Submission to the

Inquiry into the Victorian Government's Response to the COVID-19 Pandemic

October 2020

PTUA
PUBLIC TRANSPORT USERS ASSOCIATION

1 Summary of Recommendations

1. Maintain enhanced cleaning regime on public transport vehicles and stations;
2. Restore and maintain service levels to those in place prior to Stage 4 restrictions;
3. Configure onboard and station HVAC systems to maximise throughput of fresh air;
4. Implement traffic priority measures for trams and buses to reduce delays;
5. Revise bus and tram timetables to capitalise on priority measures and reduce time onboard;
6. Configure traffic lights to give pedestrians a green signal without need to press button wherever possible, or to provide faster response times where not possible;
7. Enforce Road Rule 128 to maximise space and safety for pedestrians and reduce delays to trams;
8. Permit cyclists to proceed with caution after stopping at red lights;
9. Ensure rail replacement buses provide sufficient capacity for effective distancing;
10. Any service cuts in future curfews be implemented with more notice and better correlated to other curfew restrictions.
11. The restoration of service levels to pre-curfew state be as soon as possible after the reduction or end of the curfew;
12. Any future curfew services cut not drop train, tram and major bus services below half-hourly, to maintain a usable service for essential workers;
13. Abolish Sunday timetables and use the Saturday timetable on Sundays, as well as public holidays;
14. Expand active transport networks to improve safety and connectivity for local travel;
15. Introduce a network of fast and frequent bus services to service suburban travel;
16. Increase off-peak service levels to make off-peak travel a more viable option for passengers;
17. Introduce off-peak fares to encourage staggering of journey times, with fares remaining multi-modal;
18. Abolish Free Tram Zone to encourage active transport for short trips in CBD and reduce CBD crowding as patronage returns;
19. Accelerate procurement of low-floor trams with modern HVAC systems;
20. Upgrade HVAC systems where required to provide best-practice air filtration/treatment and fresh air circulation;
21. Investigate technology to provide real-time guidance on carriage loads;
22. Eliminate placement of advertising over public transport vehicle windows;
23. Investigate use of Myki usage and registration records for contact tracing purposes.

2 Introduction

The Public Transport Users Association (PTUA) welcomes the opportunity to contribute to the Inquiry into the Victorian Government's Response to the COVID-19 Pandemic. This pandemic has brought enormous disruption at a global level and the Victorian Government's response will be an important determinant of Victorians' well-being now and into the future.

This submission addresses the initial response to the COVID-19 pandemic as it relates to public transport, and outlines some areas where Victoria's response to the pandemic can influence how well we, as a state, are able to emerge from this enormous disruption.

3 Initial Response

3.1 Emerging evidence

Evidence does not indicate that public transport has been a major source of COVID-19 transmission in Australia or elsewhere where precautions have been introduced (Ardila-Gomez 2020; Fisher *et al.*, 2020; Furth 2020; Goldbaum 2020; Medina 2020; O'Sullivan 2020; Sadik-Khan & Solomonow 2020). Furthermore, early advice on minimising the risk of transmission was predicated on COVID-19 not being airborne (Lewis 2020), so opportunities to prevent spread, such as facemasks and improved ventilation, were potentially missed and this may have contributed to transmission where it did occur (Shen *et al.*, 2020).

Poor ventilation is neither inherent to (Figure 8), nor unique to public transport (Hanmer & Milthorpe 2020; Miller 2020; Kontominas 2020), and this points to an important risk minimisation measure for public transport. In addition, the risk of transmission on public transport can be reduced by allowing increased distancing between passengers, improving cleaning and hygiene regimes, and reducing journey times (Hu *et al.*, 2020). We therefore applaud measures taken so far by the Victorian Government to reduce risk, including:

- continued operation of normal timetables (prior to Stage 4 restrictions) despite reduced patronage;
- addition of extra peak-shoulder services to allow passengers to shift their journeys outside of peak while minimising peak-shoulder crowding (Jacks 2020);
- all-door boarding on buses;
- provision of hand sanitiser at stations; and
- the enhanced cleaning regime across the network.

Despite official advice initially downplaying the value of facemasks for the general public, they are now seen as making a useful contribution to reducing transmission and should be a standard part of public health repertoire moving forward, even when in doubt about mode of transmission (Chu *et al.*, 2020; Gandhi & Rutherford 2020). However, effective and consistent community education and outreach to vulnerable groups will be an important part of ensuring their effectiveness (Tso & Cowling 2020; "Victoria's mask rule poses challenges for vulnerable groups, migrant communities" 2020). In contrast, evidence does not appear to support mass temperature checking (Mitra *et al.*,

2020; Cunningham 2020), so the use of thermal cameras to screen passengers does not appear to be warranted at this time, subject to any emerging evidence to the contrary.

Recommendations:

1. Maintain enhanced cleaning regime on public transport vehicles and stations;
2. Restore and maintain service levels to those in place prior to Stage 4 restrictions;
3. Configure onboard and station HVAC systems to maximise throughput of fresh air.

3.2 Remaining opportunities to reduce exposure

Less progress has been made up until now on reducing journey times onboard public transport. A lack of priority measures means that trams and buses are much slower than they could be, and this lengthens journey times and reduces the frequencies and onboard capacity that can be provided with a given fleet and workforce (Morton 2007; Lawrie & Stone 2020).

The reduction in traffic volumes provides an ideal opportunity to reconfigure infrastructure and traffic signals to reduce delays to public transport vehicles and to provide greater safety for vulnerable road users as other jurisdictions have achieved (Ackerman 2020; Carlson 2020; Honan 2020; MAV 2020). As it stands, it seems that buses are now spending more time idling at mid-journey timing points due to the faster travel enabled by reduced traffic. Conscious measures by the government to provide traffic priority and revise timetables could lock-in these time savings to boost the efficiency of public transport operations and reduce exposure time onboard for passengers.

Similarly, most signalised intersections still require pedestrians to touch "beg buttons" which creates the potential for transmission. This requirement can cause delays if reaching the intersection after the parallel traffic has received a green light and result in groups of people congregating at the crossing while awaiting a green walk signal, or entice people to cross without a green light (Victoria Walks 2020). Transmission risk and delays to pedestrians could both be reduced by making green walk signals automatic at all signalised intersections.

Enforcement of Road Rule 128[1] would also ensure that the relatively small amount of space allocated to walking is available to pedestrians and not encroached upon by cars (Figure 1), and that delays to trams are reduced. Given the failure of some traffic sensors to detect bicycles (Johnson et al., 2013), the "Idaho stop" (which allows people on bicycles to treat red lights as 'Stop' signs and 'Stop' signs as "Give Way') also has merit to reduce delays and bunching up of people at intersections (Dunn 2016; Tekle 2017).

[1] "A driver must not enter an intersection if the driver cannot drive through the intersection because the intersection, or a road beyond the intersection, is blocked."

Figure 1: Road Rule 128, which prohibits blocking of intersections, is regularly broken by motor vehicles, particularly in Melbourne's CBD, which increases risks to pedestrians, adds to crowding on crossings, and delays trams. Source: https://twitter.com/liveable_melb/status/1199311992130945024

Figure 2: Private cars blocking pedestrians and trams in contravention of Road Rule 128. Image source: Daniel Bowen.

V/Line passengers have very much appreciated that the full timetable has been maintained over the course of the emergency. In almost all cases, that meant that appropriate physical distancing could easily be achieved.

Unfortunately, that was in contrast with the inadequacy of some V/Line rail replacement bus services, used when scheduled track work was being carried out. It was often the case that too few buses were provided, making the maintenance of proper physical distancing impossible. Passengers either had to take the risk of travelling too close to others, or not boarding the bus at all, thereby

incurring a lengthy wait with no certainty about the adequacy of subsequent bus replacements. That situation was the cause of a number of complaints.

Recommendations:

4. Implement traffic priority measures for trams and buses to reduce delays;
5. Revise bus and tram timetables to capitalise on priority measures and reduce time onboard;
6. Configure traffic lights to give pedestrians a green signal without need to press button wherever possible, or to provide faster response times where not possible;
7. Enforce Road Rule 128 to maximise space and safety for pedestrians and reduce delays to trams;
8. Permit cyclists to proceed with caution after stopping at red lights;
9. Ensure rail replacement buses provide sufficient capacity for effective distancing.

3.3 Cause for optimism - with precautions

Considered together, the above-mentioned evidence suggests that public transport remains a safe and healthy transport option provided: there is a thorough cleaning regime; adequate service levels and operating spans are provided to enable distancing; journey times are minimised through priority measures; facemask recommendations are in line with the latest evidence; and there is good air filtration and/or fresh air circulation. Furthermore, public transport retains its advantages over private motor vehicles in terms of broader impacts such as physical activity, road trauma, air pollution, congestion, and transport affordability (further discussed below).

4 Stage Four Restrictions

4.1 Curfew service cuts implementation and removal

The implementation of the evening service cuts for stage 4 curfew was sudden, poorly announced and happened before either people already out on the Sunday evening had heard about it or the employment restrictions had come into place, on the Thursday (PTUA 2020a; Bowen 2020), causing some overcrowding until they had come into force.

Following the shift of the curfew starting time from 8pm to 9pm in mid-September, it was a further two weeks before services during that hour were restored.

Restoration of remaining service cuts following removal of the curfew on 28th September took a further two weeks. (https://www.ptv.vic.gov.au/more/coronavirus-covid-19/)

Recommendations:

10. Any service cuts in future curfews be implemented with more notice and better correlated to other curfew restrictions;
11. The restoration of service levels to pre-curfew state be done as soon as possible after the reduction or end of the curfew.

4.2 Curfew Service Levels

The suspension of Night Network during curfew hours in the lockdown is reasonable. However the lowered levels of evening service during the curfew hours were insufficient to support essential workers and others needing to travel. Reduced services were particularly poor for people making connections, causing long waits. The resultant 40 minute frequencies used on most tram lines and some rail lines were non-clockface frequency, reducing timetable legibility for passengers.

There was anecdotal evidence that the changes forced people to stop using public transport, including some switching to car pooling that was to be kept to an absolute minimum according to the health rules (DHHS 2020).

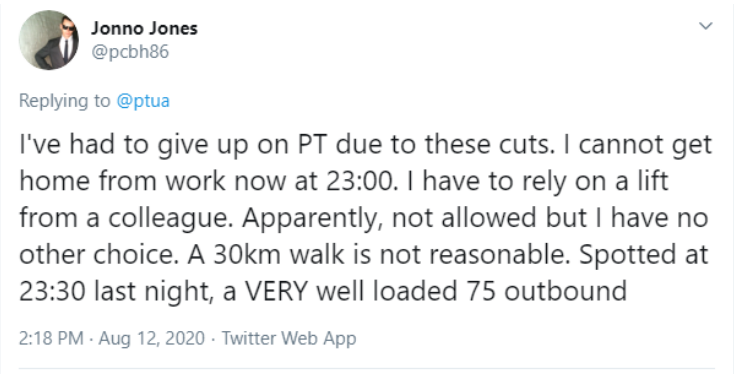

Figure 3: Service cuts during curfew made public transport unusable for some essential workers, forcing them into potentially unsafe car-pooling arrangements. Source: https://twitter.com/pcbh86/status/1293401370649718785

Evening service frequencies are inadequate at the best of times, particularly on trains where services were cut from every 20 minutes to every 30 in 1978, when metropolitan Melbourne was about half its current size, and shopping hours were far more restricted. The current normal service levels could be considered as barebones already - cutting them further by half left the public transport service almost unusable for those needing to use it.

Recommendations:

12. Any future curfew services cut not drop train, tram and major bus services below half-hourly, to maintain a usable service for essential workers.

4.3 Sunday Morning Services

The retention of the post curfew Sunday morning services included in Night Network was welcome and useful for essential workers and other permitted uses on Sunday mornings. This appeared to be recognition that "normal" Sunday morning services are insufficient. Prior to Night Network, train services on Sundays started later in Melbourne than elsewhere in Australia, and the PTUA had been campaigning for earlier starting times (PTUA 2011, 2014).

A better long term solution would be the merging of Saturday and Sunday timetables, to make service spans and frequencies consistent across the weekend, with the only variation being after-midnight Night Network services where applicable.

Recommendations:

13. Abolish Sunday timetables and use the Saturday timetable on Sundays, as well as public holidays.

5 Building Back Better

5.1 A healthier community

The COVID-19 pandemic has generated a great deal of speculation over the impacts on travel behaviour and employment patterns beyond the current restrictions. For example, working from home may become more prevalent and increase the proportion of travel undertaken locally (Siebert 2020; Wright 2020). This would be consistent with the Government's own 20 Minute Neighbourhoods vision and reinforces the value of improving short distance travel options such as walking and cycling (Bensley-Nettheim 2020; Sisson 2020). The sudden drop in motor vehicle traffic around the world has shown the potential for reductions in pollution and road trauma if this can be converted into a new normal through telecommuting and mode shift to active and public transport (Berman & Ebisu 2020; Bao & Zhang 2020; PTUA 2020b).

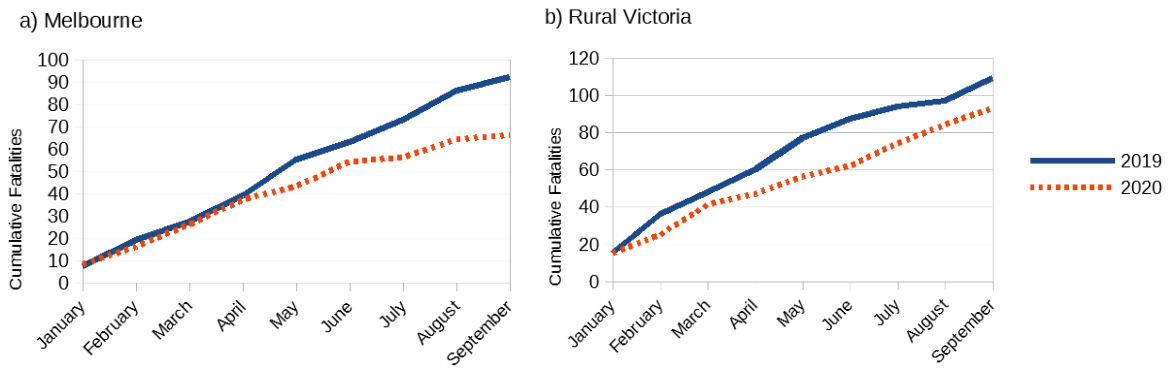

Figure 4: Road fatalities for the first 9 months of 2019 and 2020 for a) Melbourne, and b) rural Victoria. Reduced motor vehicle travel has significantly reduced road trauma in 2020 compared to 2019, particularly in metropolitan Melbourne where tighter restrictions have applied. Source: Transport Accident Commission.

Recent research has shown great interest in cycling that is suppressed due to inadequate safe cycling networks (VicHealth 2020). Catering for this demand would have many health, social and economic benefits and would make an important contribution to Victoria's pandemic recovery (Department for Transport 2015; Blondiau *et al.*, 2016; Fishman *et al.*, 2015; Rachele 2016; Standen *et al.*, 2019).

A significant shift of journeys away from public transport to private motor vehicles would have seriously negative effects such as increased congestion and pollution (Lawrie & Stone 2020; Medina 2020). Conversely, maintaining and increasing the role of public transport has many synergies with responding effectively to the COVID-19 pandemic, for example:

- reducing the prevalence of overweight and obesity through reducing sedentary transport behaviour can reduce the severity of COVID-19 infection (Choy 2020; Cowburn 2020; Garcia de Jesus 2020; Wen *et al.*, 2006; She *et al.*, 2019);
- reducing car use can lower tail-pipe emissions as well as pollution that is not addressed by vehicle emissions standards or electrification, such as pollution from tyre and brake wear and road surfaces, and help to reduce respiratory disease and vulnerability to COVID-19 (Copat *et al.*, 2020; Yongjian *et al.*, 2020; Basagaña *et al.*, 2018; Xia *et al.*, 2015; Barnett 2014; Timmers & Achten 2016; Kelly 2017; Stockstad 2020);
- reducing car dependence can reduce household financial stress in a period of increased un- and under-employment, particularly in middle and outer suburban areas currently poorly served by public transport (Walks 2018; Wang 2013);
- reducing car dependence supports local economic recovery by shifting expenditure to goods and services with higher local content and value-adding (Litman 2018; Osborne *et al.*, 2020; Welle & Avelleda 2020);
- reducing private motor vehicle use cuts the economic and social cost of road trauma (Figure 4);
- minimising private motor vehicle traffic allows improved commercial vehicle productivity;
- public transport provides independent mobility, including access to education and employment, for people who are unable to drive (Quednau 2018).

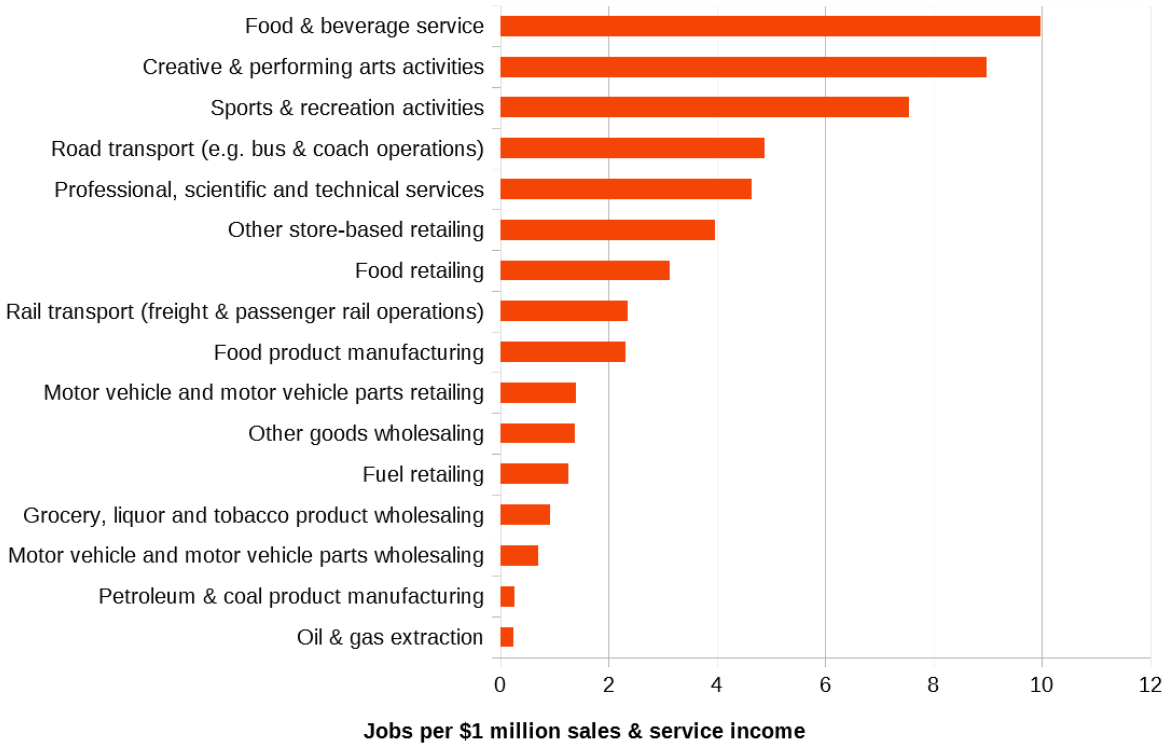

Figure 5: Expenditure on private transport such as motor vehicles and fuel results in comparatively few jobs compared to other industries with higher labour intensity. Source: Australian Bureau of Statistics, Australian Industry, 2018-19.

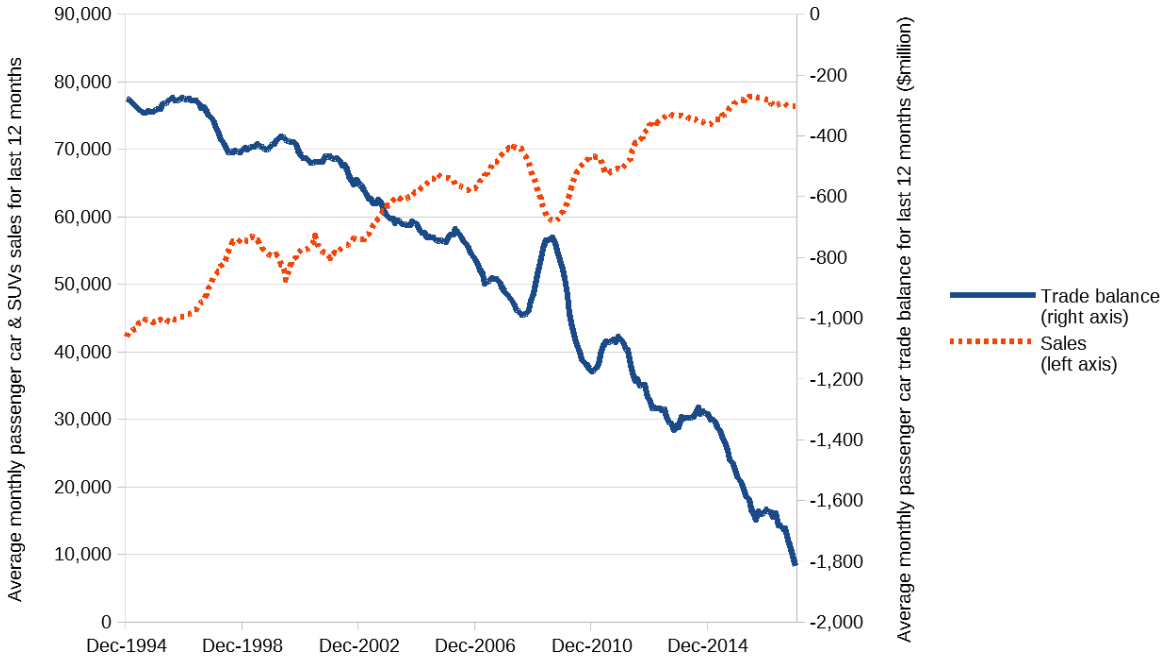

Figure 6: Along with a secular trend related to the decline of the Australian automotive manufacturing industry, Australia's trade deficit in passenger cars shows a clear relationship with new car sales.

Recommendations:

14. Expand active transport networks to improve safety and connectivity for local travel.

5.2 Enabling a healthy transport system

Investing in public transport to better cater for emerging travel needs will be central to ensuring the liveability and productivity of Melbourne as we seek to emerge from the pandemic. While CBD-focused train travel has fallen dramatically during restrictions, bus travel has not fallen by as much, underlining its more localised role and coverage of jobs that are not able to be done from home. Unfortunately slow and infrequent services and limited operating spans reduce the bus network's current ability to assist recovery from the COVID-19 pandemic. Investment in a network of fast and frequent bus services would both provide direct job creation, and reduce the private and social costs resulting from car dependency, and thereby support Victoria's recovery (Lawrie & Stone 2020).

With plans to reinvigorate the CBD with al fresco dining and other uses of outdoor space, space-efficient transport will be vital to ensure pleasant amenity for diners and capacity to deliver viable numbers of patrons to businesses. Private motor vehicles create noise and air pollution and take up large areas for parking for comparatively few passengers, whereas active and public transport can deliver customers without harming local amenity and free up space for physical distancing and non-transport activities (Figure 7). The City of Melbourne's Transport Strategy (City of Melbourne 2019) acknowledges an oversupply of off-street parking in the city which indicates ample opportunity to reprioritise road space towards more productive and space-efficient uses.

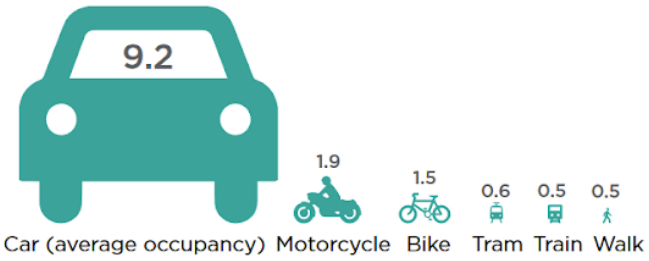

Figure 7: Space consumed per person (m^2) using different modes of transport (City of Melbourne 2019, p.33).

As public transport patronage growth in other cities has indicated, adequate capacity on the rail network will be necessary to allow distancing as restrictions are eased. Similar to efforts to flatten the COVID-19 infection curve so that hospital capacity was not overwhelmed, flattening public transport passenger loads by staggering the time of travel will allow passengers to return to the network without traditional peak crowding. A return to normal service levels plus additional off-peak services to allow staggered commute times and working hours will be a necessary part of enabling this. Shifting to off-peak travel could be further encouraged by looking at pricing mechanisms such as off-peak Myki Money fares that reduce the cost of travel when demand is lower, with fares

remaining multi-modal for the most efficient, competitive and non-discriminatory public transport service offering to passengers and potential passengers. Abolition of the Free Tram Zone would also help to encourage walking short distances within the CBD rather than increasing tram passenger loads in the most crowded part of the network.

The risk of airborne transmission can be further reduced through effective air circulation and treatment (Morawska *et al.*, 2020). High rates of air replacement and/or fine particle filtration can minimise exposure to pathogens, and use of ultraviolet light in ventilation systems also shows potential for neutralising the coronavirus. The Victorian Government should ensure that such measures are implemented in public transport vehicles and stations here, and this may require accelerated replacement of older trams which lack modern HVAC systems and are not DDA-compliant.

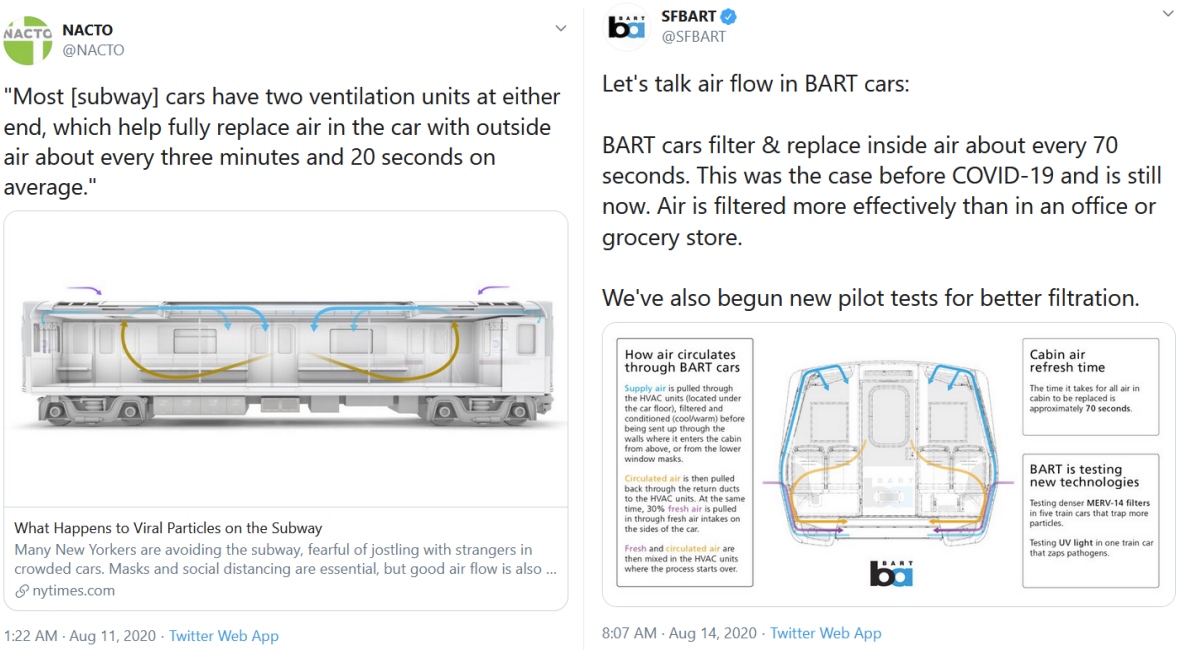

Figure 8: Public transport agencies in other jurisdictions are examining the role of air treatment in minimising the risk of COVID-19 transmission. Source: a) https://twitter.com/NACTO/status/1292843878425464833, b) https://twitter.com/SFBART/status/1294032912329760769

While fleet expansion and renewal will be important to meet accessibility obligations and to provide capacity and modern HVAC systems, procurement will take time. Therefore it will be vital to maximise existing fleet productivity by providing priority to buses and trams in the form of dedicated lanes and head-starts at traffic lights, and to trim padding in timetables that, in the case of trains, are to some extent remnants of Siemens train brake issues over 10 years ago. Higher average speeds will allow vehicles and drivers to provide more services and therefore more space for passengers over the course of a shift.

Recommendations:

15. Introduce a network of fast and frequent bus services to service suburban travel;
16. Increase off-peak service levels to make off-peak travel a more viable option for passengers;
17. Introduce off-peak fares to encourage staggering of journey times, with fares remaining multi-modal;
18. Abolish Free Tram Zone to encourage active transport for short trips in CBD and reduce CBD crowding as patronage returns;
19. Accelerate procurement of low-floor trams with modern HVAC systems;
20. Upgrade HVAC systems where required to provide best-practice air filtration/treatment and fresh air circulation.

5.3 Use of technology

Use of technology has potential to assist the spreading of passenger loads across available space. For example, passengers could be alerted to carriages with fewer passengers which would allow them to avoid crowded carriages (Oliveira *et al.*, 2019).

However adequate service provision is crucial to ensure that space is available to spread into. High service frequencies provide more space onboard public transport vehicles and "flatten the curve" of passenger flows at interchanges by spreading passengers out across a higher number of vehicle arrivals and departures over time, thereby reducing pressure on station space at any one time.

Provision of shelter along the length of platforms will also encourage passengers to spread out rather than crowd under limited shelter in unfavourable weather. In addition, elimination of advertising over public transport vehicle windows would help passengers to identify less crowded areas before selecting which door to enter.

It should be noted that technology access and literacy is variable across public transport users so the system should not be reliant on all passengers making full use of smart devices. On the other hand, using Myki data as part of contact tracing (subject to privacy protections) would be less reliant on users' technology literacy and could play a role in quickly responding to potential transmission (Humphries 2020).

Recommendations:

21. Investigate technology to provide real-time guidance on carriage loads;
22. Eliminate placement of advertising over public transport vehicle windows;
23. Investigate use of Myki usage and registration records for contact tracing purposes.

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