

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 City of Adelaide 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 Union¹.

City of Adelaide 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 City of Adelaide 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 City of Adelaide, the Department of Transport, Energy and Infrastructure, the Environment Protection Agency (EPA) and Planning SA.

¹ European Commission Working Group Assessment of Exposure to Noise, 2003, *Good Practice Guide for Strategic Noise Mapping and the Production of Associated Data on Noise Exposure*, EC

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.

Data from City of Adelaide 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.

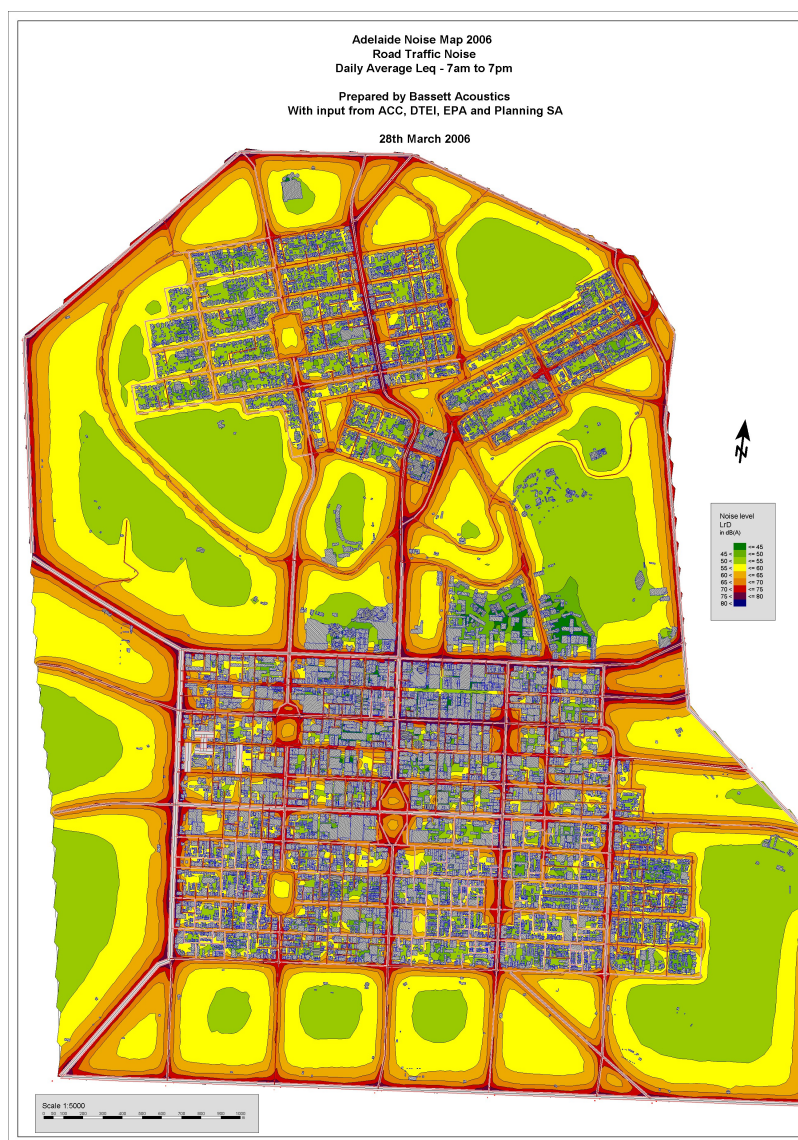
The model was created using the latest noise modelling software and was checked against actual noise measurements in King William Street, North Terrace and Grenfell Street.

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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.



Adelaide City Noise Map
Source: Bassett Acoustics

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

Other Fact Sheets

A number of other Noise Technical Fact Sheets complement the information in this document. These can be downloaded from the City of Adelaide website: www.cityofadelaide.com.au/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

Fact Sheet 16: AAAC Star Rating

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”
- World Health Organisation, Guidelines For Community Noise, Edited by B Berglund et al, 1999) (<http://www.who.int/docstore/peh/noise/guidelines2.html>)
- 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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Acknowledgments

This project has been developed by City of Adelaide in partnership with Bassett Acoustics.

Contact Us

For further information call City of Adelaide on (08) 8203 7203 or email city@cityofadelaide.com.au

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