

Before the Commissioner appointed by
the Selwyn District Council

Under the Resource Management Act 1991

In the matter of Resource consent application for Foodstuffs (South Island) Properties Limited to establish and operate a PAK'nSAVE supermarket and associated access, loading, car parking, signage, earthworks and landscaping at 157 Levi Road, Rolleston (RC216016)

Statement of evidence of Rob Lachlan Hay

18 July 2022

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**anderson
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Qualifications and experience

- 1 My name is Rob Lachlan Hay.
- 2 I am an Associate and Director in the international acoustical consulting firm of Marshall Day Acoustics (**MDA**). I hold Bachelor and Master of Science degree from the University of Canterbury, majoring in Chemistry.
- 3 I have worked in the field of acoustics for over 18 years. I joined MDA in 2006, and I have been involved in many significant building and environmental acoustics projects throughout New Zealand. Of significance to the current application, I have been involved in the design and consenting of many supermarkets including greenfield and brownfield sites, and extensions to existing supermarkets the majority of which have been in residential environments. I have also worked on numerous dwelling designs with a focus on protecting these against intrusive noise.
- 4 My role in relation to Foodstuffs' (South Island) Properties Limited's (**Foodstuffs**) application to establish and operate a PAK'nSAVE supermarket and associated access, loading, car parking, signage, earthworks, and landscaping at 157 Levi Road, Rolleston (**Application and Application Site**) has been to provide advice in relation to noise. I drafted the noise assessment report to the Assessment of Environment Effects (**AEE**) accompanying the Application, which appears at Appendix J of the AEE.
- 5 I adopt this report as part of my evidence and, rather than repeating large parts of the report, I shall summarise key points.
- 6 My assessment is based upon the proposal description attached to the evidence of Mr Mark Allan as **Appendix 1**.
- 7 In preparing this statement of evidence I have considered the following documents:
 - (a) the AEE accompanying the Application;
 - (b) submissions relevant to my area of expertise;
 - (c) the statement of evidence on transportation prepared by Mr David Smith;
 - (d) section 42A report;
 - (e) the peer review of my noise assessment report prepared by Acoustic Engineering Services (AES) and subsequent evidence of Mr William Reeve (AES) on behalf of Council;
 - (f) The recent interim recommendation on PC71 relating to the residential rezoning of rural land to the immediate east of the Application Site; and

8 I am familiar with the Application Site and area.

Code of Conduct for Expert Witnesses

9 While this is not a hearing before the Environment Court, I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court of New Zealand Practice Note 2014 and that I have complied with it when preparing my evidence. Other than when I state I am relying on the advice of another person, this evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

Scope of evidence

10 I have prepared evidence in relation to:

- (a) the existing noise environment of the Application Site;
- (b) the proposed noise standards for the Application;
- (c) the key findings of my assessment of effects;
- (d) matters raised by submitters to the Application;
- (e) matters raised in the Selwyn District Council's (**SDC**) s42A report including the peer review conducted by AES and Evidence of William Reeve (AES); and
- (f) Proposed conditions of consent.

Executive Summary

- 11 The existing noise environment around the Application Site and the broader area is typical of a peri-urban area dominated by traffic on arterial roads. The existing noise level can be expected to increase in line with intensifying new residential development generally to the south of Rolleston Township as well as the potential for intensification of existing large lot residential to the west of the Application Site, regardless of whether the Application proceeds.
- 12 The level of mechanical plant noise can be readily controlled to sufficiently well below the applicable night-time noise limits in both the Proposed Selwyn District Plans (**PSDP**) and the Operative Selwyn District Plan (**OSDP**), so that no cumulative noise increase will occur.
- 13 Daytime transportation and servicing noise levels will comply with both the relevant OSDP and PSDP noise limits respectively.

- 14 Night-time heavy goods deliveries will not comply with the relevant OSDP or PSDP noise limits for brief periods of time at dwellings opposite site access points 1 (easternmost access on Levi Road,) and 5 (southernmost access on Lincoln Rolleston Road), or along the loading bay access. The duration of these exceedances will be brief (on the order of 30 seconds) and, in my view, no unacceptable adverse effects will occur.
- 15 I acknowledge the potential for plan provision changes:
- (a) future residential intensification across existing residential zoned land (particularly to the west of the Application Site and the Application Site itself) in accordance with the Resource Management (Enabling Housing Supply and Other Matters) Amendment Act 2021 (**RMA-EHS**) which will result in an increase in traffic and general activity noise in the broader area;
 - (b) future residential activity along the eastern boundary in accordance with Proposed Plan Change 71 (**PC71**) to the OSDP. The Applicant has proposed an alternative interface with this boundary should this land become residential – which includes for acoustic purposes two noise control fences – on the Application Site and on the boundary in addition to restricting the number of night-time deliveries to provide noise mitigation;
 - (c) the PSDP – while the rules of this plan do not yet have legal effect, transportation and servicing noise levels will comply with daytime limits, and night-time exceedances will occur at a lesser magnitude than is the case under the OSDP. I am unable to predict what the consequences of the RMA-EHS may be on the PSDP, but it is unlikely that night-time noise limits for medium density housing areas would be lower than proposed, and they could reasonably be expected to be higher.
- 16 In my noise assessment report that accompanied the Application, I discussed the advantages of the PSDP noise rules over the OSDP noise rules and proposed to assess the Application against the PSDP plan noise limits (or something substantially similar). I note that Mr Reeve (AES, on behalf of Council) and I agree on this approach.
- 17 The Application has been designed with the current and potential future residential setting of the Application Site in mind to ensure acoustic effects are internalised to the Application Site as much as possible, and I consider this is appropriate including when considering future changes to the environment.
- 18 Various conditions of consent relating to noise have been proposed which, with some minor modifications, are appropriate.

The existing environment

- 19 The existing noise environment is dominated by local road traffic on the Application Site's two arterial road frontages, Lincoln-Rolleston Road and Levi Road, with additional contributions from more distant local roads, Christchurch Southern Motorway, overflying aircraft (the CIAL Outer Control Boundary noise contours are nearby to the southeast), and general urban and peri-urban activity.
- 20 The Application Site currently sits on the fringe, and within the township boundary of, urban Rolleston and will experience periods of relative quiet, especially at night.
- 21 However, extensive residential development is currently underway or anticipated to the south of the Application Site along Lincoln Rolleston Road and directly to the west with potential future intensification of the existing large lot residential area. There is also the possibility of further residential development to the east should PC71 be approved. This increased development will increase traffic and therefore noise on both frontage roads significantly over time. In addition, general urban activity will also increase background noise levels.
- 22 I consider the current noise environment typical of a peri-urban environment dominated by arterial road traffic. In the future I expect a modest increase in noise level consistent with a busy suburban environment.
- 23 In my opinion there is nothing about the noise environment that suggests either special acoustic amenity should be provided for, nor that the environment is sufficiently noisy to mask the noise generated at the Application Site.

Proposed noise standards for the application

- 24 In section 3 of my noise assessment report, I provided an outline of the OSDP and PSDP noise limits, typical guidance on noise amenity guidelines such as World Health Organisation (**WHO**) and NZS 6802:2008, and the impact of the National Planning Standards (**NPS**) on the noise rules for revised district plans.
- 25 While recognising that the OSDP noise limits have legal effect at this time, I conclude that discussion by stating that the PSDP noise limits provide better alignment with the requirements of the NPS and the conservative end of typical guidance for amenity suggested by WHO and NZS 6802:2008.
- 26 Since the PSDP was published the RMA-EHS Act has come into effect. I do not know how or whether this will have any impact on the PSDP noise limits. However, as one effect of the RMA-EHS is to increase the density of residential development, it is likely that the typical background noise environment in residential areas will increase. This may increase the likelihood of both daytime and night-time noise limits being increased to reflect the changed level of acoustic amenity typically

present and to reduce the probability of non-compliance with district plan noise standards by residential activities.

- 27 I would not anticipate that the RMA-EHS would result in lower noise standards than proposed by the PSDP.
- 28 I remain of the view that the PSDP noise limits, or something similar, remain the appropriate standard for assessment of this Application.

Assessment of noise effects

- 29 Based on my previous experience, the Application will be typical of other supermarkets found around the District and will generate noise in three ways:
- (a) mechanical plant noise;
 - (b) customer vehicles arriving, moving within the car park, and departing;
 - (c) delivery and service vehicles arriving, moving within the back of house area, and departing.
- 30 I will discuss these briefly below with reference to my noise assessment report. I will separately discuss intensification of residential land use in accordance with the RMA-EHS and residential development of land to the east of the Application Site in recognition of the potential for that land to be rezoned residential under PC71.

Mechanical plant noise can be readily controlled

- 31 As the proposed activity has not yet been consented it is premature to carry out detailed selection of mechanical plant and associated noise mitigation design.
- 32 In my experience supermarket mechanical plant can be readily designed to ensure compliance with both the OSDP and PSDP noise standards using a combination of appropriate plant placement, selection of equipment, and the provision of noise attenuation devices such as lined ducts, acoustic attenuators and louvres, and localised screening.
- 33 In these circumstances the approach typically used to provide certainty that mechanical plant will comply with the relevant noise limits is to offer a condition of consent. This condition would require that the Applicant submit a design report to Council from a suitably qualified person certifying that compliance will be achieved, prior to uplifting building consent. A condition of consent has been proposed to this effect.

Customer and staff vehicle movements will comply with the proposed noise limits

- 34 As discussed in my report at sections 4.1.1 and 4.1.2, noise generated by peak daytime customer vehicle movements, daytime off-peak movements, and night-time movements by staff vehicles will comply with the OSDP and PSDP noise standards.
- 35 Properties opposite sites access points 2 and 3 (Levi Road), and 4 and 5 (Lincoln Rolleston Road) may experience noise levels significantly greater than the OSDP noise standard after 2000 hours.
- 36 I do not consider that adverse effects will arise due to customer and staff vehicle movements given that compliance with the daytime noise standards in both the OSDP and PSDP will be achieved, and that the PSDP noise limits, while not yet in effect, are proposed for this activity and are more appropriate in my view.
- 37 I note that advice from Mr Smith is that approximately 2/3 of the customer vehicle movements will arise from pass by and diverted trips already using the local road network.
- 38 In discussing this matter with Mr Smith, I understand that there are significant complexities in modelling the network variations arising from both this Application and other changes on the network. I have taken Mr Smith's advice that the vehicle movements summarised in Table 7.2 of his ITA are representative of the nett change in peak vehicle movements compared to baseline. I understand that this net change in movements incorporates changes arising from the Application, PC71, other more distant network changes, and organic growth.
- 39 The increase in vehicle movements at 2033 on the immediate road network summarised in Table 7.2 of the ITA suggests less than a 1 dB increase above baseline at peak, and this will therefore be imperceptible.

Daytime movements of delivery and service vehicles will comply, but night-time movements will not and will result in localised effects

- 40 In section 4.2 of my report, I discussed predicted noise levels arising from goods delivery and service vehicles. The effects arising from this aspect of the activity are discussed in section 5 of my report.
- 41 I have predicted that all such daytime activities on site will comply with both the OSDP and PSDP noise standards. During the daytime I do not consider that any unacceptable noise effects will arise.
- 42 I understand that two night-time heavy goods vehicles will be required to access the site during the early morning. Predicted noise levels at dwellings close to access points 1 and/or 5 will exceed both the OSDP and PSDP night-time noise

limits for a brief period, perhaps 30 seconds, as the vehicle drives along the access point toward or away from the dwellings.

- 43 The WHO Guidelines set a noise level outside bedroom windows of 45 dB L_{Aeq} averaged over an 8 hour period for protection of sleep amenity. This assumes that a bedroom window open for ventilation will provide a reduction in noise level of 15 decibels, thus achieving WHO's suggested internal guideline level of 30 dB L_{Aeq} (8 hour).
- 44 Dwellings directly opposite access points 1 and/or 5 are likely to receive noise levels that exceed 45 dB L_{Aeq} , although as noted for a duration that is more likely to be 30 seconds or so, rather than 8 hours.
- 45 When considering the time averaging explicit in the WHO Guideline, the noise level falls well within the WHO Guideline.
- 46 Even setting aside averaging, with windows open for ventilation the resulting noise level inside bedrooms is expected to be less than 35 dB L_{Aeq} for that brief period. This is still within WHO's less preferred upper acceptable 35 dB L_{Aeq} (8 hour).
- 47 In my view the noise related effects are acceptable based on the brief and transitory nature of the events, and the similarity to other heavy vehicle movements occurring on the arterial roads servicing the Application Site.
- 48 Additionally, it is feasible that residents likely to be annoyed by 1-2 delivery movements per night are also likely to be annoyed by the existing high traffic noise levels on both arterial roads and are likely to provide additional acoustic amenity by choosing to close bedroom windows.
- 49 For these reasons I do not consider that any unacceptable level of adverse effect will arise.

Potential future residential development to the east (PC71)

- 50 I understand that the Commissioner has made an initial recommendation in favour of a partial rezoning of rural land to residential, with some of this land adjoining the Application Site to the east. The effect of this potential future rezoning under either the OSDP or PSDP would be to move the compliance assessment point for noise from the notional boundary of the existing rural dwelling to the common site boundary with the Application Site.
- 51 I consider that appropriate acoustic amenity can be achieved at the interface between supermarkets and residential activities, as has occurred in numerous other situations I have assessed. The Application provides mitigation for the potential future scenario of residential activity to the east of the Application Site

through an internal boundary setback and the construction of two appropriately designed noise control barriers as follows:

- (a) a 10 metre wide landscaping buffer along the common boundary;
- (b) an 18.5 m building setback;
- (c) a 2 m high noise control fence on the PC71 boundary (as measured above existing PC71 land height); and
- (d) a further 2.5 m high noise control fence set 6 m inside the application site, extending from Levi Road to the end of the supermarket service yard.

Matters raised by submitters

- 52 I have reviewed 21 submissions (all in opposition) that mention noise as a matter of concern.
- 53 Some of these submissions mention concern about noise in a very general sense but are not specific about any specific aspect of the Application.
- 54 Where specific concerns have been raised the concern has been (with two exceptions) noise arising from customer, service, and delivery vehicles. A significant subset of these submissions specifies night-time delivery vehicle noise as a concern.
- 55 While some submitters describe the local environment as 'quiet', a roughly equal number note that existing noise due to traffic on Levi and Lincoln Rolleston Roads is a nuisance and excessive. This supports my view that the noise environment is not especially quiet or of high acoustic amenity, and that traffic noise, particularly from the arterial roads dominates the environment and will continue to do so because of the residential intensification in the wider area I mentioned earlier.
- 56 I have addressed all these concerns in my noise assessment report and summarised my view briefly above. The submissions have not raised new issues that I have not considered.
- 57 As I have previously noted based on the evidence of Mr Smith, any new traffic movements added to the local road network will not increase the noise level by a perceptible level due to the small proportion of new trips added to the arterial roads bordering the Application Site.
- 58 Two submissions have been prepared by a planning company (BTW) on behalf of submitters associated with 341 Lincoln Rolleston Road. BTW assert that 'significant adverse effects' will be generated by noise including "...heavy vehicle

movements, pedestrian vehicle movements, mechanical services plant, car parking (including customer talking, car horns and trolleys crashing)."

- 59 I am not aware of any expert evidence that has been provided to date to support this assertion.
- 60 I take the phrase 'pedestrian vehicle movements' to refer to customer's cars, rather than say scooters or similar. I have already addressed customer, service, and delivery vehicles above.
- 61 I have addressed mechanical plant in my noise assessment report and briefly above also. None of the supermarket developments or extensions with which I have been involved have caused non-compliances due to mechanical plant noise. I do not believe that significant adverse noise effects will arise in this case. Similarly, I have never observed crashing of supermarket trolleys as being a source of significant adverse noise effects at other supermarkets, even those with car park areas directly adjacent to neighbouring residential areas.

Matters raised by SDC staff report (s42A)

- 62 I have reviewed those parts of the s42A report prepared by Ms Anderson that discuss noise, with particular attention to paragraphs 93 to 108 and 162, and the proposed conditions of consent on pages 45 and 46. I have also reviewed the peer review undertaken by AES on behalf of Council, to which the s42A report refers and Mr Reeves subsequent evidence.
- 63 At paragraphs 100 – 103 the s42A report raises concerns expressed in the AES report regarding the potential for sleep disturbance because of night-time delivery vehicles entering and leaving the site. Mr Reeve expands on this in paragraph 37 of his evidence. I discuss this matter in greater detail at paragraphs 42 to 49 in my evidence above.
- 64 In short, even allowing for bedroom windows being open for ventilation, an acceptable noise level will still be achieved in the bedroom to provide for sleep amenity. With windows closed, as would be likely for a poor sleeper near an arterial road, noise levels would be still lower.
- 65 Paragraphs 104 and 105 of the s42A report refer to AES being unable to fully assess the potential noise effects that could arise for future residential properties to the east and southeast of the site should the PC71 development proceed. Reference is made to an agreement between the applicant and the proposers of PC71.

- 66 I am unable to comment on the contents of an agreement as I have not been party to those discussions. I have discussed the future possibility of residential activity on the eastern boundary above.
- 67 I note that at paragraph 162 the s42A report concludes that the Applicant's proposed consent condition for construction noise is appropriate and that construction noise can be adequately managed. I concur.
- 68 At paragraph 21 of his evidence Mr Reeve seeks confirmation that the currently proposed conditions for mechanical plant and construction noise remain appropriate considering the potential for residential development resulting from PC71.
- 69 I believe they are still appropriate. Both are written in a way that is neutral to PC71, and simply require compliance and or assessment at the applicable location required by the District Plan. Thus, if PC71 has legal effect at the time construction or mechanical plant design are occurring, then this must be taken into account, by which time a development plan will also exist, and specific analysis will be possible.
- 70 In reviewing the AES peer review I note that there is agreement on a wide range of matters from the applicable OSDP and PSDP noise standards, the preference to use the PSDP noise standards for the noise conditions for this Application, management of construction noise, anticipated noise levels (broadly), and most conditions of consent.
- 71 At section 3.2, last paragraph, AES state that I did not discuss the L_{Amax} criteria. This is correct and for completeness I confirm my agreement with AES that compliance is likely to be achieved.
- 72 I acknowledge the concern expressed by AES regarding noise from the refrigerated truck night-time delivery. The Applicant will be using specifically contracted trucks for this service with the refrigeration gear mounted behind the driver's cab, rather than above it as in the case AES refer to.
- 73 I agree that the potential remains for a brief exceedance to occur in some circumstances. Should this situation arise, the Applicant can provide a higher noise control fence within their own property (within the landscaped buffer proposed) and/or arrange for the refrigeration system to be turned off while on site.
- 74 As the trucks will essentially be under control of the Applicant, and deliveries are occurring at night rather than in the daytime, this is a more secure assurance than with third party daytime deliveries not under the Applicant's control.
- 75 Mr Reeve has also suggested that it would be useful to know how many other vehicles are using Levi Road in the early morning at the same time as the two

proposed deliveries. Unfortunately, I am advised by Mr Smith that there is no current data to assist since the Levi Road connection with CSM has been created.

- 76 Previous estimates for Levi Road suggest an average of around six vehicles per hour at 0400 hours. Given the lack of up-to-date information I am unable to give a useful estimate to answer Mr Reeves query. As discussed above however, I am satisfied that any adverse effect is acceptable.

Proposed consent conditions

- 77 I have reviewed the proposed resource consent conditions on pages 45 and 46 of the s42A report.
- 78 Condition 5 is acceptable for the currently existing environment but does not account for potential future PC71 dwellings closer to the Application Site.
- 79 Conditions 6, 9, 10 and 12 are acceptable as written.
- 80 Conditions 7 and 8, subject to the outcome of any further discussion around condition 5, should specify the barrier arrangement proposed in paragraph 48 above in the event of a residential scenario on this boundary (Option B in the Application), or a 2 m high boundary fence in the event of a rural scenario (Option A in the Application).
- 81 I support the use of broadband reversing alarms for any forklifts used on-site (and indeed any vehicle under the direct control of the Applicant). I am not aware that the levels of these alarms can be adjusted or calibrated as suggested in the s42A recommended conditions. I would also be concerned that such adjustment of level may inadvertently impair the ability of the reversing alarm to fulfil its primary function and suggest that this requirement is removed.

Rob Lachlan Hay

Dated this 18th day of July 2022