INFRASTRUCTURE VICTORIA

Get on board

Making the most of Melbourne's buses – discussion paper

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Acknowledgment of Country

Image from The Great Ocean Road.
The region includes the traditional lands of the Eastern Maar and Wadawurrung peoples.

Agenda

01 Overview

02 Purpose of this research and alignment with DTP bus reform

03 Snapshot of Melbourne's buses

04 Four big challenges

05 Opportunities and benefits for buses

06 Next steps.

Introductions and overview

Infrastructure Victoria is the state's independent infrastructure advisory body.

Our research on bus reform complements the Department of Transport and Planning's ongoing work:

- discussion paper released December 2022
- identifies four key challenges with the existing bus network using new data analysis
- seeks additional input and evidence from stakeholders
- community research and transport modelling also being done.

Final bus reform recommendations will be released in late 2023.

Purpose of our research

Our research focuses on the role of bus reform within the following areas:

- population and employment growth
- impact on land use
- integration with all modes of transport
- quantifying the benefits of reform for communities.

Get on board: Making the most of Melbourne's buses (December 2022) presents early findings on issues and opportunities for bus reform.

- This paper supports conversations with stakeholders as an input to our final bus reform recommendations.

Snapshot of Melbourne's bus network:

400+
routes

120
million annual boardings

- average metro service every 30min during the weekday peak
- average 51min on Sundays
- only 52km of dedicated bus lanes
- $800 million each year (30% of overall PT operations).
- 20% of all trips on public transport (pre-COVID).

Four big challenges

1. Buses are rarely a competitive travel option with other modes.

2. Victorians can get better value from the bus network.

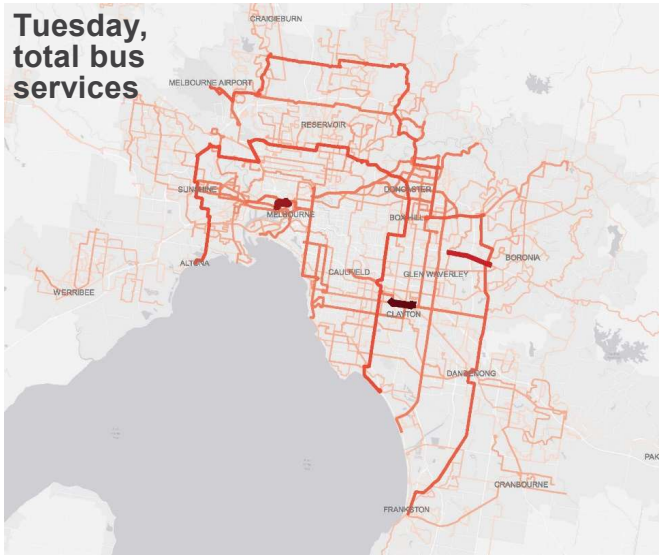
3. The existing bus network is contributing to a transport inequity problem, especially for outer and growth areas of Melbourne.

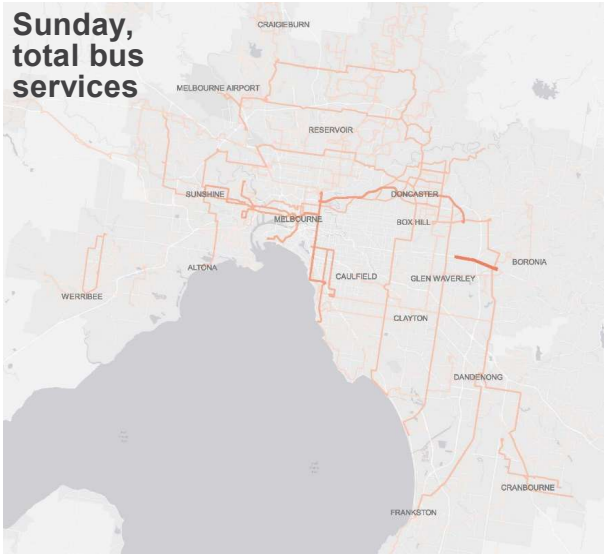
4. Customers find using buses difficult and complex.

Challenge one

Buses are rarely a competitive travel option with other transport modes

Service frequency and indirect routes





Total services per day

- 0 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- 200 +

Infrastructure Victoria analysis of PTV general transit feed specification data (GTFS)

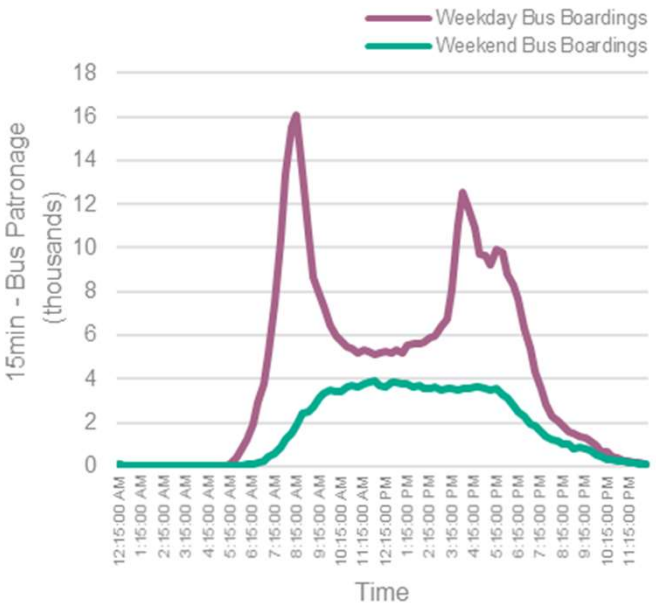
- Frequency is an important factor in how well buses integrate with the rest of the network.
- Direct routes ensure travel times are minimised and help buses to compete with private vehicles.
- SmartBus/DART and university shuttle services are some of the highest frequency services across the network.
- More frequent services typically encourage more patronage.[1]

[1] C Loader and J Stanley, 'Growing bus patronage and addressing transport disadvantage—the Melbourne experience'. *Transport policy*, 2009, 16(3):106-14.

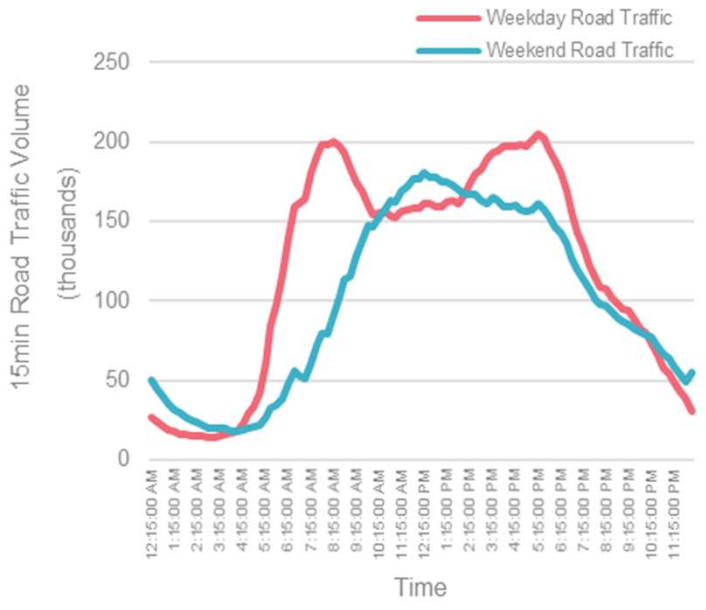
Making buses a viable alternative to the car

- Cars are overwhelmingly the most popular form of transport in Melbourne.
- Weekend bus use is relatively low.
- Weekend car use remains high.
- This represents a significant opportunity to tap into unmet travel demand.

Bus ridership (May 2019 estimate)



Road traffic volumes (May 2019 estimate)

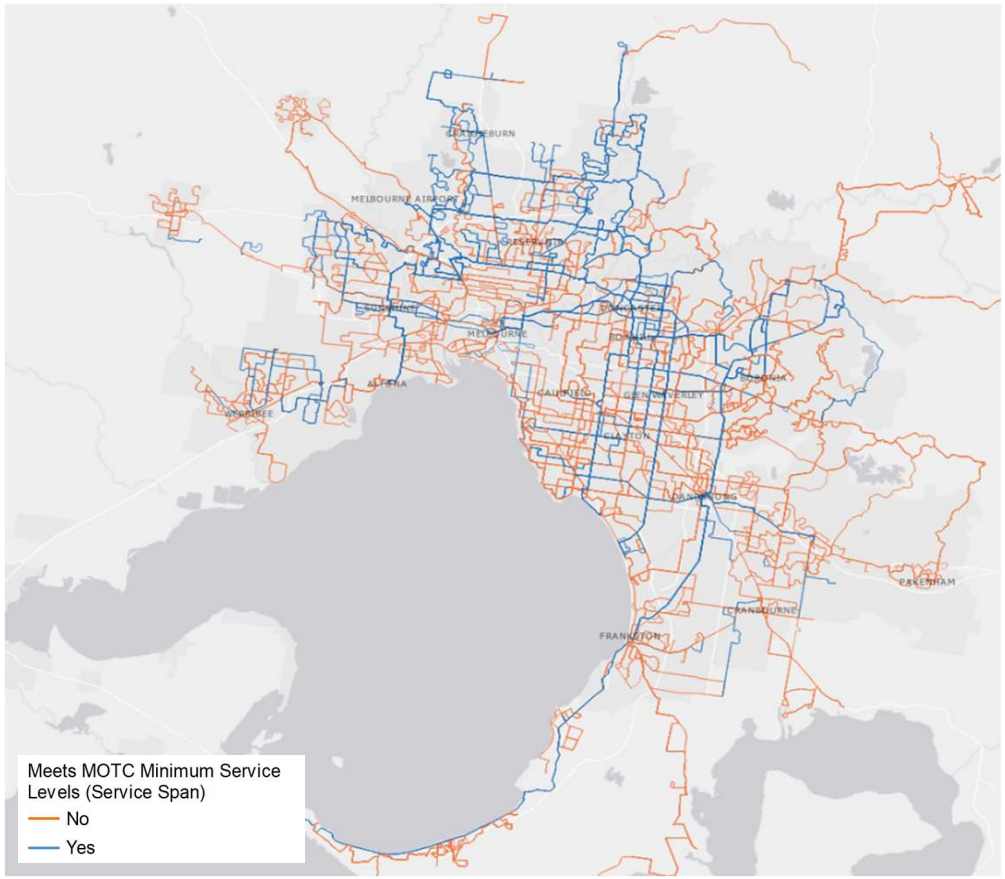


Source: Infrastructure Victoria analysis of DoT bus data and SCATS data (Data Vic, *Traffic signal volume data* [data set], https://www.data.vic.gov.au/, 2022, accessed 9 June 2022).

Limited operating hours

- Public transport services need to meet minimum criteria to be a viable option in day to day travel.
- Victoria's *Meeting our Transport Challenges* (2006) recommended social safety net minimum service levels of at least hourly, and 6am to 9pm operating hours
- Many routes across Melbourne do not meet these minimum standards (see figure).
- This means public transport is not a viable option for many people.
- For those who cannot easily afford car travel, low public transport service levels could limit their ability to participate in their community and lead to social isolation.

Bus routes that meet the MOTC minimum service levels (service span)



Note that analysis has only considered surveyed routes (those for which timetable data has been published through GTFS). Source: IV analysis of PTV timetable data for 2022.

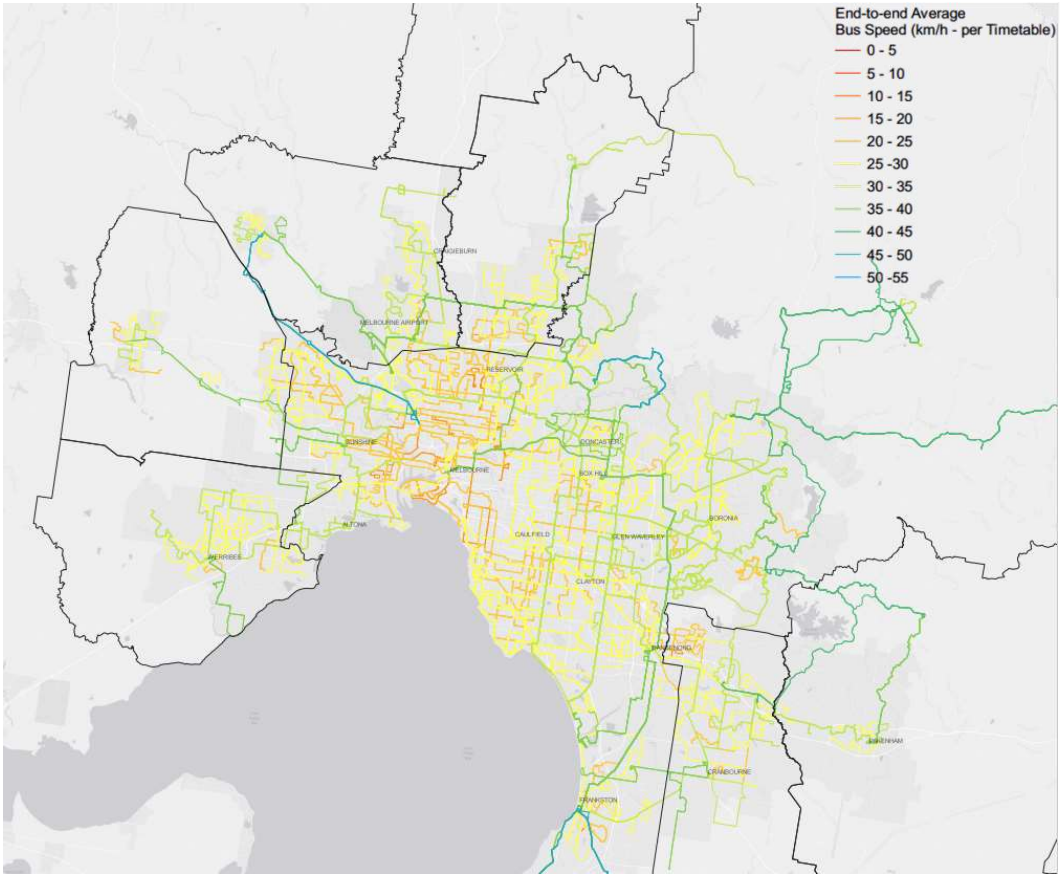
Challenge two

Victorians can get better value for money from the bus network

Network performance

- Areas in inner and middle parts of Melbourne typically run with average bus speeds below 15 km/h (see figure on right).
- Current franchising agreements for Melbourne's bus network contains state-set targets based on service delivery and punctuality.
- This can lead to timetable generation where average end-to-end speeds are considerably lower than equivalent car travel speeds.
- Conservative practice factors in excessive road congestion to reduce the likelihood of a 'late' running bus. Leads to excess idling at timing points.

Average timetabled speeds for bus routes



Source: Infrastructure Victoria analysis of DoT bus data

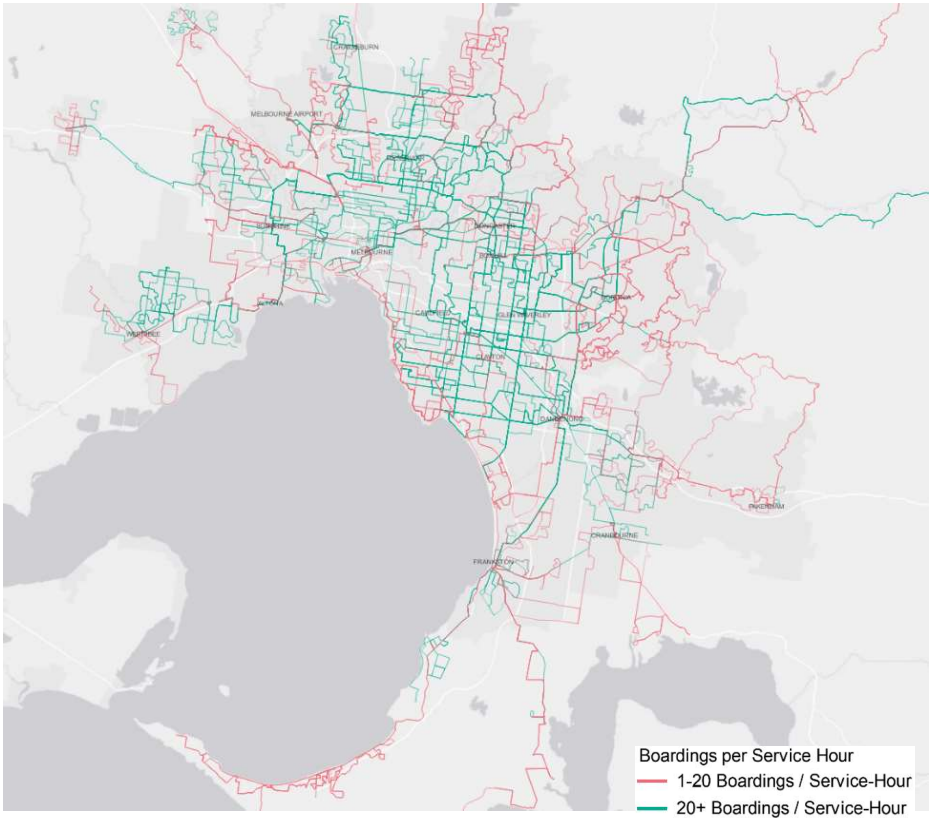
Network efficiency

- Twenty boardings per service hour can be a general measure of economic viability (see figure on right).
- Using pre-COVID data, we found that 54% of routes were operating above this benchmark.[1]

What could reform look like?

- Review existing services where the benefit to customers is limited (for example, route duplication, competing transport modes).
- Add new and/or more frequent services in areas of highest need.

Boardings per service hour by bus route (2019-2020)



Source: Infrastructure Victoria analysis of DoT 2019-20 Bus data

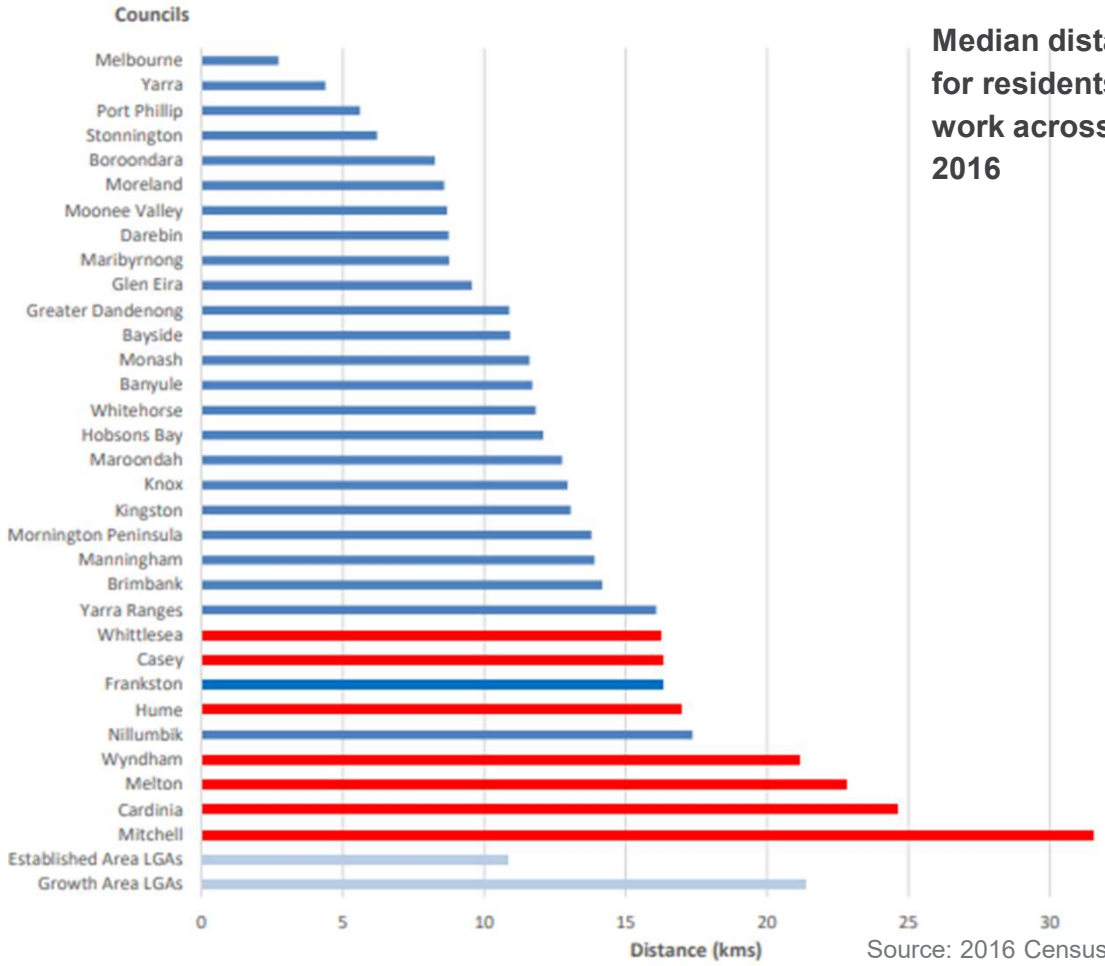
[1] Note that this benchmark should only be used to understand overall network performance at a strategic level. It is not a suitable measure to solely determine the economic rationale of any individual route.

Challenge three

The existing bus network is contributing to transport inequity, especially for outer and growth areas of Melbourne

Long distances to access work

- Residents in growth areas, on average, travel twice as far to access jobs than other areas of Melbourne.
- 82% of growth area residents used their own cars to travel to work, compared to Melbourne's average of 71%.



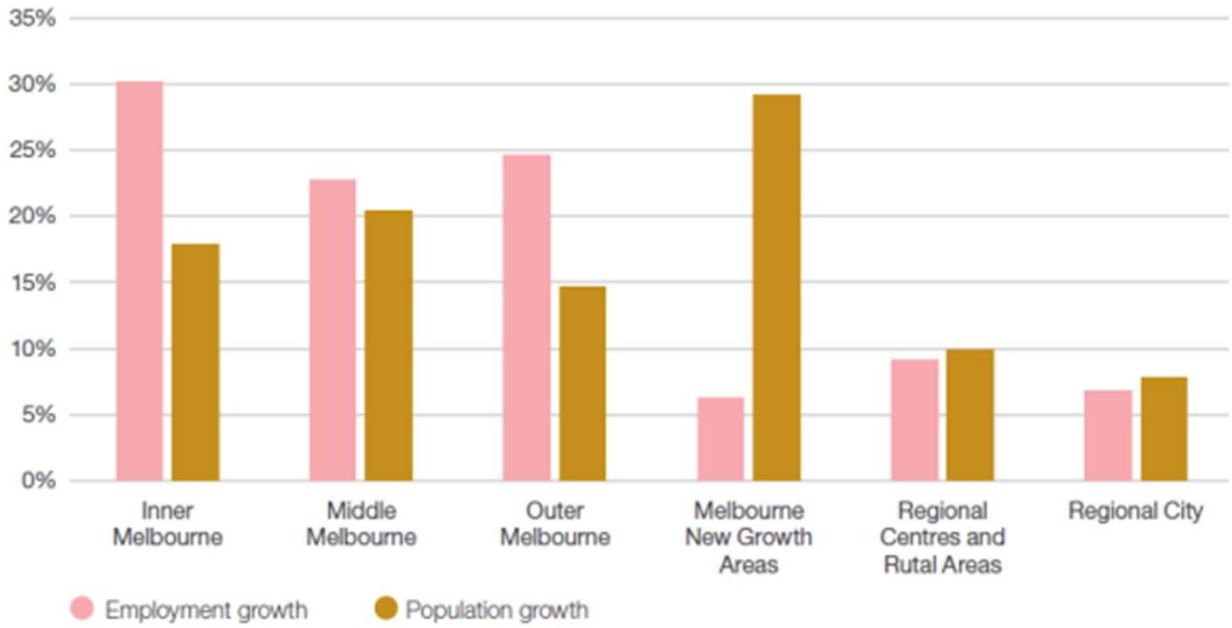
Median distance travelled for residents' journey to work across Melbourne, 2016

Source: 2016 Census - commuting to work

Growing challenges

- The spatial mismatch between employment and population growth is forecast to be exacerbated in coming decades.
- People will continue to need to travel out of new growth areas to access employment.
- Continuing to rely on private vehicles for this travel is not substantiable.
- The bus is often the only public transport option in these areas so it is important to ensure buses are operating as well as they can be.

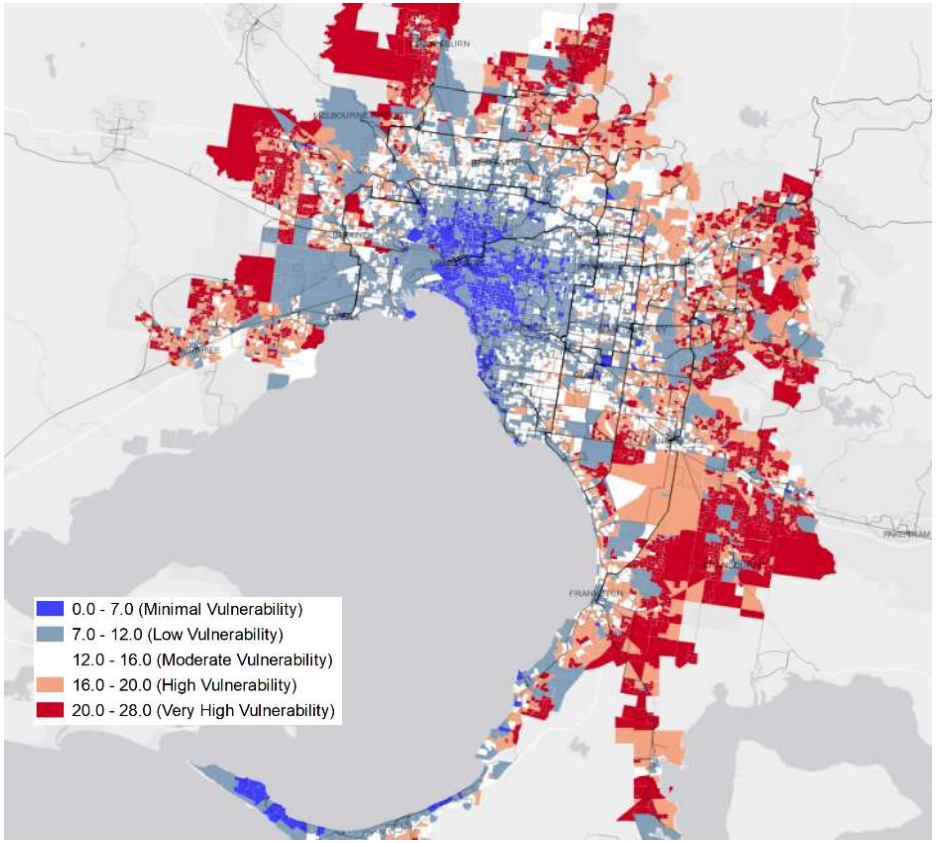
Comparison of employment and population growth projections (2018 to 2051)



Source: Infrastructure Victoria, Major transport program strategic assessment report, 2021

Car dependence

- For many people, the most viable way to access jobs and other opportunities is by car. For those on lower incomes, the reliance on car travel, and associated costs, can cause financial stress.
- This is exacerbated as the costs of travel increase due to higher petrol prices.
- Expensive car travel and the lack of public transport options limits the ability to participate in work and social activities.
- Many areas poorly serviced by the bus network including outer and new growth areas are highly vulnerability to mortgage, petrol, and other cost of living rises.

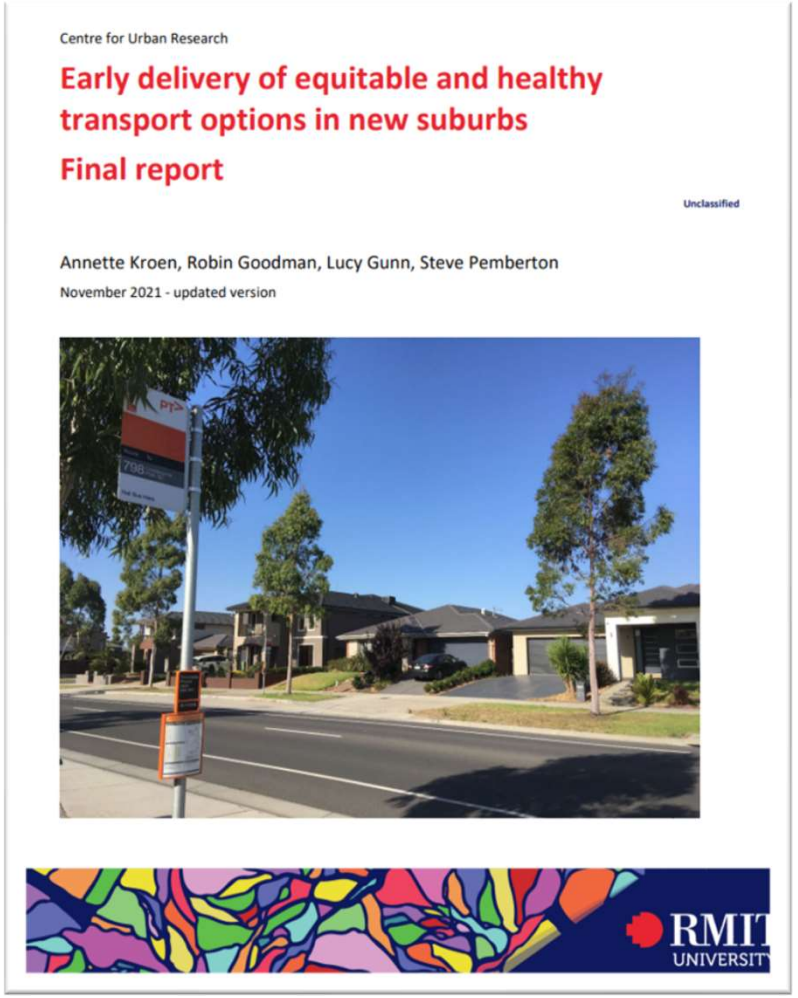


Vulnerability assessment for mortgage, petroleum, and inflation risks and expenditure (VAMPIRE) index

Source: RMIT, *VAMPIRE for Australian Capital Cities (SA1)* [data set], https://aurin.org.au/, 2016, accessed 1 August 2022.

Planning and delivery of buses in growth areas

- There are problems with how and when buses are delivered in new growth areas.
- Precinct Structure Plans do not guarantee a timely provision of bus services or guarantee their funding.
- Street connectivity for public transport, as well as the services themselves, often do not exist when residents begin to move in.
- Moving house is a key moment to establish travel habits. There is an opportunity to solidify public transport use when people move into growth areas.
- However, without good public transport options long term car dependence becomes entrenched.
- These issues were highlighted by RMIT researchers.


Centre for Urban Research

Early delivery of equitable and healthy transport options in new suburbs

Final report

Unclassified

Annette Kroen, Robin Goodman, Lucy Gunn, Steve Pemberton

November 2021 - updated version

Challenge four

Customers find using the bus difficult and complex

Buses have an image problem

Melbourne's bus system is often negatively perceived by the general public.[1] Perceptions include:

- unreliable, infrequent, indirect, slow and inefficient
- loud, uncomfortable, and smelly
- poor safety on board
- poor safety accessing bus stops (e.g. kerb and pedestrian crossings)

Of large Australian cities, Melbourne buses have the lowest levels of approval.

The shift to zero emissions buses (along with broader bus reform) will be a chance to address some of these negative perceptions.

[1]Roads Australia, *Investigating the Social Licence for Buses in Australia*, 2022

Opportunities and benefits

Early findings

Reform opportunities

Reforms to improve patronage

- more direct routes
- improve travel time
- more priority lanes
- changes to frequency and hours of operation
- timetable integration.

Reforms to improve coverage

- demand responsive alternatives or subsidies for taxi/ride share
- better integrating land use and transport.

Reforms to improve the customer experience

- next generation and zero emissions buses
- better in-vehicle experience
- better live-network information
- improve stops and surrounds
- improve marketing and branding.

Reforms to improve financial competitiveness

- pricing reform
- time of day and mode
- cheaper fares in off peak fare discounts.

Reform benefits

Faster travel and better access

- to employment and education opportunities
- better access means a healthier, more resilient and cohesive society.

Health and environmental benefits

- environmental benefits accrue from more people catching the bus rather than driving
- reduced congestion, reduced air pollution, reduction in road crashes.

Social inclusion

- buses can be the only option to travel longer distances for some
- provide essential access to services like health and other community events/services.

Land use

- good bus services can integrate with land use to create value
- a better bus system also has a role in achieving the aspirations of Plan Melbourne.

Value for money and economic benefits

- potential to create a more financially sustainable system
- bus capital and operating costs are cheap compared to other modes.

The goal: more people on buses

- benefits include better health, environmental, social, land use and value for money.

Next steps

- Written submissions have closed & are being considered
- Community research is underway
- Reform options will be developed using modelling, stakeholder feedback and community research
- Detailed assessment of these reform options will include options for transport modelling
- Final report will be released in late 2023.

Thank you

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