

What are the impacts of the COVID-19 Pandemic on our Transport Systems

- **Operation of our Freeways**
- **Functioning of our City**

31th March 2020

SUMMARY

ARRB is the national Transport Research Organisation and is responsible for the delivery of infrastructure standards for State, Territory and Commonwealth Governments. ARRB has been doing this for the past 60 years and operates in all Capital cities with the headquarters and smart materials research laboratories in Melbourne. ARRB operates across six key strategic work groups that are listed below to service the Australia community.

- Future Transport Infrastructure – what are our roads going to be made of in the future
- Transport Safety – deliver a 50% reduction in fatal and serious injuries on our road system
- Sustainability & Resilience – how do we keep communities connected and reduce our impact
- Asset Management – how do we enhance the performance of the current road network
- Future Transport Systems – how do we enable connected and autonomous vehicles to operate
- Data Collection & Analysis – next generation intelligent data for road performance

We have recently sought to understand what the performance of the transport system is in Melbourne during the COVID-19 pandemic. We pulled data to analyse the performance of the Monash freeway and the pedestrian movements in the City of Melbourne. The data sources for traffic volumes and pedestrian movements were:

- Monash Freeway traffic counter
- City of Melbourne pedestrian counters

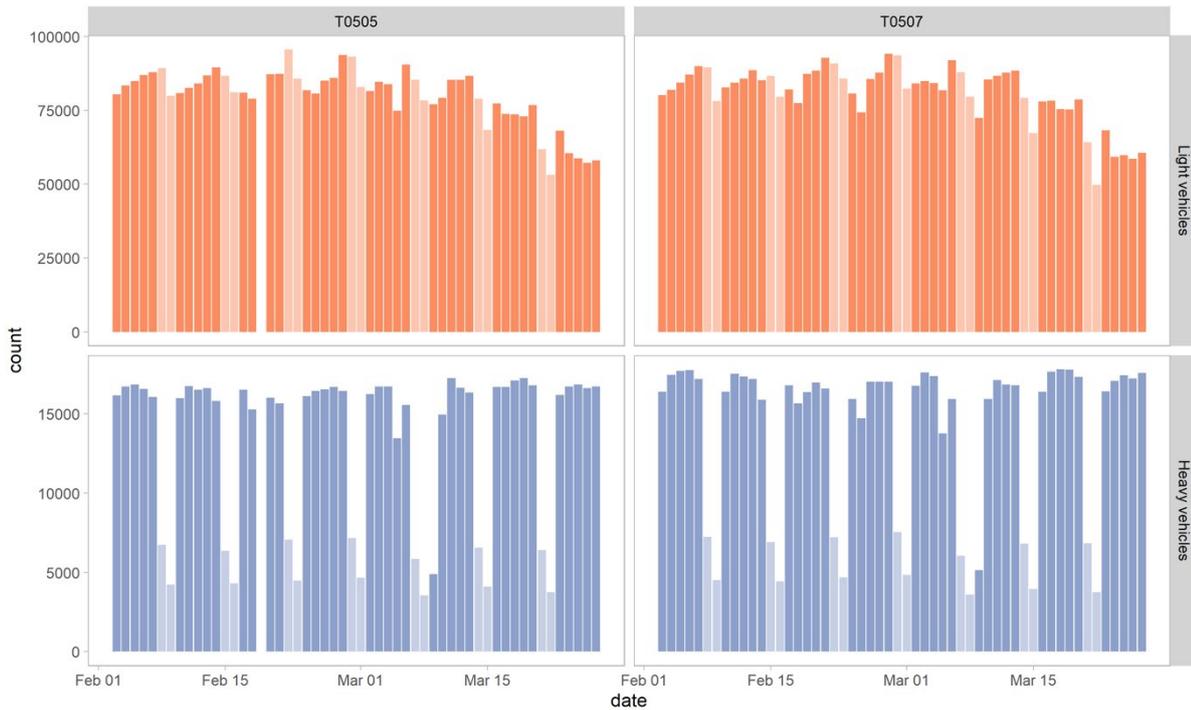
The graphical representation of the data certainly illuminates some very significant trends and measures on the performance on the provisions articulated by the Prime Minister and Premier.

TRAFFIC COUNTS

A traffic count is a measure of traffic volume that shows how many cars are using the road. The data used is for two sites on the Monash Freeway near Mt Waverley:

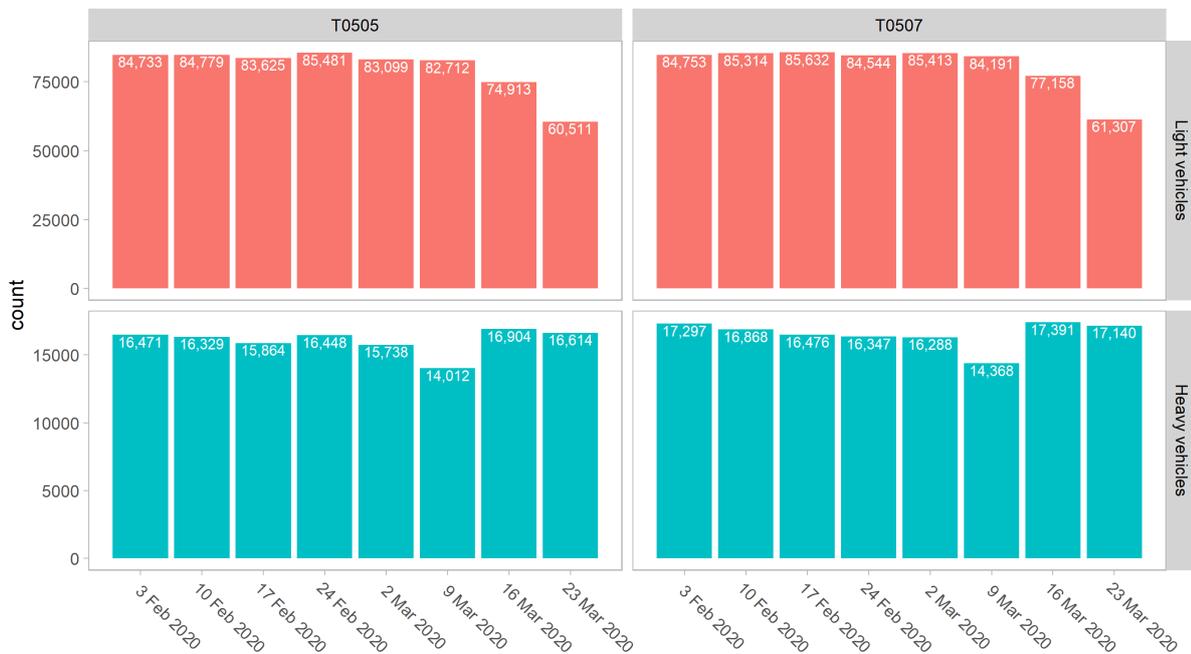
- Stanley Av - Inbound (T0505)
- Stephensons Rd - Outbound (T0507)

Traffic is hard to visualise by day using a line graph due to the large difference in volume on the weekends relative to the week. This is why the bar chart has been the best option as shown below. Interestingly there is no effective change in the heavy vehicle use of the network but a substantial decrease in light vehicle traffic.



This is no substantive change to heavy vehicle volumes however there is an increase seen in the peak period for T0505. It may be that this increase in peak volume is due entirely to lower congestion allowing higher volume of heavy vehicles (that were already travelling at that time) to make it through. Or just that heavy vehicles can now efficiently transport at that time so they don't have to avoid peak hour?

Average weekday volume (Excludes weekends).

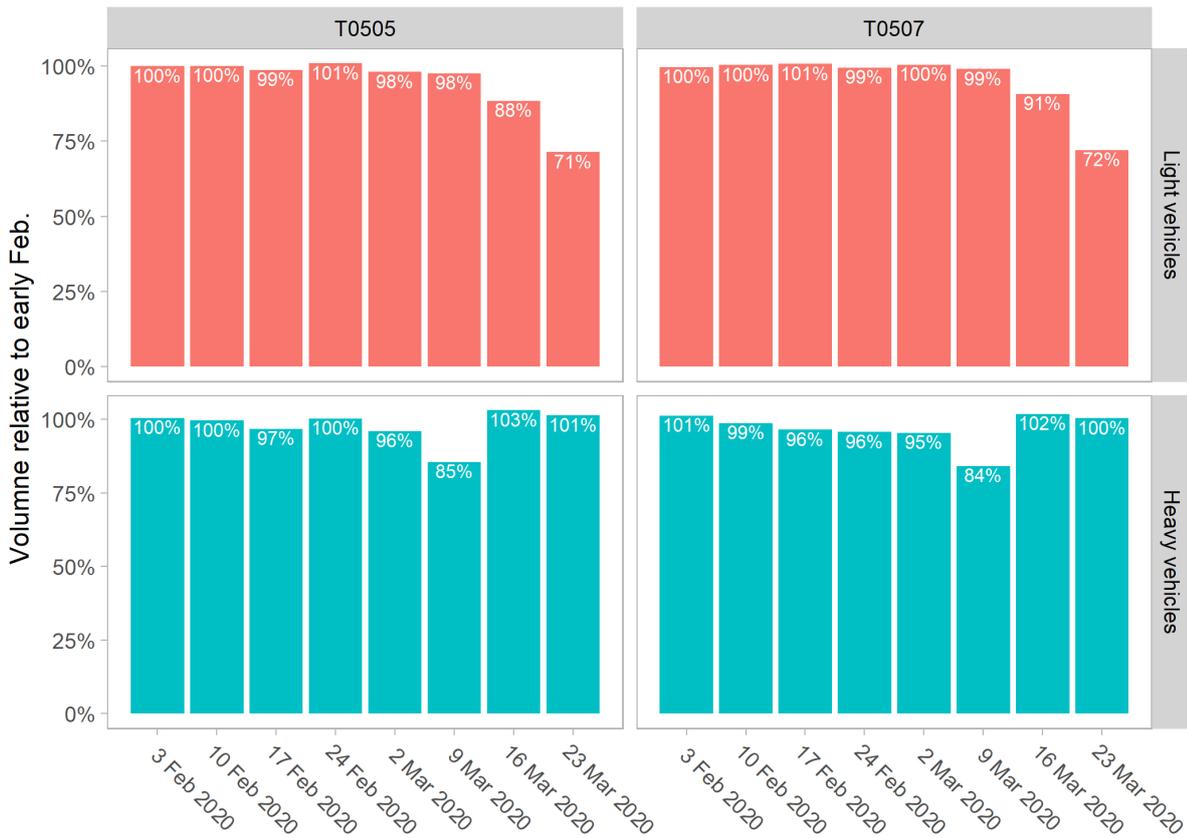


SUMMARY TABLE

For the weekend of 21 March 2020 and the week of the 23 March the change in volume relative to the first two weeks of Feb are:

Times	Site ID	Heavy vehicles	Light vehicles
Weekday	T0505	101%	71%
Weekday	T0507	100%	72%
Weekend	T0505	94%	68%
Weekend	T0507	92%	68%

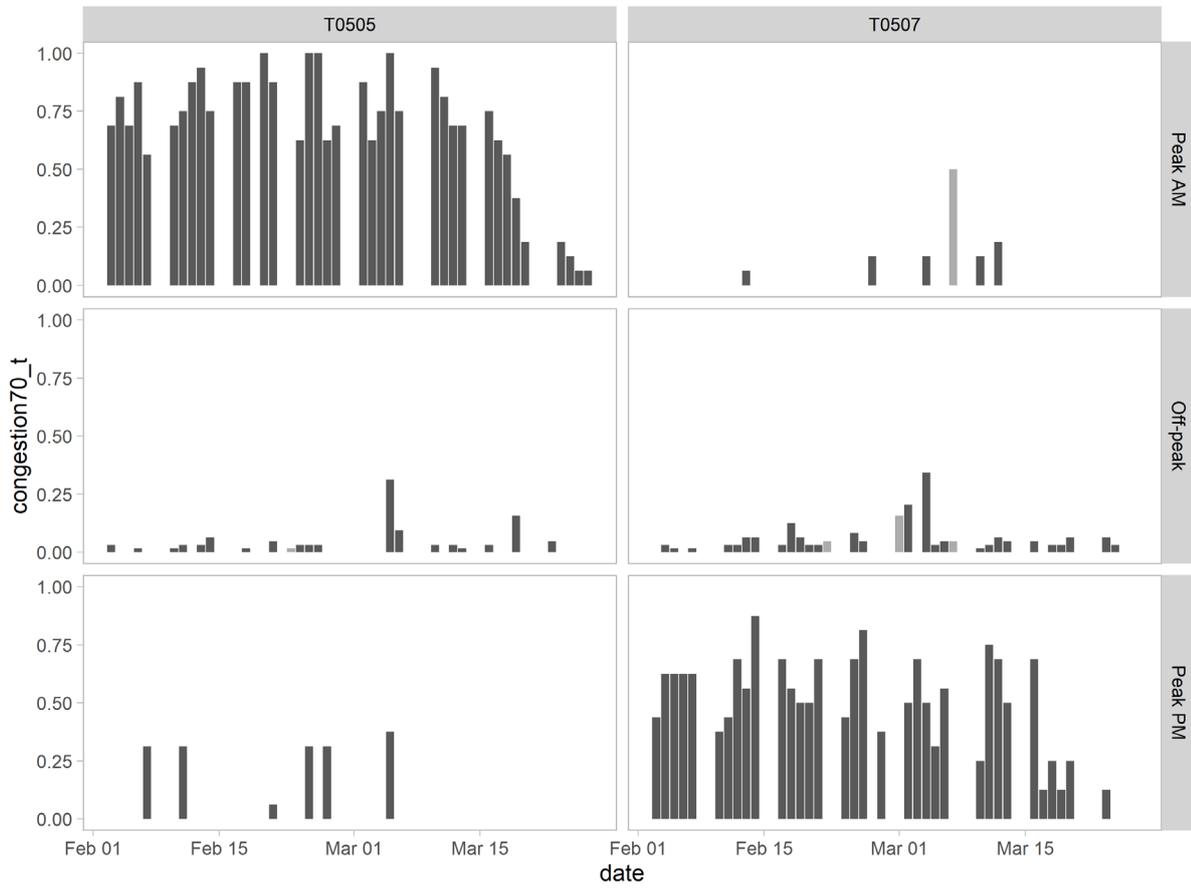
PLOT - BY WEEK



CONGESTION

Measured as the proportion of time that the mean speed of the road is 70% lower than the speed limit.

BY DAY



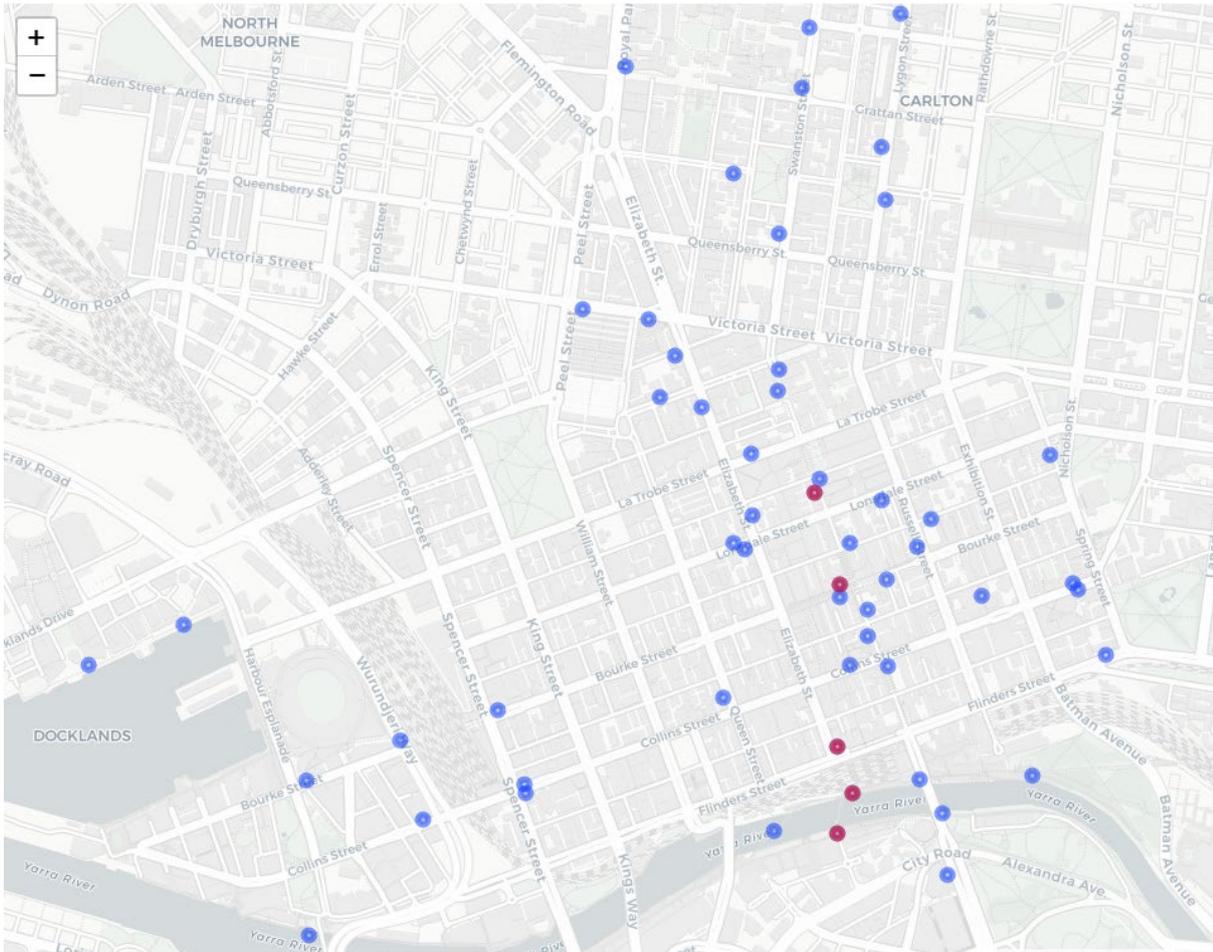
PEDESTRIAN COUNTS

Data from the City of Melbourne. The open data API does not have up-to-date data however it can be sourced from their web app as a daily download which was used for this project.

MAP OF SITES - INTERACTIVE

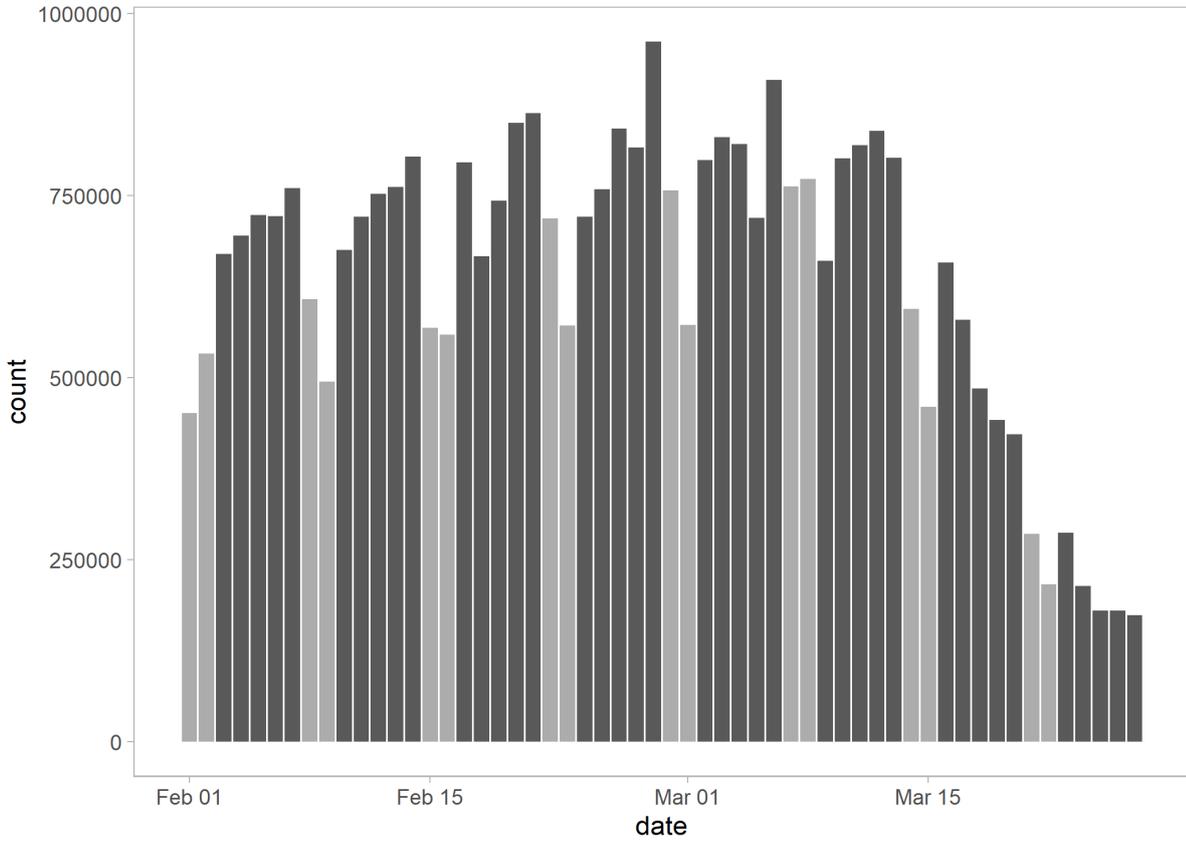
Filtered by sites with non-zero data. Red sites are selected below for detail plot.

Sites were selected as typically having similar levels of pedestrian volumes and at the high end of the range.



COUNT

BY DAY - TOTAL



BY DAY - SELECTED SITES

