

Measuring the
liveability of the
21 largest cities
in Australia

Liveability Report for Geelong

Acknowledgements

This research has been funded by the Australian Prevention Partnership Centre and the NHMRC Centre of Research Excellence in Healthy Liveable Communities. It has also been supported by the Clean Air and Urban Landscapes Hub of the National Environmental Science Programme.

This work is licenced under the Creative Commons Attribution-NonCommercial-NoDerivs 3.0 Australia Licence. To view a copy of this licence, visit: creativecommons.org/licenses/by-nc-nd/3.0/au/. Any maps reproduced as part of this project must include attribution and citation.

ISBN: 978-0-6483390-9-0

Gunn LD, Davern M, Higgs C, Both A, Roberts R, Rozek J, Giles-Corti B. (2020). Measuring liveability for the 21 largest cities in Australia: Liveability Report for Geelong. Melbourne: RMIT University, Centre for Urban Research.

Enquiries regarding this report may be directed to:

Building 8, Level 11
RMIT University City campus
124 La Trobe Street
Melbourne VIC, 3000
Australia

E hlc@rmit.edu.au
P 03 9925 4577

Indicator data and maps can be accessed through the Australian Urban Observatory:

W auo.org.au



About this report

This report is one of a series of 21 Liveability Reports presenting indicators and maps on the liveability of Australia's 21 largest cities. It builds on the *Creating Liveable Cities in Australia Report* and *Scorecards* developed by researchers from the Healthy, Liveable Cities Group at RMIT University. This report includes two new indicators – a Liveability Index and Social Infrastructure Index as well as liveability indicators for seven domains.



Liveability Index



Walkability



Social Infrastructure



Public Transport



Food Environment



Alcohol Environment



Public Open Space



Employment



Housing Affordability



Liveability Index

Rationale

The economic, social, environmental and health co-benefits of urban liveability are now recognised by all levels of government in Australia and globally. Liveable communities are safe, socially cohesive and inclusive, and environmentally sustainable. They have affordable housing linked via public transport, walking and cycling infrastructure, to employment; education; shops and services; public open space; and social, cultural and recreational opportunities [1, 2].

What we measured

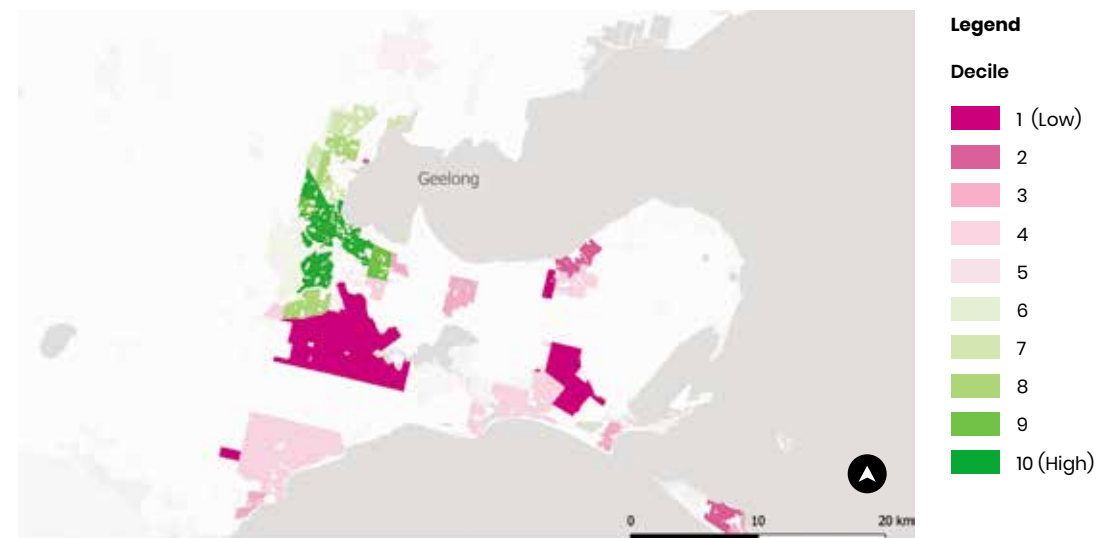
The Liveability Index is underpinned by seven years of research [3]. It combines six domains of liveability found to be associated with health and wellbeing outcomes: walkability and access to social infrastructure, public transport, larger public open space, affordable housing and local employment. Higgs et al 2019 [3] found that people who live in more liveable communities are more likely to walk, cycle and use public transport and less likely to drive. Details for the included measures are contained in Higgs et al 2019 [3].



Results

Analysis of liveability for Geelong suburbs reveals wide variation over the city.

Figure 1. Liveability Index for Geelong.



2019 CC BY-NC-ND 4.0
Data: Australian Bureau of Statistics (ABS), 2016 under CC by 4.0; OpenStreetMap, 2018 under ODbL; Australian Children's Education & Care Quality Authority, 2018; Australian Curriculum, Assessment and Reporting Authority, 2018; Healthdirect Australia National Health Services Directory, 2017, via AURIN Portal, 2019; ActionBuses, Canberra Metro, MetroTas, NT Department of Infrastructure, Planning & Logistics, Public Transport Victoria, Transport for NSW, TransLink and Transport, under CC by 4.0
Map tiles: CartoDB, under CC BY 3.0, featuring data by OpenStreetMap, under ODbL.



Walkability

Rationale

Walkability measures the ease of walking in an area. Neighbourhoods with shops and services to walk to, small blocks and good street connectivity, and higher population density tend to be more walkable [4]. Walkable neighborhoods discourage driving and increase walking, cycling and active transport use which improves levels of physical activity and reduces chronic disease outcomes [5-8].

What we measured

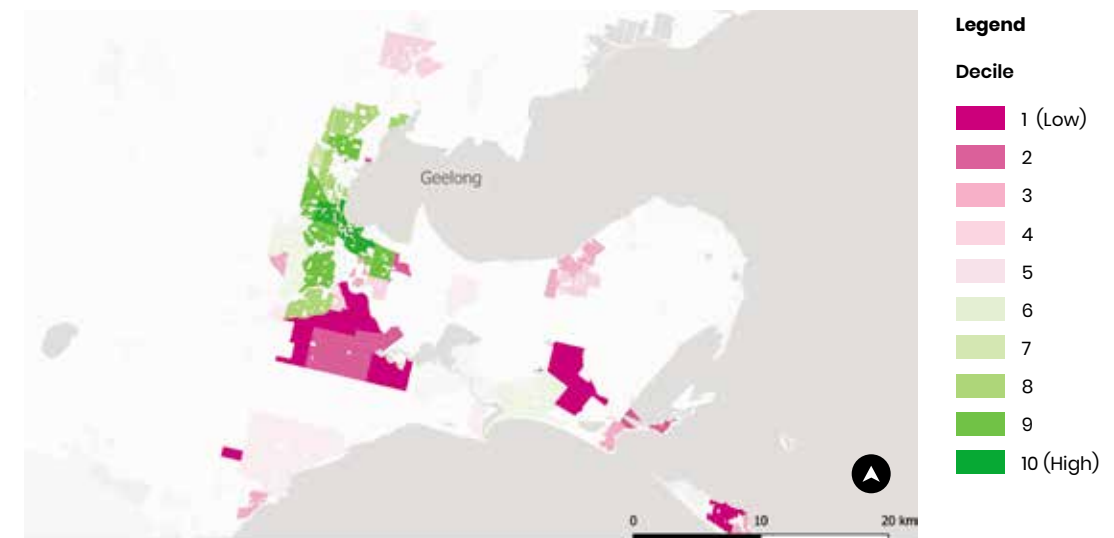
Walkability is calculated as a composite index that includes access to daily living destinations (something to walk to), dwelling density (population needed to supply services and destinations) and street connectivity (a way to get there) within a reasonable walking distance of home [4, 9].



Results

A closer analysis of walkability across the suburbs of Geelong reveals wide variation over the city.

Figure 2. Walkability Index for Geelong.



2019 CC BY-NC-ND 4.0
Data: Australian Bureau of Statistics (ABS), 2016 under CC by 4.0; OpenStreetMap, 2018 under ODbL; ActionBuses, Canberra Metro, MetroTas, NT Department of Infrastructure, Planning & Logistics, Public Transport Victoria, Transport for NSW, TransLink and Transport, under CC by 4.0
Map tiles: CartoDB, under CC BY 3.0, featuring data by OpenStreetMap, under ODbL.





Social Infrastructure

Rationale

Social infrastructure provides access to essential community services and resources [10]. Access to a wide range of different types of social infrastructure is therefore important for the creation and ongoing development of healthy communities. High levels of access to social infrastructure is linked to increased physical activity [11] and wellbeing [10], and increases satisfaction with the local community [1] improving social interactions and mental health outcomes [12]. Social infrastructure is therefore a key component of liveability.

What we measured

The Social Infrastructure Index included access to 16 types of social infrastructure at various recommended distances from dwellings [10]. It included access to childcare facilities, community centres, libraries, aged care facilities, pharmacies, family and community healthcare, dentists and general practitioners, sporting facilities, swimming pools, outside school hours childcare, primary and secondary schools, museums or galleries, and cinemas and theatres [3].

Results

Across Australia's largest 21 cities, a wider mix of social infrastructure is available in

Rank 1
Sydney

Rank 2
Melbourne

Rank 3
Adelaide

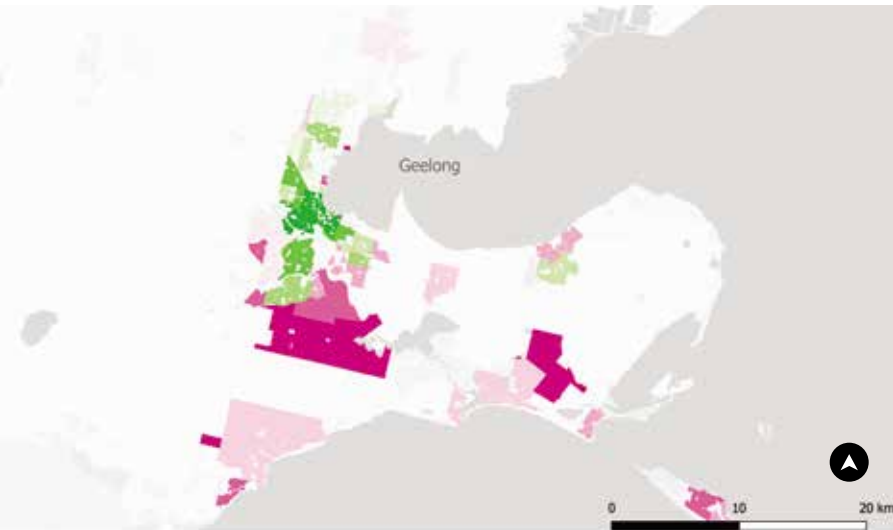


The average number of social infrastructure destinations accessible within recommended distances from dwellings across all areas of Geelong is

6 out of a total of 16

However, a closer analysis of the mix of social infrastructure across Geelong reveals wide variation across the city.

Figure 3. Social Infrastructure Index for Geelong.



2019 CC BY-NC-ND 4.0
Data: Australian Bureau of Statistics (ABS), 2016 under CC by 4.0; OpenStreetMap, 2018 under ODbL; Australian Children's Education & Care Quality Authority, 2018; Australian Curriculum, Assessment and Reporting Authority, 2018; Healthdirect Australia National Health Services Directory, 2017, via AURIN Portal, 2019
Map tiles: CartoDB, under CC BY 3.0, featuring data by OpenStreetMap, under ODbL



Public Transport

Rationale

Living close to public transport supports health and wellbeing in a number of ways: by encouraging walking and reducing dependence on driving; and, providing residents with access to employment and amenities. People who live close to public transport are more likely to use it [5], and in turn achieve daily recommended physical activity. Having a public transport stop near home and work, increases the likelihood of using public transport [18]. While living within 400m of a public transport stop with a service every 30 minutes, is likely to encourage more walking [19].

Providing regular and proximate public transport also reduces inequities. It enables people who have restricted mobility or can't drive – such as young people, older adults, and people with disabilities – and those without a private motor vehicle to access services, education and jobs. Along with active transport, it also facilitates more sustainable mobility.

What we measured

We measured access to bus, train and tram stops with an average service interval of no more than 30 minutes between the weekday hours of 7am and 7pm. Access was measured as the percentage of dwellings within 400m of any of these

stops based on a walkable road network distance. The distance of 400m is consistent with access standards in many Australian state transport policies.

Results

Across Australia's largest 21 cities, access to regular public transport is available to more residents living in

Rank 1
Canberra

Rank 2
Sydney

Rank 3
Adelaide



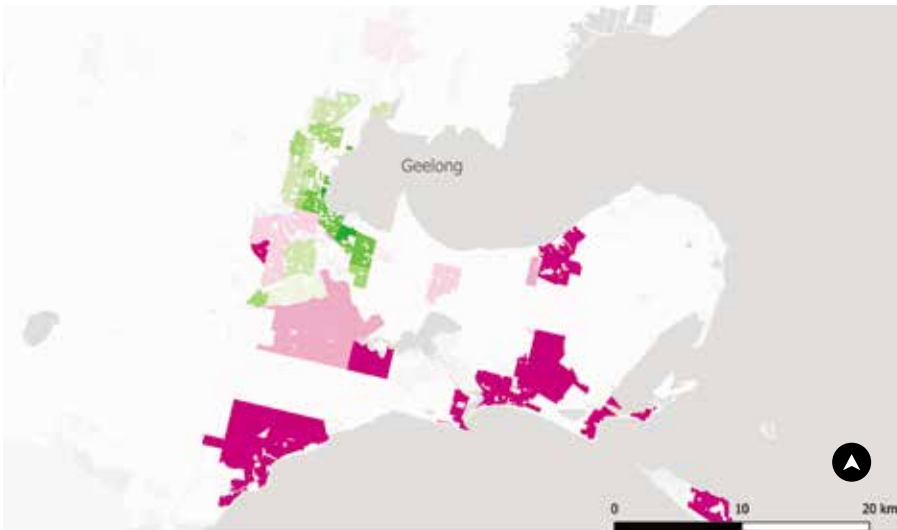
The percentage of residences with proximate access to regular public transport in Geelong is

38%*

*This figure is based on up-dated methods and data and is not comparable to previously reported figures. Up-dated figures for previous years can be accessed through the Australian Urban Observatory.

A closer analysis of access to regular public transport across the suburbs of Geelong reveals wide variation over the city.

Figure 4. Percentage of residences with proximate access to regular public transport for Geelong.



2019 CC BY-NC-ND 4.0
Data: Australian Bureau of Statistics (ABS), 2016 under CC by 4.0; OpenStreetMap, 2018 under ODbL; ActionBuses, Canberra Metro, MetroTas, NT Department of Infrastructure, Planning & Logistics, Public Transport Victoria, Transport for NSW, TransLink and Transperth, under CC by 4.0 Map tiles: CartoDB, under CC BY 3.0, featuring data by OpenStreetMap, under ODbL





Food Environment

Rationale

Being close to a supermarket supports healthy eating and active living by providing easy access to fruit, vegetables and healthy food within a walkable distance. People living within walking distance of a supermarket are more likely to walk or cycle instead of driving [5, 13]. Increases in physical activity from active transportation, such as walking and cycling, reduces chronic disease risk and congestion issues. In disadvantaged areas, living within 800m of a supermarket reduces the risk of overweight and obesity [14].

What we measured

We measured the average distance to any type of supermarket. Distances were calculated from individual dwellings using a pedestrian accessible road network.

Results

Of the 21 largest cities in Australia, the average distance to a supermarket is lowest in

Rank 1
Launceston

Rank 2
Canberra

Rank 3
Sydney

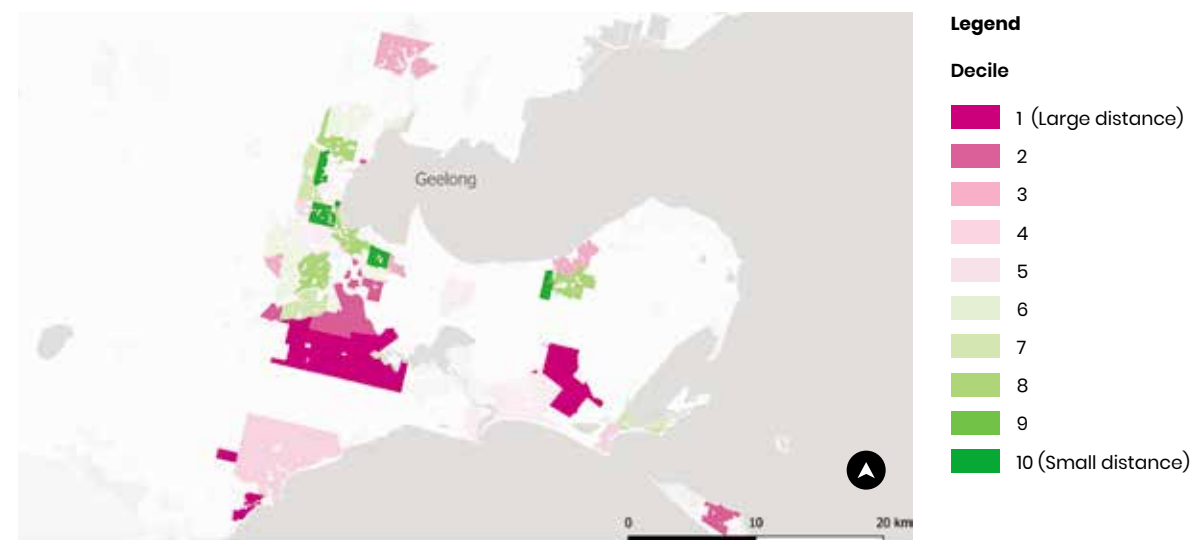


The average distance to a supermarket for Geelong is

1390m

A closer analysis of average distances to supermarkets across the suburbs of Geelong reveals wide variation over the city.

Figure 5. Average distances in metres to supermarkets for Geelong.



Alcohol Environment

Rationale

Access to alcohol has been linked to harmful alcohol consumption and alcohol-related violence [15, 16]. Furthermore, alcohol outlets are more prevalent in more disadvantaged areas [17]. For those living in disadvantage areas where there are fewer alcohol outlets, there appears to be a protective affect with enhanced self-reported health [17].

What we measured

Access to off-licence alcohol outlets were included in this report. This includes bottle-shops and supermarkets where alcohol can be purchased and taken to another premise for consumption. Distances were calculated from individual dwellings using a pedestrian accessible road network.

Results

Across Australia's largest 21 cities, the average distance to an off-licence alcohol outlet is furthest in

Rank 1
Toowoomba

Rank 2
Townsville

Rank 3
Bendigo

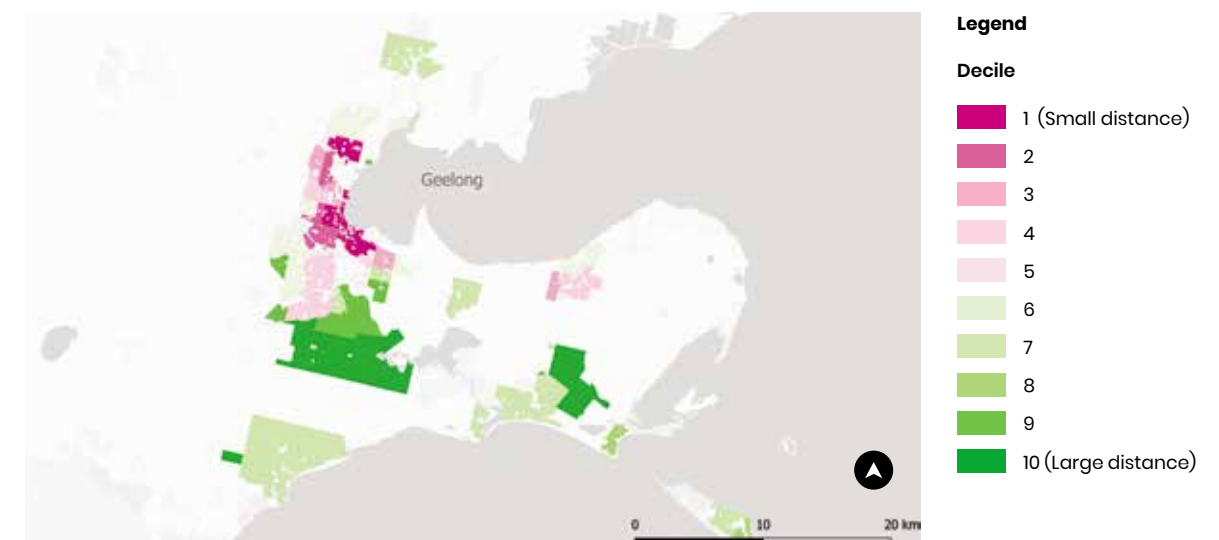


The average distance to an off-licence alcohol outlet for Geelong is

1002m

A closer analysis of alcohol outlets across the suburbs of Geelong reveals wide variation over the city.

Figure 6. Average distances in metres to an off-licence outlet for Geelong.





Public Open Space

Rationale

Public open space includes parks, open areas and places where people can congregate for active and passive recreation and enjoyment. Parks are one form of public open space that usually include grassed areas and gardens, and some green recreational space. Parks support both the physical and mental health of people living nearby and are important for supporting the local ecology and biodiversity of an area [21].

What we measured

Public open space was defined as urban parks greater than or equal to 1.5 hectares, since larger parks have been shown to support physical activity [22, 23]. Access was measured as the percentage of dwellings within 400m based on a walkable road network distance. The distance of 400m represents a 5-minute walk for most people.

This measure is also included in the National Cities Performance Framework under the liveability and sustainability domain [20].

Results

Across Australia's largest 21 cities, living within 400m of public open space of 1.5 hectares is available to more residents living in

- Rank 1**
Canberra
- Rank 2**
Ballarat
- Rank 3**
Newcastle



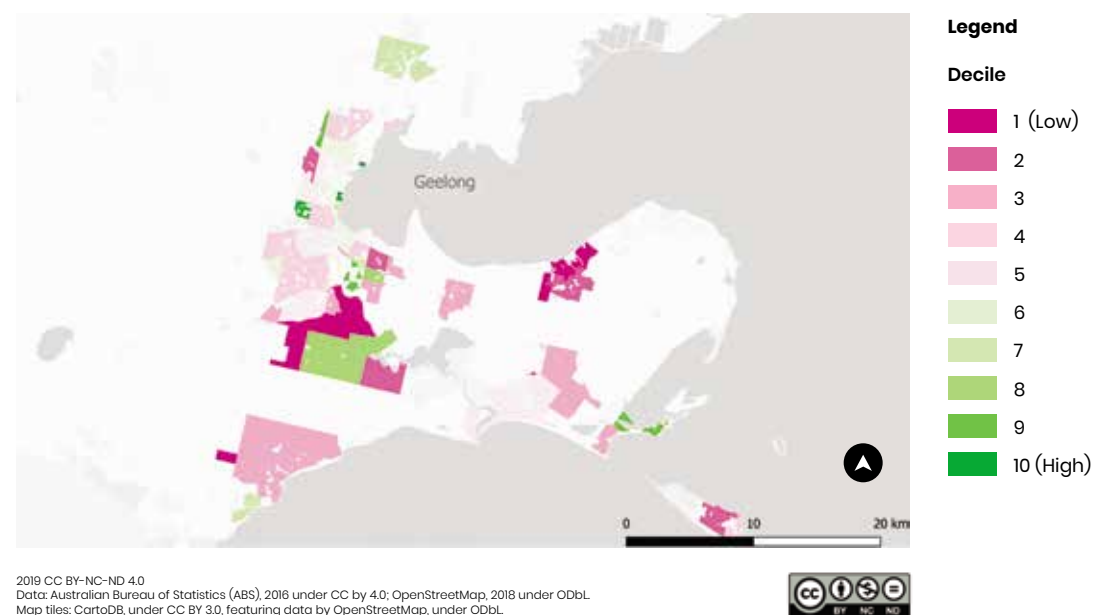
The percentage of residences living within 400m of public open space of at least 1.5 hectares in Geelong is

44%*

*This figure is based on up-dated methods and data and is not comparable to previously reported figures.

A closer analysis of access to public open space across the suburbs of Geelong reveals wide variation over the city.

Figure 7. Percentage of residences living within 400m of large public open space for Geelong.



2019 CC BY-NC-ND 4.0
Data: Australian Bureau of Statistics (ABS), 2016 under CC by 4.0; OpenStreetMap, 2018 under ODbL
Map tiles: CartoDB, under CC BY 3.0, featuring data by OpenStreetMap, under ODbL.



Local Employment

Rationale

Accessible employment is a social determinant of health, providing workers with financial resources to support themselves and their families. Access to local employment reduces vehicle kilometres travelled, travel time and traffic congestion on city roads. It also increases the likelihood of people using active transport such as walking, cycling and public transport and has been associated with improved self-reported health [24]. Access to local employment with shorter travel times has the potential to support work-life balance with shorter travel times found to be associated with a reduced risk of obesity [25].

What we measured

We measured access to local employment as the percentage of residents living in Australian Bureau of Statistics Statistical Area 1 (SA1), working within a larger Australian Bureau of Statistics Statistical Area 3 (SA3). On average, SA1 areas represent approximately 400 people while SA3 areas represent between 30,000 and 130,000 people.

Results

Across Australia's largest 21 cities, more local employment is available in

- Rank 1**
Townsville
- Rank 2**
Toowoomba
- Rank 3**
Mackay

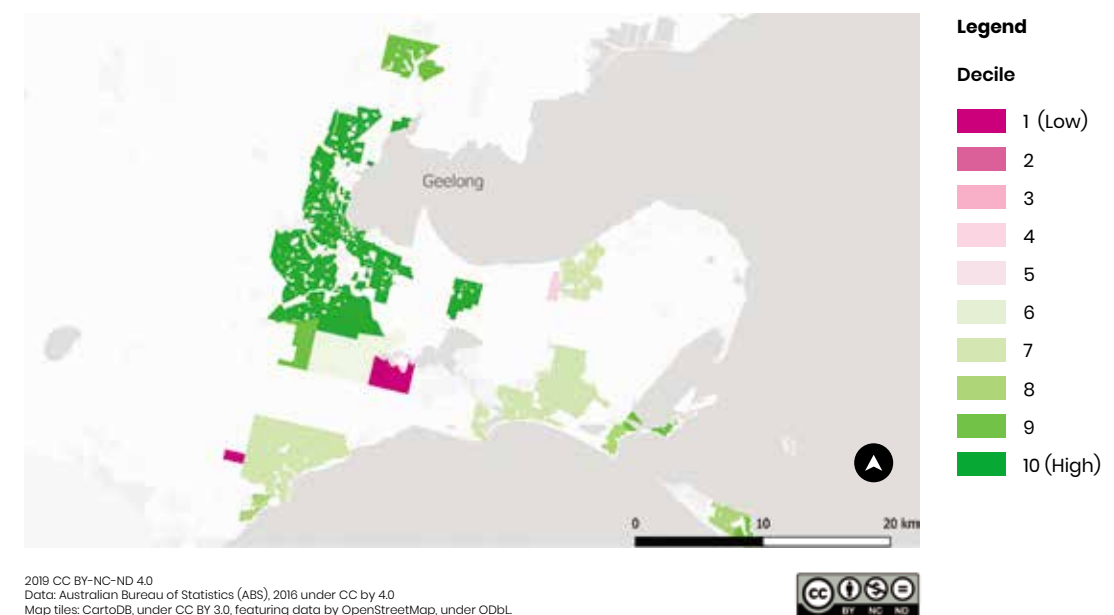


The percentage living with local employment access at SA3 level for Geelong is

69%

A closer analysis of Local Employment across the suburbs of Geelong reveals wide variation over the city.

Figure 8. Percentage living at SA1 with local employment access at SA3 for Geelong.



2019 CC BY-NC-ND 4.0
Data: Australian Bureau of Statistics (ABS), 2016 under CC by 4.0
Map tiles: CartoDB, under CC BY 3.0, featuring data by OpenStreetMap, under ODbL.



Housing Affordability

Rationale

Decent and affordable housing supports families by providing safe, stable and healthy shelter. Affordable housing frees up family finances for use on health care and food, and supports physical and mental health and wellbeing [26]. The 30/40 affordable housing measure [27] is associated with poorer self-reported health, higher community dissatisfaction, and residents feeling unsafe [28].

What we measured

We measured housing affordability according to a refined indicator of housing stress (10) where households in the bottom 40 percent of income spend more than 30 percent of their household income on housing costs [28].

Results

Across Australia's largest 21 cities, housing stress is least common in

Rank 1
Launceston

Rank 2
Hobart

Rank 3
Wollongong

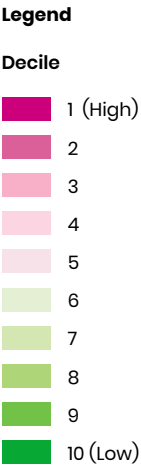
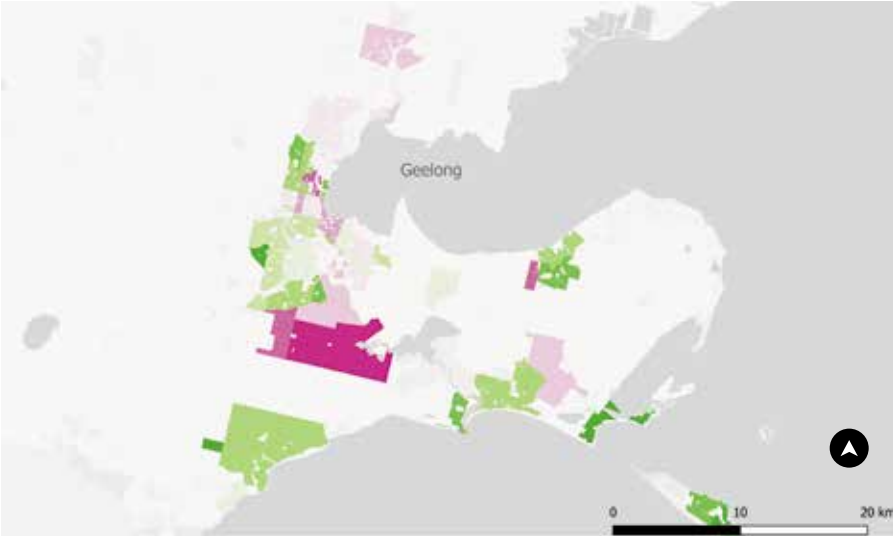


In Geelong, the percentage of households in the bottom 40 percent of the income distribution spending more than 30 percent of household income on housing costs is

32%

A closer analysis of housing stress across the suburbs of Geelong reveals wide variation over the city.

Figure 9. Percentage of households under housing stress for Geelong.



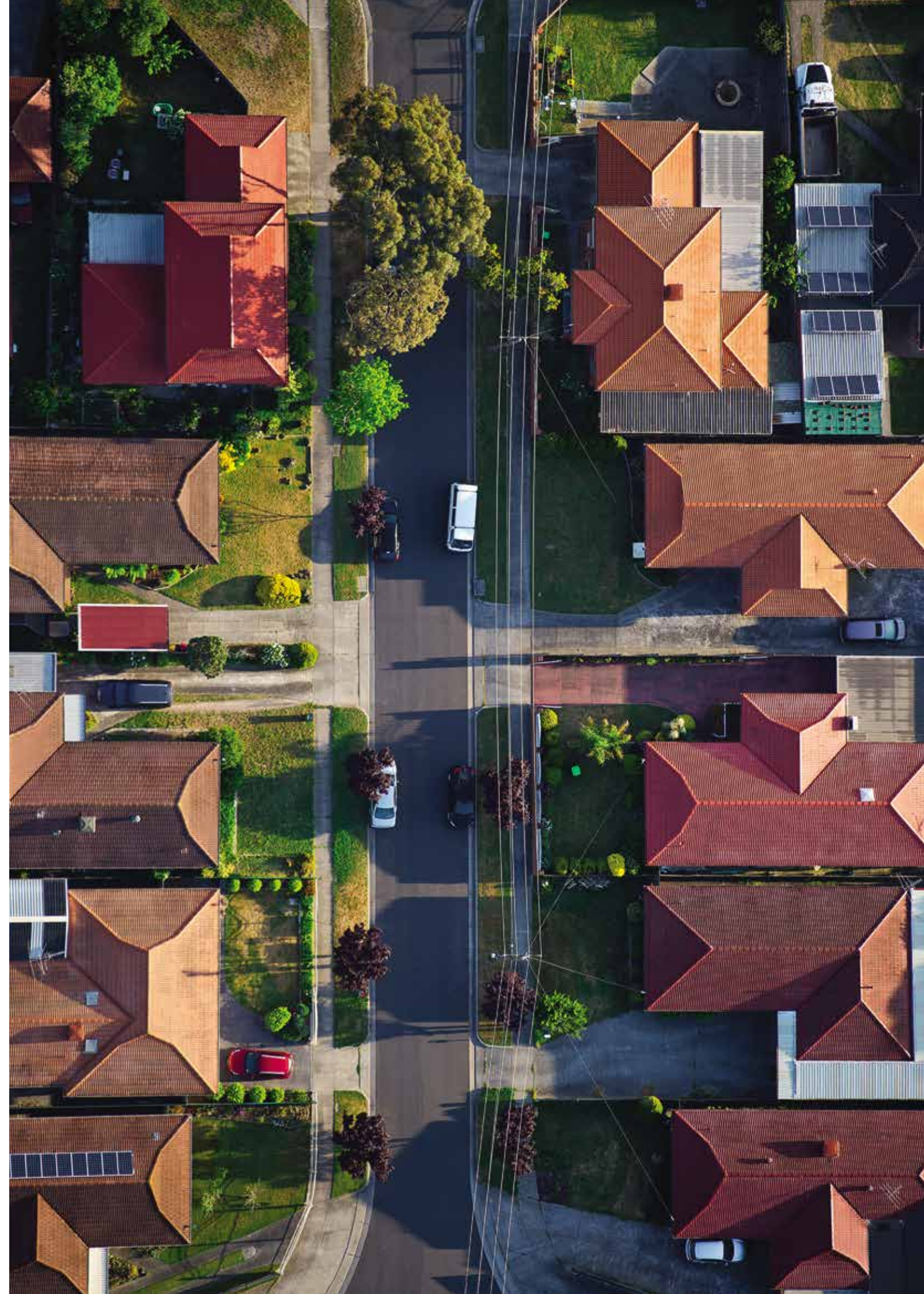
Summary for Geelong

Indicator		Brief Description	Value
Liveability		Liveability Index	See map
Walkability		Walkability Index	See map
Social Infrastructure		Social Infrastructure Index	6 destinations
Public Transport		Percentage living within 400m to regular public transport	38%
Food Environment		Average distance to closest supermarket	1390 m
Alcohol Environment		Average distance to an off-licence alcohol outlet	1002 m
Public Open Space		Percentage living within 400m of public open space of 1.5 hectares	44%
Local Employment		Percentage living with employment access at SA3 level	69%
Housing Affordability		Percentage of households in the lowest 40% of household incomes spending more than 30% of income on housing	32%

Please visit the Australian Urban Observatory at auo.org.au for more reports covering the liveability of Australia's 21 largest cities.

References

1. Lowe, M., et al, *Planning healthy, liveable and sustainable cities: How can indicators inform policy*. Urban Policy and Research. 2015. 33(2): p. 131-144.
2. Badland, H., et al, *Urban liveability: Emerging lessons from Australia for exploring the potential for indicators to measure the social determinants of health*. Social Science & Medicine. 2014. 111: p. 64-73.
3. Higgs, C., et al, *The Urban Liveability Index: developing a policy-relevant urban liveability composite measure and evaluating associations with transport mode choice*. Int J Health Geogr. 2019. 18(1): p. 14.
4. Hooper, P., et al, *The building blocks of a 'Liveable Neighbourhood': Identifying the key performance indicators for walking of an operational planning policy in Perth, Western Australia*. Health and Place. 2015. 36: p. 173-183.
5. Boulange, C., et al, *Examining associations between urban design attributes and transport mode choice for walking, cycling, public transport and private motor vehicle trips*. Journal of Transport & Health. 2017. 6: p. 155-166.
6. Zapata-Diomedí, B., et al, *Physical activity-related health and economic benefits of building walkable neighbourhoods: a modelled comparison between brownfield and greenfield developments*. International Journal of Behavioral Nutrition and Physical Activity. 2019. 16(1): p. 11.
7. Chandrabose, M., et al, *Built environment and cardio-metabolic health: systematic review and meta-analysis of longitudinal studies*. Obesity Reviews. 2019. 20(1): p. 41-54.
8. World Health Organization, *Global action plan on physical activity 2018-2030*. 2018: Geneva: Switzerland.
9. Arundel, J., et al, *Creating liveable cities in Australia: Mapping urban policy implementation and evidence-based national liveability indicators*. Melbourne: Centre for Urban Research, RMIT University. 2017.
10. Davern, M., et al, *Using spatial measures to test a conceptual model of social infrastructure that supports health and wellbeing*. Cities & Health. 2017. 1(2): p. 194-209.
11. Giles-Corti, B., et al, *The influence of urban design on neighbourhood walking following residential relocation: Longitudinal results from the RESIDE study*. Social Science & Medicine. 2013. 77: p. 20.
12. Evans, G., *The built environment and mental health*. Bulletin of the New York Academy of Medicine. 2003. 80(4): p. 536-555.
13. Gunn, L., et al, *Designing healthy communities: creating evidence on metrics for built environment features associated with walkable neighbourhood activity centres*. The International Journal of Behavioral Nutrition and Physical Activity. 2017. 14(1): p. 164.
14. Murphy, M., et al, *Supermarket access, transport mode and BMI: the potential for urban design and planning policy across socio-economic areas*. Public Health Nutrition. 2017. 20(18): p. 3304.
15. Foster, S., et al, *Liquor landscapes: Does access to alcohol outlets influence alcohol consumption in young adults?* Health & Place. 2017: p. 17.
16. Livingston, M., *Alcohol outlet density and harm: Comparing the impacts on violence and chronic harms*. Drug and Alcohol Review. 2011. 30(5): p. 515-523.
17. Badland, H., et al, *Testing spatial measures of alcohol outlet density with self-rated health in the Australian context: Implications for policy and practice*. Drug and Alcohol Review. 2016. 35(3): p. 298-306.
18. Badland, H., et al, *Public transport access and availability in the RESIDE study: Is it taking us where we want to go?* Journal of Transport & Health. 2014. 1(1): p. 45-49.
19. Rachele, J.N., et al, *Are Measures Derived From Land Use and Transport Policies Associated With Walking for Transport?* Journal of Physical Activity & Health. 2018. 15(1): p. 13-21.
20. Department of Infrastructure, Transport, Cities and Regional Infrastructure. *National Cities Performance Framework*. Available from: <https://smart-cities.dashboard.gov.au/all-cities/overview>.
21. Davern, M., et al, *Quality Green Space Supporting Health, Wellbeing and Biodiversity: A Literature Review*. 2016, University of Melbourne (Melbourne, Australia).
22. Sugiyama, T., et al, *Associations between recreational walking and attractiveness, size, and proximity of neighborhood open spaces*. American Journal of Public Health. 2014. 100(9): p. 1752.
23. Francis, J., et al, *Quality or quantity? Exploring the relationship between Public Open Space attributes and mental health in Perth, Western Australia*. Social Science & Medicine. 2012. 74(10): p. 1570-1577.
24. Badland, H., et al, *Are Area-Level Measures of Employment Associated with Health Behaviours and Outcomes? An International and Interdisciplinary Journal for Quality-of-Life Measurement*. 2017. 134(1): p. 237-251.
25. Frank, L.D., M.A. Andresen, and T.L. Schmid, *Obesity relationships with community design, physical activity, and time spent in cars*. American Journal of Preventive Medicine. 2004. 27(2): p. 87-96.
26. Brackertz, N., J. Davidson, and A. Wilkinson, *Trajectories: the interplay between mental health and housing pathways, a short summary of the evidence, report prepared by AHURI Professional Services for Mind Australia, Australian Housing and Urban Research Institute*. 2019: Melbourne.
27. Yates J and Gabriel M, *Australian Housing and Urban Research Institute. Housing affordability in Australia: Collaborative research venture 3: Housing affordability for lower income Australians: Background report*. 2005.
28. Badland, H., et al, *Examining associations between area-level spatial measures of housing with selected health and wellbeing behaviours and outcomes in an urban context*. Health & Place. 2017: p. 17.





**Centre for
Urban Research**

Building 8, Level 11
RMIT University City campus
124 La Trobe Street
Melbourne VIC, 3000
Australia

T: +61 3 9925 0917
E: cur@rmit.edu.au

cur.org.au

 **RMIT**
UNIVERSITY | Centre for
Urban Research

 **Australian
Urban
Observatory**

Your pathway to liveable cities
auo.org.au