

Before a Board of Inquiry
MacKays to Peka Peka Expressway Proposal

under: the Resource Management Act 1991

in the matter of: Notice of requirement for designation and resource consent applications by the NZ Transport Agency for the MacKays to Peka Peka Expressway Proposal

applicant: **NZ Transport Agency**
Requiring Authority

Statement of rebuttal evidence of **Siiri Wilkening** (Construction Noise) for the NZ Transport Agency

Dated: 24 October 2012

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STATEMENT OF REBUTTAL EVIDENCE OF SIIRI WILKENING FOR THE NZ TRANSPORT AGENCY

- 1 My full name is Siiri Wilkening.
- 2 I have the qualifications and experience set out at paragraphs 2 to 4 of my evidence in chief, dated 4 September 2012 (*EIC*).
- 3 I repeat the confirmation given in my EIC that I have read, and agree to comply with, the Code of Conduct for Expert Witnesses (Consolidated Practice Note 2011).
- 4 In this statement of rebuttal evidence, I respond to certain aspects of the evidence lodged by submitters as it relates to construction noise. Specifically, I:
 - 4.1 Respond to the late submissions of:
 - (a) John Axe (741);
 - (b) Jill Short (742); and
 - (c) Arthur Wright (743).
 - 4.2 Respond to the evidence of:
 - (a) Malcolm Hunt, on behalf of the Kāpiti Coast District Council ("KCDC") (682);
 - (b) Emily Thomson, on behalf of KCDC (682);
 - (c) Dr Marie O'Sullivan on behalf of Action to Protect and Sustain our Communities ("APSOC") (572);
 - (d) Lisa Wildmo-Seerup on behalf of APSOC (572);
 - (e) Monica and Christopher Dearden (261); and
 - (f) Loretta Pomare (309-1).
- 5 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 reports,¹ my EIC and this rebuttal statement to set out my opinion on what I consider to be the key operational noise matters for this hearing.
- 6 Consistent with my EIC, I have referred to the MacKays to Peka Peka Expressway Project as "the Project" in this rebuttal evidence.

¹ Technical Report 16, "Assessment of Construction Noise Effects" and the draft Construction Noise and Vibration Management Plan ("CNVMP").

EXECUTIVE SUMMARY

- 7 I have read the late submissions, as they relate to construction noise issues, and respond to the relevant sections. I have also read all of the statements of evidence provided by submitters as they relate to my area of expertise.
- 8 I have reviewed the proposed designation conditions as they relate to construction noise in light of the comments made by KCDC, and comment on these later in my rebuttal evidence.
- 9 The submitters' evidence has not caused me to depart from the opinions expressed in my EIC in regard to construction noise.
- 10 I remain of the opinion that, with the implementation of a methodology focussed on communication and mitigation throughout construction, the effects on neighbouring premises can be managed to acceptable outcomes for all involved. The noise criteria recommended in the New Zealand Construction Noise Standard NZS6803:1999 ("Standard") should be aimed to be complied with where practicable. Where there is no practicable mitigation available, alternative management methods should be implemented through Site Specific Construction Noise Management Plans ("SSCNMPs"), in consultation with the affected parties.

LATE SUBMISSIONS

John Axe

- 11 The submitter is concerned about the increase in noise levels at his dwelling² from the construction of the Project.³ The dwelling is in close proximity to the Project (approximately 60 metres from the edge of the closest carriageway).
- 12 The dwelling is separated from the Project by a dune which is to be retained. Due to this extensive shielding, construction noise levels at the dwelling are predicted to readily comply with the relevant construction noise criteria of the Standard. The dwelling is therefore not identified as a "Construction Noise Hot Spot" in Appendix C of Technical Report 16. In my opinion, with the implementation of the noise management and mitigation measures set out in the Draft Construction Noise and Vibration Management Plan ("CNVMP") and Technical Report 16, effects from construction noise can be managed appropriately for this dwelling.

² The dwelling is located at 44 Rata Road, Paraparaumu.

³ Axe Submission, paragraphs 4, 5 and 9.

Jill Short

- 13 The submitter is concerned about the impact of construction noise, in particular in relation to potential disturbance of telephone communication.⁴
- 14 The construction site is approximately 60 metres from Ms Short's dwelling, and, with the noise mitigation and management recommended in the Technical Report⁵ and draft CNVMP,⁶ noise levels are predicted to comply with the relevant construction noise criteria. Once the proposed traffic noise bund⁷ has been constructed, the dwelling will be well shielded from construction noise. Noise levels inside the dwelling will be approximately 20 decibels lower,⁸ which means that internal noise levels would, in my opinion, not interfere with telephone communication.

Arthur Wright

- 15 Mr Wright is concerned about construction noise levels in general.⁹ I note that Mr Wright's dwelling is approximately 200 metres from the Expressway alignment and 90 metres from the potential Poplar Avenue realignment. At these distances, relevant noise criteria can be achieved without implementation of additional mitigation. Nevertheless, noise mitigation and management will be implemented throughout the construction period as set out in the draft CNVMP.¹⁰
- 16 I have addressed the issue of construction noise levels in my EIC¹¹ and consider that the proposed noise management and mitigation will result in appropriate noise levels.

EVIDENCE OF SUBMITTERS**Malcolm Hunt (KCDC) (682)**

- 17 Mr Hunt has provided expert evidence on construction noise issues on behalf of KCDC.¹² Overall, I note that Mr Hunt agrees with the methodology used for the construction noise assessment¹³ and supports the management of construction noise through a CNVMP.¹⁴ A summary of points of agreement and disagreement is set out in

⁴ Short Submission, page 2.

⁵ Technical Report 16, Sections 7 and 8.

⁶ CNVMP, Sections 10 and 11.

⁷ Technical Report 15, Appendix B, Figure EN-NV-009.

⁸ Refer my EIC (Operational Noise) , page 14, footnote 29 for common noise level reduction of New Zealand dwellings.

⁹ Wright Submission, page 2.

¹⁰ CNVMP, Sections 10 and 11.

¹¹ My EIC, paragraphs 71 to 73.

¹² Hunt Evidence, paragraphs 2.9 to 2.10 and 12.1 to 12.19.

¹³ Hunt Evidence, paragraph 12.2.

¹⁴ Hunt Evidence, paragraph 12.3.

Annexure B, and I am not aware that any points of disagreement remain.

18 In his evidence, Mr Hunt discusses a number of construction noise issues. I address each of the following issues below:

18.1 Compliance with construction noise criteria;

18.2 Communication with affected residents and KCDC; and

18.3 Implementation of the CNVMP.

Compliance with construction noise criteria

19 Mr Hunt is concerned that the construction noise criteria may be exceeded during some aspects of the works for limited periods,¹⁵ although, on those occasions, he supports the proposed active noise management and mitigation methodology in the form of SSCNMPs.¹⁶ Mr Hunt notes that proposed designation condition DC.30¹⁷ requires compliance with the Construction Noise Standard NZS6803:1999 and supports such requirement.¹⁸

20 I concur that such active management is well suited for construction activities, particularly of large sites with ongoing and varied activities. I note, however, that the main focus is on managing construction noise to the extent practicable. As explained in my EIC,¹⁹ the criteria contained in the Standard are intended to be desirable, rather than mandatory, limits for construction noise.²⁰ This is reflected in the wording of proposed condition DC.30 which requires that "construction noise shall, as far as practicable, be made to comply with" the Standard's criteria.

21 This means that, at times, full compliance will not be possible for various reasons, and such practicability considerations need to be included in the designation conditions.²¹ This is discussed in paragraphs 28 to 34 of my EIC.

¹⁵ Hunt Evidence, paragraph 12.5.

¹⁶ Hunt Evidence, paragraphs 12.6 and 12.12.

¹⁷ The relevant content of recommended condition DC.30 has been moved to DC.30A as discussed in paragraph 29 below.

¹⁸ Hunt Evidence 12.5. It is noted that proposed condition G.30 requires compliance "as far as practicable".

¹⁹ My EIC, paragraphs 28 to 34.

²⁰ NZS6803:1999, Section 7.1.1: "This section specifies desirable upper limits..." and Section 7.1.2: "Construction noise ... should not generally exceed the numerical noise limits..."

²¹ The possibility of exceedance of the criteria is also anticipated in the Standard in Section 7.4: "... Where the best practicable options for noise avoidance or mitigation have been applied to construction activities and the activity does not comply with the relevant noise limit...", a resource consent may be required (or, in this instance, designation conditions that provide a management framework in such non-compliance circumstance).

- 22 I disagree with Mr Hunt's claim (paragraph 12.5) that "the NOR is essentially seeking to exceed appropriate limits set out within NZS6803:1999 during some aspects of construction ...". As noted earlier, the criteria in the Standard are desirable not mandatory, and where it is simply not practicable to meet the criteria, the Project conditions require a SSCNMP to be prepared setting out further management measures.
- 23 Mr Hunt comments that any episodes of non-compliance with the Standard should be properly recorded and, if necessary, managed by Council and suggests amendments to the conditions.²² I consider that the proposed conditions, namely DC.32 which requires that any SSCNMP shall be submitted to Council for certification, already fulfil Mr Hunt's requirement. No further amendment is required. I also note that the Draft CNVMP submitted as Appendix F of the CEMP contains requirements in regard to monitoring reporting.²³
- Communication with affected residents and Council***
- 24 Mr Hunt emphasises the importance of communication with affected parties²⁴ and recommends increasing the period of notification prior to any works (particularly night-time works) within set distances from two to five days.²⁵
- 25 I agree that such increase in notification time may be advantageous for residents and have included the suggested amendment in amended conditions attached as **Annexure A** to my rebuttal evidence (refer proposed condition DC.35).
- Implementation of the CNVMP***
- 26 Mr Hunt notes that the proposed conditions reference a "certified" CNVMP and states that there are no conditions proposed that establish how this certification is to occur.²⁶
- 27 I note that proposed conditions DC.7 to DC.10 set out requirements relating to time frames, consultation and amendments to management plans (including the CNVMP) in relation to certification by Council. More specifically, proposed condition G.33(b) requires each SSCNMP to be submitted to Council's Manager at least 5 working days prior to relevant construction activity commencing. I therefore consider that Mr Hunt's requirements are met.
- 28 Mr Hunt comments that the proposed conditions do not set out the minimum requirements of a CNVMP, i.e. a minimum content that needs to be covered.²⁷ He therefore recommends including

²² Hunt Evidence, paragraphs 12.6 and 12.7.

²³ Appendix F of CEMP: CNVMP, Section 9.3.

²⁴ Hunt Evidence, paragraph 12.16.

²⁵ Hunt Evidence, Paragraphs 12.10 and 12.10.

²⁶ Hunt Evidence, paragraph 12.18.

²⁷ Hunt Evidence, Paragraph 12.4.

additional content to proposed condition DC.30 which is based on the NZTA's model designation conditions,²⁸ setting out the overall minimum content of a CNVMP.

- 29 I agree that such condition is useful to ensure that all relevant issues are covered within the CNVMP, albeit I note the draft CNVMP already includes all of the points set out in Mr Hunt's suggested amended condition. Nevertheless, to provide certainty to all parties, I have included the amendment in **Annexure A** (see proposed condition DC.30). The amended wording of proposed condition DC.30 relates to the CNVMP (which is an overarching document relating to construction noise and vibration²⁹). Therefore, I have recommended moving the construction noise criteria into a new condition (recommended condition DC.30A).³⁰ The criteria and associated wording would remain unchanged.

Emily Thomson (KCDC) (682)

- 30 Ms Thomson, on behalf of KCDC, submitted expert planning evidence and incorporated some of the changes to the proposed designation conditions suggested in Mr Hunt's evidence. Changes which have been suggested by Mr Hunt and incorporated by Ms Thomson include those to proposed conditions DC.30 (relating to the minimum requirements of a CNVMP in relation to noise)³¹ and DC.35 (relating to the longer notification period). These have been discussed in the paragraphs above and provided for in **Annexure A**.
- 31 In addition, Ms Thomson has suggested further changes to proposed condition DC.30,³² deleting the wording "as far as practicable" in relation to compliance requirements with the Standard noise criteria. In paragraph 9.6, Ms Thomson states that this amendment is based on the reasons set out in Mr Hunt's evidence. However, in Mr Hunt's evidence, I do not find support for the deletion of these very important words, in particular when considering that Mr Hunt supports the active noise management proposed through the implementation of the SSCNMP mechanism.
- 32 As discussed in paragraph 20 above, and in paragraphs 29 to 34 of my EIC, I consider that compliance with the construction noise criteria shall be achieved as far as practicable. Where such compliance is not practicable, then the further management mechanism of the SSCNMP would be triggered (refer proposed condition DC.32). This mechanism would be obsolete if full

²⁸ NZTA's State highway Construction Noise Guide SP/M/023 v.6, September 2012; <http://acoustics.nzta.govt.nz/management/construction>.

²⁹ Refer EIC and statement of rebuttal of **Mr Whitlock** regarding discussion of construction vibration.

³⁰ Construction vibration criteria are contained in recommended condition DC.31.

³¹ Ms Thomson also includes some minimum requirements in relation to construction vibration in proposed condition DC.30. These are discussed in **Mr Whitlock's** statement of rebuttal.

³² Thomson Evidence, Paragraph 9.5.

compliance could practicably be achieved at all times. I therefore disagree with Ms Thomson's suggested deletion and consider it important that those words remain.

- 33 Ms Thomson, in paragraph 9.7, suggests a rewording of proposed condition DC.30, excluding the reference to a "certified CNVMP". I consider that the certification process is important for Council to have input and is already included in proposed conditions DC.7 to 10. Therefore, I disagree with removing this reference.
- 34 Ms Thomson suggests including wording into proposed condition DC.30 requiring the CNVMP to be implemented "throughout the entire construction period". I agree with this inclusion as it captures the purpose of the CNVMP and have included this wording into my proposed condition amendments in **Annexure A**.
- 35 Ms Thomson also suggests further wording³³ to proposed condition DC.30, setting out the methodology required to be employed in the event of potential non-compliance with the construction noise criteria. I do not consider that this addition is necessary as the process is already set out through the requirements of proposed condition DC.32 relating to the SSCNMP.
- 36 Ms Thomson suggests³⁴ extending the notification period and notification distance proposed in condition DC.35³⁵ from two to five days (in accordance with Mr Hunt's evidence)³⁶ and 100 to 200 metres.
- 37 I do not consider that the notification distance would need to be extended from 100 metres to 200 metres for any daytime works. Construction noise levels are predicted to be well within relevant criteria at a distance of 100 metres. However, extending the notification area for night-time works may be appropriate, and I have included relevant wording in **Annexure A**.³⁷
- 38 Ms Thomson suggested additional wording relating to night-time noise criteria for construction yards.³⁸ I do not agree that such wording is necessary as the construction yards are already covered by the requirements of the proposed conditions, particularly DC.30 setting out relevant noise criteria.

³³ Thomson Evidence, paragraph 9.7, pages 15 and 16.

³⁴ Thomson Evidence, paragraph 9.9.

³⁵ Previously DC.37.

³⁶ I have addressed that issue in my evidence above. Refer Paragraph 24.

³⁷ Note that in Technical Report 16, Section 8.1.12, a notification area of 300 metres is recommended for night-time works. I do not consider that this is necessary due to the very limited (in duration and area) proposed night-time works.

³⁸ Thomson Evidence, paragraph 9.9, page 17.

Dr Marie O’Sullivan (APSOC) (572)

39 Dr O’Sullivan presented evidence on behalf of APSOC, which, in relation to construction noise, focussed on the aspects of

39.1 Noise standards and criteria; and

39.2 Duration of construction noise.

I address these issues below.

40 Dr O’Sullivan comments that there should be no exceedance of the noise criteria during construction.³⁹ I have addressed the issue of practicability and the methodology of management of construction noise earlier in my evidence and disagree with Dr O’Sullivan’s comments in this regard.

41 Dr O’Sullivan states that the NZTA is seeking less stringent criteria for construction activities and wishes to exceed the criteria for 34 months (for each sector).⁴⁰ I disagree with these statements.

42 The construction noise criteria proposed for the Project are those of the New Zealand Construction Noise Standard NZS6803:1999. No general relaxation of the Standard criteria is sought.⁴¹

43 However, as explained previously, from time to time, some works are likely to exceed the criteria, for a limited duration and in specific areas (e.g. for the installation of bridge beams).⁴² These works would be of very temporary nature. They are not proposed to exceed the noise criteria for any length of time as suggested by Dr O’Sullivan, or even occur over an extended period in any one location.⁴³

44 Dr O’Sullivan implies that the construction hours proposed are excessively long.⁴⁴ I note that the daily construction duration proposed for the Project coincides with those hours of construction set out in the New Zealand Standard.⁴⁵ I understand that no Sunday or night-time works are proposed, except for the placement of bridge beams at night-time which is necessary to avoid disruption to

³⁹ O’Sullivan Evidence, paragraph 214.

⁴⁰ O’Sullivan Evidence, paragraph 215.

⁴¹ Technical Report 16, Section 7.2.1.

⁴² Technical Report 16, Section 7.2.2 and my EIC, paragraph 69.

⁴³ Refer my EIC, paragraphs 65 and 66.

⁴⁴ O’Sullivan Evidence, paragraph 218.

⁴⁵ Technical Report 16, Section 7.2.1.

local roads.⁴⁶ I therefore disagree with Dr O’Sullivan’s comments regarding construction duration.⁴⁷

45 Dr O'Sullivan has incorrectly interpreted the noise levels reproduced in Annexure B of my EIC, and is concerned about hearing loss to occur for residents adjacent to construction activities.⁴⁸

46 I have discussed the noise levels in the tables in Annexure B in paragraphs 44 and 45 of my EIC. These levels do not make allowance for mitigation measures (e.g. barriers), nor do they represent ongoing noise levels over the total duration of the activity or noise levels experienced by every dwelling in the vicinity.⁴⁹

47 Under no circumstances would the public be in a position to suffer hearing damage or loss through construction activities on this Project.⁵⁰

Lisa Wildmo-Seerup (APSOC) (572)

48 Ms Wildmo-Seerup, on behalf of APSOC, has provided evidence in relation to noise effects from the point of view of an audiologist. While my area of expertise does not cover the subject of audiology, I have reviewed and responded to those aspects of Ms Wildmo-Seerup’ evidence that fall within the area of environmental acoustics, namely construction noise.

49 Ms Wildmo-Seerup has misinterpreted a number of statements in Technical Report 16 in relation to potential mitigation and management measures.⁵¹ All mitigation measures set out in the tables shown in Annexure B of my EIC⁵² are potential mitigation measures and will be applied as appropriate, on a case-by-case basis.

50 In paragraph 7, Ms Wildmo-Seerup is incorrect in comparing the Sound Power Levels of table A-1⁵³ with the Sound Pressure Levels of Table 9-7.⁵⁴ This comparison is incorrect on several issues:

⁴⁶ EIC, paragraph 69.

⁴⁷ I also refer to my EIC, regarding prolonging construction overall if daily construction times are restricted (paragraph 70).

⁴⁸ O’Sullivan Evidence, paragraph 25 (page 82).

⁴⁹ Refer table headings in Annexure B of my EIC for descriptions.

⁵⁰ Dr Black deals with potential health effects including from noise, in his EIC and rebuttal evidence.

⁵¹ Wildmo-Seerup Evidence, paragraphs 6 and 7.

⁵² These tables are reproduced from Technical Report 16, Section 9.6.

⁵³ Technical Report 16, Appendix B, page 58.

⁵⁴ Technical Report 16, Section 9.6, page 49.

- 50.1 Sound Power Levels and Sound Pressure Levels are not comparable;⁵⁵ and
- 50.2 The sound power levels in table A-1 relate to equipment employed for preload fill (i.e. heavy earthmoving equipment working under load), rather than equipment mobilisation within the yard area which involves starting up of trucks (e.g. idling and warm up).
- 51 Ms Wildmo-Seerup suggests⁵⁶ that the use of A-weighted noise levels is not appropriate for the assessment of construction noise in relation to hearing damage, but rather that a dosimeter⁵⁷ assessment or the C-weighted scale⁵⁸ should be used. My assessment is not in relation to hearing damage (which will not occur for residents in the vicinity of the construction site),⁵⁹ but is in relation to environmental noise in accordance with relevant standard criteria. I therefore disagree with Ms Wildmo-Seerup's suggestion.

Monica and Christopher Dearden (261)

- 52 The submitters are concerned about the duration of construction works, assuming that continuous noise will be created by heavy earthmoving machinery and drilling over a four year construction period.⁶⁰ I have previously commented on the fact that construction activities will be temporary, moving progressively along the alignment,⁶¹ with high noise activities occurring for limited times only in each Sector (e.g. the construction of the Te Moana Road bridge in the general vicinity of the submitters would occur over an 8 months period, with drilling occurring for a very short time of the overall duration).
- 53 Mr and Mrs Dearden comment that there appears to be a detailed process for handling and recording complaints, but no apparent plan on how to solve problems.⁶² I refer to the CNVMP where Section 9.2

⁵⁵ Refer Technical Report 16, Appendix A for a definition of both.

⁵⁶ Wildmo-Seerup Evidence, paragraph 10.

⁵⁷ Dosimeters are used for Occupational Health and Safety assessments and involve a person wearing a dosimeter for an extended period (e.g. a working day) to determine the noise dose received by this person. This is generally used in high noise occupations (e.g. factory workers) to obtain an accurate value for a specific equipment operator.

⁵⁸ The C-weighting was introduced to assess noise with a strong low-frequency component such as blasting. It is not appropriate to use the C-weighted curve in relation to general construction noise.

⁵⁹ Occupational Safety and Health Guidelines require noise levels of 85 dB L_{Aeq} for any 8 hour period and peak noise levels of 140 dB not to be exceeded without appropriate hearing protection.

⁶⁰ Dearden Evidence, paragraph 2.29.

⁶¹ My EIC, paragraphs 65 and 66.

⁶² Dearden Evidence, paragraph 2.41.

and the flow chart in Appendix B set out the process to be employed in the event that non-compliance with the Project noise criteria has been shown. I consider that this information responds appropriately to the submitters' concerns.

Loretta Pomare (309)

- 54 Ms Pomare is concerned about the use of the Project alignment as a haul road throughout the construction period, with noise levels being high due to an uneven surface.⁶³ Generally, haul roads are formed as gravel roads to a relatively high standard without rutting or pot holes. Based on the truck numbers proposed to be used for the placement of pre-load material (up to 74 per day),⁶⁴ the relevant construction noise criteria would be readily complied with. Noise levels would increase intermittently during the passing of the truck only, similar to trucks passing on a local road.⁶⁵ I do not consider the use of the alignment as a haul road to be unacceptable or to create unreasonable noise effects.
- 55 Ms Pomare comments that night-time works are planned over a 9 month period for the Waikanae and Te Moana bridges.⁶⁶ This is incorrect. No night-time works are proposed for the construction of the Waikanae bridge. Night-time works for the Te Moana bridge are proposed to be for a maximum duration of 12 nights.⁶⁷
- 56 Ms Pomare seeks that construction noise criteria should not be exceeded. I have discussed this issue in my evidence above, and in paragraphs 29 to 34 of my EIC.
- 57 Similarly to other submitters, Ms Pomare seeks that construction hours be restricted.⁶⁸ I have discussed this in my EIC, paragraphs 68 to 70.
- 58 Ms Pomare seeks a longer notification period of two weeks for construction activities, and temporary relocation for construction duration of more than one day in the vicinity of her dwelling.⁶⁹ In regard to the notification period, I consider that the 5 day notification period suggested by Mr Hunt and Ms Thomson is appropriate, and I have included that requirement in the amended proposed conditions in **Annexure A**. A longer notification period is unlikely to be practicable, as variables influencing the construction works may not be known at such duration (e.g. for weather dependent works).

⁶³ Pomare Evidence, paragraph 102.

⁶⁴ Technical Report 16, Section 9.5.

⁶⁵ On average, based on daytime construction hours, 74 trucks per day would equate to less than 7 trucks per hour.

⁶⁶ Pomare Evidence, paragraphs 103 and 131.

⁶⁷ My EIC, paragraph 93.

⁶⁸ Pomare Evidence, paragraph 132.

⁶⁹ Pomare Evidence, paragraph 133.

- 59 I do not consider that relocation would be appropriate for works of short duration or works that are within the construction noise criteria. As set out in Technical Report 16, temporary relocation should be used on a case-by-case basis only⁷⁰ as it is very intrusive to residents.
- 60 Ms Pomare (in paragraph 136) seeks that construction noise barriers be installed prior to the commencement of any works in the vicinity of her property. Section 10.9 of the CNVMP requires that noise barriers be installed prior to any construction works occurring that require mitigation in order to achieve compliance with the noise criteria. I agree with this requirement. I note that proposed designation condition DC.36 also requires such installation prior to commencement of construction in any one area.

CONCLUSION

- 61 I have reviewed all relevant statements of evidence, as they relate to construction noise, and have discussed the issues raised. I remain of the opinion that the Project can be constructed so that construction noise effects are appropriately and adequately managed with the aim of meeting the Project construction noise criteria and any exceedances are addressed through noise management and mitigation using the mechanisms of the CNVMP and SSCNMP.



Siiri Wilkening
24 October 2012

⁷⁰ Technical Report 16, Section 8.1.8.

ANNEXURE A – PROPOSED CONDITIONS REFERRED TO IN THIS REBUTTAL STATEMENT

(Additions to conditions are shown in underlining and deletions by strikethrough)

DC.30	<p>The Requiring Authority shall implement the noise management and mitigation measures identified in the certified CVNMP <u>throughout the entire construction period of the Project.</u></p> <p><u>The CNVMP shall, as a minimum, address the following:</u></p> <ol style="list-style-type: none"> 1. <u>Description of the works, anticipated equipment/processes and their scheduled durations;</u> 2. <u>Hours of operation, including times and days when construction activities causing noise and/or vibration would occur;</u> 3. <u>The construction noise and vibration criteria for the project;</u> 4. <u>Identification of affected houses and other sensitive locations where noise and vibration criteria apply.</u> 5. <u>Monitoring requirements, including relevant times i.e. critical phases of construction, e.g. at the first use of high-noise or high-vibration machinery, when possible exceedance of the Project criteria is anticipated (e.g. night works etc.), or in response to any reasonable complaint.</u> <p>Construction noise shall, as far as practicable, be made to comply with the following criteria in accordance with NZS6803:1999:</p> <p>Residential receivers</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="border-top: 1px solid black; border-bottom: 1px solid black;">Time of week</th> <th style="border-top: 1px solid black; border-bottom: 1px solid black;">Time period</th> <th style="border-top: 1px solid black; border-bottom: 1px solid black;">dB <small>L_{Aeq(T)}</small></th> <th style="border-top: 1px solid black; border-bottom: 1px solid black;">dB <small>L_{Amax}</small></th> </tr> </thead> <tbody> <tr> <td rowspan="4" style="border-bottom: 1px solid black;">Weekdays</td> <td style="border-bottom: 1px solid black;">0630-0730</td> <td style="border-bottom: 1px solid black;">55</td> <td style="border-bottom: 1px solid black;">75</td> </tr> <tr> <td style="border-bottom: 1px solid black;">0730-1800</td> <td style="border-bottom: 1px solid black;">70</td> <td style="border-bottom: 1px solid black;">85</td> </tr> <tr> <td style="border-bottom: 1px solid black;">1800-2000</td> <td style="border-bottom: 1px solid black;">65</td> <td style="border-bottom: 1px solid black;">80</td> </tr> <tr> <td style="border-bottom: 1px solid black;">2000-0630</td> <td style="border-bottom: 1px solid black;">45</td> <td style="border-bottom: 1px solid black;">75</td> </tr> <tr> <td rowspan="4" style="border-bottom: 1px solid black;">Saturdays</td> <td style="border-bottom: 1px solid black;">0630-0730</td> <td style="border-bottom: 1px solid black;">45</td> <td style="border-bottom: 1px solid black;">75</td> </tr> <tr> <td style="border-bottom: 1px solid black;">0730-1800</td> <td style="border-bottom: 1px solid black;">70</td> <td style="border-bottom: 1px solid black;">85</td> </tr> <tr> <td style="border-bottom: 1px solid black;">1800-2000</td> <td style="border-bottom: 1px solid black;">45</td> <td style="border-bottom: 1px solid black;">75</td> </tr> <tr> <td style="border-bottom: 1px solid black;">2000-0630</td> <td style="border-bottom: 1px solid black;">45</td> <td style="border-bottom: 1px solid black;">75</td> </tr> <tr> <td rowspan="4" style="border-bottom: 1px solid black;">Sundays and public holidays</td> <td style="border-bottom: 1px solid black;">0630-0730</td> <td style="border-bottom: 1px solid black;">45</td> <td style="border-bottom: 1px solid black;">75</td> </tr> <tr> <td style="border-bottom: 1px solid black;">0730-1800</td> <td style="border-bottom: 1px solid black;">55</td> <td style="border-bottom: 1px solid black;">85</td> </tr> <tr> <td style="border-bottom: 1px solid black;">1800-2000</td> <td style="border-bottom: 1px solid black;">45</td> <td style="border-bottom: 1px solid black;">75</td> </tr> <tr> <td style="border-bottom: 1px solid black;">2000-0630</td> <td style="border-bottom: 1px solid black;">45</td> <td style="border-bottom: 1px solid black;">75</td> </tr> </tbody> </table> <p>Industrial and commercial receivers</p> <table border="1" style="width: 100%; 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DC.35	<p>a) At least 2 <u>5</u> working days prior to commencement of works within any construction area, the Requiring Authority shall seek to ensure that:</p> <ol style="list-style-type: none"> If night works (works between the hours of 2000h and 0630h) are proposed to be undertaken, the occupiers of properties within 100 <u>200</u>m of the construction area (are provided with written notification of the scheduled works, including any advice for reducing internal noise levels); the occupiers of properties within 100m of the construction area are provided written notification of the scheduled works; the occupiers of properties within 50m of the construction area are provided individual written notification of the scheduled works with the opportunity offered for discussions on a case by case basis, if requested. <p>b) Reasonable attempts are to be made to directly engage with the occupiers of properties within 20m of the construction area to discuss the proposed construction works.</p>																																																			

**ANNEXURE B – POINTS OF AGREEMENT AND DISAGREEMENT –
M HUNT AND S WILKENING**

(Reference to Malcolm Hunt evidence noted for each point)

Agreement on the following points has been recorded:

1. Adequacy of proposed designation conditions in response to KCDC's submission (paragraphs 2.9 and 12.15) (subject to amendment of proposed designation conditions DC.30 and DC.35 discussed below):
 - a. Night-time construction noise;
 - b. Construction noise management; and
 - c. Construction noise monitoring;
2. Content and implementation of the CNVMP (paragraphs 2.13, 12.3 and 12.12) (subject to amendment of proposed designation condition DC.30 which I agree with – refer paragraph 29 of my rebuttal);
3. Notification of night-time works (paragraph 2.17) (subject to amendments of proposed designation condition DC.35 which I agree with – refer paragraph 25 of my rebuttal);
4. Active noise control for activities likely to exceed the noise criteria through SSCNMPs (paragraphs 12.6 and 12.12);
5. Proposed mitigation measures (paragraph 12.9); and
6. The importance of communication with affected parties (paragraph 12.16).

No disagreement can be recorded based on Mr Hunt's evidence.