

Before Hearing Commissioners

under: the Resource Management Act 1991

in the matter of: notices of requirement and resource consent applications by the NZ Transport Agency and Hamilton City Council for the Southern Links Project

Rebuttal evidence of Vincent Dravitzki (Noise) on behalf of the
NZ Transport Agency and Hamilton City Council

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**REBUTTAL EVIDENCE OF VINCENT DRAVITZKI ON BEHALF OF THE
NZ TRANSPORT AGENCY AND HAMILTON CITY COUNCIL**

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REBUTTAL EVIDENCE OF VINCENT DRAVITZKI ON BEHALF OF THE NZ TRANSPORT AGENCY AND HAMILTON CITY COUNCIL

INTRODUCTION

- 1 My full name is Vincent Kevin Dravitzki.
- 2 I have the qualifications and experience set out in paragraphs 3 and 4 of my statement of evidence-in-chief (*EIC*) dated 12 June 2014.
- 3 My rebuttal evidence is given in regard to notices of requirement (*NORs*) and applications for resource consents lodged by the NZ Transport Agency (*the Transport Agency*) and Hamilton City Council (*HCC*) on 9 August 2013 in relation to the construction, operation and maintenance of the Southern Links Project (*Project*).
- 4 I repeat the confirmation given in my *EIC* that I have read and agree to comply with the 'Code of Conduct for Expert Witnesses' contained in the Environment Court Practice Note 2011.
- 5 In this statement of rebuttal evidence, I respond to the relevant sections of evidence of the following:
 - 5.1 Mr Ben Inger (planning), on behalf of Ronald and Carolyn Ingram (30); and
 - 5.2 Mr Peter Skilton (planning) on behalf of Shona and Grant Mackintosh (27).
- 6 In addition, I respond to a submission by Margaret and Murray Shaw of 143 Hall Road (88), which was only recently served on the Requiring Authorities, and therefore, was not previously addressed in my *EIC*.
- 7 The fact that this rebuttal statement does not respond to every matter raised in the evidence of submitter witnesses within my area of expertise should not be taken as acceptance of the matters raised. Rather, I rely on my earlier technical report, *Assessment of Road-Traffic Noise and Construction Noise (Noise Assessment)*, my *EIC* and this rebuttal statement to set out my opinion on what I consider to be the key noise matters for this hearing.

RESPONSE TO EXPERT EVIDENCE OF SUBMITTERS

Ben Inger (Ronald and Carolyn Ingram)

- 8 In paragraphs 6.1 and 6.2 of his evidence, Mr Inger refers to comments that I made in my *EIC* with regards to the titles on the Ingram land on which a house could be built as of right. In paragraph 169 of my *EIC*, I recommended that the noise effects on these titles should also be considered, once there was greater clarity

over the property agreements in place as a result of the Chinaman's Hill designation that crosses a similar part of the Ingrams' land.

- 9 Ms Amanda Hampton has now provided that clarification in her rebuttal evidence, and as shown in Annexure A to her rebuttal evidence. Her Annexure A plan shows the land intended to be purchased or already purchased by the Crown and the Ingrams' residual titles. I understand that the two titles, SA13A/447 and 448 are intended to be amalgamated.¹
- 10 The titles that therefore need to be considered in terms of potential noise effects are only the merged SA13A/447 and 448, SA328/42, SA72D/474, and SA13A/150. I note that SA14A/842 and SA72D/474 have already been assessed in my Noise Assessment because those titles have existing houses (Section 5.3 Figure 12).
- 11 I understand from Mr Dowsett's EIC and rebuttal evidence that the Chinaman's Hill designation which crosses the Ingrams' land will be uplifted if the Project NORs are confirmed. For clarity, and in response to paragraph 6.3 of Mr Inger's evidence, I confirm that as a result, there is therefore no 'existing noise environment' that should be considered here.
- 12 There is no formal methodology for assessing impacts on land on which a house could be built, but a house is not yet built and there is no building consent. As noted in paragraph 169 of my EIC, NZS 6806² and the Transit Noise Guidelines³ only require assessment of existing houses (or where building consent has been granted for a house). Therefore, my approach has been to consider the extent of spill of noise over the Ingrams' residual titles to see how this might constrain where a house could be located to achieve an acceptable noise environment.
- 13 The criteria that I used for this noise level was 57 dBA $L_{Aeq(24h)}$, the Category A noise level in NZS 6806. This approach does not exclude locating a house within a higher noise level, but I consider that doing so is less favourable.
- 14 As I now have a better understanding of the property situation, I have reassessed the extent of land that would be subject to noise levels 57 dBA or less as a result of the Project with no mitigation (i.e. 'Do Minimum'). The plan attached as **Annexure A** to my rebuttal evidence plots the 57 dBA contour line over the Ingrams'

¹ Amanda Hampton rebuttal, paragraphs 12 and 13.

² New Zealand Standard for Acoustics – Road-traffic noise – New and altered roads, NZS 6806 (2010).

³ Appendix 6 of the 1999 edition of the Planning Policy Manual "Transit New Zealand's Guidelines for the Management of Road Traffic Noise". Under the predecessor to the Transport Agency, these have been known as the Transit New Zealand Noise Guidelines or the Transit Noise Guidelines.

land. It is my opinion that if the majority of a title was less than 57 dBA, then there is ample choice of locations for a suitable building platform on these titles and therefore the Project has little impact. Conversely, if the area less than 57 dBA is small, such as 20%, then this could constrain the location of a building platform, and noise impacts of the Project on the undeveloped lots would be greater.

- 15 My assessment of the percentage of the relevant residual titles with noise levels from the Project less than 57 dBA (with no mitigation) is set out in the following table. This table revises that contained in paragraph 167 of my EIC.
- 16 The table in my EIC included titles that have either (as explained in Amanda Hampton’s rebuttal evidence) been acquired by the Crown,⁴ have already been assessed as Protected Premises and Facilities (PPFs) in the Noise Assessment,⁵ or will be acquired for the Project.⁶ The table below lists only the titles that will be owned by the Ingrams.
- 17 The percentages below are also different from the equivalent EIC table, because I have expressed the percentages as only of the residual title, not the original title.
- 18 As in my EIC, these are estimates (and not precise calculations) using the plan in Annexure A to my rebuttal, which is sufficient for my method of assessing impact.

Parcel	Approximate size of parcel	% of title with noise level less than 57dBA
SA13A/448 merged with residue of SA13A/447	5 ha	97
SA328/42	6 ha	97
SA13A/150	4 ha	85

- 19 Using this table, my view is that there is still considerable choice of location of building platforms on each of the above titles. I note that in paragraph 6.4 of his evidence, Mr Inger says there are limited building platforms. I am unaware of other impediments for these platforms, but from my site visit I observed much of this area to be flat, with a small rise towards the Ingrams’ current residence.

⁴ Namely, SA13A/148.
⁵ Namely SA14A/842 and SA72D/474.
⁶ Namely, SA13A/149.

My understanding is that there should be reasonable choice on these residual titles.

- 20 I have also considered the extent to which this assessment could change through Project design variations that could occur without the need to formally alter the designation.
- 21 The concept design is for the State highway in this location to be largely on the flat, moving into shallow cut as it passes under an elevated Ohaupo Road. Permitted and practicable variations in design would do little to alter the spread of noise.
- 22 I have undertaken this broader assessment of potential effects on the Ingrams' residual titles, and conclude that there is still considerable choice of location of building platforms to achieve an acceptable noise environment. Having undertaken this assessment, I do not consider that the Ingrams' residual titles should be assessed again in the future noise assessment. It would, in my opinion, be inappropriate to add them to a list of PPFs required be assessed in the future, according to NZS 6806.

Peter Skilton (Mackintoshs)

- 23 Mr Peter Skilton has prepared evidence on behalf of Shona and Grant Mackintosh, who have a property that fronts onto both Weston Lea Drive and Peacockes Road. Weston Lea Drive is to be extended through their property to Peacockes Road, creating a short section of new road. Among the effects that Mr Skilton has identified is traffic noise,⁷ and he seeks a noise barrier adjacent to the new link and double-glazing.⁸ The Mackintoshs also seek that the designation be moved about 25 metres further from their property.⁹
- 24 In paragraphs 6.02 and 6.03 of his evidence, Mr Skilton notes that the HCC evidence does not specifically address the issues raised in the Mackintosh submission. The reason for this was because the effects of traffic noise were not specifically identified in the Mackintoshs' submission. Rather, their submission refers to effects on the environment, without identifying the specific environmental effects. As Mr Skilton's evidence raises these specific noise effects, I will now respond in this rebuttal evidence.
- 25 Mr Skilton's evidence has helped me to identify that there is a discrepancy in the Noise Assessment at this location. The relevant section of my Noise Assessment is Section 5.6.2 and Figure 30 in particular.¹⁰ The Mackintoshs' property is identified as 84 Peacockes

⁷ Paragraph 3.0.4(g), Peter Skilton evidence.

⁸ Paragraph 7.0.5, Peter Skilton evidence.

⁹ Paragraph 6.1.2, Peter Skilton evidence.

¹⁰ Noise Assessment, Annexure G to the AEE.

Road. Existing noise levels in the area in which this property is located were assessed as being 52 to 55 dBA. As Figure 30 shows, I did not assess the new connection between Weston Lea Drive and Peacockes Road. As a consequence, the Mackintoshs have not had full information of the noise impacts on their property. Therefore, I will provide that information now, before addressing matters raised by Mr Skilton.

- 26 The Noise Assessment assessed the noise at their house as being 61 dBA, but this is only the noise from Peacockes Road. In applying NZS 6806, the relevant criteria are the "altered road" criteria. Category A is for noise levels less than 64 dBA. As this criterion was met, it was stated in Section 5.6.2 of the Noise Assessment that mitigation is not required. I note that Peacockes Rd is an existing road being redeveloped to a minor arterial, and is therefore not a "new road". However, if the current Hamilton City noise rule 5.1.1(i) in the Operative Hamilton District Plan, which is specifically for new arterials, were applied, noise levels should be 62 dBA or less, so again, no mitigation would be required.
- 27 The concept design for this area includes a roundabout.¹¹ The distance from the Mackintoshs' house from Peacockes Road to the new link carriageway remains relatively constant at about 25 metres. As discussed in Mr Lion-Cachet's rebuttal evidence, traffic volumes on the new link will be only a quarter of those on Peacockes Road, and noise levels from the link will therefore be about 56 dBA, which is well below the levels needed for any mitigation.
- 28 Therefore, I do not expect any change to the noise levels predicted for this house. However, traffic on the new link will bring noise along the western side and partly to the front of the house, which faces north.
- 29 The new link is about 80 metres in length. When NZS 6806 is applied, the "altered road" criteria are usually applied to the first 100 metres of a new link connecting to the altered road.¹² Therefore, mitigation of the new link would not be justified by NZS 6806. Even if the "new road" criteria were to be applied, Category A would be met, and therefore no mitigation would be required.
- 30 Mr Skilton notes that the designation is close to the house. I understand this is to allow it to accommodate other modes of transport, as well as the embankment needed to join to Peacockes Road. He notes that a belt of trees would be removed giving a loss

¹¹ Drawing No. 6014546-SK 1025 Rev C.

¹² Appendix A4 of NZS 6806 shows this process without any explanation as to why. I interpret this as allowing a transition for the existing noise level caused by the existing road.

of privacy. In paragraph 7.0.5, he seeks that a noise barrier be put in place along the road boundary and acoustic double-glazing be provided to the dwelling.

- 31 As I have stated above, no mitigation is required to meet NZS 6806 or the Operative Hamilton District Plan noise limit. However, I note from the photograph in Mr Skilton's evidence that the house is orientated to Weston Lea Grove. Accordingly, the new link will bring noise to this more used part of the house. While the trees, if present, would not diminish the noise levels, it is accepted in noise literature that such vegetation has a psycho-acoustic effect in making noise more acceptable to people. Therefore, there may be some minor noise effects beyond those that are addressed by the standards, such as NZS 6806. These are minor effects, more in the nature of amenity effects, rather than serious noise disturbance, and are linked to changes in landscape. Appropriate landscaping may well address these effects. I note that Mr Morton suggests a fence along the southern and western boundaries to mitigate effects of headlight glare. If this fence was improved to be a noise barrier, it would also assist in mitigating traffic noise effects.
- 32 In my opinion, the acoustic double glazing sought is not warranted. It is not needed to meet the requirements of NZS 6806 or the Operative Hamilton City District Plan. With windows open, indoor daytime noise levels will be only 40 to 45dBA depending on location in the house, which is a suitable noise environment for daytime activities. At night-time, with windows open for ventilation, noise levels will be 35 to 40 dBA or less depending on location in the house, which are very suitable for a sleeping environment.
- 33 It appears that the main relief sought by the Mackintoshs is that the designation be moved further from the house; a minimum of 25 metres. This is not warranted on the basis of noise effects, but if it was justified on other grounds, it would also have noise benefits in a small lowering of noise. However, I note that in Mr Eccles' alternatives rebuttal evidence, he does not support altering the designation boundary, as sought by the Mackintoshs. Rather, it seems likely that HCC will purchase the Mackintoshs' property.¹³
- 34 Mr Skilton also refers to increased noise from traffic slowing and accelerating from the roundabout. In my experience, while this is possible, it is unlikely in this situation. Where heavy commercial vehicles are a significant part of the traffic, some annoyance can occur as these vehicles pass through a roundabout. I have previously investigated this issue on behalf of the Transport Agency at other roundabouts near Hamilton and in Tauranga. Overall, I have found little increase in total noise from commercial vehicles, but a change in tonality, which appears to cause some annoyance.

¹³ Paragraph 50.3, Tony Denton's EIC.

However, in this current situation, as the roads are effectively suburban roads for use by local residents, the traffic is likely to be mainly cars. I therefore consider the effects described above to be unlikely.

Margaret and Murray Shaw submission

- 35 The Shaws' submission has only recently been served on the Requiring Authorities and was therefore not available at the time my EIC was prepared. Their submission primarily concerns the impact of the Project across their land, which they have restored as a nature habitat, but it also refers to noise pollution. It is not clear whether they mean noise pollution of the open space, or noise pollution at their house, but for completeness, I will address both.
- 36 The Shaws' property is considered in section 5.6.2 of my Noise Assessment, and specifically in Table 16 and Figure 30. In the Noise Assessment I identified that the predicted noise level at their house at 143 Hall Road is 61 dBA. Applying the new road criteria of NZS 6806, this noise level would be in Category B. It would also exceed the noise limit of the Operative Hamilton City District Plan for new roads on residential land, which is equivalent to 57 dBA rule 5.1.1(i).
- 37 In the Noise Assessment, I commented that for this area of the Peacockes Structure Plan, a quieter road surface was already intended to be used, but given the intended residential development, I noted in section 5.6.2 that noise barriers may not be practicable. However, I now have a better understanding of the type of residential development intended in the District Plan for this part of the Peacockes area in which the Shaws' property is located, which is more of the nature of a large lot residential.
- 38 Therefore, a noise barrier or fence of 2 to 2.5 metres high is likely to be a practicable mitigation measure. If it is extended about 60 to 100 metres either side of the Shaws' house, this would reduce the noise at the house to 57 dBA, within the Category A criterion.
- 39 Therefore, provided the Shaws' house is included within the list of properties to be assessed at the time of the future noise assessment (as proposed by condition 4.2 of HCC's designation under s168A of the RMA), a detailed assessment would be made and the practicability of mitigation, such as a noise barrier would be fully evaluated.
- 40 In section 5.6.2 of the Noise Assessment, I noted that for this general area of the Peacockes' Structure Plan existing noise levels would be about 52 to 55 dBA. I have recently visited this particular part of the area and note that Hall Road is a cul-de-sac. I believe the noise level will be much more like that of the fully rural areas

(identified in my EIC as being typically 46 to 50 dBA¹⁴). As noted in paragraph 228 of my EIC, in the Peacockes area, the noise level of 57 dBA is near to the designation boundary, so that most of the Shaws' property will have noise levels of 53 dBA or less, and less than 50 dBA further from the road and in the deeper gullies.

- 41 The Shaws are therefore correct that there will be increased noise because of the Project on the open land on their property. Close to the proposed road passing through their property, this will be a substantial increase of about 10 dBA compared to what exists now. However, levels will decrease moving away from the road, and I estimate that for most of the land, noise levels will be either little changed from now or increased by only 3 to 5 dBA more than present. There will be a low level of traffic noise intruding into what is now a quiet rural character. Generally, noise mitigation is not provided for open land and this open land would not be considered in the future noise assessment.

CONCLUSIONS

Ben Inger (Ingrams)

- 42 I have undertaken a broad assessment of predicted noise levels on the Ingrams' residual titles, and conclude there will be little constraint on where future houses could be built on the Ingrams' residual titles to achieve acceptable levels of noise as a result of the Project. This assessment would be little changed if there are minor variations in design. I therefore consider that potential noise effects of the Project on this land will be minor, and do not consider these titles should be included in the list of PPFs for the future noise assessment (required by condition 4.2, NZTA Waipa 168 NOR).

Peter Skilton (Mackintoshs)

- 43 No noise mitigation is required by NZS 6806 for the Mackintoshs' property at Peacockes Rd/Weston Lea Drive. The relief sought by the Mackintoshs, of moving the designation boundary further away from their house, is not required to mitigate noise effects.

Shaw submission

- 44 The future noise assessment will include the Shaws' residential buildings at 143 Hall Road. It is likely that this assessment would propose a noise barrier 2 to 2.5 metres high and with such a barrier in place, the Shaws' would experience a noise level of less than 57 dBA.
- 45 There will be a spill of noise over the Shaws' open space land from the proposed road crossing this land. Apart from land in close proximity to the road, I expect noise levels over most of this land to

¹⁴ Paragraph 29 of my EIC.

increase either little from current levels or by no more than 3 to 5 dBA.

Vince Dravitzki

8 July 2014

Annexures

A Plan showing Ingram residual titles with noise contour

ANNEXURE A
PLAN SHOWING INGRAM RESIDUAL TITLES WITH NOISE CONTOUR

