



RFI RESPONSE

NOTICE No. B010961-RFI-01 - ACOUSTICS RFI RESPONSE.DOCM

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| Project: | Rotokauri North Development | Project #: | B010961 |
| For the Attention of: | Renee Fraser-Smith (Tolle Mache) Dominic Rose (WTP) | Date: | 30 June 2022 |
| Subject: | Acoustics RFI Response | Pages: | 10 |

1. INTRODUCTION:

Rotokauri North Holdings engaged Agile Engineering Consultants Limited (Agile) to review and provide comments on the Rotokauri North fast track application RFI documentation.

To date, Agile has developed and issued the following documents:

- Road Traffic Noise Assessment Dated March 2022, Document Ref: B010961-Rotokauri North Development - Acoustics - Road Noise Assessment_(R2)
- Construction Noise and Vibration Management Plan, Dated April 2022, Document Ref: B010961-Rotokauri North Development - CNVMP

This RFI response presents the RFI items relevant to noise and vibration and provides comments where appropriate.

RFI documentation reviewed as part of this response is as follows:

1. 13Jun22 Minister of Housing FTC59 Comments Received
2. 14Jun22 Kane and Deborah Lee FTC59 Comments Received
3. 19Jun22 Heritage New Zealand FTC59 Comments Received
4. 22Jun22 Department of Conservation FTC59 Comments Received
5. 22Jun22 Jennifer Connolly and Michael Forbes FTC59 Comments Received
6. 23Jun22 Hamilton City Council FTC59 Comments Received
7. 23Jun22 LP and estate of FJD van Asbeck FTC59 Comments Received
8. 23Jun22 Mark and Kay Moroney FTC59 Comments Received
9. 23Jun22 Minister for Arts, Culture, and Heritage FTC59 Comments Received
10. 23Jun22 Waikato District Council FTC59 Comments Received
11. 23Jun22 Waikato Regional Council FTC59 Comments Received
12. 23Jun22 Waka Kotahi FTC59 Comments Received
13. 20220614 - Minister for Maori Crown Relations_FTC59 comments received

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| RFI Document | Submitter | Submitter Comment | Agile Comment |
|--------------|-----------------------|--|---|
| 6 | Hamilton City Council | <p>7.1 Noise and vibration effects for the proposed construction work and road noise from State Highway 39 have been provided in the Application, Rotokauri North Development Acoustics, Construction Noise & Vibration Management Plan, (CNVMP) Project No. B010961 report prepared by Agile Engineering Consultants. HCC has found the CNVMP to be comprehensive and adequately addresses each element of the proffered condition for providing a CNVMP prior to works occurring on-site.</p> <p>7.2 The conditions of consent recommended by the Applicant relate to construction noise and vibration and are accepted by HCC. There are additional matters post construction as follows:</p> | <p>We note that HCC finds the CNVMP comprehensive and adequately addresses each element of the proffered conditions.</p> <p>Consent conditions are reviewed later in this RFI response.</p> |
| | | <p>7.3 Road Noise Subdivision District Plan Rule 25.8.3.4 – Design and construction of new and altered roads</p> <p>7.4 This rule applies (in part) to new roads that are predicted to carry at least 2,000 AADT post development. It does not apply to local transport corridors but does apply to the proposed collector roads. Any such road that meets the AADT criteria would need to comply with Rule 25.8.3.4. This requires new roads to be designed and constructed to mitigate road traffic noise in compliance with NZS 6806:2010 ‘Acoustics – Road traffic noise – New and altered roads’.</p> <p>HCC has recommended conditions, in Attachment A in line with this requirement.</p> | <p>SH39 is a local transport corridor. As such, Rule 25.8.3.4 does not apply.</p> <p>It is understood that the proposed main collector roads are predicted to have design flows above the 2,000 AADT threshold for Rule 25.8.3.4, which therefore applies.</p> <p>Consent conditions are reviewed later in this RFI response.</p> |
| | | <p>7.5 Road Noise State Highway 39 District Plan Rule 25.8.3.10 – Noise Sensitive Activities</p> <p>7.6 The applicant has provided a comprehensive road traffic noise assessment ‘Rotokauri North Development Acoustics Road Traffic Noise Assessment Project No. B010961 Rev 2’. This report addressed noise effects on houses within 80m of SH39. HCC’s Environmental Health Manager has reviewed this report and noted</p> | <p>Noted. Consent conditions are reviewed later in this RFI response.</p> <p>For clarity, 25.8.3.10 states that the internal noise limits apply only when line of sight from all parts of all windows and doors of any new habitable room(s) is blocked to any part of the carriageway. Therefore:</p> |
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| | | <p>that it was carried out by a suitably qualified and experienced practitioner in environmental and building acoustics. The report assesses the proposal against District Plan Rule 25.8.3.10. The assessment and predictions are based on noise measurements of the existing noise environment carried out early March 2022 under acceptable environmental conditions.</p> <p>7.7 As a result of this review, HCC has recommended a number of conditions to ensure compliance with District Plan Rule 25.8.3.10. This ensures road noise does not cause an adverse effect within the habitable areas of dwellings that are within 80m of State Highway 39 (SH39). All Lots within 80m of SH39A; HCC recommends Consent Notices on these lots by ensuring dwellings are designed and constructed to meet an indoor design sound level of 35dBA Leq(24hr) in bedrooms and 40dBA Leq(24hr) in other rooms. The panel may wish to request from the applicant the list of Lots within 80 metres of SH39 subject to this consent notice requirement.</p> | <p>All Lots within 80m of SH39A are not required to be designed and constructed to meet an indoor design sound level of 35dBA Leq(24hr) in bedrooms and 40dBA Leq(24hr) in other rooms.</p> <p>However, all Lots within 80m of SH39A are required to be designed and constructed such that any new habitable rooms with line of sight from any parts of any windows and doors to SH39 meet an indoor design sound level of 35dBA Leq(24hr) in bedrooms and 40dBA Leq(24hr) in other rooms.</p> |
| | | <p>7.8 Noise Conditions Please refer to Attachment A for amendments to the Applicant's Noise Conditions and additional the inclusion of additional conditions by HCC.</p> | <p>Consent conditions are reviewed later in this RFI response.</p> |
| | | <p>13 – 15 Construction Noise and Vibration Management Plan (CNVMP)</p> | <p>As per above, the CNVMP for the bulk earthworks and the civil works has been developed already. This has been noted as comprehensive and adequately addresses each element in the conditions by HCC in item 7.1.</p> <p>CNVMP should be provided to Hamilton City Council's Planning Guidance Manager (or nominee) and Waikato District Councils Monitoring Department for certification at least 20 working days prior to the date construction work (including earthworks) is commenced on site.</p> <p>A CNVMP may be required for the roundabout/SH39 works, which will be developed and submitted at a later date.</p> |
| | | <p>19. All construction work on the site shall be designed and conducted to ensure that construction noise from the site at approximately 1 metre from the most exposed façade of any building</p> | <p>These limits are consistent with those assessed in the CNVMP.</p> |

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used for residential purposes shall not exceed the noise limits in the following table. In the event that any sound level measurements are recorded they shall be measured and assessed in accordance with the provisions of NZS 6803:1999 Acoustics Construction Noise.

| Time period | Monday to Friday | | Saturdays | | Sundays and Public Holidays | |
|--------------------|------------------|------------|-----------|------------|-----------------------------|------------|
| | Leq (dBA) | Lmax (dBA) | Leq (dBA) | Lmax (dBA) | Leq (dBA) | Lmax (dBA) |
| 06:30am to 07:30am | 55 | 75 | 45 | 75 | 45 | 75 |
| 07:30am to 06:00pm | 70 | 85 | 70 | 85 | 55 | 85 |
| 06:00pm to 08:00pm | 65 | 80 | 45 | 75 | 45 | 75 |
| 08:00pm to 06:30am | 45 | 75 | | | | |

Advisory Note: The lower (shaded) noise limits mean that some construction work may not be able to take place during the corresponding time frames, which includes all times on Sundays and public holidays.

Regarding the advisory note – no noisy works are planned to take place on Sundays and public holidays. Works on these days will meet the limits specified in condition 19.

20. Construction vibration received by any building on any other site shall comply with the criteria in the following table. In the event that any vibration levels are recorded they shall be measured and assessed in accordance with the German standard DIN 4150-3:1999 Structural vibration – Part 3: Effects of vibration on structures.

| Type of Structure | Short Term Vibration | | | | Long Term vibration |
|----------------------------------|---|----------------|------------------|--|---------------------|
| | PPV at the foundation at a frequency of | | | PPV at the horizontal plan of the highest floor (mm/s) | |
| | 1-10 Hz (mm/s) | 1-50 Hz (mm/s) | 50-100 Hz (mm/s) | | |
| Commercial / Industrial | 20 | 20-40 | 40-50 | 40 | 10 |
| Residential/School | 5 | 5-15 | 15-20 | 15 | 5 |
| Historic or sensitive structures | 3 | 3-8 | 8-10 | 8 | 2.5 |

These limits are consistent with those assessed in the CNVMP.



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| | | <p>71. As part of the Engineering Plan submission and certification process an acoustic report, prepared by a suitably qualified and experienced person in road traffic acoustics, shall be provided showing how new roads that are predicted to carry at least 2,000 annual average daily traffic at the design year (if any) are to be designed and constructed in accordance with NZS6806:2010 'Acoustics – Road-traffic noise – New and altered roads'. This condition shall not apply to roads designated as local transport corridors.</p> | <p>An acoustic report will be produced assessing AADT >2000 roads in line with NZS 6806. This will be undertaken during and submitted as part of the next package of design works.</p> |
| | | <p>72. Any barrier intended to function as a noise barrier shall be installed at the locations and to the extent shown in the relevant plan in Appendix C of 'Rotokauri North Development - Acoustics - Road Traffic Noise Assessment' (Agile Engineering Consultants, April 2022). The barrier shall have a mass of at least 10kg/m² and shall be installed prior to works clearance application.</p> | <p>The noise barrier/bund location should be referenced from the Engineering drawings 'Rotokauri North Development – For Consent' (BBO, April 2022) as this shows the finalised barrier location.</p> <p>The noise barrier/bund location in Appendix C of 'Rotokauri North Development - Acoustics - Road Traffic Noise Assessment' (Agile Engineering Consultants, April 2022) is indicative only, and should the barrier be installed in a slightly amended location (as per the engineering drawings) such that line of sight is reinstated from a habitable space to SH39, the noise contours in Appendix C of the Road Traffic Noise Assessment with no barrier should be used to determine the incident noise level on a dwelling.</p> <p>Following this, the mitigation as per Table 6 of section 5.2 of 'Rotokauri North Development - Acoustics - Road Traffic Noise Assessment' (Agile Engineering Consultants, April 2022) should be applied to meet the provisions of District Plan Rule 25.8.3.10.</p> <p>The barrier is proposed to take the form of the earth bund.</p> <p>Based on the above, condition 72 should be amended as follows:</p> <p>'Any barrier/bund intended to function as a noise barrier shall be installed at the locations and to the extent shown in the relevant plan in 'Rotokauri North Development – For Consent' (BBO, April 2022). The barrier shall consist of a earth bund, or have a mass of at least 10kg/m² and shall be installed prior to works clearance application.'</p> |

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| | | <p>Consent Notices (relevant to residential lots – all stages)</p> <p>107. All habitable rooms in buildings on Lots to shall be protected from traffic noise from State Highway 39A by ensuring they are designed and constructed to meet an indoor design sound level of 35dBA Leq(24hr) in bedrooms and 40dBA Leq(24hr) in other rooms. Where the indoor design sound levels can only be achieved with windows and doors closed, an alternative ventilation system shall be installed that complies with the requirements of Section G4 - Ventilation of the New Zealand Building Code 2011.</p> <p>i) Habitable room means any room that is part of a building, apart from those rooms used solely for the purposes of an entrance, passageway, toilet, bathroom, laundry, garage or storeroom.</p> <p>ii) If a noise barrier is installed in accordance with condition 72, then this condition would apply to habitable rooms on second floors of buildings and any other habitable room with a clear line of sight to State Highway 39A.</p> <p>a) Pursuant to Section 221 of the Resource Management Act 1991, a consent notice shall be registered against the Computer Freehold Register of Lots To Requiring the glazing / façade performance requirements and ventilation strategy for habitable rooms outlined in Table 6 of section 5.2 of 'Rotokauri North Development - Acoustics - Road Traffic Noise Assessment' (Agile Engineering Consultants, April 2022) to be incorporated into the design and construction of the buildings. The applicable requirements and strategy can be determined by reference to the noise contours in the relevant plan in Appendix C of the report;</p> <p>Or alternatively;</p> <p>If the glazing / façade performance requirements and ventilation strategy for habitable rooms are not undertaken in accordance with</p> | <p>Adoption of indoor design sound level criteria is dependent on if a habitable room has line of sight to SH39, which this condition partially covers below.</p> <p>In regards to point ii ('If a noise barrier is installed in accordance with condition 72, then this condition...'), the suitability of this point is dependent on the rephrasing of Condition 72 to reference the engineering drawings. To cover instances where second floor habitable rooms do not have line of sight to SH39 (e.g if a second row dwelling is shielded by a front row dwelling), point ii should be rephrased as per the following:</p> <p>'ii) If a noise barrier is installed in accordance with condition 72, then this condition would apply to habitable rooms with line of sight to State Highway 39A on second floors of buildings and any other habitable room with a clear line of sight to State Highway 39A.'</p> <p>As previously discussed, the noise barrier/bund location in Appendix C of 'Rotokauri North Development - Acoustics - Road Traffic Noise Assessment' (Agile Engineering Consultants, April 2022). is indicative only.</p> <p>In regards to point ii ('If a noise barrier is installed adjacent to SH39A...'). To cover instances where second floor habitable rooms do not have line of sight to SH39 (e.g if a second row dwelling is shielded by a front row dwelling), point ii should be rephrased as per the following:</p> <p>'ii) If a noise barrier is installed adjacent to SH39A, then this Consent Notice will only apply to habitable rooms with line of sight to State Highway 39A on second floors of buildings and any other habitable room at first floor with a clear line of sight to State Highway 39A.'</p> |
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| | | <p>Table 6 of section 5.2 of 'Rotokauri North Development - Acoustics - Road Traffic Noise Assessment' (Agile Engineering Consultants, April 2022) the indoor design sound level of 35dBA Leq(24hr) in bedrooms and 40dBA Leq(24hr) in other rooms must be met. Where the indoor design sound levels can only be achieved with windows and doors closed, an alternative ventilation system shall be installed that complies with the requirements of Section G4 - Ventilation of the New Zealand Building Code 2011.</p> <p>An acoustic design certificate, prepared by a suitably qualified and experienced person in building acoustics, shall be provided to Council's Planning Guidance Manager at or before the time of application for building consent. The certificate shall show how the noise standards and the ventilation requirement will meet the sound level of 35dBA Leq(24hr) in bedrooms and 40dBA Leq(24hr) in other rooms.</p> <p>i) Habitable room means any room that is part of a building, apart from those rooms used solely for the purposes of an entrance, passageway, toilet, bathroom, laundry, garage or storeroom.</p> <p>ii) If a noise barrier is installed adjacent to SH39A, then this Consent Notice will only apply to habitable rooms on second floors of buildings and any other habitable room at first floor with a clear line of sight to State Highway 39A.</p> | |
| 7 | LP and estate of FJD van Asbeck | <p>A 54-56 metre diameter roundabout on my boundary edge creates less desirable attributes for sale. In the event that 336 Te Kowhai is sold :</p> <p>a. deceleration on approach and acceleration on exiting the proposed roundabout will create much noise disturbance for residents. Many trucks travel this route, especially at night. Air brakes are banned, but are frequently used</p> <p>b. Illumination disturbance from raised roundabout lights.</p> | <p>We note "deceleration on approach and acceleration on exiting the proposed roundabout will create much noise disturbance for residents"</p> <p>Limited industry standards and guidance exist on predicting the effects of the junction on the level of noise produced.</p> <p>However, measurements at a nearby existing roundabout approach on the same section of SH39 (MP-B, refer to Appendix B of Acoustic Report) were undertaken.</p> |

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| | | <p>As owner of 360 Te Kowhai Road, but do not reside there, I have spoken with my sharemilker who does, and asked if he has any concerns with the proposed subdivision opposite the farming operation. He wishes to continue farming without interference or restraint, and machinery, dust, smells and animal noises etc are to be expected in a rural area. A proposed 12 metre planted buffer along the southern side of Te Kowhai Road will be of some benefit.</p> | <p>These were then distance corrected back to 13 m, and compared to levels measured simultaneously at a free flow section of SH39 (MP-A, refer to Appendix B of Acoustic Report).</p> <p>The results show a 0.7 dB increase at a roundabout approach.</p> <p>This is not expected to result in additional noise disturbance compared to the existing noise levels at the 336 Te Kowhai Road dwelling. Generally, 0.7 dB is unlikely to be noticeable to residents.</p> <p>The use of banned air brakes is an enforcement issue and should be managed separately from this consent.</p> <p>We note." A proposed 12 metre planted buffer along the southern side of Te Kowhai Road will be of some benefit."</p> <p>The background noise from SH39 would like mask any animal noise incident on the proposed dwellings.</p> |
| 8 | Mark and Kay Moroney | <p>Hours of work restrictions: 6.30am - 6.00pm, Saturday 7.30am - 1.00pm</p> <p>Days of works: 6 days</p> | <p>As per the CNVMP, noisy construction activities are permitted to occur during daytime, 0730 to 1800 hours, Monday to Saturday.</p> <p>High noise-generating activities will occur only between 0730 and 1800 hours Monday to Saturday, excluding Public Holidays.</p> |
| | | Dust control noise control and vibration control | <p>We note the request for noise and vibration control.</p> <p>Noise and vibration control applied for the works are presented in Section 5 of the CNVMP.</p> |
| 12 | Waka Kotahi | <p>Noise sensitive activities such as a new residential building near to an existing state highway can potentially be affected by road-traffic noise. The Acoustic Report(Agile Engineering Consultants: Rev 2 April 2022) concludes that any dwelling located within 80m of State Highway 39 can meet the relevant noise standards under the Hamilton City Plan subject to the mitigation measures presented in Table 6 of the report. Waka Kotahi consider that the mitigation</p> | Noted. |



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| | measures are appropriate in ensuring the relevant noise standards under the Hamilton City Plan can be met. | |
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We believe that this report satisfies your request but would be pleased to provide further information or clarification of any content should it be required. In this instance, please contact the undersigned.

Yours faithfully

A handwritten signature in black ink that reads "Ed Taylor".

Ed Taylor

Senior Acoustic Engineer

BEng, MASNZ

Agile Engineering Consultants

ed.taylor@agile-eng.co.nz