

Waikato District Council

Attention: Carolyn Wratt

Dear Carolyn

Comments on submissions received on the Waikato District Plan review - Noise

Tonkin & Taylor Ltd (T+T) is pleased to provide our general comments on matter of noise on the proposed amendments to the Waikato District Plan (DP) under review, as well as comments on the submissions received from Waikato DHB. Recommendations are provided to produce a consistent set of DP rules for noise.

General comments**Notation**

Parameters should be notated dB L_{Aeq} or dB LAeq. There is some inconsistency with subscripts and notation throughout the proposed DP. A 15 minute measurement / assessment period is recommended by the standards referred to; this should be made clear in the DP but may be overly complicated to specify in each rule as well. We recommend that the requirement to assess noise over a 15 minute period is included in the definitions section.

L10 versus LAeq

It is noted that the proposed DP has updated the noise parameter from L_{10} to L_{Aeq} , in line with generally accepted best practice. For a typical noise source, the L_{Aeq} is generally around 3 dB lower than the L_{10} . A difference of 3 dB is just perceptible with normal hearing. If the same limits remain in the DP with the parameters altered (e.g. a limit of 50 dB L_{A10} becomes a limit of 50 dB L_{Aeq}), then effectively this is equivalent to an allowable increase of 3 dB.

Most district plans which have updated their noise metrics have kept the same noise limits with no adjustment for the difference between L_{10} and L_{Aeq} . We recommend that a similar approach is adopted for the proposed DP.

With regard to the noise limits for Hampton Downs, which mirror the consent conditions, the L_{10} parameter has been kept. As there is little noise difference that will be perceived between the same numerical limit defined as L_{10} or L_{Aeq} , we would suggest that the noise limits listed for Hampton Downs are updated to L_{Aeq} to maintain consistency with the rest of the DP, as suggested in the Waikato DHB submission.

Referencing standards

Most noise limits will be subject to measurement as per NZS6801 and assessment as per NZS6802, although there are exceptions to the applicability of NZS6802, for example rail, aircraft, gunfire,

blasting and windfarms. We agree with the Waikato DHB submission that this should not be listed as a separate standard to noise limits within the DP. It can be included at the end of every statement of noise limits in the same permitted activity standard (for example as per 28.2.1.2 P2) or included in a general requirements section or in the definitions of the DP.

NZS6802 requires a Special Audible Characteristic (SAC) penalty to be applied of up to 5 dB where a noise source may be particularly noticeable due to its characteristics, e.g. a tonal whine. The noise source level including the SAC as applicable is referred to as the rating level. Some district plans include a SAC correction within the noise limit whereas other require the application of the penalty to the rating level. We recommend that the later approach is preferred. Hence there is no change to the determination of noise limits or rating levels within the proposed DP.

Zone boundaries

The DP should make clear what noise limits apply at zone boundaries. Some limits are listed for other zones (e.g. the Industry zones) but there is no consistent approach. We would suggest a general requirement that noise from activity on one site should comply with the noise limits and standards of the zone of receiving site(s) which can be reiterated in each zone chapter. This can be included in the definition of noise within the DP.

Waikato DHB General comments and T+T responses

Item	DHB Comment	T+T Response
a	The proposed noise limits are generally in accordance with guideline values and use current measurement and assessment standards, acoustical metrics, numerical values, time-frames and assessment location.	-
b	However, the following issues have been identified: - Incorrect terminology has been used in conflict with the standards specified	See general comments regarding notation of noise parameters and time period for LAeq.
c	- No provision has been made for sound sources outside the scope of NZS 6802,	Agree – clarify in the definitions. This will allow for use of other standards as applicable.
d	- The measurement and assessment standards are an integral part of the noise limits and cannot be a separate permitted activity standard,	Agree. See general comments.
e	- There is an inconsistent approach for sound received in another zone,	Agree. See general comments.
f	- Tamahere Commercial Areas A and B have been treated inconsistently with other areas in that a noise limit is based on the source location and not the receiver location.	Agree, it should be stated where the noise limits in Tamahere A/B apply.
g	This should be moved onto a separate rule, as for Huntly Power Station in the Rural Zone	Agree to maintain consistency.

Item	DHB Comment	T+T Response
h	<p>Chapter 26: Hampton Downs Motor Sport and Recreation Zone.</p> <p>Rules 26.2.1 P1, P2 and P3</p> <p>Sound from motorsport and other activity at Hampton Downs is currently authorised by a resource consent. The proposed permitted activity standards closely follow but do not exactly mirror the resource consent.</p> <p>Issue have been identified with the noise controls in both the existing resource consent and proposed rules:</p> <ul style="list-style-type: none"> Noise limits have been written in terms of the outdated "L10" parameter. This does not represent good practice and might not adequately represent sound from short duration events. It is also inconsistent with other noise limits in the plan. <p>Incorrect notation has been used.</p> <ul style="list-style-type: none"> Measurement and assessment standards are not specified in the proposed plan (they are in the resource consent). <p>It is submitted these matters should be addressed in the new permitted activity standards. While this does not prevent activity continuing under the existing resource consent, it sets a robust baseline for any further developments or alterations to activity. The Council could also update the noise conditions in the resource consent to match the new plan provisions under the review condition (97).</p>	<p>Agree. Suggest updating Hampton Downs limits to LAeq, recognising that this will be inconsistent with the consent conditions. Agree that times for noise limits on Saturdays should be consistent with limits for Monday to Friday. See also general comments.</p>
i	<p>Rules 26.2.2 P1 and D1</p> <p>The proposed noise limits are generally in accordance with guideline values and use current measurement and assessment standards, acoustical metrics, numerical values, time-frames and assessment location. However, the following issues have been identified:</p> <ul style="list-style-type: none"> Incorrect terminology has been used in conflict with the standards specified, No provision has been made for sound sources outside the scope of NZS 6802, Noise limits have been written in terms of the outdated "L10" parameter. This does not represent good practice and might not adequately represent sound from short duration events. It is also inconsistent with all other noise limits in the plan. There is a difference of one hour between noise limits on Mondays-Fridays and Saturdays, which is inconsistent with other zones and is an unnecessary complication. Notional boundary is defined in Chapter 13 and should not be redefined or repeated in this rule. The format of the rule is inconsistent with other zones. <p>As for the 26.2.1 it is submitted that while activity could continue under the existing resource consent, these matters should be addressed in the new permitted activity standards to set a robust baseline for any further developments or alterations to activity.</p>	<p>Agree that times for noise limits on Saturdays should be consistent with limits for Monday to Friday. Notional boundary does not need to be re-defined, remove from standard. See also general comments (e.g. included in definitions).</p>
j	<p>Chapter 27: Te Kowhai Airpark Zone</p> <p>The proposed noise limits are generally in accordance with guideline values and use current measurement and assessment standards, acoustical metrics, numerical values, time-frames and assessment location. Inclusion of rules for specific activity are supported. However, the following issues have been identified:</p> <ul style="list-style-type: none"> Incorrect terminology has been used in conflict with the standards specified, No provision has been made for sound sources outside the scope of NZS 6802, Measurement and assessment standards need to be specified, There is an inconsistent approach for sound received in another zone, The separation of noise limits into rules 27.2.6 and 27.2.7 	<p>Agree as per general comments. The taxiway rule (27.2.7 P1 and D1) is very similar to the general aircraft rule for Te Kowhai Airpark. It will be difficult to differentiate between taxiway noise and takeoff noise and therefore one rule will give a simpler approach. Recommend that the taxiway rule is deleted.</p>

Proposed changes to standards

Amendments to standards as proposed by Waikato DHB are in *italics* with T+T comments inset in grey.

Amend Rule 23.2.1.1 P2, P3, P4, P5 and D1- Noise- General as follows:

P2 Sound measured in accordance with NZS 6801:2008 and assessed in accordance with NZS 6802:2008 must not exceed:

(a) ~~Noise measured at~~ the following noise limits at any point within a notional boundary on ~~within~~ any site in the Rural Zone and ~~within~~ any other site in the Country Living Zone ~~must not exceed:~~

Agree - needs to specify location of measurement of limits. Excluding the Rural Zone here is covered by clause (b), accept.

- (i) ~~50dB LAeq(15min) dB (LAeq), 7am to 7pm, every day;~~*
- (ii) ~~45dB LAeq(15min) dB (LAeq), 7pm to 10pm every day;~~*
- (iii) ~~40dB LAeq(15min) dB (LAeq) and 65 dB (LMax), 10pm to 7am the following day;~~*
- (iv) ~~65dB LAFmax, 10pm to 7am the following day;~~*

See comment on notation. Needs to be consistent across entire DP.

(b) The permitted activity noise limits for the zone of any other site where sound is received.

Also needs to be consistent across DP. We agree this should be included in principal. Replaces P3 (a). See general comments.

~~P3 (a) Noise measured within any site in any zone, other than the Country Living Zone and Rural Zone, must meet the permitted noise levels for that zone.~~

~~P4 (a) Noise generated by any activity in Tamahere Commercial Area A and Tamahere Commercial Area B, as identified on the planning maps, must not exceed the following levels:~~

~~(a) In Tamahere Commercial Areas A and B does not exceed:~~

- ~~(i) 62.5dB (LAeq), 7am to 10pm;~~*
- ~~(ii) 50dB (LAeq) and 75 dB (LMax), 10pm to 7am the following day,~~*

~~(b) Outside Tamahere Commercial Areas A and B, does not exceed:~~

- ~~(i) 55dB (LAeq), 7am to 10pm;~~*
- ~~(ii) 40dB (LAeq) and 70Db (LMax), 10pm to 7am the following day.~~*

~~P5 (a) Noise levels shall be measured in accordance with the requirements of NZS 6801:2008 "Acoustics Measurement of Environmental Sound."~~

~~(b) Noise levels shall be assessed in accordance with the requirements of NZS 6802:2008 "Acoustic Environmental Noise."~~

~~D1 (a) Sound that is outside the scope of NZS 6802:2008 or a permitted activity standard; and~~

~~(b) Sound Noise that does not comply with Rule 23.2.1.1 P1 or P2, P3, P4 or P5.~~

Use of sound vs noise: noise is defined as unwanted sound. NZS6801 and 6802 use the term 'sound', however, the term 'noise' is commonly used in legislation. Maintain consistency across DP.

Add new Rule 23.2.1.X applying to activity in Tamahere Commercial Areas A and B, worded as follows:

P1 Farming noise, and sound generated by emergency generators and emergency sirens.

P2 Sound measured in accordance with NZS 6801:2008 and assessed in accordance with NZS 6802:2008 must not exceed:

(a) The following noise limits at any point within any other site in Tamahere Commercial Areas A and B:

Agree that receiver location for noise levels needs to be specified.

(i) 65dB LAeq(15min), 7am to 10pm;

(ii) 50dB LAeq(15min), 10pm to 7am;

(iii) 75 dB LAFmax, 10pm to 7am the following day;

(b) The following noise limits at any point within any site outside the Tamahere Commercial Areas A and B:

(i) 55dB LAeq(15min), 7am to 10pm;

(ii) 40dB LAeq(15min), 10pm to 7am;

(iii) 70dB LAFmax, 10pm to 7am the following day;

See comment re notation – there is a need to maintain consistency.

D1 (a) Sound that is outside the scope of NZS 6802:2008 or a permitted activity standard; and

(b) Sound that does not comply with Rule 23.2.1.X P1 or P2.

Chapter 26: Hampton Downs Motor Sport and Recreation Zone			
<p>Amend 26.2.1 P1, P2 and P3 as follows:</p> <table border="1"> <tr> <td>P1</td> <td> <p>(a) <u>The sound noise level from motor sport and recreation activities, measured in accordance with NZS 6801:2008 and assessed in accordance with NZS 6802:2008, shall not exceed the following limits measured at any point beyond the 'Hampton Downs Noise Control Boundary' shown in Appendix 12 (Motorsport and Recreation):</u></p> <p>(i) <u>65 dB LAeq(15 min) dBA L10 on no more than 27 days per year (with no more than 10 of the 27 days to be on a Sunday or public holiday) between the hours of 9:00am – 6:00pm; and</u></p> <p>(ii) <u>55 dB LAeq(15 min) dBA L10 on no more than 40 days per year between the hours of 9:00am – 6:00pm; and</u></p> <p>(iii) <u>50 dB LAeq(15 min) dBA L10 between the hours of 7am to 6pm any other days of the year; and</u></p> <p>(iv) <u>45 dB LAeq(15 min) dBA L10 between the hours of 6pm to 10pm every day of the year; and</u></p> <p>(v) <u>40 dB LAeq(15 min) dBA L10, and 65 dB LAFmax dBA Lmax at all other times</u></p> <p>(b) <u>The motor racing activities in Rule 26.2.1 P1 (a) (i) and (ii) are exclusive of each other and the activities are considered to be on separate days.</u></p> </td> </tr> </table>	P1	<p>(a) <u>The sound noise level from motor sport and recreation activities, measured in accordance with NZS 6801:2008 and assessed in accordance with NZS 6802:2008, shall not exceed the following limits measured at any point beyond the 'Hampton Downs Noise Control Boundary' shown in Appendix 12 (Motorsport and Recreation):</u></p> <p>(i) <u>65 dB LAeq(15 min) dBA L10 on no more than 27 days per year (with no more than 10 of the 27 days to be on a Sunday or public holiday) between the hours of 9:00am – 6:00pm; and</u></p> <p>(ii) <u>55 dB LAeq(15 min) dBA L10 on no more than 40 days per year between the hours of 9:00am – 6:00pm; and</u></p> <p>(iii) <u>50 dB LAeq(15 min) dBA L10 between the hours of 7am to 6pm any other days of the year; and</u></p> <p>(iv) <u>45 dB LAeq(15 min) dBA L10 between the hours of 6pm to 10pm every day of the year; and</u></p> <p>(v) <u>40 dB LAeq(15 min) dBA L10, and 65 dB LAFmax dBA Lmax at all other times</u></p> <p>(b) <u>The motor racing activities in Rule 26.2.1 P1 (a) (i) and (ii) are exclusive of each other and the activities are considered to be on separate days.</u></p>	<p>See general comments. Need to maintain consistency across DP.</p>
P1	<p>(a) <u>The sound noise level from motor sport and recreation activities, measured in accordance with NZS 6801:2008 and assessed in accordance with NZS 6802:2008, shall not exceed the following limits measured at any point beyond the 'Hampton Downs Noise Control Boundary' shown in Appendix 12 (Motorsport and Recreation):</u></p> <p>(i) <u>65 dB LAeq(15 min) dBA L10 on no more than 27 days per year (with no more than 10 of the 27 days to be on a Sunday or public holiday) between the hours of 9:00am – 6:00pm; and</u></p> <p>(ii) <u>55 dB LAeq(15 min) dBA L10 on no more than 40 days per year between the hours of 9:00am – 6:00pm; and</u></p> <p>(iii) <u>50 dB LAeq(15 min) dBA L10 between the hours of 7am to 6pm any other days of the year; and</u></p> <p>(iv) <u>45 dB LAeq(15 min) dBA L10 between the hours of 6pm to 10pm every day of the year; and</u></p> <p>(v) <u>40 dB LAeq(15 min) dBA L10, and 65 dB LAFmax dBA Lmax at all other times</u></p> <p>(b) <u>The motor racing activities in Rule 26.2.1 P1 (a) (i) and (ii) are exclusive of each other and the activities are considered to be on separate days.</u></p>		

P2	<p>The use of a public address system shall only occur between the hours of 7:00am and 7:00pm and shall not exceed a noise limit of 50 dBA L10: dB LAeq(15 min), measured at any point beyond the 'Hampton Downs Noise Control Boundary' shown in Appendix 12 (Motorsport and Recreation) in accordance with NZS 6801:2008 and assessed in accordance with NZS 6802:2008.</p>	
P3	<p>...</p> <p>C. A programme of noise management and assessment of compliance with the noise standards, including details of the monitoring</p>	
<p>of noise levels for vehicles competing in events with a noise limit of 65 dB LAeq(15 min) dBA L10.</p>		
<p>Amend 26.2.2 P1 and D1 as follows:</p>		
P1	<p>(a) Sound The noise level from activities within Precinct B and Precinct C, other than motor racing activities within Precinct B and Precinct C, measured in accordance with NZS 6801:2008 and assessed in accordance with NZS 6802:2008 must shall not exceed the following noise limits when measured at the at any point within a notional boundary on any other site of any dwelling:</p> <p>(i) 50 dB LAeq(15 min), 7am to 7pm, Monday to Saturday excluding public holidays;</p> <p>(ii) 40 dB LAeq(15 min), 7am to 7pm, Sunday and public holidays;</p> <p>(iii) 40 dB LAeq(15 min), 7pm to 7am the following day;</p> <p>(iv) 75 dB LAFmax, 10pm to 7am the following day.</p> <p>Monday to Friday 7:00am to 7:00pm 50 dBA L10 Saturday 7:00am to 6:00pm 50 dBA L10 All other times including public holidays 40 dBA L10 Monday to Sunday 10:00pm to 7:00am 75 dBA Lmax</p> <p>Noise levels shall be measured and assessed in accordance with the requirements of NZS</p>	<p>Agree that notional boundary does not need to be defined within the standards; it is linked to its definition in the 'definition' section of the DP. Agree with proposed changes subject to general comments.</p>
<p>6801:2008 'Acoustics – Measurement of environmental sound' and NZS 6802:2008 'Acoustics – environmental noise'.</p> <p>(b) The notional boundary means a line 20m from the façade of any dwelling or the legal boundary, whichever is the closer to the dwelling as defined in NZS 6801:2008 'Acoustics – Measurement of environmental sound'.</p>		
D1	<p>(a) Sound that is outside the scope of NZS 6802:2008 or a permitted activity standard; and</p> <p>(b) Sound Any activity that does not comply with Rule 26.2.2 P1.</p>	

Chapter 27: Te Kowhai Airpark Zone		
Delete 27.2.7 P1 and D1. Amend 27.2.6 P1, P2, P3 and D1 as follows:		Agree with deletion / amendment of rules, see previous comment.
P1	<p><u>(a) Sound from emergency sirens.</u></p> <p><u>(b) Sound from aircraft movements on taxiways received at 98A and 98B Limmer Road</u></p>	
P2	<p><u>Sound measured in accordance with NZS 6801:2008 and assessed in accordance with NZS 6802:2008 must not exceed:</u></p> <p><u>(a) for sound from activity in Precinct B, excluding aircraft movements on taxiways, the following noise limits at any point within a notional boundary on any site outside the Te Kowhai Airpark Zone:</u></p> <p><u>(i) 55 dB L_{Agg(15 min)}, 7am to 10pm;</u></p>	

Recommendations

In general, we agree with the suggestions made by Waikato DHB. Any changes implemented need to be consistent across the entire DP, for example notation and reference to noise measurement / assessment standards.

We recommend the following:

- Noise is included in the definitions with an explanation of the standards to be used, limitations of standards, applicability of the SAC and rating level, reference time period for measurements, and explanation of what limits are applicable at zone boundaries. Any noise definitions in the DP should be consistent with the definitions provided in the Proposed National Planning Standard evaluation report 2018: Part 2D – Noise and Vibration Metrics;
- The proposed rules are checked for consistency, specifically regarding notation and removing anything that is covered by the definition of noise;
- In general update proposed rules in line with submission made by Waikato DHB, subject to above recommendations;
- To ensure rules are clear and concise, we would recommend the use of the term 'noise' rather than both 'noise' and 'sound'. Although there is a difference between the terms it is likely to be confusing if both are used in the same rule.

We are able to provide draft rules in line with these recommendations as required.

Applicability

This report has been prepared for the exclusive use of our client Waikato District Council, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

Tonkin & Taylor Ltd

Environmental and Engineering Consultants



Darran Humpheson

Senior Acoustics Specialist

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