Before an Independent Hearing Commissioner at Hurunui District Council

under: the Resource Management Act 1991

in the matter of: application RC210098 for land use consent to install and operate a Gravity-Based Recreation Activity within the Conical Hill Reserve, Hanmer Springs

between: **Hanmer Springs Thermal Pools & Spa**
Applicant

and: **Hurunui District Council**
Consent Authority

Summary and Reply Statement of Evidence of Jeremy Trevathan

Dated: 7 October 2021

REFERENCE: J M Appleyard (Jo.Appleyard@chapmantripp.com)

Chapman Tripp
T: +64 3 353 4130
F: +64 3 365 4587

60 Cashel Street
PO Box 2510, Christchurch 8140
New Zealand

www.chapmantripp.com
Auckland, Wellington,
Christchurch

SUMMARY AND REPLY STATEMENT OF EVIDENCE OF JEREMY TREVATHAN

BACKGROUND

1 My full name is Jeremy William Trevathan. My qualifications and experience were outlined in my evidence in chief dated 23 September 2021.

2 Since the circulation of that evidence I have reviewed the evidence of Ms Vicki Barker and Appendix 1 of that evdience which was a letter titled *RC210098: Hanmer Springs Flyride – Noise Conditions* prepared by Mr Malcolm Hunt of Malcolm Hunt Acoustics. I have also visited the Holmes Solutions Flyride test track in Christchurch to observe and measure track / trolley noise, and have met with Mr Walton to discuss noise-related Conditions.

SUMMARY

3 The District Plan limits are not suitable for determining potential effects of noise from users of the ride, due to character of the noise. In line with WHO guidance, and that of other literature consulted, an assessment of the LAFmax level for this noise in the context of the ambient environment is more appropriate when seeking to understand the potential effects of this noise.

4 I consider that where sounds from ride users typically do not exceed a level of 45 dB LAFmax at dwellings and outdoor living areas, the noise effects will be minimal. I am not aware of any guidance which recommends a more conservative approach than this. The Hurunui District Plan has no daytime LAFmax limit, and a night time limit of 75 dB LAFmax.

5 The closest residential properties and the Conical Hill summit pathway are well shielded from most of the ride's route due to the topography of the site. Only part of span 7, the final corner, and span 8 have a line-of-sight view to neighbouring dwellings. I have therefore recommended that the design and operation of the Conical Hill Switchback ride be managed so as to limit as far as practicable, the likelihood of users generating loud noises as they traverse the final two spans (7 and 8) of the ride to ensure that noise levels do not exceed 45 dB LAFmax. Management may also be required in the vicinity of Pole T4 depending on exact configuration of the track in this area.

6 A different assessment approach is appropriate when considering noise received on the Conical Hill summit pathway and other trails in the area, and the change in noise levels due to increased vehicle and pedestrian activity in the area around the start of the Conical Hill summit walkway.

7 Noise levels of up to 65 dB LAFmax are expected over a small portion of the Conical Hill summit walkway – reducing quickly to 45 dB LAFmax due to terrain shielding. 53,000 walkers per year use this path, and walkers are often exposed to higher and more

frequent noise events than this, associated with other walkers in close proximity to them.

8 Noise levels of up to 75 dB LAFmax are expected over a small portion of the 'cross-town' link track. Occasional noise events of this level are typical in shared-use environments – generated for example by vehicles, mountain bikers, bird calls or broken branches.

9 The 'average' traffic and pedestrian noise level increase in the area at the start of the Conical Hill summit pathway is expected to be 2 - 3 dB - a just noticeable average noise level change. Absolute noise levels will remain low – for example below the District Plan daytime limit (although that limit does not apply to noise generated on roads).

10 As above I recently visited the Holmes Solutions Flyride test track in Christchurch to observe and measure track / trolley noise. The measurements suggest noise from the track / trolley will be less than 35 dB LAeq(5 sec) when received at residential sites as the trolley traverses Span 8. This is lower than the existing ambient level of 41 to 44 dB LAeq measured in these areas. Other spans are further away and/or have terrain screening, so levels will be lower again.

11 **LETTER *RC210098: HANMER SPRINGS FLYRIDE – NOISE CONDITIONS* PREPARED BY MR MALCOLM HUNT**

12 The letter of Mr Hunt focuses on the wording of a possible noise limit and noise monitoring condition. I discussed a monitoring condition in paragraph 81 of my evidence in chief, and have recently met with Mr Gary Walton to refine Mr Hunts proposed wording.

13 The wording which Mr Walton and I suggest is:

1) Noise arising from construction activities shall comply with the noise standards contained in NZS 6803:1999 "Acoustics – Construction Noise"*.*

2) Once the Flyride is operational, the following noise limits shall apply:

a) Noise arising from people riding on the Flyride shall not exceed 45 dB L_{AFmax} at any point within any residentially zoned site.

b) All other noise arising from the operation of activities authorised by this Consent on the site shall comply with the following noise limits at or outside the boundary of the site:

i) 55 dB $L_{Aeq\ (1\ hr)}$, 7am – 7pm daily

ii) 45 dB $L_{Aeq\ (1\ hr)}$, 7pm – 7am daily

iii) 75 dB L_{AFmax} all days between 10pm and 7am

c) Noise shall be measured and assessed in accordance with NZS 6801:2008 "Acoustics – Measurement of environmental sound" *and NZS 6802:2008* "Acoustics – Environmental noise"*.*

3) Prior to the commencement of commercial use of the Flyride, a draft "Noise Compliance Measurement & Assessment Plan" (NCMAP), prepared by a suitably qualified and experienced noise

expert, shall be submitted to Council's Consent Manager for certification. The NCMAP shall include:

a) A description of the commissioning investigations and measurements that have been undertaken to verify the noise modelling and assumptions relating to noise arising from people riding on the Flyride, and any resulting specific recommendations relating to ride controls.

b) Recommendations relating to appropriate processes for monitoring noise levels once the Flyride is operational such as:

i) Descriptions of methods and procedures for the measurement of L_{AFmax} sound levels at known distances in close proximity to identified Flyride noise sources, and the minimum number of readings to be taken.

ii) Methods for calculating adjustments to these measured L_{AFmax} levels to predict representative L_{AFmax} noise levels expected at residentially zoned sites, including reference to relevant acoustic Standards or guidelines on which the calculations are based.

c) If Council fails to certify the NCMAP within twenty working days of receiving the draft NCMAP, or within ten working days of receiving any requested amendments to the draft NCMAP, the NCMAP can be assumed to be certified.

4) Noise monitoring shall be undertaken within 30 working days of the commencement of commercial use of the Flyride, in accordance with the certified NCMAP. A compliance assessment report shall be provided to Council's Consent Manager.

5) Further noise monitoring should be undertaken at the earliest practical time of anticipated peak usage of the ride (e.g. a school or public holiday period), should such an instance not occur within the first 30 working days identified above. A compliance assessment report shall be provided to Council's Consent Manager.

14 Mr Hunt does also provide some general commentary relevant to the expected noise effects of the proposal, stating that 45 dB LAFmax from flyride users is a "*low level of sound*" (last para, page 1), and that by contrast the existing daytime ambient sound levels in the area "*are significant, far exceeding the noise limit recommended*" (4th para, page 2).

EVIDENCE OF MS VICKI BARKER

15 Many of Ms Barkers comments appear to be based on an understanding that the existing ambient levels are "very low" (e.g. Barker para 7.11) in all locations, at all times. That is not however a view expressed by any of the noise experts, including Mr Hunt as I have recorded above. As I described in paragraph 70 of my evidence, a wide range of ambient sounds are currently experienced in the area.

16 Ms Barker also suggests that 'annoyance' has not been considered as a possible effect arising from the noise. In a situation like this, annoyance *is the primary* noise effect which could potentially arise – and so the purpose of my assessment – including use of a methodology which is significantly more conservative than the District Plan approach, was to consider and mitigate potential noise annoyance effects.

17 If those living near to the start of the Conical Hill summit pathway, or walking on it, perceive the existing environment to always be reasonably characterised as "very low levels of background noise" then they are already showing a high tolerance of the anthropogenic sounds which are readily and regularly audible in the area, associated with 53,000 walkers per year.

18 In para 7.13 and 7.14 Ms Barker conflates my evidence regarding the Conical Hill summit pathway, and the 'cross-town' link track.

- The Conical Hill summit walkway is not mixed use, and I did not suggest it was. It does carry 53,000 walkers per year - and 65 dB LAFmax is expected to be generated by Flyride users occasionally over a small portion of the walkway. 65 dB LAFmax is not a high noise level. The District Plan night time LAFmax noise limit is 75 dB in residential areas, to prevent awakening people who are asleep. My companies standard noise level assumption for someone having a "raised voice" conversation equates to a noise level of 65 dBA at 2 metres. Crying, shouting, laughing or people trying to communicate over a larger distance are louder again. That is why I concluded that walkers are often exposed to higher and more frequent noise events than this, associated with other walkers in close proximity to them. Due to the tight switchbacks on the Conical Hill summit walkway a number of people may be within 100 metres of your location at any time, and the excited voices of children, for example, are a regular feature from portions of the walkway which are out of sight above and below you. I expect that occasional voices heard from users of the Flyride will be indistinguishable from the mixture of other sounds experienced on the walkway, and walkers will not typically be aware of the Flyride as the source of these sounds.
- Noise levels of up to 75 dB LAFmax are expected over a small portion of the 'cross-town' link track. Again, this is not a particularly high noise level – complying with the District Plan night time noise limit for residential receivers. In my evidence I did not state what permitted uses of this track were – but I did observe that 75 dB LAFmax was typical of what users of mixed-use tracks may experience from time to time – and I have seen no contrary noise expert evidence. I was implying that noise at that level would be rather unremarkable for those using this type of track, as they would experience many sounds of that level either on that track, or the gravel roads which they are likely to have travelled on to reach that point, or when moving through the surrounding working forests, for example.

19 In her paragraph 7.14 Ms Barker returns to the idea that "low ambient noise levels" were recorded in the area, and suggests that 65 to 75 dB LAFmax is high in this context. The measured ambient noise levels in paragraph 36 of my evidence were presented as

representative of the residential receiving locations in the area, which might be used for passive relaxation. Noise levels experienced by walkers on the Conical Hill summit walkway or by walkers, horse riders and mountain bikers on the 'cross-town' link track have not been measured. As described in my evidence and above, walkers, horse riders and mountain bikers will regularly experience (and generate) noises at 65 to 75 dB LAFmax when out on the trails.

20 Ms Barker in her paragraph 7.12 appears to be alluding to the noise generated by the track / trolley system itself. As above I have investigated this further, and as expected the noise is low.

21 Ms Barker discussed cumulative noise in her paragraph 7.15. As I described in my paragraph 75, noise from users of the ride will be very low when received in the locations where vehicle and walker noise is relevant. I can confirm that there will be no measurable change in the noise level in these areas due to noise from ride users – as per my paragraph 75, noise from ride users in this area is expected to be "lower than the measured background noise in the area, even at the quietest times".

22 I am happy to answer any questions

Dated: 7 October 2021

Jeremy Trevathan