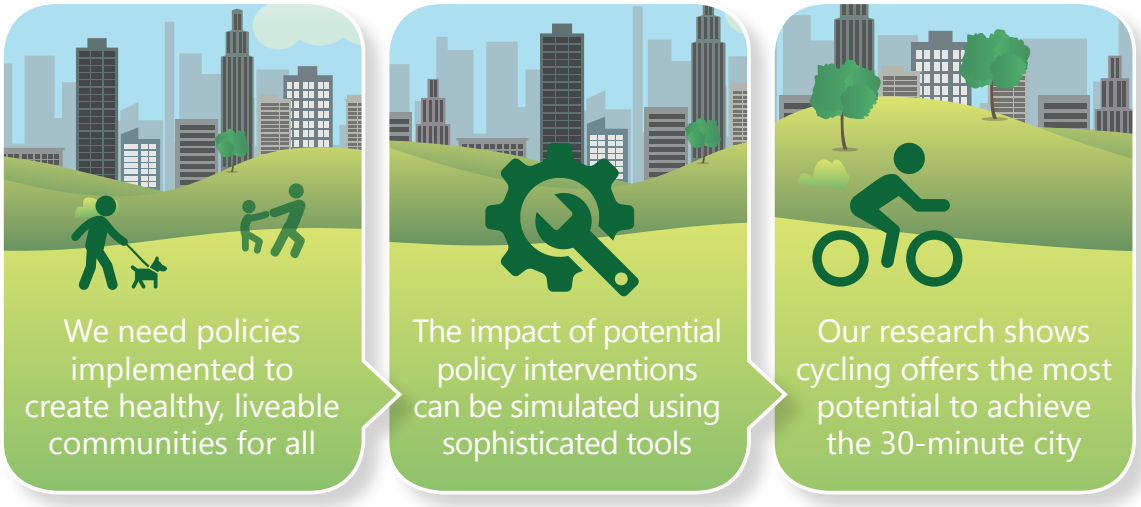
FINDINGS BRIEF

The Australian Prevention Partnership Centre
Systems and solutions for better health

Importance of healthy liveable cities



Key messages

- Australia does not have sufficient policies to deliver healthy and liveable communities. Our research showed that **people value walkability and liveability,** and we created indicators for measuring these, however **urban policies are not always implemented** in local communities.
- Planning policies and infrastructure are needed to help avoid disadvantage being suburbanised, and we **developed advanced simulation modelling tools** to explore the outcomes of urban interventions. This provides evidence when advocating for better policies, health and liveability.
- We found that **house prices are higher in more walkable neighbourhoods**. These inequalities have financial and health impacts, especially for those of lower socioeconomic background.
- We examined several possible interventions, including how the 30-minute city might best be achieved. Cycling offers more potential than walking, but **investment in cycling infrastructure coupled with education programs** are critical to influence uptake.
- Developing **further advanced simulation modelling** can inform policies and assist with infrastructure planning. For example, investigating whether increasing access to public transport leads to more walking, and whether this is enhanced when population increases are allowed in strategic areas.

The project: Benchmarking, monitoring, modelling and valuing the healthy liveable city

Project lead: Distinguished Professor Billie Giles-Corti, RMIT University

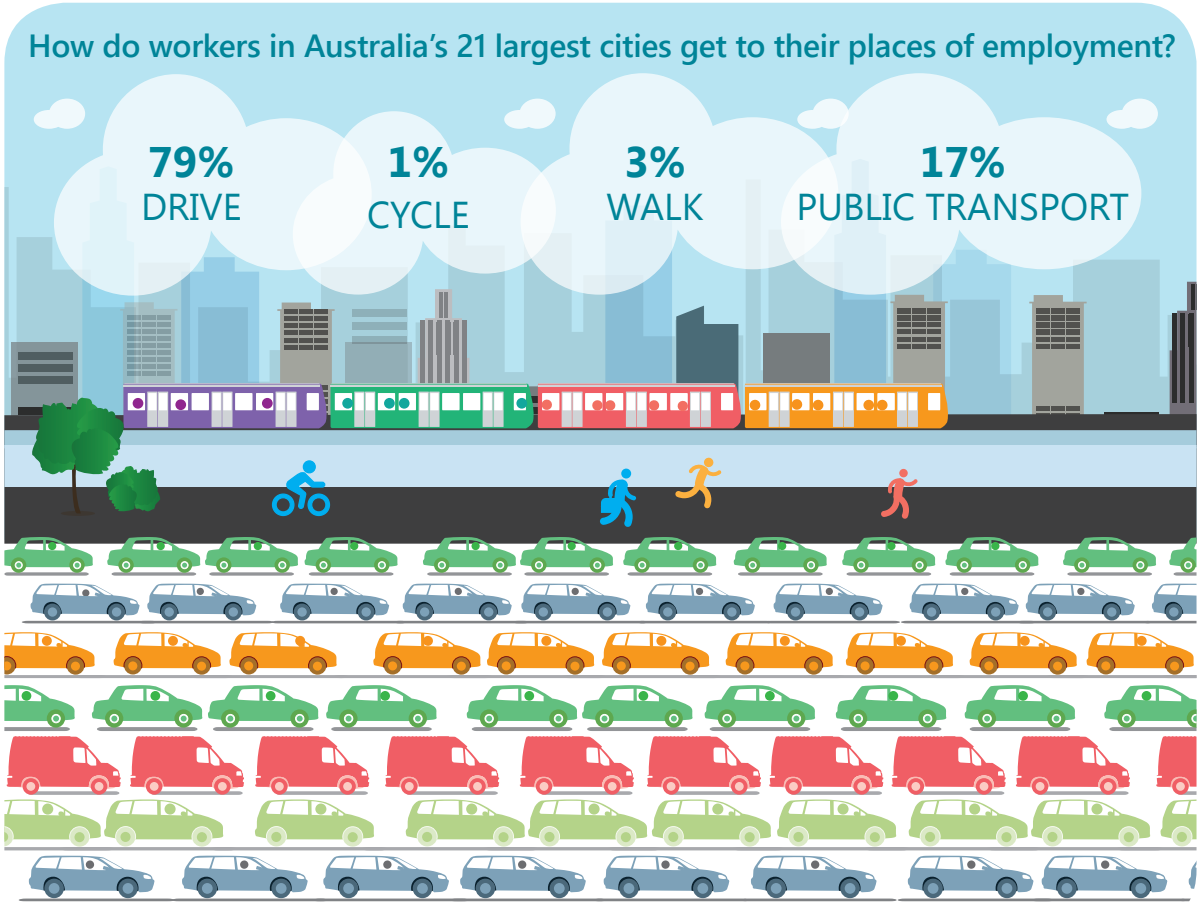
Project start: April 2019 **Project end:** December 2022

Why is this issue important?

The environments in which we live have a massive impact on our health. Cities that are walkable and cyclable can help support healthy behaviours. Australian cities are typically walkable in established inner city areas, however, this is not the case in outer suburban city areas which often do not have good access to transport and other amenities. A lack of walkability causes a disparity and inequity across socioeconomic backgrounds in Australia, and regional centres are repeating some planning mistakes seen in major cities including sprawl and a lack of walkability on the urban fringe.

Sprawling, car-dependent urban growth patterns affect the health of Australians. Almost 80% of commuters drive to work. The COVID-19 pandemic has caused a further shift towards private motor vehicles and working from home, highlighting the importance of local liveability that may be lacking in some areas.

One proposed way of countering rapid urbanisation, population growth, traffic congestion and climate change is the **30-minute city.** This means people can access employment and amenities within a half-hour trip using active transit – such as **public transport, walking, and cycling** – which is associated with better physical and mental health. However, use is low (around 17%, 3% and 1% respectively) and there are many challenges and costs associated with implementing planning reforms. These include behavioural change within the population and supportive infrastructure to extend cycle lanes, of which there are few in comparison to other international cities.



What did we do?

Our previous research established the health benefits associated with liveability, and set benchmarks for measuring it. This project extended this research by developing innovative modelling methods that can simulate planning scenarios without the need to actually build them. These use highly granular data on walking and cyclists' behaviour, using agent-based modelling and a 'virtual population' which enabled us to evaluate interventions that promote active transport.

These tools could inform planning policy to create sustainable and resilient cities, providing more effective solutions that improve liveability, wellbeing and long-term health across all socioeconomic backgrounds.

What did we find?

Inequities in liveability

Is there a price to pay if you want to live in a more walkable neighbourhood?

Findings	Policy relevance	Recommendations
In **cities**, inner areas are generally more liveable and walkable than outer suburbs, and cities continue to expand. City-wide averages of urban liveability hide inequities at the local level.	Policies are needed to avoid disadvantage being suburbanised as the fringes of cities grow and inner areas gentrify.	Obtaining more detailed local data for use in further advanced simulation modelling could inform early-warning systems to avoid widening inequities.
In **regional centres,** liveability is more variable, but regional centres are expanding like major cities.	Continually expanding on the fringes of regional centres replicates urban issues such as lack of access to key services, employment and infrastructure.	Keep regional centres contained by increasing density and services, which also minimises costs.
There is a price to pay if you want to live in a more walkable neighbourhood. Although house prices decrease the further they are from public transport, the costs of car use may be higher.	Inequities in the quality of the built environment could be resolved by planning. Transit access in disadvantaged neighbourhoods requires further investigation.	Government levies and infrastructure contributions could be used to provide housing and critical infrastructure. Guidelines for new developments could improve standards for density and access to amenities.
Poorer neighbourhoods tend to have poorer residents, further marginalising already disadvantaged people. Health impacts are worse for people who are already more vulnerable.	A variety of policies are needed to redress the distribution of liveability across all areas of a city, especially for disadvantaged and vulnerable people, and those living on the fringe.	First-home owner grants and welfare payments would help vulnerable people manage housing costs. Zoning changes in existing, amenity-rich areas could provide more access to social and affordable housing.

More information

Gunn LD, Saghapour T, Giles-Corti B, Turrell G. Exploring inequities in housing affordability through an analysis of walkability and house prices by neighbourhood socioeconomic disadvantage. Cities & Health. 2022 Jun 2:1–9. https://doi.org/10.1080/23748834.2022.2072058

Giles-Corti B, Saghapour T, Turrell G, Gunn L, Both A, Lowe M, et al. Spatial and socioeconomic inequities in liveability in Australia's 21 largest cities: Does city size matter? Health & Place. 2022 Nov 1;78:102899. https://doi.org/10.1016/j.healthplace.2022.102899

Changing from cars

Could we achieve the 30-minute city if large-scale interventions prioritised local living and working above widespread car use?

Findings	Policy relevance	Recommendations
We found 17% of Australian workers travel by **public transport**, but an additional 24% could reach their job within 30 minutes if they switched to public transport.	Large-scale interventions to shift workers to using public transport would have considerable benefits. Even small shifts free up the road network, improving air quality and the experience for those who continue to drive.	Add more frequent and direct public transport routes; introduce strategies to reduce the convenience and competitiveness of driving, such as road charges, and parking availability and cost.
Only 1% of workers commute by **cycling,** but our results suggest nearly 30% could reach their workplace within 30 minutes.	Cycling offers significant opportunities in car-dependent cities, making it the most promising policy option. However, people must be willing and able to switch.	Investment in cycling infrastructure that makes it safer and more efficient than driving, especially for women, children and older adults.
Overall, 21% of workers use a form of active transport, but an additional 58% could reach their job within 30 minutes if they switched.	Of the 58%, cycling and public transport could enable greater access to employment, amenities, and mass rapid transport than walking could.	Investigate whether cities based upon 30-minute **cyclable or public transport** distances might be more realistic than new greenfield developments that have 20-minute **walkable** access to amenities.
Even if 100% of workers shifted to active transport, 70% would still have workplaces over 30 minutes away. Bringing homes and jobs closer together could reduce car usage from 79% to 31%; potentially even lower in large regional centres.	The long-term policy reforms required to bring workers and their employment closer together are major undertakings, but would lead to major benefits, especially in smaller capital cities and larger regional centres.	Further research is needed investigating long-term reforms requiring land use and infrastructure changes that create compact pedestrian and cycling-friendly neighbourhoods, as well as relocating homes and jobs.

More information

Both A, Gunn L, Higgs C, Davern M, Jafari A, et al. Achieving 'Active' 30 minute cities: How feasible is it to reach work within 30 minutes using active transport modes? ISPRS International Journal of Geo-Information. 2022 Jan 13;11(1):58. ; https://doi.org/10.3390/ijgi11010058

What did we produce?

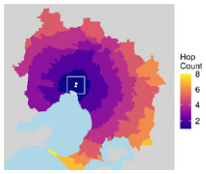
Australian Urban Observatory

We created liveability scorecards for Australia's 21 largest cities, which are useful for planners and researchers in population health and cities. These are freely available on the Australian Urban Observatory (auo.org.au/measure/scorecards) which is an initiative of previous research with the Prevention Centre that includes an interactive map tool for exploring liveability and its underlying determinants.

Transport Health Assessment Tool (THAT)

We developed an award-winning web-based simulation tool that measures the health effects achieved by replacing short car trips in Melbourne with walking or cycling. Its simple interface allows users to select criteria for a variety of scenarios which can be tailored to accommodate different trip types, ages and sex of the population.

THAT-Melbourne is freely accessible on the Australian Urban Observatory (auo.org.au/transport-health-assessment) and was developed with funding from RMIT University and support from Cambridge University and the Prevention Centre. A version for Brisbane is already underway, funded by the Prevention Centre.



Transport model of Melbourne (AToM)

We created AToM, a simulation tool which can examine the potential impact of scenarios such as constructing roads, changing the prices of transport fares, increasing existing train services or adding new stations and lines.

Notably, all types of publicly accessible roads were included such as minor bike paths, which means it can even be used for exploring local road use. It uses 'virtual people' to represent important behavioural factors, such as age, gender and occupation. The open and publicly available tools use data sources commonly available for different cities, and the workflow can be integrated with other models.

Examining the Suburban Rail Loop (SRL)

We developed the AToM model further to measure changes in behaviour that might result from Melbourne's SRL, a 90 km orbital rail line, and the densification of new precincts around the stations.

Our modelling showed that major infrastructure projects can influence city-wide active transport behaviour and lead to more walking and public transport use. However, our scenarios showed only modest effects, which could be improved if changes to land use, future population growth and employment were included.

Publications

More than 12 publications related to this project have been published, and more are in preparation. They are listed on the Prevention Centre website (preventioncentre.org.au/research-projects/importance-of-healthy-liveable-cities/#project-publications).

Why does it matter?

Our findings challenge assumptions about where, and for whom, socioeconomic inequities in liveability exist, and this may depend on city size. Obtaining more local data could inform investments and advocacy aimed at providing healthy liveable cities for all.

Joining Impact models of transport to the Built Environment (JIBE)

Building upon our liveability and agent-based modelling research, JIBE (jibeproject.com) is bringing together urban, transport and health modelling experts from Australia and the UK to develop computer models that can better inform urban and transport planning policy and practice in both countries. It is a project of the National Health and Medical Research Council and the UK Research Institute Built Environment and Health Program, and is being co-led by RMIT and Cambridge Universities.

Building upon The Australian National Liveability Study

The results of The Australian National Liveability Study (preventioncentre.org.au/resources/the-australian-national-liveability-study-final-report) have informed a broad range of further research tools and reports, including the impacts of the built environment on early childhood development, aging and disability.

- In 2019 the National Cities Performance Framework expanded its inclusion of the study's indicators from two to six, by adding indicators to measure access to local amenities supporting healthy lifestyles.
- We added new data to the Australian Urban Observatory for use by policy makers, and for two time periods – 2018 and 2021.
- We have scaled up the National Liveable Cities project globally, to include 80 collaborators in 25 cities across 19 countries.
- Since 2018, members of the Healthy Liveable Cities Lab have delivered more than 35 presentations on the project to external groups or at conferences, in addition to research translation activities targeting our industry partners.

What next?

Planning policies must be implemented that address inequities in the built environment and create liveable, healthy communities for all. Further advanced simulation modelling, using more detailed local data and virtual populations, can inform policy and provide more cost-effective solutions.

Given the potential for cycling to achieve the 30-minute city, recommended starting points are to prioritise separate cycle paths within 5 km of train stations, activity centres and high schools, and to create opportunities for safe cycling within 2 km of primary schools.

The Australian Prevention Partnership Centre

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