ADELAIDE CITY ROAD TRAFFIC NOISE MAP

The Adelaide City Road Traffic Noise Map has been created with the intention of providing an indication of road traffic noise exposure in the Adelaide City Council area.

The acoustic terminology used in this fact sheet is explained in *Fact Sheet 11: Acoustic Terminology*.

Benefits of the Adelaide City Road Traffic Noise Map include:

- improved noise management in South Australia;
- assistance with planning for new development;
- help new residents understand the existing noise environment within the City; and
- potential for benchmarking of Adelaide to other cities, particularly with the European Union intending all member countries to produce city noise maps.

As much as possible, the modelling method and output are consistent with those of the European Union\(^1\).

Adelaide City Council seeks to grow the City centre through additional workers, visitors, residents and students, with such aims being consistent with State Government strategies and further building on the redevelopment that continues to occur in the City centre. The excitement and convenience of City living continues to attract many, as does Adelaide’s vibrant night scene.

In this environment, noise may be an issue for those living near major roads or in areas where different uses locate together. Achieving responsible coexistence between the noise expectations of different City users involves various initiatives. The Adelaide City Road Traffic Noise Map complements various Adelaide City Council initiatives, including Precinct Licensing initiatives, Development Plan controls and improved noise information resources.

The Map has been created by Bassett Acoustics with contributions in a collaborative manner from the Adelaide City Council, the Department of Transport, Energy and Infrastructure, the Environment Protection Agency (EPA) and Planning SA.

The Model

The Adelaide City Road Traffic Noise Map predicts the noise levels from road traffic during the day and night. The road traffic noise map has been created from a computer model constructed in the latest SoundPlan version 6.3 environmental noise modelling software.

Many major European cities are required to prepare a noise map. This project allows Adelaide to compare noise levels with other major cities, where possible experience and knowledge gained from those already prepared is utilised, specifically the London Road Traffic Noise Map undertaken by the United Kingdom Department for Environment, Food and Rural Affairs.

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Data from Adelaide City Council and Department of Transport, Energy and Infrastructure was modified to provide estimates of the average annual daily traffic flows of City roads. Other inputs include road widths calculated from an aerial photograph, and building heights estimated based on floor numbers. Topographical information is not included in the model as the inner city area of Adelaide is relatively flat and as such, exclusion of topography would not have significant impact on the end results.

The model was created using the latest noise modelling software and was checked against actual noise measurements in King William Street, North Terrace and Grenfell Street.

**Output**

The model is presented as a grid noise map with noise contours developed in a similar manner to the standard noise indicator used by the European Union, allowing for future comparisons with European cities.
The noise contours have been used by Planning SA to estimate the percentage of the City population exposed to particular noise levels.

**Limitations**

The Adelaide City Road Traffic Noise Map model was calculated using grid spacing of 10 metres and at a height above ground of 4 metres, in a similar manner to European Union models. As such, noise predictions over small distances and at significantly different heights may be inaccurate.

The noise levels are predicted based on a daily average of traffic flow and represent the average noise exposure of the population over a 24 hour period. Short term events and noise level fluctuations are not separately modelled.

**Future Work**

The Map includes road traffic as a noise source, and in the future could be expanded to include other noise sources, such as trains, trams, aircraft, air conditioners, night clubs or industry.

To improve accuracy in certain areas, topographical data could be included as an input to the model. The extension of the model to other council areas of metropolitan Adelaide is also a consideration.

**Acoustic Consultant**

If you are considering any sound insulation, it is recommended that you verify any sound insulation specifications with your developer and/or employ the services of an acoustic consultant to ensure the proposed changes provide significant noise reduction.

To contact an acoustic consultant visit the Yellow Pages Directory (under Acoustical Consultants) or for an acoustic consultant who is part of the Association of Australian Acoustical Consultants (AAAC) visit [www.aaac.org.au](http://www.aaac.org.au)

**Other Fact Sheets**

A number of other Noise Technical Fact Sheets complement the information in this document. These can be downloaded from the Adelaide City Council website: [www.adelaidecitycouncil.com/noise](http://www.adelaidecitycouncil.com/noise)

- Fact Sheet 1: Sound Insulation Guidelines
- Fact Sheet 2: Gaps and Flanking Paths
- Fact Sheet 3: Sound Insulation for Windows
- Fact Sheet 4: Sound Insulation for Glazed Doors and Standard Doors
- Fact Sheet 5: Sound Insulation for Exterior Walls and Facade Systems
- Fact Sheet 6: Ventilation
Fact Sheet 7: Sound Insulation for Air Conditioners and Other External Mechanical Plant

Fact Sheet 8: Sounds in the City

Fact Sheet 9: Adelaide City Road Traffic Noise Map

Fact Sheet 10: Noise Ready Reckoner

Fact Sheet 11: Acoustic Terminology

Fact Sheet 12: Frequently Asked Questions

Fact Sheet 13: Sound Insulation for Internal/Common Walls

Fact Sheet 14: Sound Insulation of Floors

Fact Sheet 15: Mechanical Plant for Commercial Buildings

Hard copies of these Fact Sheets are available at Council’s Customer Centre, Libraries and Community Centres, or by contacting Councils Customer Centre on (08) 8203 7203.

The Building Code of Australia Compliance

The Building Code of Australia (BCA) should be consulted to ensure that any sound insulation upgrades comply with the requirements of the BCA. It should be noted that although the upgrade of a building element may be acoustically beneficial, it may not comply with the requirements of the BCA.

Australian Building Codes Board

The Noise Technical Fact Sheets contain content sourced from the Building Code of Australia and Guidelines on Sound Insulation, published by the Australian Building Codes Board (ABCB). These documents can be purchased from the ABCB website: www.abcb.gov.au

Standards

The standards which apply in the Development Plan are:

- Australian/New Zealand Standard 2107:2000 “Acoustics - Recommended design sound levels and reverberation times for building interiors”


- Recognised liquor licensing noise limits (www.olgc.sa.gov.au). These are modified to apply within bedroom and living areas.

Contacts / Additional Information

Additional information can be obtained from:

- Australian Association of Acoustic Consultants (www.aaac.org.au)
• Australian Acoustical Society (www.acoustics.asn.au)
• Office of the Liquor and Gambling Commissioner (www.olgc.sa.gov.au)
• South Australian EPA (www.epa.sa.gov.au/noise.html)
• South Australian Police (www.sapolice.sa.gov.au)
• Yellow Pages (www.yellowpages.com.au search "acoustic")
• Australian Window Association (www.awa.org.au)

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Contact Us
For further information call Adelaide City Council on (08) 8203 7203 or email city@adelaidecitycouncil.com

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