

22 May 2020

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Dear Craig

### **15 CREMORNE STREET**

Thank you for a copy of the Auckland Council request for further information dated 14 May 2020 regarding the noise from the proposed change of conditions 10 and 12 of a consent relating to the number of permitted helicopter flights from 15 Cremorne Street, Herne Bay. The following sets out the request and our response.

*Please clarify when referring to a proposed weekly average of 11 flights per week this is actually the maximum number of flights allowed to ensure compliance with 50dB  $L_{dn}$  at or within sites containing dwellings that have not provided written approval.*

Eleven flights a week reflects the maximum number to comply with 50dBA  $L_{dn}$ . It is noted a maximum of ten flights a week are proposed.

*Please clarify if predicted  $L_{dn}$  levels provided in Table 1 are averaged over 7 consecutive days.*

Averaging has been based on seven consecutive days as adopted in Clause 4.3 of NZS 6807:1994 *Noise management and land use planning for helicopter landing areas*.

*Please provide predicted  $L_{dn}$  levels at the site boundary of 6 River Terrace and 10 Wairangi Street where written consents were not obtained.*

These two sites are a slightly further from the helipad as predicted for 20 Cremorne Street (Site 2 in the report) so a similar to lower noise level (50dBA  $L_{dn}$ ) could be expected. Figure 1 shows the cross section to Site 2 (20 Cremorne Street), Figure 2 the cross section to 6 River Terrace and Figure 3 the cross section to 10 Wairangi Street. As shown on these cross sections the helicopter noise is located 3m above ground level and the receiver height of 1.5m at the closest site boundary to the helipad and any intervening buildings are include on the cross section.

As shown on Figures 1 – 3 there are screening effects to 6 River Terrace and 10 Wairangi Street when the helicopter is on the ground and at immediate lift off so the level received at these two sites will be slightly lower than for 20 Cremorne Street and within 50dBAL $_{dn}$ .

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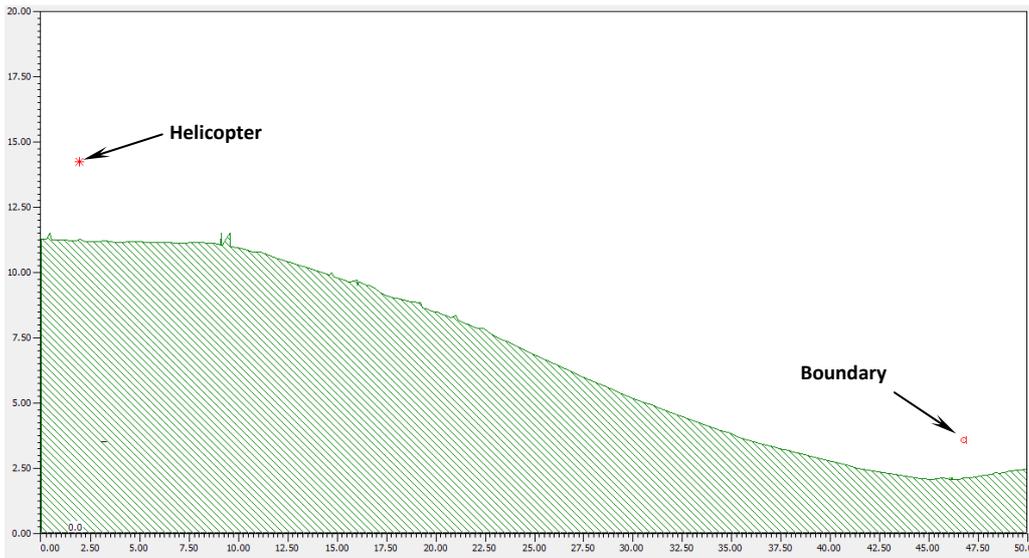


Figure 1. Site 2 (20 Cremorne Street)

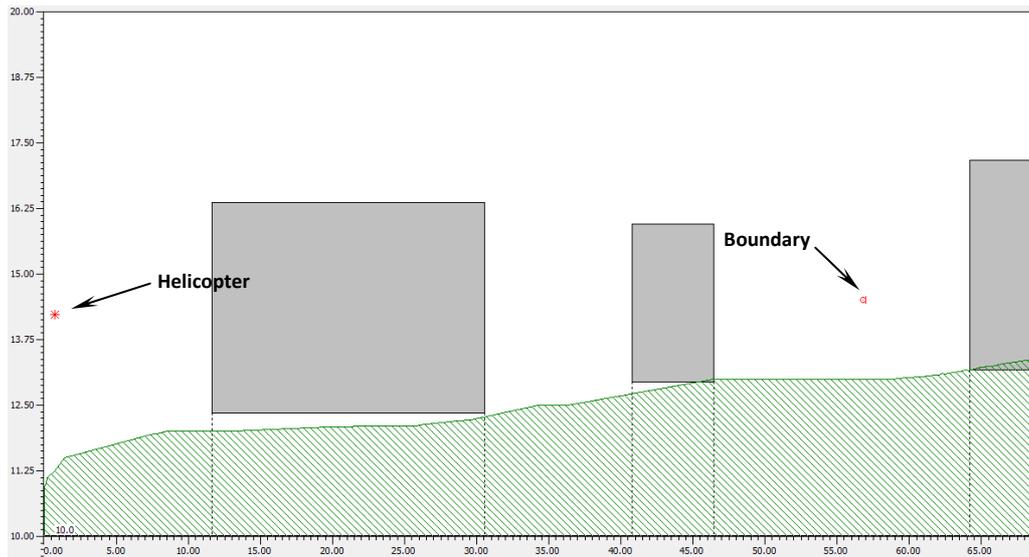


Figure 2. 6 River Terrace

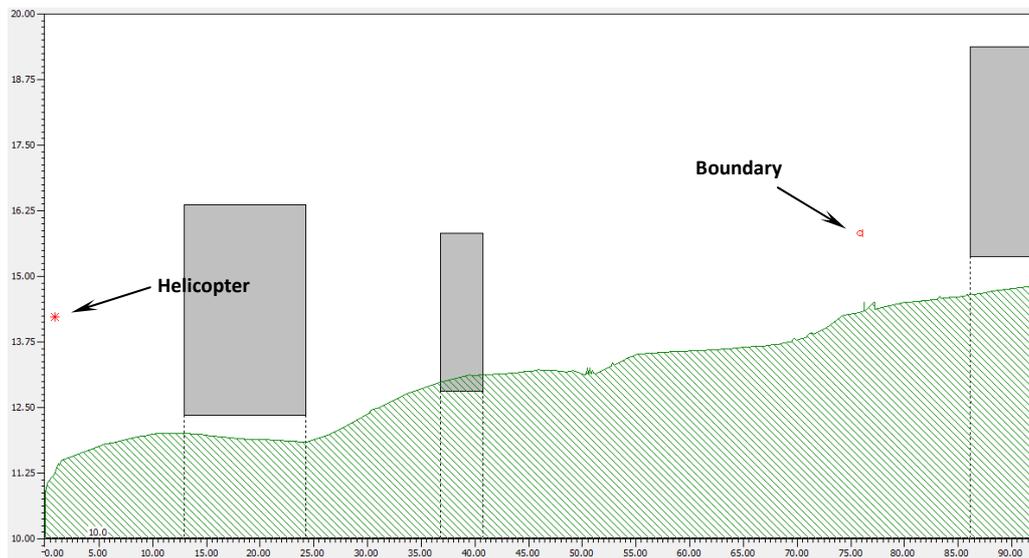


Figure 3. 10 Wairangi Street

Please confirm the proposed maximum of 3 flights (or 6 movements) can occur on a single day and will not exceed 50dB  $L_{dn}$  at or within sites containing dwellings that have not provided written approval.

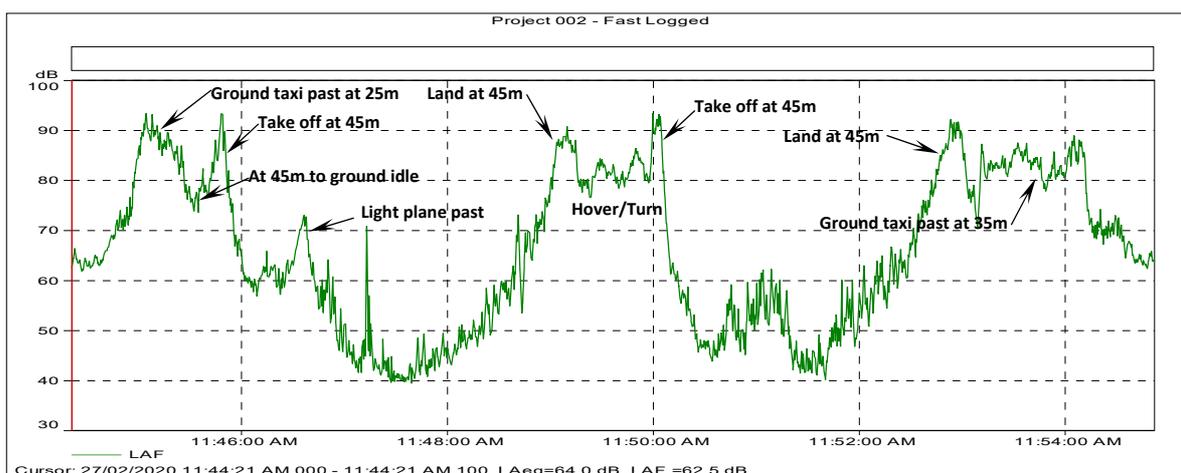
Three flight movements in one day will be up to 53dBA  $L_{dn}$ . However, clause 4.3.2 states “Averaging shall not be conducted over periods of longer than seven consecutive days. The averaged value shall not exceed the relevant limit, and in any case the limit shall not be exceeded by more than double the sound exposure limit (i.e. 3dBA in  $L_{dn}$  terms) on any day.” That is a level of up to 53dBA  $L_{dn}$  is anticipated providing fewer flights occur on other days of the week to ensure the weekly average does not exceed 50dBA  $L_{dn}$ .

Please comment if the proposed maximum number of flights per week/per day are likely to occur and if not, please advise what the typical number of movements per week/per day are anticipated to be.

To be advised by the Planner

Please provide noise monitoring results from field testing of an Air Bus H130T2 during landing, shut down, start up, ground idling, take-off and hovering (if available).

Figure 4 shows the noise trace undertaken during the testing.



**Figure 4. Noise trace of Air Bus H130T2**

Is helicopter manoeuvring close to the helipad under different wind speeds/directions likely to occur and if so how would this affect predicted  $L_{dn}$  levels.

No, and there will not be a measurable change to the helicopter noise. If the wind speed is high the background sound will increase and provide some degree of masking other noise sources, such as the helicopter.

The AEE states compliance will be achieved with AUP (OP) E25.6.32 however the maximum noise level is not assessed in the acoustic report. Accordingly, please provide predicted  $L_{AFmax}$  levels at affected receiver locations and if an infringement is predicted, an assessment of effects.

The noise assessment stated the “results reflect what is believed to be the aim of the conditions and Rule E25.6.32 in the AUP-OP” as it is unclear exactly what was required. This was misinterpreted to mean the noise complied with Rule E25.6.32. The  $L_{dn}$  does comply with the 50dBA limit of Rule

E25.6.32, however, the maximum level of 85dB  $L_{AFmax}$  is not complied with. The reason for an 85dB  $L_{AFmax}$  limit in the AUP(OP) for the day and night periods is not clear as it is unusual to adopt a maximum level for daytime activities and normally if a daytime level were to be adopted it would be expected to be a minimum of 10dB above the night time level, not the same.

Clause 1.1 of NZS 6807 states “*This Standard is intended to apply ... where flight movements are likely to result in a maximum sound level ( $L_{max}$ ) exceeding 70dBA at night-time or 90dBA during daytime in any residential zone*”. That is a daytime level of 90dBA is used on NZS6807 as a trigger for the noise assessment, not a control. A maximum of 85dB in Rule E25.6.32 appears to be related to a night time control rather than a daytime control. Due the uncertainty of the intention of Rule E25.6.32 the wording as set out above was adopted in the assessment. The above was not seen as a critical point as the existing conditions do not adopt a maximum noise level as no night flights are permitted.

Regardless of the above the maximum level has been predicted for the closer boundaries to the helipad based on the measurements undertaken and given in Figure 4 above. The maximum noise has been predicted at each of the sites assessed as shown in Figure 5.



**Figure 5. Assessment points**

Site <sup>1</sup>	$L_{max}$
1	87dBA
2	93dBA
3 <sup>2</sup>	84dBA
4	92dBA
5 <sup>2</sup>	84dBA
6 <sup>2</sup>	84dBA
7	92dBA

1 As shown on Figure 5

2 Helicopter screened when on ground

**Table 1. Maximum noise level**

With respect to the noise effects from the maximum level experienced at each of these sites there is no change to that currently permitted and experienced in terms of the consent for the site. The change sought is a potential of up to three flights a day with no more than 104 flights a year (an average of two flights a week). Although this change provides for an increase in the potential number of events that may occur on any one day the limitation of any events to 104 flights a year has not changed so results in the same total flights as currently consented. That is, the resulting noise effect remains the same as currently permitted.

*Please comment on noise effects for users of public space, beach and shoreline areas given the proximity of these areas to the helipad.*

Noise at the beach area of the end of Cremorne Street will be similar to that predicted for site 2 at 50dBA  $L_{dn}$  and 92dBA  $L_{max}$ . At these levels the noise will be clearly heard by anyone on the beach but taking into account the short duration of the sound and levels the noise is considered to be reasonable. This is the same as the current consent permits so there is no change and hence the effects remain the same for anyone on the beach.

*Please confirm that helicopters using the helipad will not fly directly over any dwelling when operating below 500 feet.*

No helicopter will fly over the houses in this area. The flight path to and from the helipad is across the water.

*Please advise the typical duration to descend from 500 feet to land and to ascend to 500 feet after take-off.*

The duration for an arrival is typically 52 seconds  
The duration for a departure is typically 46 seconds

These times assume calm conditions. There may be a small variation if flying downwind or upwind, the variation being dependent on the wind speed.

*The acoustic report does not comment on potential cumulative noise effects from consented helipads in the surrounding area. At least two consented helipads are known at 12 Cremorne Street and 64 Sentinel Street although there may be more.*

The helipad at 12 Cremorne Street is 125m to the west and the flight path is to the north-west way from this helipad and when on the ground the helicopter is screened by the topography to the dwellings at this site. At 130m (without screening) noise to the dwellings near the helipad at this site will be a minimum of 10dB below the highest noise experienced from a helicopter flight at this location (Site 2). Where a noise is 10dB or more below an existing noise there are no cumulative noise effect to the higher level and hence noise adverse cumulative noise effects.

The helipad at 64 Sentinel Street is 310m to the east so the noise received to this site will be more than 15dB below helicopter noise experienced from this site. Thus the cumulative noise effects will be insignificant.

Should you have any questions regarding the above please do not hesitate to contact me.

Yours faithfully  
Hegley Acoustic Consultants



Nevil Hegley