



**HEGLEY ACOUSTIC
CONSULTANTS**

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David Drew
Executive - Major Business
Westfield NZ Ltd
P O Box 109-280
Newmarket
AUCKLAND

Dear David

WESTFIELD ST LUKES PRIVATE PLAN CHANGE 8: FURTHER INFORMATION REQUEST

Further information has been sought by URS on the noise related to the above Private Plan Change. The request was:

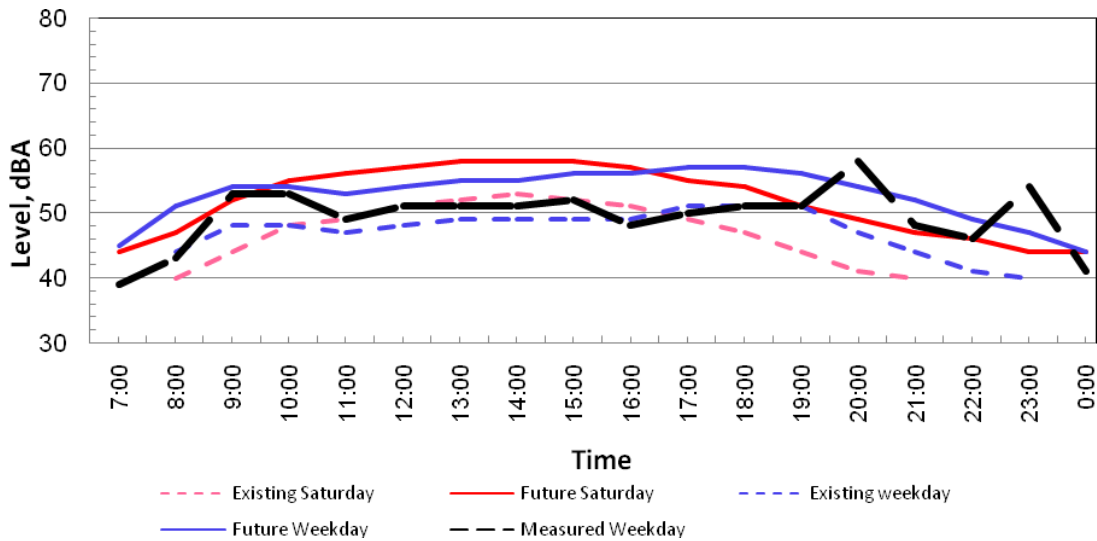
Further information is required in relation to traffic noise effects on Aroha Ave given the anticipated increase in traffic flow along this road. Please provide traffic data for this road as hourly flows for both existing and predicted future traffic over a weekday and Saturday 24 hour period. The current peak hour statistics do not allow a reliable assessment of noise effects. Please provide traffic noise levels at houses on Aroha Avenue for existing and predicted future traffic, as well as an assessment of the increase in traffic noise.

In order to determine the difference in the noise received before and after the proposed changes the traffic engineer has provided traffic flows for the current conditions and the future traffic flows on an hourly basis. From this information the one hour L_{eq} values have been predicted. It is noted that the traffic flows are relatively low for some periods of the day so the accuracy of the prediction model for these periods is lower than when the flows exceed approximately 100vph. However, the relative noise levels will be comparable so even at the lower flows a good indication of the traffic noise effects can be obtained. No predictions for less than 10vph have been undertaken as such low flows are impractical to be represented by a one hour noise level as the noise from distance traffic and the general environmental noise would control any noise in this environment at that time.

The analysis only includes the noise from traffic on Aroha Avenue; it does not include the noise from traffic noise from adjacent streets, traffic that is turning into adjacent houses or any other environmental noise that is in the area, such as pedestrians walking past. Further, due the low traffic flows the noise has been predicted for the maximum period of between 7:00am – 12 midnight. The predicted noise levels include a 2.5dBA additive effect for reflection effects that would be received at the standard assessment point of 1m from the building façade.

Based on the above, the resulting traffic noise has been calculated at the typical houses distance from the edge of the carriageway at one hour intervals as shown in Figure 1.

Also plotted on Figure 1 is the existing noise level as measured on a weekday. This is generally in agreement with the calculated noise levels with the main difference being for two periods in the morning and two in the evening. Inspection of the 15 minute noise monitoring shows there were some short term higher noise levels within the one hour period that influenced the results. These were most likely related to vehicles turning into the adjacent houses or pedestrians talking as they walked past, not through traffic.



From Figure 1 the noise levels on Aroha Avenue can be expected to increase by typically 6dBA on both weekdays and Saturdays.

There are not any noise requirements in the District Plan that relate to traffic noise. The only guidance on traffic noise is from the NZTA and the draft NZ Standard on traffic noise. The NZTA traffic noise guidelines adopt a noise level of 12dBA above the existing noise environment for this noise environment as being reasonable. The predicted increase is well within this even allowing for a ten year growth period.

The draft NZ Standard on traffic noise adopts a lowest design level of 65dBA, well above the predicted noise levels for this proposal. It is noted that traffic noise controls are generally 24 hour values. In the above the 1 hour predicted levels have been compared to the 24 hour design limits so this include a factor of safety of approximately 3dBA.

While the predicted increase of typically 6dBA will be noticeable, when taking into account the above, the increased noise will remain well within what is generally considered to be a reasonable level for residents.

Should you have any questions regarding the above please do not hesitate to contact me.

Yours sincerely
Hegley Acoustic Consultants

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