Response to

Securing Victoria's Future Prosperity

VCEC draft report on a state-based reform agenda

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PTUA

PUBLIC TRANSPORT USERS ASSOCIATION

Contents

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1 Productivity Challenges

1.1 Productive people

The Commission's draft report notes that the state's workforce is a core asset underpinning Victoria's productivity and competitiveness. Healthy, skilled people will be crucial to Victoria's future. Current trends in some non-communicable disease risk factors, particularly in the context of an ageing population, are therefore cause for great concern.

The increasing proportion of Australians who are overweight or obese makes Australia one of the fattest countries in the world, with startling growth in overweight and obesity among young people (ABS 2011). This follows a precipitous fall in the number of children walking and cycling to school over the past two or three decades (PTUA 2007a, p.9).

Sedentary lifestyles, frequently related to car dependence, are a key risk factor in obesity and a range of related non-communicable diseases including heart disease, Type 2 diabetes and osteoarthritis (PTUA 2007a, pp.9-12). On the other hand, active transport, by itself or linked to a public transport journey, has large public health benefits with a positive effect on labour force productivity and participation (Davis & Jones 2007; Hughes & McMichael 2011, p.39). The safety and amenity of people who walk or ride will however need to be prioritised through measures such as traffic calming to encourage more people to engage in active transport.

In addition to embedding healthy physical activity into daily routine (Lucas 2010a), public transport can enable travel time to be used productively for reading and working, particularly if wireless internet connectivity is available. This productive use of travel time applies particularly to regional Victoria.

As well as contributing to sedentary lifestyles, car dependence limits the ability of many people to participate in employment and education (CfPT 2006, p.14; VCOSS 2010). This exacerbates social problems and limits the productivity of Victoria's working-age population.

1.2 Congestion

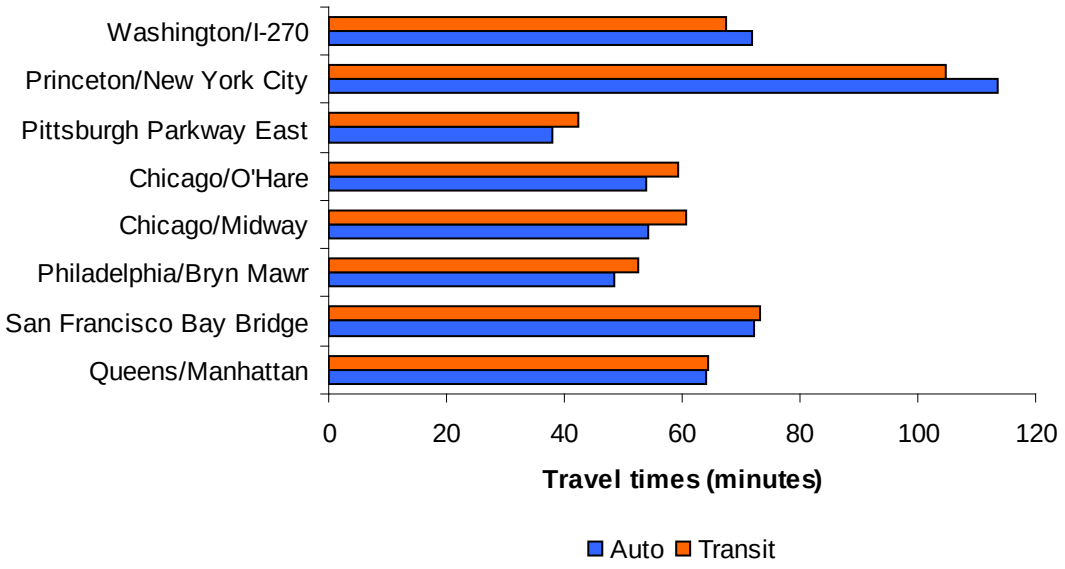
Traffic congestion is a feature of all modern cities that decades of road building has failed to eradicate. In fact, transport experts now recognise that expansion of road capacity induces additional traffic, so that any gains are not only temporary, but also a poor return on investment (PTUA 2008b, pp.15-19). Despite this, recent and current Victorian road projects

have proceeded on the basis of overly optimistic congestion reduction assumptions (Victorian Auditor General 2011).

The Commission's draft report (p.117) notes that Melbourne has the highest level of road congestion in Australia on some indicators. This is not surprising since billions of dollars have been sunk into encouraging road use through construction of CityLink (and its later expansion), East Link and various other arterial roads, and thus Melbourne has the highest car use of Australia's three largest cities (see ACIL Tasman 2011, pp.82-3). Congestion will remain a feature of Melbourne as long as car use continues to be encouraged through road building and underpricing of road use.

Public transport has an obvious vital role in managing congestion. Good quality public transport provides the necessary substitute to peak period road use that efficient road pricing would seek to discourage. Even in the absence of road pricing, public transport acts as a pressure valve by giving road users an alternative to adding to congestion. The attractiveness of this pressure valve will govern its ability to contribute to congestion reduction. Where only a slow and unappealing public transport system is offered (such as across large areas of Melbourne), road users will (reluctantly) choose to endure severe congestion and add to road traffic volumes. However, where more attractive alternatives to private car use are available, potential road users will opt for them rather than endure the congestion they would otherwise be exacerbating. As a result, road travel times will tend to converge with the time taken by equivalent public transport journeys (see Figure 1.1). The implications of this convergence are dire for areas with slow and infrequent public transport.

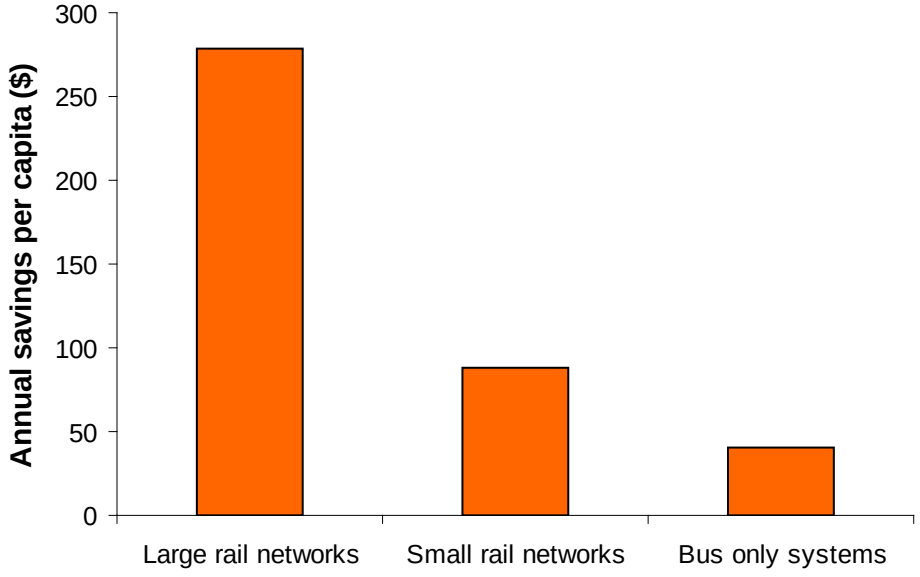
Figure 1.1: Convergence of door-to-door travel times



Source: Lewis & Williams 1999, p.112

Although public transport is unlikely to completely eliminate road congestion while road use remains underpriced, it can effectively eliminate road congestion for those who use it. That is, mass transit services with Category A rights-of-way (PTUA 2008b, p.31) enable people to avoid traffic delays and thereby to continue productively going about their business (and even potentially continue working *while* in transit as noted above). This is demonstrated by the greater average congestion cost savings enjoyed by residents of cities with large rail networks (Figure 1.2).

Figure 1.2: Annual congestion cost savings from transit



Source: Litman 2006, p18

The effects of road congestion on road-based public transport can also be mitigated through priority measures that help buses and trams to continue to offer a time-competitive relief valve. For example, head start lanes, 'B' and 'T' lights and dynamic signal priority (such as would be facilitated by roll-out of the GPS-based RAPID system across the public transport fleet) all help road-based public transport to cut through congestion as well as achieve greater operational efficiencies.

1.3 Freight transport

We have previously noted that freight growth projections may be excessive (PTUA 2007b, pp.15-20; PTUA 2008a, p.29). We are therefore cautious about accepting projections of significant growth in freight volumes such as those included in the Commission's draft

report (p.119). Nonetheless, freight movements represent a small proportion of traffic, and there is substantial scope for existing road infrastructure to cater for freight vehicles by shifting some of the passenger task to public transport and active transport and more efficiently utilising freight vehicles (PTUA 2011c, pp.6-8).

The PTUA believes that as much freight as possible should travel by rail and that more would do so with investment in rail infrastructure to enable fair competition with road.

However, not all freight movements will ever be by rail so the smooth transport of goods by road is important. One way to provide this is to encourage as many people as possible to use public transport rather than cars. The PTUA believes that this would be far preferable to building the East-West Road Tunnel, the benefits of which are, in any case, less than the construction cost.

1.3.1 Port of Hastings and the standard gauge

If the Port of Hastings is to be developed, it is imperative that it has good rail connections to avoid the road congestion that would be caused by trucks. Indeed, it is important that rail carries the overwhelming majority of freight traffic to and from the port. A significant impediment to this is the rail gauge.

The current railway line to that area is Victorian broad gauge (1,600 mm) while much of the traffic to and from the Port is likely to move interstate to Sydney, Adelaide and Perth on the lines of standard gauge (1,435 mm). Transferring containers and other freight between rail wagons of different gauges would add cost, cause delays and generally make rail an unattractive option. It is therefore important that the railway line to the Port is converted to standard gauge to facilitate interstate traffic.

However, on its own, this would stymie freight being carried from Victorian regions which are mostly of broad gauge. Rather than dual gauge track, it would be preferable to convert broad gauge railway lines to standard gauge. This would benefit not only traffic to and from Hastings but also more generally, reducing maintenance cost of country roads and improve road safety (PTUA 2011c).

In Australia's integrated national economy, supply chains are now largely national in scope. Therefore 'intrastate' freight movements are often just a component of a longer national supply chain. Linked to the above point but also valid more generally, not having one rail gauge throughout Victoria and Australia is a large hidden cost. Movement of freight by rail is discouraged by the break of gauge and is more expensive than it would otherwise be due to the costs of transhipment between gauges.

The gauge difference also acts as a barrier to entry for interstate above-rail operators, reducing competition in the logistics sector. Progressively converting all Victorian railway

lines to standard gauge would more easily enable more goods to travel by rail, a more efficient mode of transport over longer distances than road, in addition to having fewer externalities (PTUA 2011c, p.10). This would be aided by ensuring gauge-convertible sleepers are used when laying new or renewed track in the interim.

2 Planning

2.1 Community engagement

Consistent with the comments by the Grattan Institute included in the draft report (p.127), we believe that genuine public participation is central to the effective delivery of transport and land use planning. In many ways, the conflict between local government (as the tier closest to local communities) and state government over the implementation of *Melbourne 2030* results from a failure to reflect the wishes of the community expressed during earlier consultations on the development of the strategy (PTUA 2011a, pp.3-5).

A more effective approach to strategy development would make a substantial investment in the capability of local communities to make fully informed decisions about the merits of different options, and then ensure the implementation remains true to the goals articulated by the community. Where communities are genuinely engaged in strategy development and feel they have a stake in its successful implementation, we would expect fewer disputes over permit applications, and faster, less costly development processes for proposals that are consistent with the strategy.

2.2 Urban development

The PTUA supports planning and building approvals designed to prevent urban sprawl and to encourage use of non-car based transport, among other things to prevent road congestion skyrocketing. In the absence of such planning, transport 'planning' is inevitably skewed towards car use.

The State government is requiring local councils to identify areas for high density housing development and this is occurring in some areas, particularly those closer to Melbourne city centre, the corollary of which is that new housing and also commercial building developments must cater for pedestrians, cyclists and have good access to public transport.

This has not always been the case. For example, Coles Myer's head office at Tooronga that was opened in the 1980s is on one infrequent bus route, an unpleasant and quite long walk away from Tooronga station and some distance from the Nos. 8 and 72 tram routes. If planning permission had been conditional on adequate public transport access, key transport developments could have had wider benefits for the public, for example the extension of the No. 8 tram route from Toorak to Hartwell, completing a very useful link in the tram network, provision for a more pleasant walk to Tooronga station and frequent buses and more routes. In the absence of such public transport improvements, the actual

mode share impact of Coles' move to Tooronga (Table 2.1) highlights the potential for decentralisation away from Melbourne's CBD to result in less efficient transport outcomes.

Table 2.1: Impact on mode share of Coles' move from CBD to Tooronga

Mode	*Before (%)*	*After (%)*
Train	47.3	9
Tram	13	0.7
Bus	2.7	0.9
Drive company car	19.3	22.9
Drive own car	10.4	55.1
Car passenger	6.3	8.4
Other	0.1	3
Total	*100*	*100*

Source: Public Transport Corporation

Where large housing developments are approved without adequate public transport, traffic congestion will result. Examples in Melbourne abound, such as in the outer south east (e.g. Berwick, Cranbourne), the west (e.g. Werribee, Laverton) and the north (e.g. Craigieburn and South Morang, to which the rail extension is now belatedly being introduced).

It is important with new housing estates that structure plans ensure convenient access to the Principal Public Transport Network (PPTN) without reliance on a car and that public transport routes are able to operate efficiently with minimal diversions and delays (PTUA 2004). However, even the most public transport-friendly structure will not reduce car dependence unless good, frequent public transport services are provided as houses are being built so that people moving in do not need one or more cars from the outset. The history of this happening in Melbourne is not good, although trams were provided to parts of Docklands before residential and commercial construction commenced. Generally, new housing should not be approved unless good, frequent public transport is already available or will be provided from the outset.

In some areas, including Boroondara and Knox, there is public resistance to the notion that not everyone can, or indeed should, have a car despite worsening traffic congestion and the continued increase in housing density. That many people cannot apparently conceive that not all trips are best made by car is, we consider, to be another manifestation of the lack of effective community engagement during the development and implementation of *Melbourne 2030* (see '2.1 Community engagement' above).

In short, integrated urban development and transport planning is essential and this should be a key role of the newly formed Public Transport Development Authority (PTDA).

3 Improving transport

3.1 Market mechanisms

Public transport is disadvantaged when competing with car-based transport in a number of ways, including:

- Fixed upfront and annual car registration fees that encourage car use compared to public transport.

  Once these are paid, road use is perceived by drivers as being free, there being no marginal cost to them, in contrast to the fare they would incur if they made the journey by public transport instead. Distance-based registration would enable fairer competition and move towards more efficient road pricing (VTPI 2011). A low-technology approach that does not incorporate time and location into the charging would be easier and cheaper to implement than more sophisticated systems, and would not encourage 'rat-running' as tolls are known to do with harmful effects on local amenity (Fullerton 2006).

  A flat rate would also not cause as large a shift in peak mode share as would result from more explicit 'congestion' charging. As such, distance-based registration should be considered as a near-term option that is not dependent on the completion of major public transport infrastructure projects, but could support investment in improving public transport services.

- Road users are charged the same access fee – perceived to be free, as above – no matter what the time of day or day of week.

  Cities including London and Singapore have introduced congestion taxes that are effective in reducing road vehicle usage at peak times. The Commission's draft report suggests that such charges not be introduced until public transport has been improved sufficiently to absorb the resulting patronage growth. In the absence of such charges, increasing road capacity is bound to induce additional uneconomic demand for road use, and should therefore be avoided. Instead the emphasis needs to be on urgently improving public transport.

  As noted below (see '3.3 Walking and cycling'), many car journeys could be shifted to active transport if the walking and cycling environments are also sufficiently improved, and this would ease the pressure on public transport capacity.

- Road user charges of all types do not recover the full cost of providing and using roads, which include (PTUA 2009b):

- Depreciation of the capital cost of roads
- The cost of the capital required to build and upgrade roads and road infrastructure (noting that roads and the Whole of Government motor vehicle finance lease are among the very few assets exempt from the Victorian Government's Capital Assets Charge, and therefore enjoying an advantage over other public asset investment options being considered by Government)
- Road maintenance
- Externalities, but nevertheless real costs, of:
    - Air pollution from car emissions increasing health care costs
    - Road crashes increasing health costs and disruption to the community and industry
    - Air pollution and new road construction causing environmental degradation
    - Noise pollution with 'hidden' health costs
    - Congestion, which the draft report identifies
- Statutory minimum car parking requirements for property developments, with no equivalent public transport service availability requirements
- Developers of car-dependent greenfield developments do not incorporate the additional costs of fringe development into their cost base, thus underpricing car-dependent land use patterns relative to development in areas with more developed public transport options (Trubka, Newman & Bilsborough 2008).

The PTUA has estimated the social costs resulting from providing and using roads at between $17 billion and $70 billion per annum in excess of total taxes and charges on road users (PTUA n.d.; PTUA 2009b, pp.2-13, 22). Clarke and Prentice (2009) also found that petrol excise is a relatively efficient form of taxation, while the Commission's draft report (p.83) suggests stamp duties should be prioritised for reduction and eventual abolition. Rather than using road pricing revenue to reduce car related charges as suggested in the draft report (p.134), these findings point to using road pricing revenue to reduce inefficient non-transport taxes, to the extent it is not used to improve non-car transport alternatives.

In addition to this, the manufacture of Australian cars is also heavily subsidised. An article in the *Australian Financial Review* on Friday 16 December 2011 put that figure at $5.4 billion, comprising:

- Automotive Competitiveness and Investment Scheme: $1.35 billion
- Automotive Transformation Scheme: $3.4 billion
- Automotive Industry Structural Alignment Program: $116 million
- Green Car Innovation Fund: $500 million
- Automotive Supply Chain Development Program: $20 million
- Automotive Market Access Program: $6 million
- Expansion of the LPG Vehicle Scheme: $11 million

Even this figure under-estimates the situation as state governments have and continue to provide other incentives including direct grants and preferential vehicle procurement policies.

3.2 Buses

Buses are an important part of the complete public transport network and in addition to journeys made solely on them can also provide useful connections with rail services and, to a lesser extent, tram services increasing the total public transport network available.

However, many, probably the great majority, of bus services in Melbourne are poor, most being infrequent, not operating throughout the day, every day, and many having circuitous routes (PTUA 2009a, pp.6-7). This leads to slow journeys, poor patronage and inefficient use of buses and drivers. Yet the impact of higher frequency services in Melbourne is demonstrated by various SmartBus routes that operate every day, all day and mostly at 15 minute intervals. Patronage growth on these routes has been significant. The very slow rate of implementation of bus service review recommendations is therefore disappointing and underlines the lack of capability in network planning in the Department of Transport (Lucas 2010b).

In addition to meandering routes that add excessive kilometres to journeys, the cost of delivering bus services is inflated by the limited use of priority measures (Walker 2011). The speed of bus services could be increased through more comprehensive use of measures such as head start lanes and GPS-integrated dynamic signal priority that eliminates waiting time at traffic lights. Faster services along more direct routes would enable a given number of drivers and buses to provide more attractive, more frequent services that can entice more people out of low occupancy cars and connect more seamlessly with rail services, relieving pressure on station car parks.

Furthermore, it is important that buses (and trams) connect with trains to create a much wider public transport network than any mode is able to offer on its own. In Melbourne, bus connections with trains are often poor with buses either being scheduled not to connect with trains or not waiting to make advertised connections if trains are running late (PTUA 2010a). An example of good connectivity is on the Gold Coast where numerous bus services are timed to connect with trains from Brisbane, such as the 745 bus from Nerang to Surfer's Paradise.

3.3 Walking and cycling

About half of car journeys in Melbourne are of less than five kilometres. This means a large proportion of vehicle journeys could be made on foot or bicycle and not have to be absorbed by public transport. Although there is significant willingness to use active transport, unsafe road conditions and traffic speeds deter many people (CPF 2011). This highlights the need for further bicycle and pedestrian-friendly infrastructure and traffic calming to make active transport a real option for more people. As noted above (see '1.1 Productive people'), greater uptake of active transport would boost the health of Victoria's labour force and reduce the economic burden of non-communicable diseases.

Cycling and walking infrastructure has improved to some extent in the last few years in a move away from the assumption hitherto apparently inherent in transport infrastructure and building projects that everyone does and wishes to travel by car.

However, much remains to be done from the simple and no-cost, such as having pedestrian priority at all road crossings, to providing bike paths segregated physically from road traffic, not just by a painted line on the road.

In addition, facilities to leave bicycles securely at all railway stations and to take them on both metropolitan and country public transport services, especially rail, is necessary to encourage people to ride to their local station rather than drive.

3.4 Assessment of transport infrastructure projects

Using conventional cost benefit analysis methodology, the benefit cost ratio of the proposed East-West road tunnel is 0.45 (PTUA 2008a, pp.16-19). The BCR still falls well short of 1 even when a range of questionable benefits are included in the analysis (*ibid.*). Despite the gross waste of scarce resources that such a project would represent, vested interests in the road lobby continue to push for its construction. This lobbying is meeting with some success, as demonstrated by the project's inclusion in the Victorian government submission to Infrastructure Australia.

As noted above (see '1.2 Congestion'), road projects continue to be approved on the basis of overly optimistic congestion reduction assumptions (Victorian Auditor General 2011) which is potentially diverting billions of dollars away from more worthy public investments that could create a more productive workforce.

In light of concerns such as these, we also therefore hold serious concerns regarding attempts to fast-track transport infrastructure and limit opportunities for public scrutiny of projects which may not be in the long-term public interest.

3.5 Cost of public transport infrastructure construction

The cost of public transport infrastructure appears to be high compared to that elsewhere. Factors that may contribute to this include:

- The lack of continuity of public transport infrastructure projects so that people with the appropriate skills have to be especially located (potentially from outside Victoria) for each project.
- Inadequate early planning and investigation of risks leading to project announcements that incorporate massive contingencies which are then used as a baseline for inflated tenders (Murphy 2011; Martinovich 2011a; Martinovich 2011b).
- The 'alliance' procurement method which has inherent flaws.

3.6 Funding public transport infrastructure

The Commission's draft report (p.135) refers to alternative funding mechanisms for transport infrastructure. Without taking a strong view on the mechanisms adopted, we do caution that the funding tail should not wag the infrastructure dog. In other words, the enthusiasm of private financing and construction proponents for certain projects should not be allowed to dictate the direction of transport planning and implementation (see also '2.1 Community engagement' above).

We also note that the agglomeration economies that impart greater value to centrally located land are largely enabled by high capacity public transport services as distinct from roads that encourage more dispersed land use (Voith 1998). We therefore believe that public transport is a more deserving beneficiary of revenue from property taxes than roads.

4 References

ABS 2010, *Overweight and Obesity in Adults in Australia: A Snapshot*, cat. no. 4842.0.55.001, http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/7DC7186F4A9950DECA25789C0023DCEF/$File/4842055001_200708.pdf

ACIL Tasman 2011, *Victoria's productivity, competitiveness and participation*, ACIL Tasman Pty Ltd, Melbourne, http://www.vcec.vic.gov.au/CA256EAF001C7B21/WebObj/ACILTasmanReportPDF/$File/ACIL%20Tasman%20Report%20PDF.pdf

Clarke, H. & Prentice, D., 2009, *A Conceptual Framework for the Reform of Taxes Related to Roads and Transport*, La Trobe University, http://www.taxreview.treasury.gov.au/content/html/commissioned_work/downloads/Clarke_and_Prentice.pdf

Davis, A. & Jones, M. 2007, Physical activity, absenteeism and productivity: an Evidence Review, TRL Limited, London, http://www.tfl.gov.uk/assets/downloads/corporate/Physical-activity-absenteeism-and-productivity-evidence-review.pdf

Fullerton, T. (Presenter). (2006, February 20). Wheeling and Dealing. In *Four Corners* [Television program] [Transcript]. Sydney, Australia: ABC TV. Retrieved from http://www.abc.net.au/4corners/content/2006/s1571546.htm

Hughes, L. & McMichael, T. 2011, *The Critical Decade: Climate change and health*, Climate Commission, Canberra, http://climatecommission.gov.au/wp-content/uploads/111129_FINAL-FOR-WEB.pdf

CfPT 2006, *Transport and Liveability - The Path to a Sustainable Victoria*, Coalition for People's Transport, Melbourne, http://www.vcoss.org.au/documents/VCOSS_docs/Transport/DOC-0601-transport_liveability_statement.pdf

CPF 2011, *Two in three blame unsafe roads for staying off their bikes*, media release, http://www.cyclingpromotion.com.au/content/view/526/9/

Lewis, D. & Williams, F.L. 1999, *Policy and Planning As Public Choice: Mass Transit in the United States*, Ashgate

Litman, T., 2006, *Rail Transit In America: A Comprehensive Evaluation of Benefits*, Victoria Transport Policy Institute, Victoria BC, http://www.vtpi.org/railben.pdf

Lucas, C. 2010a, 'Public transport users vote with feet', *The Age*, 12 March, http://www.theage.com.au/victoria/public-transport-users-vote-with-feet-20100311-q1pt.html

Lucas, C. 2010b, 'State failing to act on bus reviews', *The Age*, 16 September, http://www.theage.com.au/victoria/state-failing-to-act-on-bus-reviews-20100915-15cnx.html

Martinovich, P. 2011a, *Submission to NSW Legislative Council General Purpose Standing Committee No. 3 Inquiry into Rail infrastructure project costing in NSW*, 3 October, http://www.parliament.nsw.gov.au/Prod/parlment/committee.nsf/0/a67a53b205038223ca2579300017f05e/$FILE/Submission%2017.pdf

Evidence to Legislative Council General Purpose Standing Committee No. 3, Parliament of NSW, Sydney, 6 December 2011, (Peter Martinovich), http://www.parliament.nsw.gov.au/prod/parlment/committee.nsf/0/6f07bf6e560415acca25795f001ae9f6/$FILE/111206%20Uncorrected%20proof.pdf

Murphy, J. 2011, 'Vic project railroaded', *Australian Financial Review*, 16 November

PTUA n.d., *Myth: Motorists pay more in taxes and fees than is spent on roads*, Public Transport Users Association, Melbourne, http://www.ptua.org.au/myths/petroltax.shtml

PTUA 2004, *Submission to the Outer Suburban/Interfaces Services & Development Committee Inquiry into Sustainable Urban Design for New Communities in Outer Suburban Areas*, Public Transport Users Association, Melbourne, http://www.ptua.org.au/files/2004/PTUA_Sustainable_Urban_Design_Inquiry_Submission_200402.pdf

PTUA 2007a, *Moving Australians Sustainably*, Public Transport Users Association, Melbourne, http://www.ptua.org.au/federal/moving_australians-web.pdf

PTUA 2007b, *Submission to the East-West Needs Assessment*, Public Transport Users Association, Melbourne, http://www.ptua.org.au/files/2007/PTUA_EWNA_submission.pdf

PTUA 2008a, *Submission to the Victorian Government On the East West Link Needs Assessment*, Public Transport Users Association, Melbourne, http://www.ptua.org.au/files/2008/PTUA_EWLNA_submission_20080715.pdf

PTUA 2008b, *Enhancing Victoria's Liveability: Submission to the Inquiry into Enhancing Victoria's Liveability*, Public Transport Users Association, Melbourne, http://www.ptua.org.au/files/2008/PTUA_VCEC_liveability_submission_2008-01-31.pdf

PTUA 2009a, *Submission to the Inquiry into the investment of Commonwealth and State funds in public passenger transport infrastructure and services*, Public Transport Users Association, Melbourne, http://www.aph.gov.au/senate/committee/rrat_ctte/public_transport/submissions/sub136.pdf

PTUA 2009b, *Designing a more efficient, equitable and sustainable motor vehicle tax system*, Public Transport Users Association, Melbourne,

http://www.taxreview.treasury.gov.au/content/submissions/post_14_november_2008/Public_Transport_Users_Association_20090513.pdf

PTUA 2010a, *Poor connections leave passengers waiting*, media release, 9 May, http://www.ptua.org.au/2010/05/09/train-bus-connections/

PTUA 2011a, *Public Transport Development Authority: what's needed?*, Public Transport Users Association, Melbourne, http://www.ptua.org.au/files/2011/PTA_design.pdf

PTUA 2011b, *PT Problem of the Day: It's none of your business what we spend your money on*, Public Transport Users Association, Melbourne, http://www.ptua.org.au/2011/07/01/potd-none-of-your-business/

PTUA 2011c, *National Land Freight Strategy, Response to Discussion Paper*, Public Transport Users Association, Melbourne, http://www.ptua.org.au/files/2011/national_land_freight_strategy_2011-04.pdf

Trubka, R., Newman, P. & Bilsborough, D., 2008, *Assessing the Costs of Alternative Development Paths in Australian Cities*, Curtin University Sustainability Policy Institute, Fremantle, http://sustainability.curtin.edu.au/local/docs/Curtin_Sustainability_Paper_0209.pdf

VCOSS 2010, *Mind the Gap*, Victorian Council of Social Service, Melbourne, http://www.vcoss.org.au/documents/VCOSS_docs/Transport/VCOSS_mindthegap_report_web.pdf

Victorian Auditor General, 2011, *Management of Major Road Projects*, Victorian Auditor General's Office, Melbourne, http://download.audit.vic.gov.au/files/20110601-Major-Roads.pdf

Voith, R. 1998, 'The Downtown Parking Syndrome: Does Curing the Illness Kill the Patient?', *Business Review*, Jan-Feb 1998, http://www.philadelphiafed.org/research-and-data/publications/business-review/1998/january-february/brjf98dv.pdf

VTPI 2011, 'Distance-Based Pricing', *TDM Encyclopedia*, Victoria Transport Policy Institute, Victoria BC, http://www.vtpi.org/tdm/tdm10.htm

Walker, J. 2011, 'On operating cost', *Human Transit*, http://www.humantransit.org/02box.html