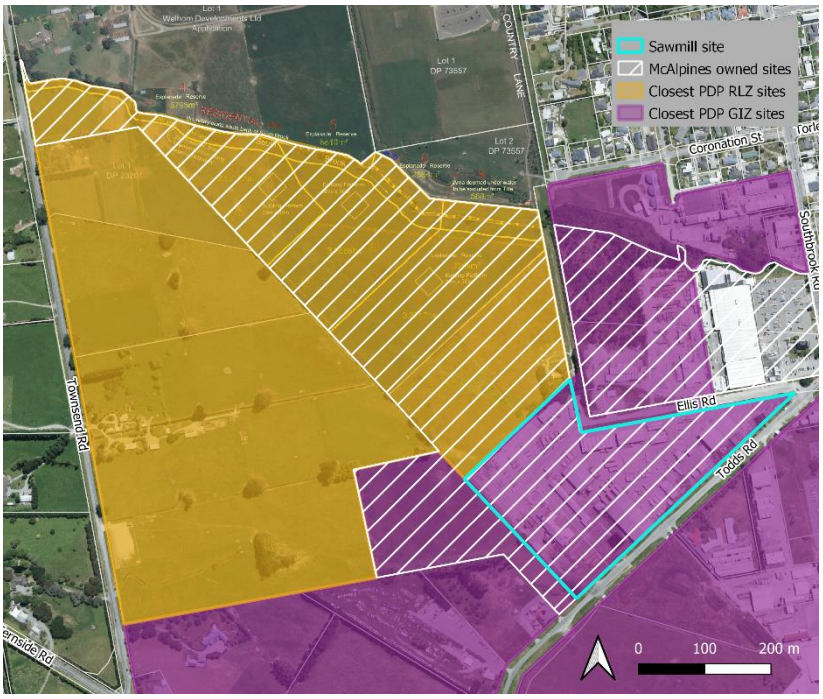
Summary of William Reeve, Acoustic Engineer on behalf of McAlpines Ltd

Dated the 24th of August 2023

1. My name is William Reeve. I am an acoustic consultant with Acoustic Engineering Services and my qualifications and experience are outlined in my brief of evidence dated the 7th of August 2023.

2. I have been engaged by McAlpines to determine the level of noise emission from existing activities on their sawmill site in Rangiora, and how this relates to acceptable thresholds for noise at undeveloped sites to the north and west.

3. I have reproduced the figure from my evidence, that illustrates the location of the sawmill and adjacent Proposed District Plan zones. The sawmill and most of the sites immediately adjoining it to the south are zoned General Industrial, whereas the sites to the north and west are zoned Rural Lifestyle.



4. This figure also illustrates the sites which McAlpines own in the vicinity of the sawmill. I understand that some of these have been purchased specifically as buffer land for the sawmill operation.

5. I also understand that the sawmill was lawfully established under the previous planning instruments and can legitimately claim existing use rights. This means that noise emissions are not constrained by the noise controls in the ODP or PDP. However, as described in the

supplementary evidence of John Duncan, various measures have been undertaken by McAlpines to reduce their noise output.

6. I undertook noise monitoring in September 2020, and a week-long logging exercise in November 2022 to establish the overall noise generation from the site, with a focus on noise levels received offsite at properties to the north and west. This confirmed that the District Plan limits would be exceeded at the notional boundary of future dwellings built on areas of the rural sites to the north-west of the sawmill.

7. In order to determine the acceptable thresholds for environmental noise at a residential dwelling in the vicinity of the sawmill, should further development occur, I have reviewed both the District Plan limits and other national and international guidance.

8. I consider that the District Plan thresholds of 50 dB LAeq (daytime) and 40 dB LAeq (night-time), reflect a typical control for residential areas in New Zealand.

9. However they are lower than the upper guideline limits of 55 dB LAeq and 45 dB LAeq outlined in NZS 6802:2008 and the WHO Community Guidelines for the protection of residential amenity. I also observe a 55 dB LAeq / 45 dB LAeq threshold to be consistent with controls for other similar large industrial noise emitters in this and other Districts (for example Daiken, or large dairy processing plants). My experience has been that noise related issues become far more likely when these thresholds are not met.

10. For these reasons I expect that the risk of serious annoyance for occupants of these sites, and therefore reverse sensitivity effects on the sawmill, becomes most likely at dwellings where noise levels from the sawmill exceed the upper guideline values given in NZS 6802:2008 of 55 dB LAeq during the daytime, and 45 dB LAeq during the night-time.

11. The sawmill operates from 7 am to 4.30 pm, Monday to Friday, although there is associated activity on site, including from forklift and truck movements which occurs from 6:30 am to 5 pm. There are also some parts of the site that operate on a Saturday, for half a day (6 am to 12 pm).

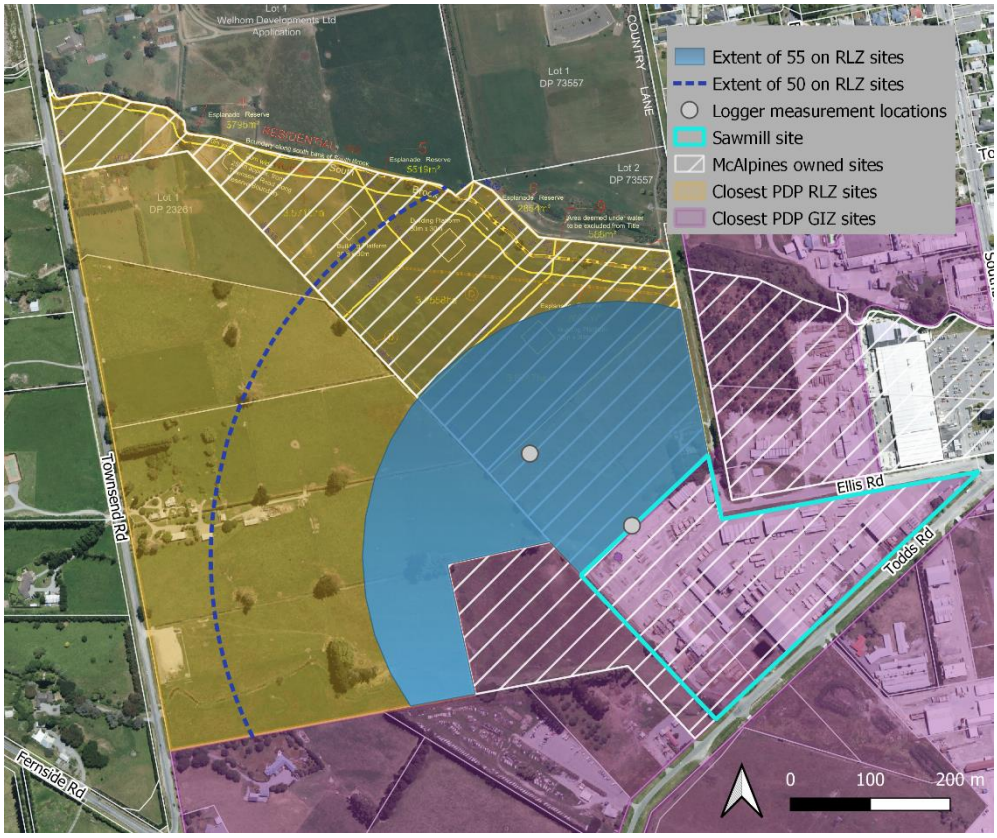
12. Some activities also operate during the core night-time period, although these generate lower noise levels at sites to the north-west.

13. The stacker is one of the key daytime noise sources for sites to the north-west. The stacking machinery is in an open-ended shed on the northern edge of the site. This activity has a distinctive character due to timber clattering and striking parts of the conveyor system.

14. Break-out from the main log processing building and contributions from the debarker, timber handling conveyors, cyclones and the chipper, along with mobile machinery used for various handling activities are also key contributors to daytime noise received at sites to the north-west.

15. Based on my measurements I have calculated a rating noise level of 55 dB LAeq at 320 metres from the acoustic centre of the sawmill site (which is close to the northwest boundary). This calculation includes a +4 dB adjustment to measured levels due to a +5 dB penalty for Special Audible Characteristics (for the special character which includes timber clattering) and a -1 dB duration adjustment (because material handling and processing does not occur all day).

16. I have reproduced below the figure from my evidence, which shows (by the shaded blue area) the extent of nearby RLZ sites where I expect rating noise levels of higher than 55 dB LAeq from the sawmill. These areas are therefore at the greatest risk of receiving noise levels which are incompatible with residential amenity.



17. I recommend that this 55 dB LAeq contour is depicted in the Planning Maps. This should be accompanied by controls, which restrict the ability for residential development, or other development with a similar noise sensitivity, to occur without acoustic assessment from a suitably qualified expert. This assessment will need to demonstrate that appropriate noise levels can be achieved both inside dwellings and in associated primary outdoor areas. The planning mechanisms proposed to achieve this, are discussed further in the planning evidence of Mr Walsh, and in legal submissions.

18. Given that the items of machinery that will generate the loudest noise levels to the north-west typically operate during the daytime period, noise levels are generally expected to be 45 dB LAeq or lower during the night-time within the area shaded blue in the figure above. This means that the controls required to manage daytime effects should also control night-time noise effects as well.

19. The operation of the stacker is a potential exception to this, since it generates higher sound levels to the north-west, and can sometimes operate from 6 am, for an hour of the night-time period defined by the PDP. Given this is not a regular occurrence, and the brevity of the intrusion into the night-time period, I still consider the extent of the daytime control I have shown above to cover the area at greatest risk of receiving noise levels which are incompatible with residential amenity.