

PROPOSED CURTIS STREET DISTRICT PLAN CHANGE Noise Advice

Introduction

It is understood that the Curtis Street site will be a new zone with site specific provisions. This assessment will consider the most appropriate noise provisions for the setting.

Executive Summary:

The ambient noise levels experienced in the locality are affected by traffic noise and are similar to the ambient levels found in many residential areas in Wellington. The noise limits that are specified in Plan Change 73, for noise received in residential areas adjacent to Business Areas, are well within the upper recommended limits in the New Zealand environmental noise standards for residential areas and can be considered relatively stringent and are suitable for establishing noise limits for this site. Specifically considering Curtis Street, compliance with these limits will afford adequate protection for sleep and amenity for the surrounding residents.

There is no amphitheatre effect in this area; however some of the residential houses on the hills have a direct line of sight to 45 – 85 Curtis Street. Noise emanating from the site and received at these houses is mitigated by the separation distance only as there is little ground absorption of sound or mitigation of sound through screening. Sites located on lower levels with residential housing above are not uncommon in Wellington

In conclusion, if the site is rezoned to allow for business use, and activities set up in this site comply with the same noise rules as those specified for Business 2 in Plan Change 73, the noise levels experienced by the surrounding residential area will be acceptable and afford adequate protection to residential amenity. Therefore the noise limits specified for Business 2 in Plan Change 73 is recommended for this site.

The Site

The site is located in a filled gully with a steep vegetated bank to the west with residential properties overlooking the site to the east and west. The closest existing residential properties are located approximately 20 m – 30 m from the subject site.

Some of the residential properties on the hills above the site directly overlook and have a direct line of sight to it. In this instance noise is mitigated by the separation distance only as there is little ground absorption of sound or mitigation of sound through screening. Sites located on lower levels with residential housing above are not uncommon in Wellington. The topography does not necessarily mean that there is an amphitheatre effect in these areas.

For an amphitheatre effect to occur numerous reflective surfaces are required generally in a smaller, more enclosed area, with noise levels increased by reflections off these surfaces. In this instance the vegetated banks do not provide a reflective surface. The level of noise at the receiver is dictated by direct line of sight to the noise source and the distance from the noise source.

Noise surveys that have been undertaken in this general locality show that daytime ambient levels are typical of other residential areas. There is not a case to provide any additional protection beyond those that were specified under Business 2, Plan Change 73.

New Zealand Environmental Noise Standard

The New Zealand Environmental Noise Standard NZS 6802:2008 gives guidance on acceptable upper limits for noise received in residential areas that provide adequate residential amenity and protect against sleep disturbance. The upper acceptable noise limits are consistent with guideline values for community noise in residential environments published by the World Health Organisation. The night time limit recommended should not exceed 45 dB LAeq (15 min) outside dwellings so that people can sleep with windows open for ventilation and achieve desirable indoor noise levels that protect against sleep disturbance.

NZS 6802:2008

Monday to Sunday 7am to 7 pm 55 dBA LAeq (15min)

Monday to Sunday 7 pm to 10pm 50 dBA LAeq (15min)

Monday to Sunday 10pm to 7am 45 dBA LAeq (15min)

Monday to Sunday 10pm to 7am 75 dBA LAF max

Noise Limits: Business Areas: Plan Change 73

This assessment will consider whether the Business noise standards specified in Plan Change 73 are appropriate for this site, given that the site will be a new zone for business activities with site specific provisions.

The residential properties adjacent to the site are zoned Outer Residential. The activity limits specified in 34.6.1.1.6, Plan Change 73 (see below) apply to noise generated in the Business Area and received at the Residential Area.

Plan Change 73 (34.6.1.1.6)

Noise (emitted within Business Areas received in other Areas)

Noise emission levels from activities in Business Areas when measured at or within the boundary of any residential site, in centres, residential and rural shall not exceed the following limits.

Residential Outer:

Monday to Sunday 7am to 7 pm 50 dBA LAeq (15min)

Monday to Sunday 7 pm to 10pm 45 dBA LAeq (15min)

Monday to Sunday 10pm to 7am 40 dBA LAeq (15min)

Monday to Sunday 10pm to 7am 65 dBA LAF max

When the noise limits in Plan Change 73 were set, consideration was given to a number of matters including:

- the upper recommended limits in New Zealand Standard NZS 6802:2008; and
- The findings of the background noise level surveys undertaken in the Wellington area.

It should be noted that noise from mechanical plant that operate outside the hours of 7am to 7pm will need to be designed to meet the very stringent limits of 40 or 45 dBA.

The noise limits specified in Plan Change 73 are 5dBA lower than the upper acceptable limits for daytime, evening and night time specified in NZS 6802:2008. In addition, Plan Change 73 provides for a 10 dBA lower Lmax limit at night. A 5 dBA reduction is noticeably quieter and a 10 dBA reduction sounds half as loud to the human ear. Therefore the noise limits specified in Plan Change 73 can be considered conservative and will provide an adequate level of amenity and adequate protection against sleep disturbance. The background levels in this locality are similar to ambient noise levels in other residential areas in Wellington. It is therefore recommended that the same limits can be applied to the Curtis Street site.

Other District Plan noise limits

Currently the noise limits specified in some rules in the Operative District Plan are more stringent than those set out in Plan Change 73.

The Operative District Plan rules set very stringent limits for daytime levels on Sunday. These limits are in fact the same noise limits that apply at night for the other days of the week. The latest ambient noise survey in Wellington showed that ambient levels on Sundays are similar to other days of the week and clearly exceed the set noise limits in the Operative District Plan. In addition some daytime limits set for weekdays are consistent with night time limits recommended in NZS 6802:2008.

Therefore some noise limits set in the Operative District Plan are seen as overly stringent and more reasonable noise limits, consistent with those in Plan Change 73, are proposed as the various areas of the District Plan undergo review.

There will however be some exceptions. For example, noise emanating from residential activities within Residential Areas is controlled differently with no noise limits for general activities but very stringent limits for domestic mechanical plant. The reason for this is general residential activity can be quite loud, for example lawn mowing, socialising outside, children playing and parties, and can easily exceed set limits. However these activities are expected in a residential setting and are therefore controlled by subjective assessment under the excessive noise provisions. Noise from domestic plant can be easily controlled and stringent limits are set aimed at negligible effects.

Matthew Borich: Environmental Noise: 2/11/2012: