

AUCKLAND UNITARY PLAN
INDEPENDENT HEARINGS PANEL

Te Paepae Kaiwawao Motuhake o te Mahere Kotahitanga o Tāmaki Makaurau

**Report to Auckland Council
Hearing topic 040
Lighting, noise and vibration**

July 2016

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1. Hearing topic overview

1.1. Topic description

Topic 040 addresses the regional coastal plan and district plan provisions of the proposed Auckland Unitary Plan relating to:

Topic	Proposed Auckland Unitary Plan reference	Independent Hearings Panel reference
040 Lighting, noise and vibration	C7.2 Lighting background, objectives and policies	E24 Lighting
	H6.1 Lighting rules	
	C7.3 Noise and vibration background, objectives and policies	E25 Noise and vibration
	H6.2 Noise and vibration rules	

Under the Local Government (Auckland Transitional Provisions) Act 2010, section 144 (8) (c) requires the Panel to set out:

the reasons for accepting or rejecting submissions and, for this purpose, may address the submissions by grouping them according to—

- (i) the provisions of the proposed plan to which they relate; or
- (ii) the matters to which they relate.

This report covers all of the submissions in the Submission Points Pathways report (SPP) for this topic. The Panel has grouped all of the submissions in terms of (c) (i) and (ii) and, while individual submissions and points may not be expressly referred to, all points have nevertheless been taken into account when making the Panel's recommendations.

1.2. Summary of the Panel's recommended changes to the proposed Auckland Unitary Plan

The Panel has sought to achieve greater consistency in these provisions and in related topics such as Major Recreation Facilities, Open Space and City Centre.

- i. Confirming the Council's approach to rules based on lighting zones (now categories) to enable a context based assessment of illuminance, glare and luminous intensity;
- ii. Confirming the Council's revised provisions for noise subject to amendments clarifying the objectives and policies and to some controls for consistency with the whole Plan; and
- iii. Confirming the Council's revised provisions for vibration and blasting.

1.3. Overview

For lighting, the Panel supports the amendments proposed by the Council and its expert Mr McKenney to adopt rules based on lighting categories to enable a context based assessment of illuminance, glare and luminous intensity.

The Panel also supports the proposed use of the threshold increment methodology for measuring and assessing glare, rather than the lux level.

For noise, the Panel generally supports the revised provisions agreed between the Council and most submitters and presented by the Council in its closing submissions. Amendments to objectives and policies for clarity, consistency and good practice are supported.

In relation to the noise created by people at food and beverage or entertainment facilities and on sports fields, the Panel supports controls consistent with the overall controls and does not recommend any exclusion of the assessment for crowd noise.

The Panel does not support amending measurement locations to exclude buildings that may be unoccupied.

The Panel does not support a rule controlling road rehabilitation works on a 20 year return period which is beyond the planning horizon of the Unitary Plan. As Auckland Transport supports such a period between noise events, this can be addressed by its own policies and management processes.

For vibration and blasting, no substantive changes are proposed and the Panel recommends that the amended provisions be adopted.

1.4. Scope

The Panel considers that the recommendations in 1.2 above and the changes made to the provisions relating to this topic (see 1.1 above) are within scope of submissions.

For an explanation of the Panel's approach to scope see the Panel's Report to Auckland Council – Overview of recommendations July 2016.

1.5. Documents relied on

Documents relied on by the Panel in making its recommendations are listed below in Section 5 Reference documents.

2. Lighting

2.1. Statement of issues

- i. Should lighting controls be responsive to the context of the environment?
- ii. Should glare be controlled by lux levels or the threshold increment?

2.2. Panel recommendation and reasons

The proposed Unitary Plan as notified set out standard lighting levels for all outdoor artificial lighting.

Amendments were proposed by the Council and its expert Mr McKensey to address the issue of whether a single set of levels was appropriate or whether the levels should reflect the context in which the lighting was used. Mr McKensey proposed a context-based method. Briefly, this includes the identification of four lighting categories for areas of Auckland which are linked to the zones, from intrinsically dark (in the conservation zones) through low and medium brightness to high brightness (most business and some special purpose zones) zones. This approach provides a context for the assessment of applications to exceed the permitted lighting standards. The Panel recommends that this approach be adopted as it better addresses the effects of lighting according to the nature of the environment where the effects are experienced.

The other important change proposed is to change from a measurement of glare (being the brightness of a light when compared with the brightness of the background against which it is seen) in lux to adopt the 'threshold increment' method of assessment. The threshold increment is a measure of the loss of visibility caused by the glare from a light. This method uses the measurement and assessment methodology in Australian Standard AS 4282-1997 for the control of the obtrusive effects of outdoor lighting. The Panel understands from the evidence that this is a technical standard generally regarded by New Zealand experts in this field as the most appropriate one for this purpose. The expert witnesses who conferred on this topic agreed that this method will allow more appropriate control of road safety issues and is aligned with the approach adopted by Auckland Transport. It is also the approach adopted by the New Zealand Transport Agency (See document M30 – Specification and Guidelines for Road Lighting Design). However, for the land use control of activities outside the road corridors, the experts agree that the threshold increment can be 15 per cent rather than 10 per cent as used in the road corridors by road controlling authorities.

Other issues arising in relation to lighting, as identified in the Council's closing submissions, have been resolved with affected submitters and the Panel is satisfied that these have been addressed appropriately.

2.3. Statement of issue

Use of standards – New Zealand standards and international standards.

2.4. Panel recommendation and reasons

The New Zealand Standards and Accreditation Act 2015 provides, in section 30(1):

Regulations and bylaws made under any Act may be made by referring (with or without modification) to any New Zealand Standard relating to goods, services, processes, or practices of any kind.

Strictly speaking, statutory planning documents under Part 5 of the Resource Management Act 1991 are not regulations or bylaws. However, in relation to rules in regional and district plans, sections 68(2) and 76(2) of that Act provide:

Every such rule shall have the force and effect of a regulation in force under this Act but, to the extent that any such rule is inconsistent with any such regulation, the regulation shall prevail.

Historically, statutory planning documents in New Zealand have routinely made reference to standards, especially in the area of noise management where specific New Zealand Standards for Acoustics in relation to:

- i. measurement of environmental sound (NZS 6801);
- ii. environmental noise (NZS 6802);
- iii. construction noise (NZS 6803);
- iv. airport noise management and land use planning (NZS 6805);
- v. road-traffic noise - new and altered roads (NZS 6806);
- vi. noise management and land use planning for helicopter landing areas (NZS 6807);
- vii. wind farm noise (NZS 6808); and
- viii. port noise management and land use planning (NZS 6809).

The Panel considers it to be appropriate to continue to use these standards as references in the Unitary Plan for methods of assessing and evaluating noise either generally or in the specific circumstances for which a number of them are intended.

There are apparently no New Zealand standards for controlling the obtrusive effects of outdoor lighting or for assessing the effects of vibration on structures or on human exposure to whole-body vibrations. However, there are experts in New Zealand who are qualified and have expertise in these matters. These experts all appear to concur on the use of certain international standards, such as the Australian Standard AS 4282-1997 for the control of the obtrusive effects of outdoor lighting, the German Standard DIN 4150-3 for the effects of vibration on structures and the international standard ISO 2631-2 for the evaluation of human exposure to whole-body vibration.

A number of amendments have been proposed by the Council so that readers of the Unitary Plan who are unfamiliar with these standards can better understand what they mean and how they can find further technical information if they need to. The Panel supports this approach.

Having heard and considered this evidence the Panel recommends that these standards be used in the Unitary Plan for these purposes and in the manner proposed by the Council in its closing submissions.

3. Noise and vibration

3.1. Statement of issue

Crowd noise at events and people noise from outdoor activities.

3.2. Panel recommendation and reasons

As well as mechanical noise from machinery or vehicles, people can make a great deal of noise all by themselves. When in groups or crowds, the noise levels can be significant. The noise provisions in the Unitary Plan must address both types of situation.

As well as arising in this topic, this issue also arose in Topic 050 City Centre in relation to the noise of people at food and beverage activities (especially where these have outdoor areas or trade on the street), in Topic 058 Public Open Space and in Topic 076 Major Recreation in relation to crowd noise at events held in stadiums. In both situations the debate was fairly polarised between operators and neighbours, between the values placed on the vitality and vibrancy of enabling groups of people to enjoy going out, especially in the city centre or in other centres, or supporting sporting events or going to large scale sporting and entertainment events and the values placed on residential amenity and enabling people to enjoy the comfort (including aural comfort) of their homes.

Having heard all the evidence, the Panel considers that there is some merit in both sides and also some reciprocal obligation on both sides to recognise the relative merits of the arguments. The strategy of a quality compact urban form anticipates both entertainment and residential activities as essential components of the centres. A major city will contain a number of larger scale facilities for recreation and entertainment and these are appropriately regarded as indicative of the health and vitality of a city.

As a starting point, the Panel agrees with the approach taken by the Council's expert witness, Mr Jon Styles, which is to take account of the likely effects of people and crowd noise when zoning areas to enable potentially noisy activities such as food and beverage or entertainment facilities (including major recreation facilities) or sports fields to be located there.

Then, once zoned, the potential for the creation of noise should be controlled by appropriate methods. In most cases that will mean having to consider noise issues in the design of any structures for the activity: the location of open dining or bar areas, the location of a spectator area beside a sports field or the design of a grandstand. Consideration also needs to be given to the design and use of sound systems, whether for amplified music or for a public address system. In all these situations the Plan provisions start from the position that the operators of these activities (owners, managers and clubs) will take steps to ensure that their activities comply with the noise standards for the area or else may be subject to some form of enforcement action.

For sports fields and major recreation facilities, the same approach should apply to those aspects of the operation which can be managed similarly to other entertainment or food and beverage facilities. A more difficult issue arises in relation to crowd noise. In Topic 076 Major recreation facilities, the precinct provisions for stadiums have noise rules that control amplified sound (music and public address) but exclude crowd noise from the assessment of

overall noise levels. This exclusion is based on expert advice that there is no real way of controlling the noise produced by thousands of people reacting to a momentary event such as a try being scored or a wicket being taken. Sport New Zealand and a number of sports clubs sought a similar exclusion for sports fields generally. The Council opposed this on the basis that a general exclusion would not deal with known effects or allow any assessment to determine whether limits on duration, frequency and timing may be appropriate.

The Panel considers it appropriate to differentiate the effects of crowd noise in stadiums from the noise of crowds at every sports field. While the Panel does not see that there is any effective way in which the roar of a crowd of several thousand people can be controlled, it accepts the Council's argument that the case for sports fields should be assessed, by applications for resource consent or by some further planning process.

For those reasons the Panel recommends controls on all activities, including the noise that people may make when participating in such activities.

3.3. Statement of issue

Should noise levels be treated differently on Sundays?

3.4. Panel recommendation and reasons

Some submitters, including a number of schools, sought that the approach of setting lower noise limits on Sundays not continue, on the basis that there is no real basis for distinguishing a Sunday from Saturday or, indeed, any other day of the week. The Council opposed this on the basis that some respite from noise levels was appropriate, that the special treatment of Sundays and public holidays remained an identified preference in the wider community and that the New Zealand Standards for Acoustics reflected that preference. The Council pointed out that removing the respite period on Sundays should be considered together with a review of overall noise levels and that such a review might show that noise levels should be reduced overall if no respite period was available.

The Panel is not satisfied that sufficient investigation has been undertaken to support the removal of reduced noise limits on Sundays and does not recommend any change in relation to this.

3.5. Statement of issue

Should the measurement of noise levels take into account whether a building is occupied or not?

3.6. Panel recommendation and reasons

Related to the foregoing issue is a question of whether the noise level from a food and beverage or entertainment activity should be measured at the nearest neighbour's boundary or at the boundary of a neighbour who is in occupation of the premises when the noise measurement is taken.

Mr Vijay Lala for Crown Mutual Limited and others sought that the noise provisions be amended to apply to buildings that are actually occupied at the time that an activity is generating noise. For example, if an adjoining building is used for office purposes that are

generally unoccupied after 11pm then, he argued, there should be no need to measure noise at the façade of such a building.

The Council's practice is to require noise to be measured at such buildings on the basis that they are 'able to be occupied.'

The Panel supports the Council's approach. The present nature of the centres is that they are no longer places of employment during the day and of entertainment at night. The centres all enable dwellings as a permitted activity and a substantial component of the City Centre is now residential. This means that the use of a building can change, and that some buildings may contain a mix of uses. The Panel accepts that it would compromise both the quality compact urban form strategy and the ability of the Council to enforce the noise rules in centres to include an exemption of this kind. The Panel accordingly does not recommend the changes sought by this submitter.

3.7. Statement of issue

Construction noise levels for road rehabilitation work within 20 years.

3.8. Panel recommendation and reasons

The Council proposed a rule (identified as Rule H6.2.1.5.7A(a)) enabling the road construction noise limits to exceed the standard limits where road rehabilitation work to substantially remove and replace the road base and pavement is undertaken, subject to a number of limits. The first such limit was that any receiver of noise from the activity had not been exposed to noise from previous rehabilitation works within the last 20 years. Other controls limited the number of nights when the noise levels could be exceeded and the finish time for milling, concrete cutting and percussive demolition.

While the Panel understands that such rehabilitation work is normally done on a 20-year cycle and that its effects can be significantly adverse for neighbours, it is concerned that including a control with a 20-year timeframe in a planning document with a 10-year planning horizon seems at least incongruous and could be inappropriate if major rehabilitation works are required earlier.

The Panel notes that its concerns are not shared by the Council or by Auckland Transport, which supports this control and is said to be confident that the necessary information to identify previous rehabilitation works and the identities of neighbours who were affected by it is readily available to ensure compliance.

The Panel is encouraged by the confidence of Auckland Transport. The Panel notes that the rule can only affect Auckland Transport, as it is the road controlling authority for Auckland. Its response to this issue demonstrates another method for addressing it, which is by the use of its own policy and management procedures. The Panel considers that this approach would be more appropriate than a rule in the Unitary Plan.

On that basis the Panel recommends the deletion of the rule containing the 20-year limit on noise levels from road rehabilitation works.

3.9. Statement of issue

Control of internal noise levels and room temperature.

3.10. Panel recommendation and reasons

The Council proposes rules which require noise sensitive spaces (such as bedrooms, sleeping areas, classrooms) to be designed and built to maintain internal temperature at an acceptable level and to reduce noise intrusion from neighbouring sites. At a general level, the Panel expressed concern that these rules might require a higher performance standard for building work than that required by the Building Code, contrary to section 18 of the Building Act 2004.

The nature of this issue is discussed in greater detail in the Overview report in the section on managing external effects. For the purposes of this report, the Panel is satisfied by the Council's submissions that these controls are within the ambit of the Resource Management Act 1991 rather than the Building Act 2004 because they address matters relating to the location of dwellings and educational facilities in a noisy environment and do not conflict with the standards set out in the Building Code.

4. Consequential changes

4.1. Changes to other parts of the plan

There are no consequential changes to other parts of the Plan as a result of the Panel's recommendations on this topic.

4.2. Changes to provisions in this topic

There are no changes to provisions in this topic as a result of the Panel's recommendations on other hearing topics.

5. Reference documents

The documents listed below, as well as the submissions and evidence presented to the Panel on this topic, have been relied upon by the Panel in making its recommendations.

The documents can be located on the aupihp website (www.aupihp.govt.nz) on the hearings page under the relevant hearing topic number and name.

You can use the links provided below to locate the documents, or you can go to the website and search for the document by name or date loaded.

(The date in brackets after the document link refers to the date the document was loaded onto the aupihp website. Note this may not be the same as the date of the document referred to in the report.)

5.1. General topic documents

Panel documents

[040- Submission Points Pathway Report- 4 February 2015](#)

[040 - Parties and Issues Report - 17 June 2015](#)

040 - Mediation Joint Statement - Lighting - 28 April 2015 (29 April 2015)

040 - Mediation Joint Statement - Noise and Vibration - 1 May 2015 (4 May 2015)

040 - Mediation Joint Statement - Noise and Vibration - Reconvened 29 May 2015 (8 June 2015)

040 - Expert Conference Joint Statement - Lighting - 28 April 2015 (1 May 2015)

040 - Expert Conference Joint Statement - Land Use Controls - 29 May 2015 (3 June 2015)

040 - Expert Conference Joint Statement - Noise - 30 April 2015 (1 May 2015)

Auckland Council closing statement

[040 - Hrg - Auckland Council - Closing Statement - Attachment A - Lighting track-changes](#) (20 October 2015)

[040 - Hrg - Auckland Council - Closing Statement - Attachment B - Noise and vibration track-changes](#) (20 October 2015)

5.2. Specific evidence

Auckland Council

[040 - Hrg - Auckland Council \(John McKensey\) - Lighting](#) (3 July 2015)

[040 - Hrg - Auckland Council \(Jon Styles\) - Noise](#) (3 July 2015)

Crown Mutual Limited and Crown pacific Finance Limited and State Advances Corporation Limited

[040 - Hrg - Crown Mutual Limited et al \(Vijay Lala\)](#) (17 July 2015)

[040 - Hrg - Crown Mutual Limited et al \(Vijay Lala\) Attachment 1](#) (17 July 2015)