

**IN THE MATTER** of the Resource Management Act 1991

**AND**

**IN THE MATTER** of a submission in respect of the **PROPOSED WAIKATO DISTRICT PLAN** by **AMBURY PROPERTIES LIMITED** pursuant to Clause 6 of Schedule 1 of the Act seeking the rezoning of land at Ohinewai

## **STATEMENT OF EVIDENCE OF BENJAMIN CHRISTOPHER LAWRENCE**

### **1. INTRODUCTION**

1.1 My name is Benjamin Christopher Lawrence. I am a Consultant at Marshall Day Acoustics, specialising in environmental acoustics.

#### **Qualifications and experience**

1.2 I hold a Bachelor of Engineering with Honours in Electrical and Electronics from the University of Auckland (2017). I am an affiliate of the Acoustical Society of New Zealand. I have 6 years of experience in acoustic engineering, which includes the preparation of noise and vibration assessments for residential, commercial and industrial sites as well as large infrastructure projects. I have provided expert evidence on acoustic matters at council hearings. My experience relevant to this project includes:

- (a) Waiata Shores (commercial development in Takanini, Auckland, involving rezoning of the development site);
- (b) Sistema manufacturing facility (commercial and industrial development in Mangere, Auckland); and
- (c) Downtown Infrastructure Development Program and America's Cup 36 (suite of long-term construction projects in downtown Auckland) – ongoing.

### **Involvement in Ohinewai Project**

- 1.3 I was engaged by Ambury Properties Limited ("APL") in July 2019 to provide acoustic advice in relation to the development of the Sleepyhead Estate. The development site a 178-hectare rural site on the corner of Lumsden Road and Tahuna Road in Ohinewai, Waikato ("the Site").
- 1.4 I carried out an acoustic assessment for The Comfort Group's proposed foam and underlay manufacturing facility in the north west corner of the Site. My assessment related to the Stage 1 earthworks as well as the construction and operation of the factory.
- 1.5 In November 2019, my colleague, Peter Ibbotson, prepared the Ohinewai Structure Plan – Proposed Rezoning Acoustic Assessment dated 20 November 2019. His report was attached as Appendix J to the Assessment of Environmental Effects and section 32AA report dated December 2019 and was provided to this Hearings Panel on 6 December 2019. I assisted in the preparation of this document as a reviewer.
- 1.6 In May 2020, I was asked to investigate and address the potential reverse sensitivity matter of recreational gamebird shooting on Lake Rotokawau, an issue which was raised by Fish and Game during consultation.
- 1.7 I have visited the Site on several occasions:
  - (a) On 1 and 8 August 2019 to measure the existing noise environment. I returned several times later that month to measure vibration levels from the dynamic compaction trial and ambient vibration levels at the dwellings on Lumsden Road.
  - (b) In February 2020, I visited the Site again to measure the existing noise environment at the proposed residential area to the east of the development during the day and night.
  - (c) On 31 May 2020 I undertook a site visit to measure gun noise from game bird shooting on the nearby Lake Rotokawau reserve.

### **Expert Witness Code of Conduct**

- 1.8 I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Consolidated Practice Note (2014) and I agree to comply with it. I can confirm that the issues addressed in this statement are within my area of expertise and that in preparing my evidence I have not omitted

to consider material facts known to me that might alter or detract from the opinions expressed.

## 2. **SUMMARY OF MY EVIDENCE**

### **Existing environment**

- 2.1 The existing noise environment is dominated by State Highway 1 traffic to varying degrees over the Site. Other notable sources include train movements on the North Island Main Trunk (NIMT) and vehicle movements on Lumsden and Tahuna Roads. There are frequent heavy vehicle movements on Lumsden Road associated with the timber mill approximately 2km north of the Site.
- 2.2 Due to these sources, the existing environment on the western side of the Site is characterised by a high level of anthropological noise over the day and night. Towards the east, noise levels reduce with increasing distance from SH1. The existing environment at the south-eastern boundary is controlled by vehicle movements on Tahuna Road.
- 2.3 Adjacent land to the northern and southern site boundaries is predominantly dairy farmland. There are no significant noise producing activities or infrastructure on these sites.
- 2.4 Land to the east is a Department of Conservation wetland reserve containing Lake Rotokawau. Gamebird shooting on the reserve takes place primarily in the winter months. The closest future residential is approximately 600m from the main shooting area.
- 2.5 The closest existing noise sensitive receivers are the dwellings on Lumsden Road and Tahuna Road. I note that the three dwellings on the eastern side of Lumsden Road and are within the Site and would be rezoned to Industrial as part of the proposal if APL is successful.

### **Proposed Waikato District Plan (PWDP) Rules**

- 2.6 It is proposed to rezone the Site to Industrial and Business on the western side of the site, and Residential to the east.
- 2.7 Sites surrounding the development are Rural except for a small number of Village zoned sites to the west. These Village zoned sites already contain existing dwellings.

- 2.8 APL does not propose any changes to the noise rules in the PWDP applicable to activities on the Site. I have therefore assessed the proposal against these rules. The only exception are the noise limits I have recommended that should apply at the three existing dwellings in the new Industrial Zone close to SH1.

#### **Potential industrial activities – noise effects**

- 2.9 Approximately 68 hectares of land on the north and west of the Site is proposed to be zoned for industrial use. This would be a combination of The Comfort Group’s manufacturing, storage and office facilities, and light industry activities.
- 2.10 My predictions show that these activities can comply with the PWDP noise rules at all adjacent Village, Residential and Rural zoned receivers with generally no constraints on commercial operations.
- 2.11 The exception would be industrial activities at the zone interfaces, which may require mitigation to comply at the existing Village and proposed Residential zone. Conventional measures such as noise barriers, building envelope design and scheduling of operations would in most cases be enough to achieve compliance. However, it is possible that some constraints on night-time industrial activity at the interface may also be required.
- 2.12 There are three existing Rural zoned dwellings within the proposed Industrial zone. I have recommended appropriate limits for the adjacent Industrial sites to ensure noise received at the existing dwellings is controlled to an appropriate level. These limits are the same as the PWDP rule for noise emissions from Business zones received at Residential/Village zones.

#### **Potential business activities – noise effects**

- 2.13 Approximately 13 hectares of Business zoned land is proposed in the south-western corner of the site. This land is intended for typical commercial developments such as retail and neighbourhood shops. Noise from these sites would include passenger cars, goods deliveries and mechanical plant. Based on my experience with similar sites, I consider that compliance would be achieved with the relevant limits in the residential zone and that there will be few constraints on normal business activity.

#### **Potential residential activities – noise effects**

- 2.14 The proposed Residential zone in the eastern part of the Site would change the character of the rural environment for the two existing dwellings on

Tahuna Road. Residential activities would be audible and noticeable at times, but the ambient noise levels would still be controlled by vehicle movements on Tahuna Road.

- 2.15 The noise limits at the Residential zone from adjacent Industrial and Business zones are relatively stringent and are comparable to the existing ambient noise levels. Requiring the Industrial and Business zones to comply with the PWDP noise limits will ensure a good level of amenity for both existing and future residential receivers.

#### **Construction activities – noise effects**

- 2.16 Construction works across the Site would generally be undertaken at large distances from existing dwellings. I calculate that daytime works would readily comply with the District Plan construction standards and would not result in unreasonable noise and vibration effects on amenity.
- 2.17 Residual effects from any high noise and vibration activities such as dynamic compaction would be managed through a construction noise and vibration management plan (CNVMP).

#### **Noise effects of gamebird shooting on new residential area**

- 2.18 I have investigated the potential noise effects from the existing gamebird shooting in the Lake Rotokawau reserve, which was raised by Fish and Game during consultation as a potential reverse sensitivity issue.
- 2.19 In summary, I consider that the gun noise has the potential to cause adverse effects based on my site visit and the data provided by Fish and Game<sup>1</sup>. These effects are addressed as follows:
- (a) The proposed no complaints covenant on the residential area solves the reverse sensitivity issue for Fish and Game; and
  - (b) Adverse noise effects on the residential area can be addressed by enabling habitable rooms facing the reserve to shut windows while maintaining thermal comfort and fresh air. I have recommended an appropriate rule. This does not resolve outdoor noise, although I note that outdoor spaces are less likely to be used during the winter months when gamebird season takes place.

<sup>1</sup> 'Ohinewai Recreational Shooting Data' provided by Fish and Game on 15 April 2020 and subsequent email from Jane Shaw (Fish and Game) on 22 May 2020.

### **Concerns of further submitters**

- 2.20 Several submitters raised operational and traffic noise as a general matter, which I have addressed in the body of my evidence. In summary, noise from both operation and traffic associated with the rezoning would be at levels generally comparable to the existing ambient environment on Lumsden Road and Tahuna Road.

### **Section 42A report**

- 2.21 The section 42A officer report is in general agreement with the acoustic assessment. The one point of difference is the three existing Rural lots on Lumsden Road which would be rezoned Industrial. To protect these properties, I have recommended appropriate noise limits to ensure noise from the adjacent industrial land is controlled to a reasonable level.

### **Conclusion**

- 2.22 In conclusion, I consider that the proposed activities can comply with the noise rules in the PWDP. The relevant rules would ensure that noise from the *Industrial* and *Business* zones does not exceed a reasonable level at the adjacent *Residential* and *Village* zones and at the existing dwellings within the proposed new zones.
- 2.23 The proposed open space buffers are sufficient for most activities in the *Industrial* zone to comply with the relatively stringent limits in the *Residential* zone. However, there may be some constraints on night-time operations for industrial activities at the *Industrial/Residential* zone interfaces.

## **3. ACOUSTICS 101**

- 3.1 In this section, I describe some of the key acoustic terms and concepts which are form the basis of my assessment.
- 3.2 The **ambient environment** refers to all existing noise sources in an area. This includes vehicle passes, train passes, wind in trees, cicadas, cows mooing, quad bikes, dairy industry, etc.
- 3.3 The  $L_{Aeq}$  parameter is used to measure ambient noise levels. It is an energy average over a given time period, meaning that louder sounds raise the results more than they would for a typical statistical average. Noise levels are generally predicted using the  $L_{Aeq}$ , which allows direct comparison to the ambient environment.

- 3.4 The **background sound** is the noise the existing in and environment nearly all the time. This includes traffic on a busy motorway, trees rustling from constant wind, or air-conditioning units. It does not sound which is of a limited duration such as car passes, trains, occasional birdsong etc.
- 3.5 The **L<sub>A90</sub>** parameter is used to measure the background sound. It is the sound that is there for 90% or more of the time.
- 3.6 The **L<sub>Amax</sub>** the highest level in any period. Examples include a car door slamming, pallet dropping or a horn. This parameter is generally only used during night-time periods due to impulsive high noise events having the potential for sleep disturbance.

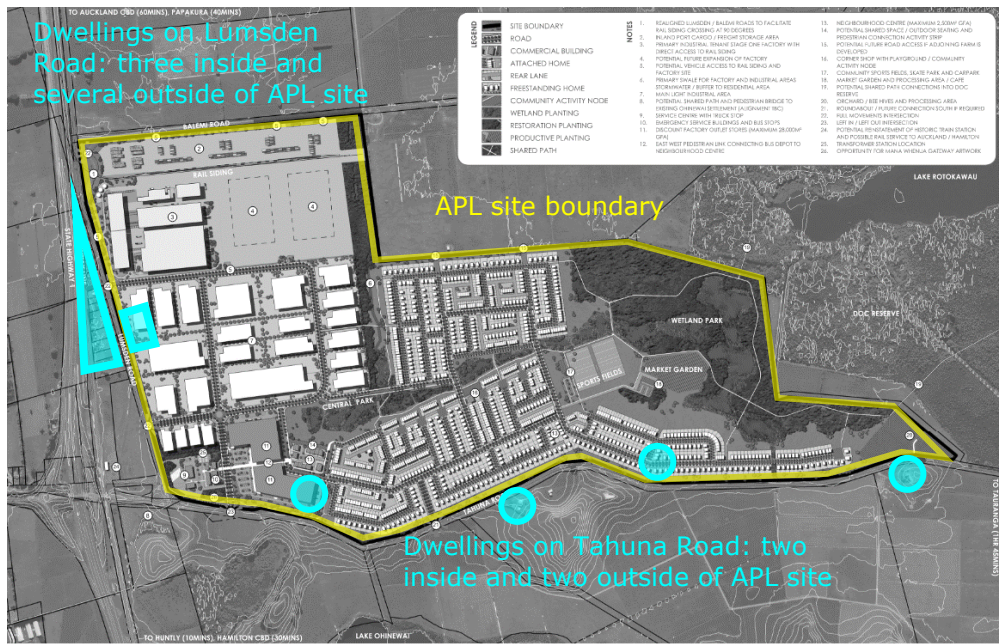
#### 4. **EXISTING NOISE ENVIRONMENT**

- 4.1 The Site is surrounded by the following land uses:
- (a) State Highway 1 traffic and the North Island Main Trunk rail line control the existing noise environment. The traffic produces high background noise levels and train movements produce intermittent high noise events at the western side of the site.
  - (b) A large timber mill development is located approximately 2km north of the Site which is accessed via Lumsden Road. Heavy vehicles pass the Site and Village zone when travelling to and from the mill.
  - (c) Land to the north and south is predominantly dairy farmland with a small number of rural dwellings. There are no notable noise producing activities or infrastructure on this land.
  - (d) To the east is a Department of Conservation wetland reserve with Lake Rotokawau. There is existing gamebird shooting on the reserve. Correspondence from Fish and Game indicates that this is primarily in the winter months<sup>2</sup>.
  - (e) There are a small number of Village zoned dwellings which are adjacent to the western boundary of the APL site. There are also three dwellings within the Site which are currently zoned Rural.
- 4.2 The closest existing receivers are shown on Figure 1 and summarised below:

2 'Ohinewai Recreational Shooting Data' provided by Fish and Game on 15 April 2020 and subsequent email from Jane Shaw (Fish and Game) on 22 May 2020. See Attachment B.

- (a) The Village zoned dwellings at 41 – 85 Lumsden Road which are adjacent to the western Site boundary
- (b) The Rural zoned dwellings at 52 – 58 Lumsden Road within the Site would be rezoned to Industrial.
- (c) The Rural zoned dwellings at 166 and 282 Tahuna Road which are adjacent to the southern boundary of the Site.

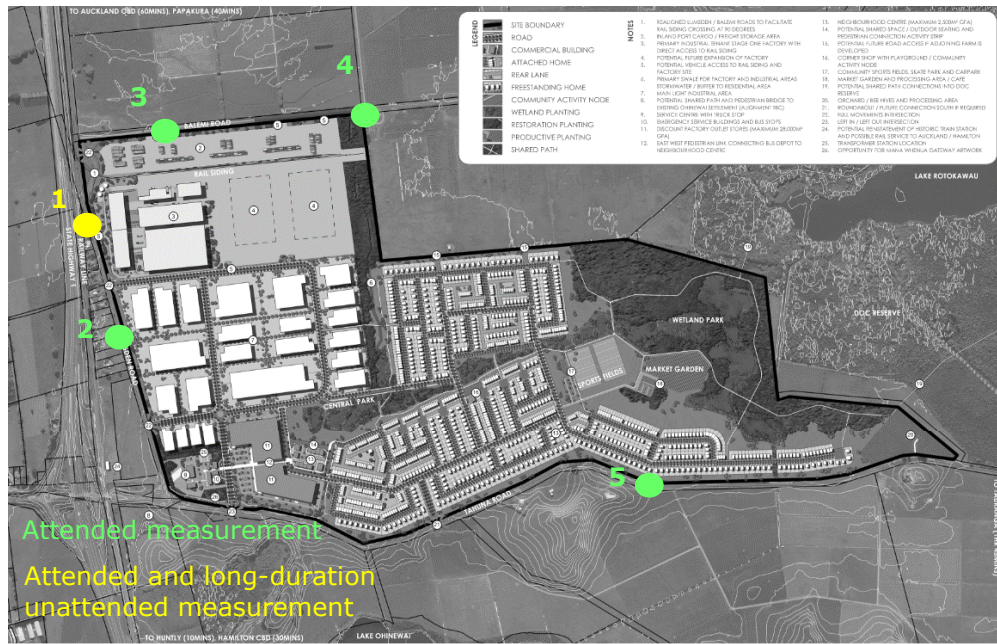
Figure 1: Existing sensitive receivers



4.3 I measured the existing ambient noise levels at five representative locations around the Site as shown in Figure 2. The measurements consisted of five short duration attended surveys surrounding the Site, and a week-long unattended survey on the western side.



Figure 2: Ambient environment measurement locations



- 4.4 On the western half of the Site the existing environment is characterised by a high level of road traffic and rail noise over the day and night. On the eastern half of the Site the noise levels are lower due to the increased distance from State Highway 1 and the rail line, but the ambient levels were still relatively high for a rural environment.
- 4.5 The measured average levels ( $L_{Aeq}$ ) and background levels ( $L_{A90}$ ) are summarised in Table 2.

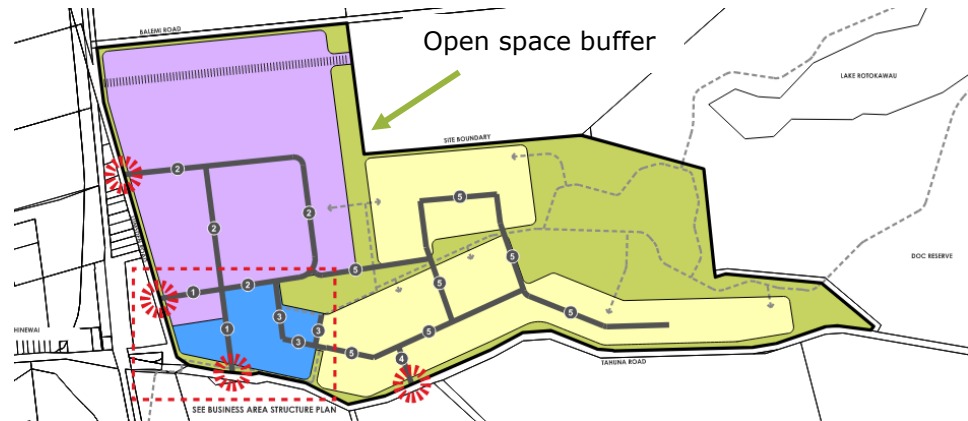
Table 1: Summary of measured ambient noise levels

Position	Date	Daytime levels	Night-time levels
1 – attended	1 August 2019	71 dB $L_{Aeq}$ 55 dB $L_{A90}$	-
1 – unattended	1 August 2019	51 – 79 dB $L_{Aeq}$ 40 – 63 dB $L_{A90}$	51 – 78 dB $L_{Aeq}$ 27 – 58 dB $L_{A90}$
2 – attended	1 August 2019	64 dB $L_{Aeq}$ 56 dB $L_{A90}$	-
3 – attended	23 August 2019	58 dB $L_{Aeq}$ 54 dB $L_{A90}$	-
4 – attended	3 March 2020	50 dB $L_{Aeq}$ 47 dB $L_{A90}$	46 dB $L_{Aeq}$ 43 dB $L_{A90}$
5 – attended	3 March 2020	46 dB $L_{Aeq}$ 43 dB $L_{A90}$	46 dB $L_{Aeq}$ 44 dB $L_{A90}$

5. **THE PROPOSAL**

5.1 The Ohinewai Structure Plan provides for a combination of Industrial and Business zoning on the western side of the Site, and Residential to the east. There are open space buffer zones between the Industrial and Residential zones, as well as to the east of the site. The Structure Plan is shown in Figure 3.

Figure 3: Ohinewai Structure Plan



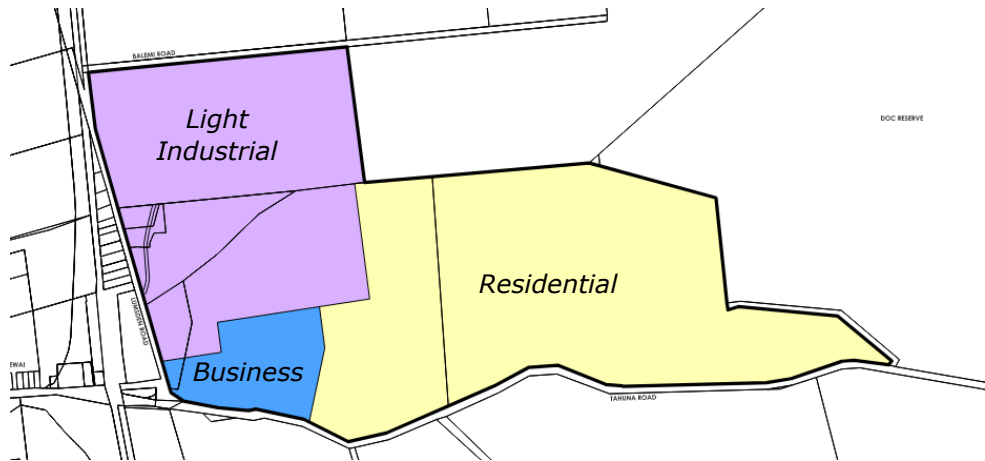
5.2 The Structure Plan is intended to enable the realisation of the Sleepyhead Masterplan, which includes a greater level of detail in relation to the activities anticipated on the Site.

5.3 I have used the Masterplan to inform my assessment, but I have not relied on the specific land use details and layout. I have assessed a representative range of potential activities for each zone to account for potential variations from the Masterplan. Specifically, I have considered all land uses identified in the definition of 'Industrial Activity' in the PWDP (refer to **Attachment A** for that definition).

6. **PROPOSED WAIKATO DISTRICT PLAN – NOISE RULES**

6.1 The Ohinewai Structure Plan provides for Industrial, Business and Residential zones as shown on Figure 4 below. Sites surrounding the development are proposed by Waikato District Council to be Rural except for a small number of Village zoned sites to the west.

Figure 4: Ohinewai Zone Plan



- 6.2 The district wide rules from the PWDP are proposed to apply to the site. New or altered noise limits are not proposed to the overall zones. The one exception are the noise limits that should apply at existing dwellings in the new *Industrial* zone. I discuss these later in my evidence.
- 6.3 The relevant limits are summarised in Table 2.

Table 2: Summary of Proposed Waikato District Plan noise limits

Noise producing zone	Receiving zone	Noise limits
<i>Industrial, Business</i>	<i>Industrial</i>	7am – 10pm: 75 dB LAeq 10pm – 7am: 55 dB LAeq, 85 dB LAmax
<i>Industrial, Business</i>	<i>Business</i>	7am – 10pm: 65 dB LAeq 10pm – 7am: 55 dB LAeq, 85 dB LAmax
<i>Business</i>	<i>Residential, Village</i>	7am – 7pm: 55 dB LAeq 7pm – 10pm: 50 dB LAeq 10pm – 7am: 45 dB LAeq, 75 dB LAmax
<i>Industrial, Business, Residential, Village, Rural</i>	<i>Residential, Village, Rural</i>	7am – 7pm: 50 dB LAeq 7pm – 10pm: 45 dB LAeq 10pm – 7am: 40 dB LAeq, 65 dB LAmax

- 6.4 The limits for noise received at Industrial and Business zones are permissive during the daytime and most commercial and industrial activities would readily comply. The limits are lower during the night-time but would still allow typical night-time commercial activities such as goods vehicle movements and production/manufacturing.
- 6.5 The limits for noise received at Residential, Rural and Village zones are common throughout New Zealand in quiet rural and residential

environments. Achieving compliance with these limits would ensure that noise is controlled to a reasonable level for these receivers – particularly considering that the background noise limits are comparable to or higher than the limits across the Site. However, these relatively stringent limits<sup>3</sup> have the potential to constrain adjacent commercial activities on the boundaries of the Industrial zone adjacent to the more sensitive zones. I address this matter in more detail in the following sections.

## 7. **PROPOSED INDUSTRIAL ACTIVITIES – POTENTIAL EFFECTS**

- 7.1 Approximately 68 hectares of land on the northern and western extent of the Site is proposed to be Industrial zoning. The north-western corner of the Site would be used for The Comfort Group’s manufacturing, storage, office and transport facilities. The remainder of the Industrial zone is anticipated to be used for light industry activities such as production, processing, moving and storage as permitted by the zoning.
- 7.2 The main noise sources would be indoor manufacturing and production (with noise transmission through the building envelope), external mechanical plant and dispatch/deliveries. These activities would take place predominantly during the daytime, but some night-time / early morning operations are likely.
- 7.3 Industrial activities at the eastern and western extents of the development may require mitigation to comply at the adjacent Residential/Village zones, particularly if high-noise manufacturing or loading/heavy vehicle movements are proposed at night-time. Conventional mitigation measures such as noise barriers and building envelope design would be enough to achieve compliance in most cases. However, some constraints on night-time industrial activities may result.
- 7.4 An example of a potential constraint is if site entrances for heavy vehicles that face onto residential areas. Acoustic screening is generally ineffective for entranceways, so high numbers of heavy vehicle movements would be constrained to daytime hours to achieve compliance. Alternatively, resource consent could be sought for higher night-time noise limits.
- 7.5 Cumulative noise levels will likely require consideration for industrial activities on the eastern and western extents of the Industrial zone. This

3 Section 8.6.2 of New Zealand Standard NZS 6802:2008 "Acoustics - Environmental Noise" specifies noise limits of 55 dB LAeq during the daytime and 45 dB LAeq during the night-time as upper limits for residential zones.

primarily applies to the eastern side where there are several Industrial sites at similar distances from the adjacent high-density Residential area. Operations may need to be constrained during the night-time period and require mitigation to meet the noise limit.

- 7.6 Other sites which are not at the eastern and western extents of the proposed Industrial zone would have a greater separation distance from nearby noise sensitive receivers. Industrial activities on these sites would be relatively unconstrained.
- 7.7 I understand that negotiations to acquire the three properties at 52 – 58 Lumsden Road are under way. However, it is possible that during initial development stages the dwellings may still be in place. If the three existing dwellings at 52 – 58 Lumsden Road within the proposed Industrial zone remain rural in use, the PWDP Industrial zone noise rules would allow noise levels at these dwellings well above what is reasonable. I therefore recommend noise limits of 55/50/45 dB  $L_{Aeq}$  for daytime, evening and night-time respectively for these sites. These are the same limits as for the Business to Rural zone interface in the PWDP and are appropriate for these sites nearby SH1.
- 7.8 This is reflected in Rule 20.6.2RD7 in Attachment B to the evidence of John Olliver which states:

*"Noise measured at the notional boundaries of the dwellings on Lots 1-3 DP 4743475 ALLOT existing as 1 September 2020 must not exceed:*

- (i) 55dB (LAeq), 7am to 7pm, every day;*
- (ii) 50dB (LAeq), 7pm to 10pm, every day; and*
- (iii) 45dB (LAeq) and 75dB (LAmax), 10pm to 7am the following day.*

*Noise levels shall be measured in accordance with the requirements of NZS 6801:2008 Acoustics - Measurement of Environmental Sound; and*

*Noise levels shall be assessed in accordance with the requirements of NZS 6802:2008 Acoustics - Environmental noise."*

## 8. **PROPOSED BUSINESS ACTIVITIES – POTENTIAL EFFECTS**

- 8.1 Approximately 13 hectares of *Business* zoned land is proposed in the south-western corner of the site. This is intended for typical commercial developments such as retail and neighbourhood shops, which generally only operate during the daytime.

8.2 Noise sources on these sites would be passenger vehicles, goods deliveries and mechanical plant. Based on my experience with similar sites, I consider that noise emissions from these sites would readily comply with the relevant limits.

8.3 Noise received from the *Industrial* sites to the north of the *Business* zone is unlikely to adversely affect commercial activities. The highest permitted noise level of 65 dB L<sub>Aeq</sub> from the *Industrial* zone would be comparable to a busy suburban road.

## 9. **PROPOSED RESIDENTIAL ACTIVITIES – POTENTIAL EFFECTS**

9.1 The proposed Residential zone in the eastern part of the development site would contain a mix of medium and high-density housing development. This would change the character of the rural environment for the existing receivers on Tahuna Road as activities on the new residential sites would be audible and noticeable at times. However, Tahuna Road is a relatively busy rural road and the ambient noise levels would still be controlled by the current vehicle movements.

9.2 The limits for noise received at the Residential zone from the adjacent Industrial and Business zones are relatively stringent and are comparable to the existing ambient noise levels. Requiring the Industrial and Business zones to comply with these limits will ensure a good level of amenity for residential uses.

## 10. **EFFECTS OF GAME BIRD SHOOTING IN THE LAKE ROTOKAWAU RESERVE**

10.1 I have recently become aware of the matter of recreational game bird shooting in the Lake Rotokawau reserve. I understand this was raised by Fish and Game during consultation in early 2020. Fish and Game has indicated<sup>4</sup> that the shooting takes place mainly in the winter months, with up to 3,000 shots per day based on 50% of the maximum yields (refer Attachment B for a summary of this information).

10.2 The reserve abuts the eastern end of the Site. The closest proposed *Residential* sites are around 600m from the lake and 150m from the reserve parcel boundary.

4 'Ohinewai Recreational Shooting Data' provided by Fish and Game on 15 April 2020 and subsequent email from Jane Shaw (Fish and Game) on 22 May 2020.

- 10.3 I visited the closest proposed *Residential* site to the reserve on 31 May 2020 to quantify the gun noise. I measured between 7am and 8am on the Sunday morning in the middle of Queens Birthday weekend. It was the second weekend of game bird shooting season, and weather conditions were overcast with minimal wind.
- 10.4 I counted a total of 70 shots from locations spread out over the reserve. Most shots were noticeable but generally at a level comparable to the ambient environment. However, there were a small number of significantly louder shots from a location near the edge of the reserve.
- 10.5 Fish and Game's data indicates that there could be three times as many shots as I counted, if not more (refer **Attachment B** for my analysis of this data). In my opinion, this could result in a noticeable adverse effect on the occupants of the nearest dwellings facing the reserve and, in turn, reverse sensitivity effects on the existing game bird shooting.
- 10.6 A no complaints covenant is proposed for all residential sites. This will solve the reverse sensitivity issue for Fish and Game but does not avoid the adverse effects of noise on the residents.
- 10.7 It is my view that a modern residential building construction with closed windows would result in acceptable internal levels for the dwellings facing the reserve. I note that thermal comfort and fresh air must be maintained to enable the windows to remain closed, the details of which are outside my area of expertise. I recommend the following rule be adopted:

*"Any habitable rooms which have an acoustic line of sight to the boundary of the Lake Rotokawau Reserve shall be provided with a means of maintaining an appropriate level of fresh air and thermal comfort while the windows are closed, as advised by a suitably qualified building services engineer."*

- 10.8 This does not resolve the potential effects of gun noise on outdoor areas. However, these spaces are likely to be used less during the winter months when gamebird season takes place. In addition, it is less likely that residents will want to open their windows during the winter.

## 11. **PROPOSED CONSTRUCTION ACTIVITIES – POTENTIAL EFFECTS**

- 11.1 Construction works across the site would generally be undertaken at large setback distances from existing sensitive receivers. I predict that these works would readily comply with the PWDP construction standards and would not result in unreasonable noise and vibration effects for receivers in the vicinity.

11.2 Residual effects from any high noise and vibration activities nearby sensitive receivers would be managed through a construction noise and vibration management plan (CNVMP).

11.3 Examples of mitigation and management measures included in CNVMPs are:

(a) Prioritising low noise and vibration methodologies near to sensitive receivers. An example is using cut and fill instead of dynamic compaction.

(b) Scheduling works to take place when buildings are unoccupied.

(c) Installing noise barriers where appropriate and effective.

(d) Communication to inform affected receivers prior to high noise and vibration works, as well as addressing construction related complaints.

## 12. **COMMENT ON MATTERS RAISED IN FURTHER SUBMISSIONS**

12.1 Six further submissions were lodged on the APL submission which raise noise and related matters. I have grouped the submitters based on their location and common potential effects.

### **Lumsden Road submitters adjacent to site**

12.2 Suzanna Clara Stow at 81 Lumsden Road and Richard and Shanette Marsh at 75 Lumsden Road raise noise as a general concern.

12.3 Noise from the operation of the adjacent industrial sites would be required to comply with the Village zone noise limits and would therefore be within the noise levels experienced in the existing ambient environment on Lumsden Road. Operational noise from the industrial sites could still be noticeable at times as it may be of a different character and come from a different direction but would still be at a reasonable level.

12.4 There would be an increase in heavy vehicle movements on Lumsden Road as a result of the rezoning. However, I do not consider that this will result in a noticeable change in noise level for these submitters.

### **Lumsden Road submitters within the Site**

12.5 Bruce Holmes at 52 Lumsden Road, and Daniel and Rebekah Holmes at 52 Lumsden Road raise operational and traffic noise as general concerns.



12.6 As I have discussed above, noise from both operation and traffic associated with the rezoning would be at levels comparable to the existing ambient environment on Lumsden Road.

12.7 The key additional matter for these submitters is that their sites would be rezoned from Rural to Industrial under the proposed rezoning. I have recommended appropriate limits for noise received from the adjacent industrial sites to be comparable to the existing ambient levels. There could still be a noticeable change in character and direction of noise (the industrial sites being on the opposite side of the dwelling to SH1), but I consider that overall levels would be reasonable given the existing environment.

### **General**

12.8 The Ohinewai Area Committee raises noise as a general concern. My evidence has addressed the potential noise effects for the overall area, and I refer to my conclusions in response to this submission.

### **Potential reverse sensitivity effects**

12.9 Though not raised in their submission, Fish and Game have raised a concern through consultation with APL about reverse sensitivity effects arising from gamebird shooting on the nearby Rotokawau Lake and surrounding reserve area. I have addressed this matter in detail in Section 10 of my evidence.

## **13. COMMENT ON MATTERS RAISED IN THE SECTION 42A REPORT**

13.1 Paragraph 181 of the section 42A officer's report prepared by Chloe Trenouth states:

*"APL's Acoustic report (Appendix J to their documentation) and further correspondence with the authors (see memo dated 28 January 2020 from Marshall Day in Appendix 5) has established that the implementation of the general noise rules would be suitable to ensure any noise effects received at sensitive zones are acceptable. No special plan provisions are required. I am satisfied that acoustic issues do not preclude the APL rezoning."*

13.2 I note that paragraph 364 of the report states that no additional plan provisions are necessary to manage effects on 52, 56 and 58 Lumsden Rd. It is my view that appropriate noise limits should be set for these sites with dwellings to ensure noise from the adjacent industrial sites is controlled to a reasonable level. As described, I expect this to be a temporary situation until their sites are acquired by APL. I have addressed this matter in paragraph 7.7 of my evidence.

14. **CONCLUSION**

- 14.1 In conclusion, I consider that the proposed zoning and Ohinewai Structure Plan are appropriate having regard to the noise rules in the Proposed Waikato District Plan. The relevant rules would ensure that noise from the *Industrial* and *Business* zones does not exceed a reasonable level at the adjacent *Residential* and *Village* zones.
- 14.2 The character of the existing rural environment would change as a result of the proposed rezoning due to the introduction of new noise sources. However, I consider that the overall ambient levels at nearby existing receivers would remain similar and still be controlled by traffic and train movements.
- 14.3 The limits for noise from the *Industrial* zone received in residential areas are relatively stringent. The proposed buffer zones are sufficient for most industrial activities to comply with these limits, but there may be some constraints on night-time operations for industrial activities at the Industrial/Residential zone interfaces.
- 14.4 Reverse sensitivity effects on the existing recreational gamebird shooting are resolved by the proposed no complaints covenant on the new residential area. Adverse noise effects on the residential area should be addressed by enabling windows to be closed for habitable rooms facing the reserve while maintain adequate fresh air and thermal comfort. I have an appropriate rule to this effect.

**Benjamin Lawrence**  
**9 July 2020**

## **ATTACHMENT A**

### **Proposed Waikato District Plan Definition of Industrial Activity (Chapter 13)**

*"Industrial activity means the production, processing, bulk moving or storage in bulk of any materials, goods or products:*

*Production includes:*

- a) manufacturing; and*
- b) assembly from components.*

*Processing includes:*

- a) repair;*
- b) servicing;*
- c) maintenance; and*
- d) assembly of materials, goods or product.*

*Bulk storage includes:*

- a) warehousing."*

## ATTACHMENT B

### Data provided by Fish and Game on 15 April 2020 and 22 May 2020

Summary from Fish and Game (provided 15 April 2020)

Bird	Days in Season	Bag Limit/ Day	People/ Maimai	Max Yield
Grey/ Mallard	30	10	3	900
Shoveler Duck	30	2	3	180
Paradise Shellduck	57	10	3	1710
Pukeko	120	10	3	3600
Pheasant	120	3	3	1080
Goose	365	10	3	10950
Maximum Total birds permitted/ maimai/year				18420
Estimate Total shots fired/maimai/year (3 shots fired per bird)				55260
<b>Total shots fired at Lake (total shots fired/maimai/year x 15)</b>				<b>828900</b>

Shots per day based on maximum yields of all birds and all 15 maimais occupied (135 birds * 3 shots * 15 maimais)	6075
50% assumption as per Fish and Game email on 22 May 2020	3038
Percentage of loud shots vs. overall shots (based on MDA measurements of 5 loud shots out of 70 overall shots)	7.1%
Total number of loud shots (3038 total shots * 7.1%)	217