

# Transport Congestion

## Critical Policy Brief



This briefing draws upon the expertise of RMIT's transport research community to inform policy makers and the wider community on the critical challenge presented by congestion.

**Congestion is a key issue affecting Victoria's transport sector, with significant economic, social and environmental costs. Infrastructure Victoria estimates that by 2030, commuter time spent on congested roads across Melbourne will increase by 20%.<sup>1</sup> Planning for future congestion requires exploration of alternative transport modes and behaviours, including shifting towards more sustainable forms of transport and travelling outside of peak periods.**

### Overview

To manage congestion, a coordinated approach is needed that considers all users of the transport system – pedestrians, cyclists, public transport users and motorists. This policy brief proposes three key actions for government to manage congestion more effectively in Victoria: better use of Intelligent Transport Systems (ITS); promoting mode shift from motor vehicles to other forms of transport; and transport pricing aimed at managing demand.

### Utilise the Potential of Intelligent Transport Systems (ITS)

Intelligent Transport Systems (ITS) can play a primary role in delivering a high level of performance across the transport network, enhancing the quality of transport services and reducing congestion. Presently, road traffic systems do not provide sufficiently accurate traffic information to identify congested roads and congestion levels, to estimate delay times, or identify alternate routes. ITS can manage congestion through real time traffic and incident monitoring, automated warning systems and dynamic travel information. With this type of information, road users can more accurately plan their day-to-day trips and avoid congested roads. They may choose to change their travel route, the

### Key Messages

- By 2030, an additional 3.5 million trips are expected to be made each day across Melbourne's transport network, increasing commuter time on Melbourne's roads by 20%.<sup>2</sup>
- There is strong potential to use Intelligent Transport Systems to manage congestion across the transport network, providing commuters with real-time information to plan their journey and best mode of transport.
- Up to a third of Victorian drivers could potentially shift to other modes of transport to alleviate road congestion. This shift can be supported by development of a high-capacity inter-suburban orbital light and heavy rail system, as well as providing higher frequency and more direct bus services.
- Congestion can be further alleviated by promoting active transport alternatives to car use. This requires additional investment in cycling infrastructure and incentives, as well as creating walkable neighbourhoods.
- Transport pricing has been seen to reduce urban congestion by between 13%-30% in other cities. Differential pricing of public transport services at peak and off-peak periods can similarly manage demand, reducing overcrowding on peak hour services.

time of travel, or even their mode of transport.

ITS can also enhance the performance of Victoria's public transport system through improved demand management. Dynamic information including train, bus or tram arrival times and passenger levels can inform decisions between modes of transport and reduce passenger crowding.

## Shifting Transport Modes

Working patterns and retail opening hours affect when and how people travel. Recent research by Infrastructure Victoria indicates that a quarter of peak hour drivers could change the time they travel and a third could change the mode they use.<sup>3</sup> Encouraging these motorists to shift to public transport could double the public transport mode share, also promoting an increase in associated walking and cycling trips.

Most of this potential demand is in areas not serviced by the existing train and tram network. These areas would particularly benefit from development of a high-capacity inter-suburban orbital light and heavy rail system, transitioning the current radial tram and rail-based systems into an accessible network serving the entire metropolitan area. Higher frequency bus services, more direct bus routes, and extended service hours are needed to meet public transport demand, supported by improved timetable integration with other travel modes.

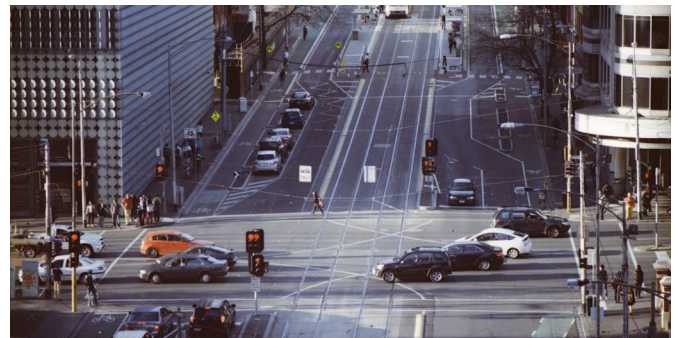
Road congestion also occurs on weekends, when patterns of movement are more diverse and public transport services less frequent. This congestion can be addressed by increasing the frequency, span and reach of weekend public transport services.

Active transport alternatives can be improved through development of a comprehensive bike path network, together with increased bike storage and bike share facilities at stations, shopping centres and places of employment. In some European countries cycling to work is encouraged through a tax-free reimbursement based on the number of kilometres cycled to and from work.<sup>4</sup> Pedestrian-friendly activity centres also encourage walkability. Walking can be made safer, more



comfortable and enjoyable through measures such as increased footpath and public space, shade and weather protection, better lighting, reduced speed limits and universally accessible pedestrian crossings.

Congestion pricing in cities such as Singapore, London and Stockholm has reduced congestion by between 13%-30%



## Transport Pricing

Pricing is an important and effective tool for transport demand management, and has been widely used to manage congestion worldwide. Infrastructure Victoria has identified the introduction of a transport network pricing regime to change behaviour and manage demand for travel as being among the highest priorities to improve Victoria's transport sector.<sup>5</sup> Through an appropriate pricing scheme, transport users pay for the additional congestion they create, conveying the cost imposed upon others and society. Effective transport pricing will help shift transport demand towards times of lower congestion and from road to other transport modes.

Different types of transport pricing models have been implemented overseas. Cordon- or zone-based congestion pricing in cities such as Singapore, London and Stockholm have reduced congestion by between 13%-30%.<sup>6</sup> On public transport, differential pricing at peak and off-peak periods can similarly manage demand, reducing overcrowding on peak hour services.<sup>7</sup>

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<sup>1</sup> Infrastructure Victoria (2018), Five-Year Focus: Immediate actions to tackle congestion, p. 4.

<sup>2</sup> Infrastructure Victoria (2018), Five-Year Focus: Immediate actions to tackle congestion, p. 4.

<sup>3</sup> Infrastructure Victoria (2018), Five-Year Focus: Immediate actions to tackle congestion, p. 5.

<sup>4</sup> Haubold, H. (2014), Commuting: Who pays the bill? Overview of fiscal regimes for commuting in Europe and recommendations for establishing a level playing-

field. European Cyclists' Federation (ECF).

<sup>5</sup> Infrastructure Victoria (2016), Victoria's 30-Year Infrastructure Strategy, p. 123.

<sup>6</sup> Mahendra, A. (2011). Road Pricing: Public Perceptions and Program Development (Vol. 686). Transportation Research Board; Pike, E. (2010), Congestion charging: challenges and opportunities, International Council on Clean Transportation.

<sup>7</sup> CRC for Rail Innovation (2013), Urban Rail Demand Management Strategies – Final Report.