulder widths. We understand that the upgraded roads will be subject to traffic growth of around 4% which will have negligible effect on traffic noise levels. There is no plan to divert other traffic onto these roads. As such, our noise assessment only considers changes in noise level as a result of moving the road closer to or further away from existing houses.

The Alignment

Option 4b can broadly be described as a curvilinear alignment. Under this option, Riccarton Road, which is currently "dead straight", will acquire slight curves. Among other benefits, this enables the road to generally move away from existing houses. Retaining a straight alignment would result in noticeable movement of the road towards a number of dwellings.

The areas where the proposed alignment moves slightly closer to existing houses are generally places where there are houses on both sides of the road, or there are significant natural features which deserve to be retained.

In some areas, the road boundary moves closer to houses as a result of adding a bridle path. We have not commented on this as it will not affect traffic noise.

Changes in Noise Level

In almost all cases, the proposed road alignment remains with the centreline in the existing location, or the centreline moves slightly further away from adjoining houses. Any change in noise level at these houses will be very small. As an example, the house at chainage 3020 is currently about 21 metres from the centreline. The proposed centreline will move about 1.5 metres further away. This will give a reduction in noise level of about 0.3 dBA. Given that the human ear cannot detect changes of less than about 2 dBA, this is a negligible effect.

Similarly, the proposed centreline will move slightly closer to a few houses. As an example, the house at chainage 3440 is currently about 22 metres from the centreline, and the proposed alignment will move about 1 metre closer. This will result in a negligible increase in noise level of 0.2 dBA.

Conclusions

The proposed upgrade to Riccarton Road adopts a curvilinear solution, to ensure that the road generally does not move closer to existing houses. Our analysis shows that changes to traffic noise levels as a result of the proposed alignment will be negligible.

Yours sincerely
MARSHALL DAY ACOUSTICS LTD



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