

Keeping public transport users safe as they travel to work during the Pandemic

POLICY NOTE: MELBOURNE

May 2020

The threat of COVID-19 has caused the largest shift in travel behaviour in living memory. As travel restrictions ease in Australia's largest cities, more people are expected to resume their commute.

In our largest cities in particular, public transport plays the vital role of bringing hundreds of thousands of people into our CBDs. On a typical weekday, 60-80% of CBD workers arrive by public transport, mostly on crowded trains.

Australia's Chief Medical Officer and his state-based colleagues have made it clear that one person per 4m² is the desired density of people to reduce the chance of infection. Public transport, especially as peak hour ('peak hour' = peak commute period) has densities exceeding this limit by a factor of 8.

As cities around the globe begin to address this problem, we have undertaken high level modelling based on Census data to understand the scale of the problem. We also explore how Australia can minimise infection risk as millions of commuters get back to work.

What we did

We examined Census data on journey to work, to determine:

- The number of people that use public transport at peak hour to get to work
- Focused on trips to work under 10km, as these trips are more easily converted to other modes.
- Scaled up our numbers based on Victorian travel survey data on the proportion of people who travel on public transport at peak hour for non-work travel (e.g. shopping).
- Estimated the density of people on peak hour public transport.

These steps provided us with a rough understanding of the number of people travelling on public transport in peak hour and how much of this load would need to be shed to allow public transport passengers to travel safely to their jobs.

We developed three scenarios for change, based on different public transport passenger loads:

- Safe distancing – 16% passenger load, approximately 4m² per person. This is the current position of State and Territory transport authorities.
- Moderate distancing – 26% passenger load, approximately 2m² per person.
- Some distancing – 49% passenger load, approximately 1m² per person.

The following results indicate the level of change required to meet the safe distancing passenger loads. This would reduce maximum occupancy to a level which is consistent with medical advice and provide the safest outcome for public transport users.

What we found - Melbourne

Just under 400,000 people use public transport during peak hour on a typical, pre-COVID-19 weekday (see left hand column of Figure 1). The right-hand column brings public transport loadings down to the level of one person per 4m², which represents a ~6-fold reduction in public transport use. The right-hand column also includes an exploration of how alternative options might expand to make up for the much lower public transport ridership. Travelling outside of peak represents the largest growth option, closely followed by working from home. Cycling is also included, as it is expected that many of the 1 – 7km public transport trips in particular could be transferred to bicycle.

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The figures should not be thought of as a prediction of what we think will happen, but rather of what would need to happen, in terms of the quantum of people that formerly used public transport at peak hour, that will need to be offered a compelling alternative option.

This chart outlines the decline in peak hour public transport boardings necessary to maintain COVID-19 safe distances and speculates on the level of contribution from substitution options.

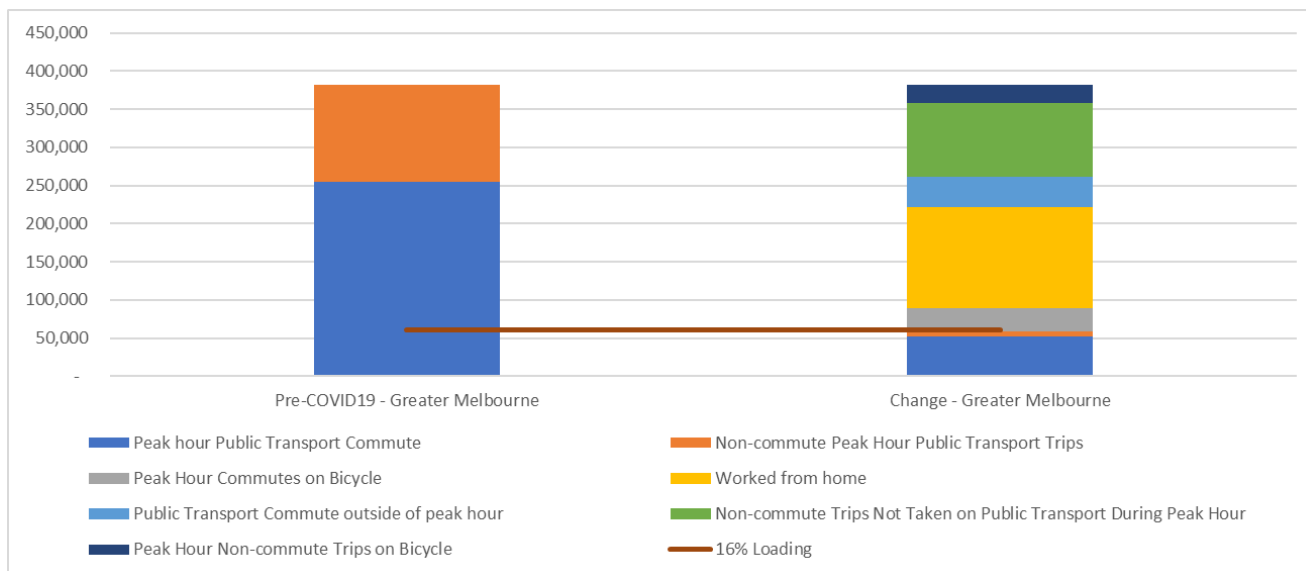


Figure 1 – comparing pre-COVID-19 and Pandemic travel, Melbourne

Table 1: Data for Melbourne

	Peak hour Public Transport Commute	Non-commute Peak Hour Public Transport Trips	Peak Hour Commutes on Bicycle	Worked from home	Public Transport Commute outside of peak hour	Non-commute Trips Not Taken on Public Transport During Peak Hour	Peak Hour Non-commute Trips on Bicycle	16% Loading
Pre-COVID19 - Greater Melbourne	254,345	127,572						61,107
Change - Greater Melbourne	52,161	6,379	30,646	131,775	39,763	96,955	24,239	61,107

The results illustrated in Figure 1 demonstrate the enormity of the challenge. In essence, up to 7 in 8 former peak hour public transport users would need to find an alternative option.

The big shifts include:

- ~140,000 extra people avoiding public transport or travelling outside of peak.
- Over 130,000 extra people working from home
- 50,000+ people choosing to cycle.

WHAT'S REQUIRED TO ACHIEVE SAFER PUBLIC TRANSPORT?

It is difficult to overstate the scale of this challenge. Never before in Australia's history has there been a requirement for peak hour public transport to shed 7 out of every 8 passengers. Every person who shifts from peak hour public transport to another option makes it safer for those who need to use it, such as those with a disability and/ or people with a very long commute. Freeing up public transport for those that must use it, makes it safer for front line health workers and others without an alternative option.

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RECOMMENDATIONS

The following measures are designed to make it easier for Australian cities to get moving again, safely.

Operate public transport on a peak hour timetable throughout the day

Many large employers are recommending their staff travel outside of peak. In order for this to be done safely, it will be necessary for the peak time table to be carried throughout the day, to reduce crowding.

Incentives for travelling outside of peak

Introducing a small price incentive for off peak travel will help to flatten the peak, making it safer for those that need to use public transport.

Work from home

Work from home has been proven an effective method of keeping the economy running without exposing the public unnecessarily to infection. Continuing to encourage employers to allow suitable workers to work from home will play a major role in helping to keep public transport a safe option for those that have to use it.

Roll out emergency, temporary pop up bike lanes

Many cities have quickly grown their protected bike lane network through the use of inexpensive bollards, planter boxes and plastic traffic dividers to encourage more commuters to travel by bike.

Raise awareness of alternatives to peak hour travel

Large scale public information campaigns are required to highlight why shifting peak public transport loads will help Australia fight COVID-19. Placing large posters around and within inner city public transport hubs, encouraging users to consider alternatives to peak hour public transport will be necessary.

Government should undertake a prominent public education campaign to highlight that public transport needs to be reserved for those that have no other option.

More information

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