

5 May 2022

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Attention: Marz Asgar, Stantec New Zealand

Marz

PRIVATE PLAN CHANGE REQUEST FOR WHISKEY CREEK RESIDENTIAL AREA: PEER REVIEW OF APPENDIX 9 ACOUSTIC REPORT

The subject site is located at the northern urban edge of Palmerston North. It is bounded to the northwest by Flyers Line and to the northeast by Rangitikei Line/SH3. An existing residential area (Cloverlea) is located immediately to the south. The subject site is currently zoned Rural within the Palmerston North City District Plan. It is proposed to rezone approximately 12.9 hectares of this Rural zoned land to Residential, and approximately 10 hectares of land to Recreation.

Marshall Day Acoustics has been engaged by Stantec New Zealand on behalf of the Palmerston North City Council to carry out a peer review of the associated acoustical report, included in the Private Plan Change Request documentation¹ as Appendix 9.

I have reviewed the Appendix 9 report, produced by Acousafe Consulting & Engineering Ltd, and make the following comments:

EXECUTIVE SUMMARY – GAP ANALYSIS

Following our review of the Appendix 9 report, we have identified the following areas that require additional comment from the author:

- Zone interfaces: the Appendix 9 report identifies two zone boundary interfaces, namely Rural and Residential. However there would also be an interface between Residential and the newly established Recreation area boundaries. The proposed Recreation zoned area would bound both the existing Residential zone along Benmore Avenue, as well as the Residential zone which is the subject of this Plan Change Request. It would also interface with the Rural zone immediately to the north of the subject site.

A small area of land within the subject site appears to be zoned Business, for the purposes of establishing a commercial enterprise. Although this does not appear to directly interface with the existing Residential zone, there may be associated noise effects requiring assessment.

- Vehicle noise. As well as an increase in vehicle numbers on the local street network, a four-arm roundabout is proposed for the current intersection of Meadowbrook Drive with Benmore Avenue. This roundabout would form the primary access to the proposed development, via the current property of 127 Benmore Avenue. This would result in a road with up to 1,570 vehicles per day², being located very close to the existing dwellings at 125 Benmore Avenue and 1 Meadowbrook Drive.

¹ Thomas Planning Ltd (2016) document “*Flyers Investment Group Ltd: Private Plan Change Request For Whiskey Creek Residential Area, Palmerston North*” dated 20 April 2021.

² Appendix 10 Transportation Assessment (Harriet Fraser Traffic Engineering & Transportation Planning) 7 April 2021

- Construction noise. Although noise from the construction of a single dwelling may not be unreasonable, and a typical source of noise in a residential area, the scale and intensity of the construction of the proposed number of dwellings needs to be considered.

ZONE INTERFACES

Rural/Residential

The Appendix 9 report identifies the zone boundary interface which is currently between the Rural zoned area and the existing Residential zoned Meadowbrook Drive/Benmore Avenue properties that would be located adjacent to the proposed new Residential zoned area. The proposed Plan Change would relocate this boundary interface, and part of the (currently Rural zoned) subject site would be re-zoned to Residential. In terms of applicable noise limits, the Appendix 9 report notes that the Residential Zone noise limits should apply for this proposed new Residential zoned area. As noted in the Appendix 9 report, these limits are 5 dB lower (daytime and night-time) than the Rural Zone limits that currently apply at this interface. This has the potential to result in an acoustical benefit to the current residents of the closest Meadowbrook Drive/Benmore Avenue properties.

Recreational/Residential

Although over 40% of the area of the subject site would be zoned Recreation, the Appendix 9 report does not address the Recreation/Residential Zones interface. This would extend along the rear of Benmore Avenue properties currently bordered by land zoned Rural. In my opinion, the acoustical implications of this needs to be addressed within the Appendix 9 report. In the same manner that the Appendix 9 report recommends adopting the District Plan Residential Zone noise limits for the proposed new Residential zoned area, a starting point may be the existing District Plan noise Standard for noise from the Recreation Zone, received within the Residential Zone.

The District Plan rules for noise from the Recreation Zone are contained in Section R15.4.7.1. The sections relevant to this proposal are as follows:

“R15.4.7.1 Noise

- a. *Public address systems or mechanically powered machines or vehicles when operated on any park or reserve shall not exceed the following at any point within any land zoned Residential or at any point within the boundary of any rural land in the Rural Zone:*

<i>7.00am to 7.00pm</i>	<i>50dB $L_{Aeq(15mins)}$</i>
<i>7.00pm to 10.00pm</i>	<i>45dB $L_{Aeq(15mins)}$</i>
<i>10.00pm to 7.00am</i>	<i>40dB $L_{Aeq(15mins)}$</i>
<i>Night-time L_{max} 10.00pm to 7.00am</i>	<i>70 dBA L_{max}</i>

- b. *Crowd noise from people in a Park or Reserve is considered a reasonable and acceptable effect of the use of recreation reserves and as such shall not be controlled using rules in this Plan.”*

Explanation

The rules for noise are designed to protect neighbouring residential amenity and other users of these areas from the specific noise effects generated by public address systems, mechanically powered machines or vehicles. Crowd noise associated with activities undertaken in this zone is not addressed by rules in this Plan.

The applicable noise limits mirror the Rural Zone limits. This indicates that, should this Standard be adopted, the residents of the existing Residential Zone adjacent to the proposed Recreation Zone can expect the noise rules to remain unchanged for the operation of public address systems, mechanically powered machines or vehicles when operated within the Recreation Zone. However, noise from people within the Recreation Zone

would be under no controls. This may not be an issue unless popular sporting events etc. occurred within that Zone. At this stage there is no indication within the Application documents that such a situation is contemplated. However, there is potential for such to develop and in my opinion this should be considered within the Appendix 9 report.

Business/Commercial

A small area of the subject site is identified as “Commercial” (for instance, see Map 7A.3 of the Thomas Planning Ltd document). From discussions with Stantec New Zealand, I understand that the underlying zoning of any commercial or business area within the proposed development would be Residential. I therefore recommend that the Residential Zone noise rules be adopted for any such areas within the proposed development. These are set out in Section R10.8.1 of the District Plan and are as follows:

“Sound emissions from any fixed mechanical plant, or from any non-residential activity, when measured at or within the boundary of any other site (other than land from which the noise is emitted or a road) shall not exceed the following:

7:00am to 10:00pm 45 dB L_{Aeq} (15mins)

10:00pm to 7:00am 40 dB L_{Aeq} (15mins)

Night-time L_{max} 10:00pm to 7:00am 65dBA L_{max} ”

In order to address noise arising from commercial activities that may not be otherwise controlled by Section R10.8.1 (for instance, heavy vehicles servicing a commercial facility such as a supermarket), I recommend additional Conditions, requiring a noise management plan, be implemented within the Whiskey Creek Residential Area in the commercial overlay area/ zone as shown in Map 7.A3. A proposal for such a condition is included further in this report.

VEHICLE NOISE

SH3/Rangitikei Line

Due to the proximity of SH3/Rangitikei Line, the Appendix 9 report recommends minimum setback distances for dwellings based on the Waka Kotahi New Zealand Transport Agency reverse sensitivity guidelines. In addition, internal limits for traffic noise have been recommended for habitable spaces in buildings located between the 40 metre buffer and the 80 metre effects boundary. I agree with this approach and note that it is consistent with other similar requirements within the District Plan, as well as with Waka Kotahi reverse sensitivity guidelines. However the Appendix 9 report notes that a 22 dB reduction in traffic noise would be required to meet the internal limit for traffic noise. In my opinion this should be considered indicative, and not be used as a standard to determine the sound insulation to be provided by the building envelope. Rather, the traffic noise should be determined in accordance with Waka Kotahi requirements.

Local Rooding Network

The proposal envisages the use of the property at 127 Benmore Avenue as the primary access route to the proposed development. This is not addressed in the Appendix 9 report.

The various planning documents (including the Appendix 10 transportation assessment) show that the intersection of Meadowbrook Drive with Benmore Avenue would be re-designed as a four-arm roundabout, with one of the arms being the access route to the proposed development. This is currently labelled as “Road 1”. The Appendix 10 report states that up to 1,570 vehicles per day would traverse Road 1. These vehicles would therefore pass by the dwellings at 125 Benmore Avenue and 1 Meadowbrook Drive at relatively close proximity, introducing traffic noise to aspects of each dwelling that are currently less exposed to the noise from traffic.

From discussion with Stantec, I understand that there may be a greater number of vehicles than that set out in the Appendix 10 report, due to the connection available between Benmore Avenue and SH3. This is

considered briefly in the Appendix 10 report Section 5 where it is stated that the design of the internal collector road “...will need to deter use by through traffic from outside the development”.

Section 7.8 of the Thomas Planning Ltd. document identifies the noise from this traffic as an issue to be addressed during the resource consent process. Noise from traffic on public roads is not usually a concern for territorial authorities, and therefore would not typically be a part of any district plan change considerations. However there is potential for this aspect of the proposal to have an adverse effect on the existing dwellings at 125 Benmore Avenue and 1 Meadowbrook Drive. This will need to be addressed, either at this Plan Change stage, or during the resource consent process.

CONSTRUCTION NOISE

Noise from the construction of a single dwelling from time to time would be typical of many residential areas. However this proposal represents construction on a reasonably large scale. Noise from construction and earthworks would typically be addressed at the consenting stage. The need for assessment and management of this is identified in Section 7.10 of the Thomas Planning Ltd document, although this refers to the effects of the earthworks only. This should be extended to include all stages of the construction process.

Because of the potential for construction on this scale to have a noise effect on the existing residential area in the vicinity of Meadowbrook Drive and Benmore Avenue, reference should be included in the Appendix 9 report to the use of New Zealand Standard NZS 6803: 1999 *Acoustics - Construction Noise* for the control and management of construction noise.

I further recommend that a Condition is imposed requiring a Construction Noise and Vibration Management Plan for this proposal prior to any works commencing on the site. A proposal for such a condition is included further in this report.

SUBMISSIONS

I have reviewed approximately 28 submissions regarding this proposal. Of these, around one third mention noise as a concern. Some of these are as a general comment. However some mention specific issues, which can be summarised as traffic noise, and construction noise.

Traffic Noise

Within the concerns regarding traffic noise, one concern (including submissions S0-13, S0-15 and S0-20) is raised regarding noise from traffic accessing the new development via Road 1. This has not been discussed within the Appendix 9 report but is identified as an issue to be addressed within Section 7.8 of the Thomas Planning Ltd. document. This is discussed above.

A second concern raised (including submission S0-13) is the noise from delivery trucks servicing any commercial buildings included within the proposed development (particularly early morning). This is not discussed in the Appendix 9 report, but I would expect this to be addressed either at this Plan Change stage, during the consenting phase of this Project, or both.

Construction Noise

A number of submissions including S0-11, S0-12, and S0 22 have raised concerns regarding construction noise, and the need for construction noise management. This is discussed above, and within the “Proposed Conditions” section below.

PROPOSED CONDITIONS

I propose that the following Conditions are added to the Palmerston North City Council District Plan Rule R10.6.1.5 (e):

v. **Commercial Activities – Whiskey Creek Residential Area**

A noise management plan (NMP) shall be provided to the Team Leader – Resource Consents for any commercial activity within the Whiskey Creek Residential Area in the commercial overlay area/ zone as shown in Map 7.A3 prior to that activity commencing. This NMP shall be produced by a person suitably qualified and experienced in noise assessment and control and shall specify the mitigation measures to be undertaken to ensure that noise from the commercial overlay area/zone shall not exceed the noise standards of Rule R10.8.1 of the Palmerston North City Council District Plan.

Additionally this NMP shall include measures to limit heavy vehicles servicing the commercial overlay area/ zone to the daytime hours as specified in Rule R10.8.1 (i.e., 7:00am to 10:00pm).

vi. **Construction Activities – Whiskey Creek Residential Area**

1. Construction noise within the Whiskey Creek Residential Area as shown in Map 7.A3 shall be measured and assessed in accordance with New Zealand Standard NZS 6803:1999 “*Acoustics - Construction Noise*” (in accordance with Palmerston North City Council District Plan Rule R6.2.6.2 g.) and comply with the relevant Project Standards at any occupied building, unless otherwise provided for in the CNVMP (condition 3).
2. Construction vibration shall be measured and assessed in accordance with German Standard DIN 4150-3:2016 “*Structural Vibration – Part 3: Effects of Vibration on Structures*” and comply with the limits of that standard, unless otherwise provided for in the CNVMP (condition 3).
3. A Construction Noise and Vibration Management Plan (CNVMP) must be prepared in accordance with Annex E of NZS 6803:1999 by a suitably qualified person, and submitted to the compliance monitoring officer for approval at least 10 days prior to the commencement of any construction works. The CNVMP must be implemented throughout the Project. The CNVMP objectives are to:
 - a) Identify and adopt the best practicable option for the management of construction noise and vibration.
 - b) Define the procedures to be followed when the noise and vibration standards in Conditions 1 and 2 cannot be met.
 - c) Inform the duration, frequency and timing of works to manage disruption.
 - d) Require engagement with affected receivers and timely management of complaints.

I trust that you find this review useful. Please do not hesitate to contact us regarding any queries or comments you may have.

Yours faithfully

MARSHALL DAY ACOUSTICS LTD



Bill Wood

Consultant