

Strathalbyn

Code Amendment

Environmental Noise Assessment

S7327C2

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sonus.

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INTRODUCTION

An environmental noise assessment has been made of the proposed Planning and Design Code Amendment (**Code Amendment**) at Lot 5 Hampden Way, Strathalbyn.

The Affected Area shown below is currently within the Hills Neighbourhood Zone of the South Australian Planning and Design Code (the **Code**) and is proposed to be rezoned to a Local Activity Centre Zone. The Local Activity Centre Zone under the Code promotes *small scale shops, offices, business, health and community facilities to provide daily services to and support walkable neighbourhoods*.



There are existing residences in the vicinity of the proposed Code Amendment as well as a 64 lot residential subdivision which has been approved to the immediate north of the Affected Area. These noise sensitive locations have the potential to be impacted by any noise generating development within the proposed Local Activity Centre, should the Code Amendment proceed.

A Concept Plan for the subject site which is proposed as part of the Code Amendment has been included as Appendix A, showing the extent of the allotment which is proposed to form the Activity Centre, an area which will remain Open Space and the future residential allotments to the immediate north (outside of the Code Amendment area).

To support the Code Amendment, the environmental noise assessment establishes objective noise criteria which would apply to any future noise generating development within the Local Activity Centre Zone, predicts the noise level from typical uses which would be appropriate and provides conceptual acoustic treatments which could practically be implemented to achieve the criteria.

CRITERIA

Planning & Design Code

The proposed Code Amendment will result in the subject site becoming part of the Local Activity Centre Zone of the Code, while the closest noise sensitive locations to the site are within the Hills Neighbourhood, Neighbourhood and Established Neighbourhood Zones.

The Code has been reviewed and the provisions considered relevant to this assessment are included as Appendix B.

Specifically, *Performance Outcome 4.1* (PO4.1) relates to noise from development *not unreasonably impact[ing] the amenity of sensitive receivers (or lawfully approved sensitive receivers)*. The Deemed to Satisfy provision for PO4.1 specifically reference achieving the criteria of the *Environment Protection (Noise) Policy 2007* (the **Policy**), which provides objective criteria for the future noise sources at the site.

Environment Protection (Noise) Policy

The Policy is referenced by PO4.1 of the Code and is a method under the *Environment Protection Act 1993* to objectively assess the noise from a development. The Policy is based on the *World Health Organisation Guidelines for Community Noise (1999)* (the WHO Guidelines) to prevent annoyance, sleep disturbance and unreasonable interference on the amenity of an area and is therefore suitable for assessing the level of amenity for residents, as required under the Code.

Goal noise levels are provided by the Policy for the assessment of noise generating activity based on the principally promoted land uses within the zone of the noise source (the proposed Local Activity Centre Zone) and the noise receiver (existing and proposed residences).

In this instance, based on a noise source in the Local Activity Centre Zone and receivers being within the neighbourhood zones where the residences are located, the following goal noise levels would apply to any development on the subject site:

- an equivalent noise level (L_{eq}) of 52 dB(A) during the day (7am to 10pm);
- an equivalent noise level (L_{eq}) of 45 dB(A) at night (10pm to 7am); and,
- a maximum noise level (L_{max}) of 60 dB(A) at night (10pm to 7am).

Under the Policy, noise levels are “adjusted” for each characteristic of tone, impulse, low frequency and modulation that the noise source exhibits. For a penalty to apply the characteristic must be considered dominant in the context of the ambient noise environment. The noise from sources such as vehicle movements, including delivery vehicles through a site can often attract a penalty for the noise character of modulation, where it is at or above the level of other activity in the area. The application of penalties is discussed further in the following section.

ASSESSMENT

In order to demonstrate that the Code Amendment and any future development in the Local Activity Centre Zone can achieve the goal noise levels of the Policy and therefore PO4.1 of the Code, the noise from typical activity centre land uses has been predicted. The Deep End Services *Retail and Economic Investigations Report* for Lot 5 Hampden Way, Strathalbyn Code Amendment (the **Deep End Services Report**) identifies a number of potential land uses which would benefit the community and fit the Local Activity Centre Zone provisions of the Code.

Based on the potential land uses described in the Deep End Services Report, noise levels have been predicted from the following noise sources located within the Affected Area:

- Supermarket
- Specialty showrooms / liquor / retail
- Fast food restaurant / drive through
- Café / restaurant / bakery
- Specialty takeaway
- Gym
- Offices / professional suites
- Consulting rooms
- Medical rooms
- Pharmacy
- Bulky goods / trade supplies outlet

Predictions have been made using a three dimensional noise model of the site and surrounding area in the SoundPlan software. The model considers the noise level generated by each of the noise sources, the distance to receivers, the shielding effects provided by barriers and topography, and meteorological conditions conducive to noise propagation.

The noise levels have also been predicted based on the following activities at each of the tenancies, which have been measured at similar activity centre sites:

- Car park activity such as people talking as they vacate or approach their vehicles, the opening and closing of vehicle doors, vehicles starting, vehicles idling, and vehicles moving into and accelerating away from their parked position;
- General vehicle movements on site;
- Operation of mechanical plant (air conditioning); and,
- The following activities specific to certain tenancies:

Site	Activity
Supermarket	<ul style="list-style-type: none"> Mechanical plant (refrigeration, exhaust fans) Delivery vehicle movements into and out of the site Delivery vehicle idling
Specialty showrooms / liquor	<ul style="list-style-type: none"> Mechanical plant (refrigeration)
Fast food restaurant / drive through	<ul style="list-style-type: none"> Vehicles idling in the drive through Patrons in outdoor dining areas Use of the order unit and pick-up area within the drive through Mechanical plant (refrigeration, exhaust fans) Delivery vehicle movements into and out of the site
Family restaurant	<ul style="list-style-type: none"> Patrons in outdoor dining areas Mechanical plant (refrigeration, exhaust fans) Delivery vehicle movements into and out of the site
Specialty takeaway	<ul style="list-style-type: none"> Mechanical plant (refrigeration, exhaust fans) Delivery vehicles movements into and out of the site
Bulky goods outlet	<ul style="list-style-type: none"> Delivery vehicle movements into or out of the site Use of a forklift to unload the delivery vehicle

Without any specific acoustic treatment of the site, the goal noise levels of the Policy are predicted to be exceeded for some tenancies, particularly at times where a penalty is considered warranted for the character of modulation associated with vehicle movements through the site and voices from patrons dining outdoors.

Based on the noise model, the following indicative treatments have been designed to demonstrate that the criteria can be achieved, should the Code Amendment proceed;

- Construction of a boundary fence for the extent marked up below as **RED** between the future residential sub division and any commercial activities. The fence should be no less than 2.1m tall, blocking line of sight between the car park and residences;
- Specific placement of restaurant outdoor dining areas and screening from residences using either the future restaurant building and/or the boundary fence noted above;
- Orientating buildings such that the major supermarket loading bays are away and/or shielded from the future residential subdivision;
- Specific placement and screening of mechanical plant for tenancies which are closest to noise sensitive receivers;

- Orientating any drive through such that the building shields nearby residences from idling vehicles and order units or where not possible constructing a barrier at the site boundary which blocks line of sight.
- Rubbish collection being restricted to the least sensitive period of the day (consistent with the Part 6 Division 3 of the Policy);



With the indicative acoustic treatments incorporated, noise levels from development within the Affected Area are predicted to achieve the Policy goal noise levels and therefore PO4.1 of the Code.

The final measures required to achieve the Policy for a specific development may vary based on the proposed activity and location on the noise sources, and as such would need to be assessed upon confirmation of the final site layout.

The treatments are consistent with similar Local Activity Centre Zone developments and will result in a comparable level of amenity at nearby residences.

CONCLUSION

An environmental noise assessment has been made of the proposed Planning and Design Code Amendment at Lot 5 Hampden Way, Strathalbyn. The assessment considers the proposed change of zone from Hills Neighbourhood to Local Activity Centre at the subject site.

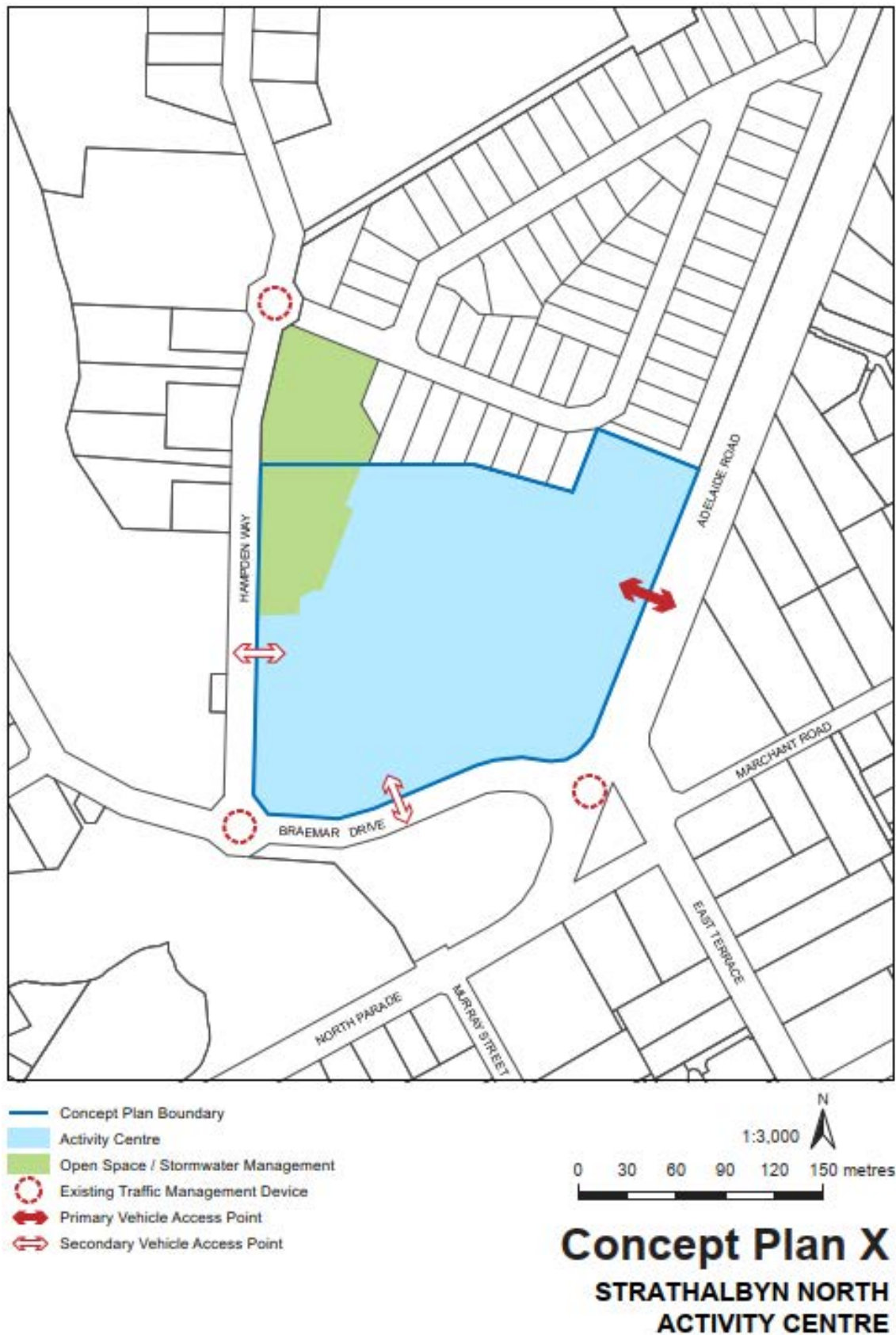
Consideration is given to the existing provisions of the Code and the appropriate noise criteria are derived for any future noise generating development on the subject site. The criteria are determined in accordance with the Policy, which will ensure that suitable levels of residential amenity are achieved at existing residences and at the future residential subdivision land to the north.

Noise levels from indicative land uses for a Local Activity Centre Zone have been predicted and compared against the noise criteria. Indicative acoustic treatments have been provided to demonstrate that the criteria can be achieved, including fencing and barrier construction and suitable location and screening of mechanical plant.

It is also noted that any future development on the site will be subject to detailed design and an environmental noise assessment at the planning stage to ensure that the noise criteria are achieved.

The assessment has therefore been based on the existing assessment pathways of the Planning and Design Code and demonstrates that with practical levels of acoustic treatment, any development as a result of the Code Amendment can achieve the provisions of the Code.

APPENDIX A: Code Amendment Concept Plan



APPENDIX B: Planning and Design Code Provisions

Part 4 – General Development Policies – Interface between Land Uses

Desired Outcome:

DO 1:
Development is located and designed to mitigate adverse impacts on or from neighbouring and proximate land uses.

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
General Land Use Compatibility	
<p>PO 1.2 Development adjacent to a site containing a sensitive receiver (or lawfully approved sensitive receiver) or zone primarily intended to accommodate sensitive receivers is designed to minimise adverse impacts.</p>	<p>DTS/DPF 1.2 None are applicable</p>
<p>PO 4.1 Development that emits noise (other than music) does not unreasonably impact the amenity of sensitive receivers (or lawfully approved sensitive receivers).</p>	<p>DTS/DPF 4.1 Noise that affects sensitive receivers achieves the relevant Environment Protection (Noise) Policy criteria.</p>
<p>PO 4.2 Areas for the on-site manoeuvring of service and delivery vehicles, plant and equipment, outdoor work spaces (and the like) are designed and sited to not unreasonably impact the amenity of adjacent sensitive receivers (or lawfully approved sensitive receivers) and zones primarily intended to accommodate sensitive receivers (or lawfully approved sensitive receivers) and zones primarily intended to accommodate sensitive receivers due to noise and vibration by adopting techniques including::</p> <ul style="list-style-type: none"> (a) locating openings of buildings and associated services away from the interface with the adjacent sensitive receivers and zones primarily intended to accommodate sensitive receivers (b) when sited outdoors, locating such areas as far as practicable from adjacent sensitive receivers and zones primarily intended to accommodate sensitive receivers (c) housing plant and equipment within an enclosed structure or acoustic enclosure (d) providing a suitable acoustic barrier between the plant and / or equipment and the adjacent sensitive receiver boundary or zone. 	<p>DTS/DPF 4.2 None are applicable.</p>

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature	
General Land Use Compatibility		
PO 4.6 Development incorporating music achieves suitable acoustic amenity when measured at the boundary of an adjacent sensitive receiver (or lawfully approved sensitive receiver) or zone primarily intended to accommodate sensitive receivers.	DTS/DPF 4.6 Development incorporating music includes noise attenuation measures that will achieve the following noise levels:	
	Assessment location	Music noise level
	Externally at the nearest existing or envisaged noise sensitive location	Less than 8dB above the level of background noise (L90,15min) in any octave band of the sound spectrum (LOCT10,15 < LOCT90,15 + 8dB)