# Keeping Australians safe as they travel to work during the Pandemic

**Policy Note**

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Institute for Sensible Transport

**Prepared by**

Liam Davies and Dr Elliot Fishman

**Institute for Sensible Transport**

ABN 78 504 466 884
102/1 Silver Street, Collingwood
VIC Australia 3065
E: info@sensibletransport.org.au
www.sensibletransport.org.au

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

## Introduction

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 has densities exceeding this limit by a factor of 8.

Figure 1 Typical peak loads on a Melbourne train

**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 4m$^2$ per person.
- Moderate distancing – 26% passenger load, approximately 2m$^2$ per person.
- Some distancing – 49% passenger load, approximately 1m$^2$ per person.

The following result 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

We ran our model for all Australian capital cities, however given the proportionally larger role public transport plays in Sydney and Melbourne, we have chosen to focus on these cities.

### Sydney

Just under 600,000 people use public transport during peak hour on a typical, pre-COVID-19 weekday (see left hand column of Figure 2). 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 grow 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. 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.

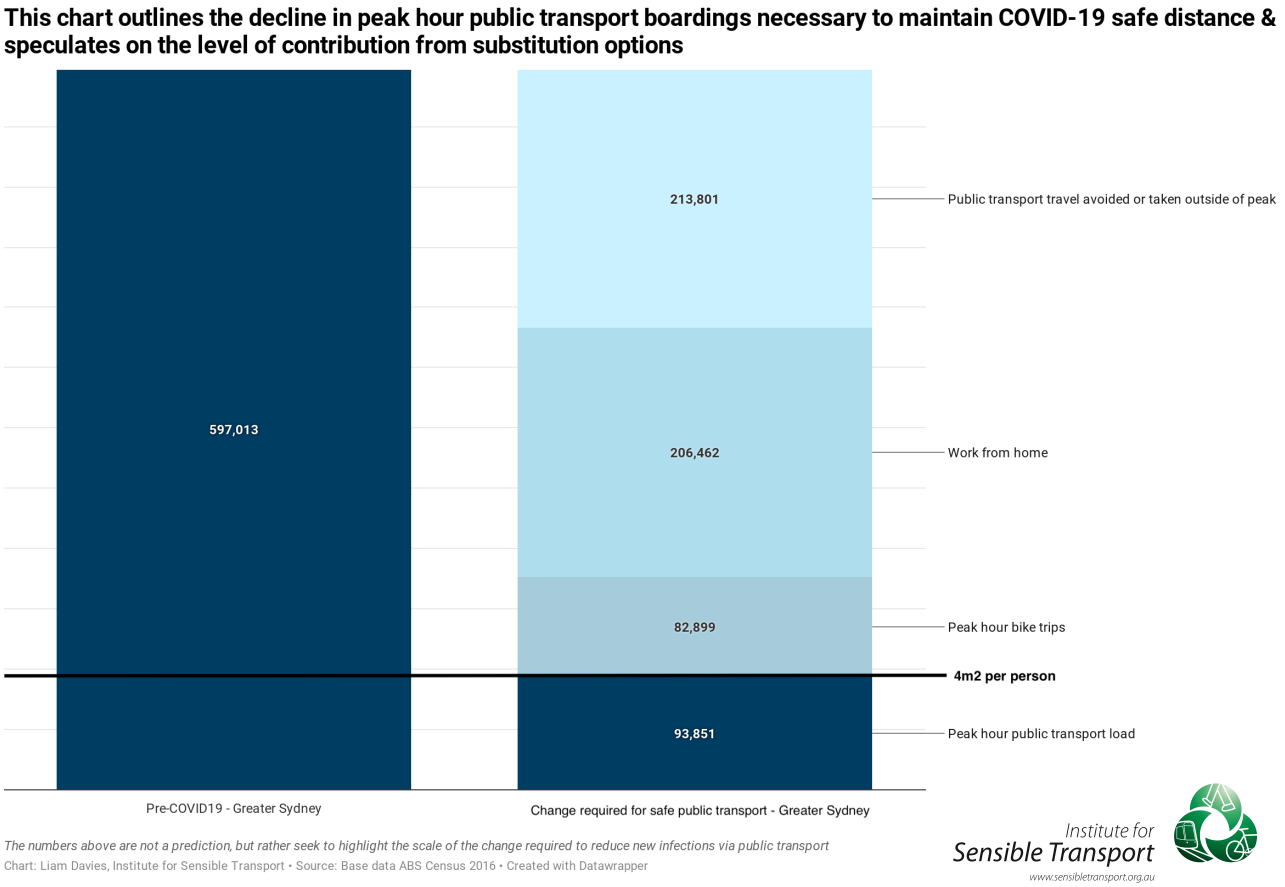


**Figure 2 Comparing pre-COVID-19 and Pandemic travel, Sydney**

The results illustrated in Figure 2 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:

- ~213,000 extra people avoiding public transport or travelling outside of peak.
- Over 200,000 extra people working from home
- 80,000+ people choosing to cycle.

## 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 3).

The right-hand column brings public transport loadings down to the level of one person per 4m², which presents a ~6 fold reduction in public transport use. The right-hand column also includes an exploration of how alternative options might grow 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. 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.

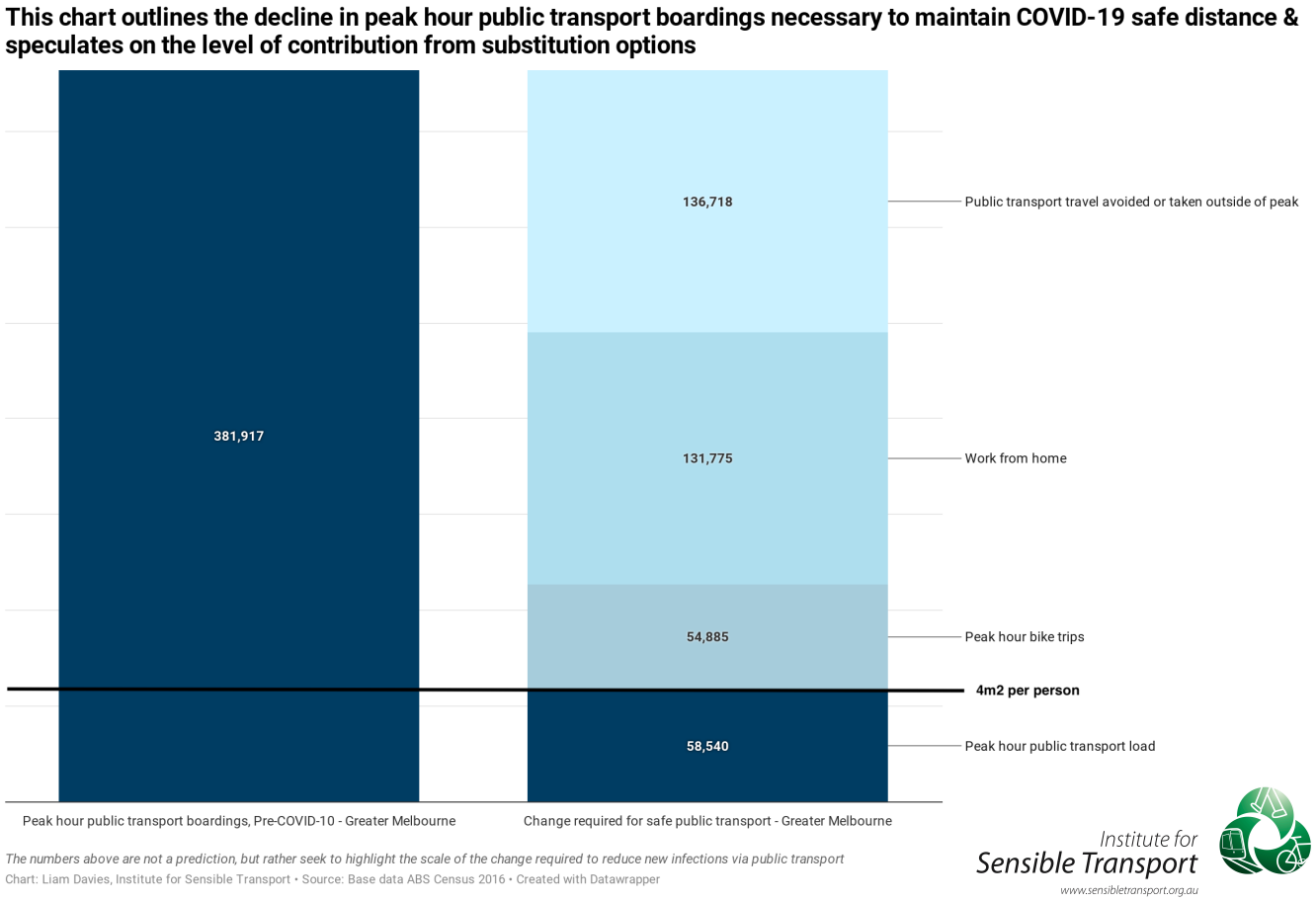


**Figure 3 Comparing pre-COVID-19 and Pandemic travel, Melbourne**

The results illustrated in Figure 3 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, safety.

#### 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 at 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

Dr Elliot Fishman
info@sensibletransport.org.au
1300 952 759

www.sensibletransport.org.au

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Melbourne, Australia VIC 3066
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