Response to *A State of Liveability*
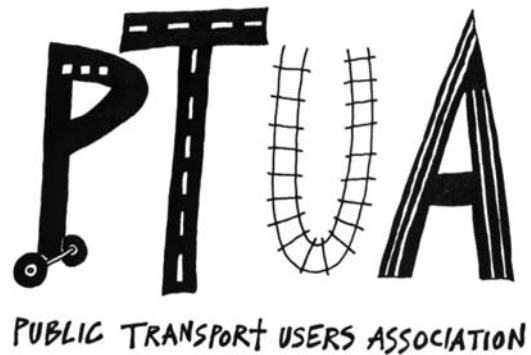
A submission commenting on VCEC's draft report on liveability

August 2008

Contents

1. Introduction

We welcome the Commission's draft report on enhancing Victoria's liveability (VCEC 2008). Liveability is a broad subject with many complex facets. It is undoubtedly challenging to do justice to all of these facets in a single report of limited length. We hope this submission assists the Commission to further develop some of the issues raised in the draft report and identify concrete measures to safeguard Victoria's liveability into the future.

This submission uses the same heading numbers as the draft report. For this reason heading numbering is not consecutive. Page numbers given in the submission relate to the draft report unless otherwise stated.

2. Defining and describing liveability

Draft finding 2.2

We acknowledge that 'liveability' can be a nebulous concept and challenging to describe. We believe that the working definition put forward in the draft report (p.11) would benefit from explicit recognition of two key factors:
1. **Sustainability** - as mentioned in our original submission (PTUA 2008a, p.1), a community that is not sustainable has no chance of maintaining its liveability.
2. **Equity** - a single community may be highly liveable for one set of residents while providing a very poor quality of life to others due to issues such as social exclusion or transport disadvantage that are exacerbated by features of the community (e.g. lack of accessible public transport).

It should also be recognised that many elements of liveability are interdependent and decision making should not be overly compartmentalised. For example, transport policies not only impact congestion and mobility, but also impact on health outcomes, social inclusion, workforce participation and environmental sustainability (CfPT 2006; PTUA 2008a; Ming Wen & Rissel 2008). What may seem to be an appropriate decision in isolation may in fact be far vastly inferior to other options when broader impacts are incorporated.

3. Drivers of liveability

We agree that initiatives that influence liveability can involve long lead times (p.15). This is true not only of measures designed to *improve* liveability relative to current levels, but also of measures aimed at preventing future *deterioration* of liveability relative to current levels. Climate change is a key example in this regard. While the short term costs of climate change abatement measures may possibly exceed the short term benefits, the longer term liveability benefits of avoided climate change are likely to exceed the costs by orders of magnitude.

3.3. Role of government
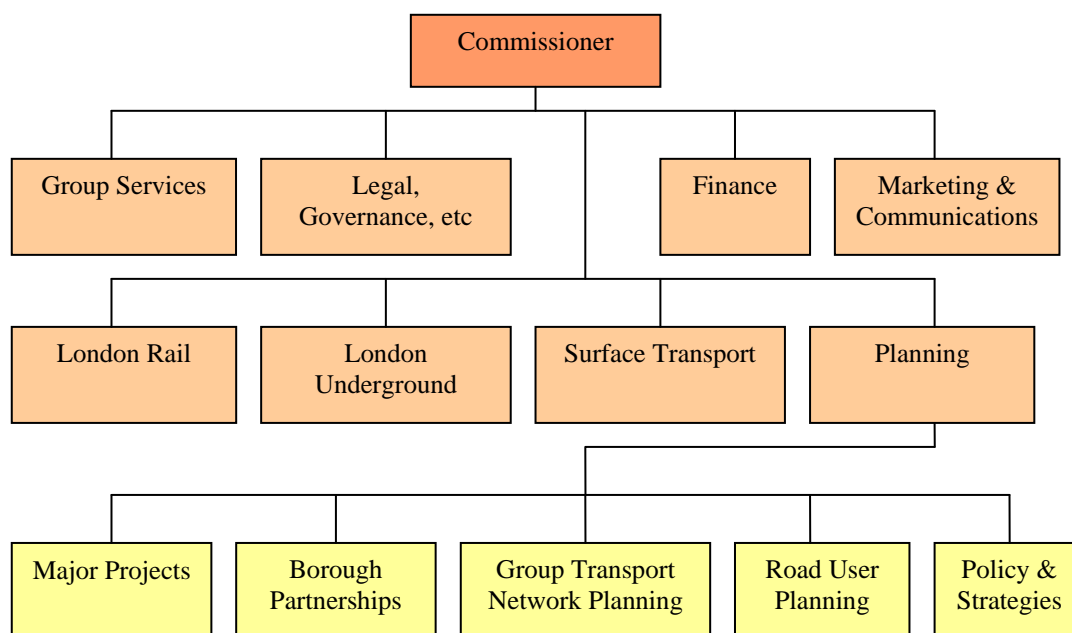
3.3.1. Subsidiarity

In cities such as Melbourne that do not have a metropolitan government, an effective public transport network requires planning and management that transcends the jurisdiction of individual local governments and that therefore cannot be fully devolved to local governments on an individual basis. The 'transport community' model of transport planning and management provides an excellent combination of engagement with local governments and communities while still retaining the ability to coordinate and integrate services across the greater metropolitan area.

Many other cities in the world with high liveability ratings and successfully managed transport systems have governance arrangements for transport and planning that successfully combine the perspectives of state or provincial governments, municipal governments, and community groups, ensuring each tier of government and civil society has the opportunity to participate in planning processes and contribute its particular perspective, leading to a superior outcome. In Vancouver, perhaps the most successful example of this planning model, the Liveable Region Strategy represents a consensus of regional and municipal authorities and local communities.

London - Transport for London (TfL)

Transport for London is part of the Greater London Authority and is responsible for managing London's transport system including roads and public transport. Some operations are outsourced to private sector contractors, however TfL retains responsibility for strategic and tactical planning and marketing, and also owns a number of subsidiary operating companies such as London Underground and Docklands Light Rail. TfL is governed by a board including the Mayor of London and representatives from sectors such as transport, local government and social services.

Figure 1: Transport for London Structure (simplified)

http://www.tfl.gov.uk/assets/downloads/foi/080418_TfL_top_level_structure_diagram_(Annex_1).pdf

TfL's Planning Directorate incorporates a Borough Partnerships Group which manages TfL's relationships with local authorities (comparable to local governments in Australia) and leads consultation on major projects and involvement in land use planning.

> ***London boroughs' role in delivering transport improvements***
> *1.8 The boroughs' role in delivering transport improvements is very important. The boroughs manage 95 per cent of the Capital's roads and play a major part in many of the projects and programmes in this Plan, especially in encouraging walking and cycling. Each borough sets out its transport aims in a Local Implementation Plan (LIP), towards which TfL provides funding. As of August 2007, the Mayor had approved 31 out of the 33 LIPs.*
> (TfL 2007, p.16)

Zurich - the Zürcher Verkehrsverbund (ZVV)

The ZVV is responsible for planning and marketing public transport in the canton of Zurich which has comparable land area and population density to Melbourne. The ZVV is overseen by a cantonal transport board including representatives from the Federal Office of Transport, the Canton of Zurich and municipalities (*communes*) within the canton. While ZVV retains responsibility for planning, services are provided by a range of contractors including the Swiss Federal Railways and various municipal operators.

Figure 2: Allocation of duties and responsibilities within the Zurich transport community

Source: http://www.zvv.ch/en/about-us/organisation/duties.html

Madrid - the Consorcio Regional de Transportes de Madrid (CRTM)

The CRTM manages the public transport services in the *Comunidad de Madrid* which includes Spain's capital and largest city Madrid, as well as surrounding areas. The CRTM includes representation from the Spanish national government (*Estado*), the provincial government (*Comunidad*) and municipalities (*ayuntamientos*) within the *comunidad*.

Figure 3: Consorcio Regional de Transportes de Madrid

Source: http://www.ctm-madrid.es/servlet/CambiarIdioma?xh_TIPO=1

Madrid's public transport network includes intercity trains operated by the Spanish national railways, a metro system under the control of CRTM and both publicly and

privately owned bus services. The CRTM has overseen a large expansion of the metro system, substantially boosting its coverage and capacity.

Vancouver - TransLink

TransLink is responsible for planning, financing, implementing and operating the public transport and main road networks in the south coast region of British Columbia, Canada. TransLink is governed by a board, a Mayors' Council comprised of mayors of the municipalities in metro Vancouver and the south coast region, and the regional transport commissioner who is appointed by the Mayors' Council. The Mayors' Council also appoints directors to the board based on the recommendations of a screening panel.

The provincial government (analogous to a state government in Australia) is responsible for the legislation establishing TransLink and contributes funding for major projects.

Public transport services within the region are mainly operated by subsidiaries of TransLink, however independent contractors are also engaged for some services.

4. Measuring liveability

Just as liveability initiatives can involve long lead times (p.15), the full impacts (including unintended consequences) of measures may not be apparent until some time after the measures have been put in place. In such cases, indicators of liveability could lead to erroneous conclusions about the success of a measure and its suitability for continued use (p.32).

For example, while it is commonly acknowledged that the addition of road capacity induces additional traffic, this traffic takes some time to build up (Litman 2007, p.7). During the early phase of this build-up it may be tempting to think that the additional road capacity has successfully eliminated congestion when in fact it has initiated a process of 'triple convergence' that leads ultimately to worse congestion outcomes (PTUA 2008, pp.15-19).

Table 1: Portion of New Capacity Absorbed by Induced Traffic

Author	*Short term*	*Long term (3+ years)*
SACTRA		50-100%
Goodwin	28%	57%
Johnson and Ceerla		60-90%
Hansen and Huang		90%
Fulton et al	10-40%	50-80%
Marshall		76-85%
Noland	20-50%	70-100%

Source: Litman 2007, p.7

Measures of congestion are also often incomplete by ignoring the amount of congestion that is avoided by using grade separated mass transit and encouraging less car-dependent landuse. For example, overall well-being may be improved by the provision of train services that allow more people to avoid congested roads - or landuse patterns that provide greater non-motorised access - even where average road speeds and congestion indicators appear to deteriorate (Litman 2006). The development and use of indicators must recognise shortcoming such as these and ensure planning and decision making adopts a sufficiently long time horizon.

The Western Australian Department for Planning and Infrastructure publishes a range of performance indicators that outline progress on improving accessibility and sustainability. A number of those indicators would be worthy of inclusion in the expanded *Growing Victoria Together* reporting framework proposed in the draft report (draft recommendation 4.1). For example:
   o People in the Metropolitan Region that live within ten minutes of a major public transport route
   o Avoided land consumption costs
   o Proportion of zoned land in the metropolitan area that is 400 metres / 1 kilometre from major transport systems.
   (DPI 2007)

6. Strong communities

6.1 Introduction

In this chapter, the PTUA recommends that transport policies and planning be more closely linked with the different features of strong and inclusive communities. Equitable, sustainable transport options are important to both building and accessing social capital. As such, transport should not be considered in isolation but rather as an integrated and vital component of measuring community strength.

6.2.1 Strong communities and liveability from an individual's perspective

Equitable transport options are vital to an individual's perspective of a strong community. A significant proportion of Victoria's population are reliant on effective active and public transport options to fully engage with their community. More specifically, around 1/3 of Melbourne's population cannot drive. This includes: people who do not own a motor vehicle; are too young to drive; have a disability affecting their mobility; or are elderly and have stopped driving for safety reasons (Coalition for People's Transport 2006).

In addition, there are specific groups in the community who are more likely to experience transport disadvantage. Transport disadvantage occurs when people are: "without ready access to any form of public transport or private transport" (Carlisle 2003). At-risk populations include: culturally and linguistically diverse groups; economically disadvantaged people; very low income individuals (including people who are homeless); people with psychiatric disabilities; people who are frail and elderly; young mothers; and outer metropolitan, regional and rurally isolated people (Carlisle 2003, Fritze 2007).

An individual who has difficulty accessing transport, for any reason, is likely to experience further challenges accessing fundamental resources in their community such as: employment, education, shopping, social, cultural and sporting activities (Social Exclusion Unit 2003).

6.2.2 Strong communities and liveability from a competitiveness perspective

The health of a population is vital to ensuring its human and economic productivity (Cullen & Whiteford 2001). Thus, the adverse health effects of car dependence are highly relevant when considering the strength of a community from a competitiveness perspective.

Road traffic injuries, physical inactivity and urban air pollution are among the most significant adverse health effects of car-dependence and climate change (PTUA 2007; Woodcock et al 2007). Annually in Victoria, approximately 400 people are killed as a

result of road accidents, 6,000 are hospitalised and a further 17,000 are injured (Coalition for Public Transport 2006, p.11). Physical inactivity is contributing to the current obesity epidemic (Stubbs & Lee 2004; Ming Wen & Rissel 2008) and air pollution contributes to increased mortality, heart attacks, non-allergic respiratory disease and has been possibly linked to lung cancer (Woodcock et al 2007). The substantial costs of these health effects is likely to contribute to the reduction of participation and productivity among individuals and of the competitiveness of a community.

Also influencing the strength of a community from a competitiveness perspective is the negative effect of traffic on retail vitality. It has been shown that retail areas experiencing high traffic volumes deter visitors and shoppers (Sustrans 2003; Lautso 2004).

Given the above health and economic factors, measures to improve active and public transport within the community are likely to result in stronger communities from a competitiveness perspective.

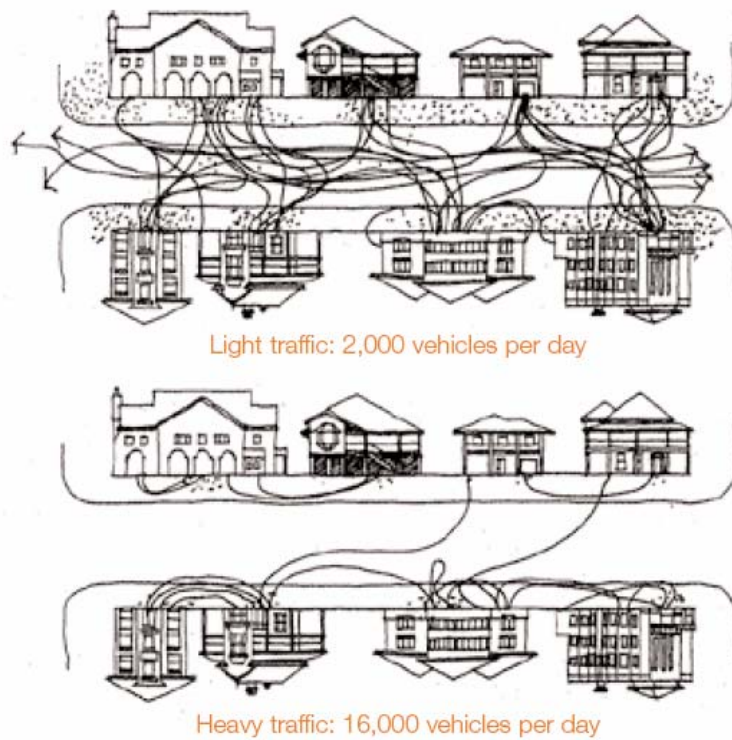## 6.3 Features of strong communities promoting liveability

6.3.1. Connectedness

Accessible transport options positively influence community connectedness. Evidence suggests that neighbourhoods designed to encourage "walkability" are more likely to have higher levels of social capital (Baum and Palmer 2002). This is because there is greater opportunity for residents to spontaneously encounter each other and engage socially. In addition, residents of suburbs with high "walkability" are more likely to know their neighbours, trust others and participate actively in their community (Leyden 2003).

Conversely, policies that encourage car dependence reduce social capital by increasing and exacerbating inequality (Woodcock et al 2007). For example, people who may already be experiencing social isolation due to living on a very low income will be further excluded when living in a car-dependent neighbourhood (Harrington et al 2008).

Car dependence and traffic also decrease social connectedness by causing community severance. Community severance occurs where pedestrians, cyclists or people with disabilities have difficulty crossing roads due to high traffic levels. The impact of community severance on social connectedness is illustrated clearly in the diagram below (Figure 4).

Figure 4: Traffic levels and social relationships

Light traffic: 2,000 vehicles per day

Heavy traffic: 16,000 vehicles per day

*Top: 2,000 vehicles per day: at relatively low traffic levels, residents
engage freely with their neighbours, having on average 3 friends and
6.3 acquaintances in the street.*
*Bottom: 16,000 vehicles per day: with high traffic levels, social
engagement is limited and residents have only 0.9 friends and
3.1 acquaintances in the street.*
Source: Engwicht 1992

Creating connections in new communities

Train stations in new suburbs can provide ideal hubs for creating connections.
Investing in the infrastructure and maintenance of train stations (explored further in
Section 6.3.3 below) can have significant social benefits for community
connectedness including the provision of: equitable access to public transport, a place
for social interaction; and a source of community information exchange, activity and
artistic expression (VillageWell 2006).

6.3.3. Local amenity

Physical features

The VCEC draft report acknowledges: "the physical features of an area contribute to
its amenity and strong communities" (p.66). Unfortunately, transport hubs within
communities, such as bus interchanges and railway stations, are often an untapped and
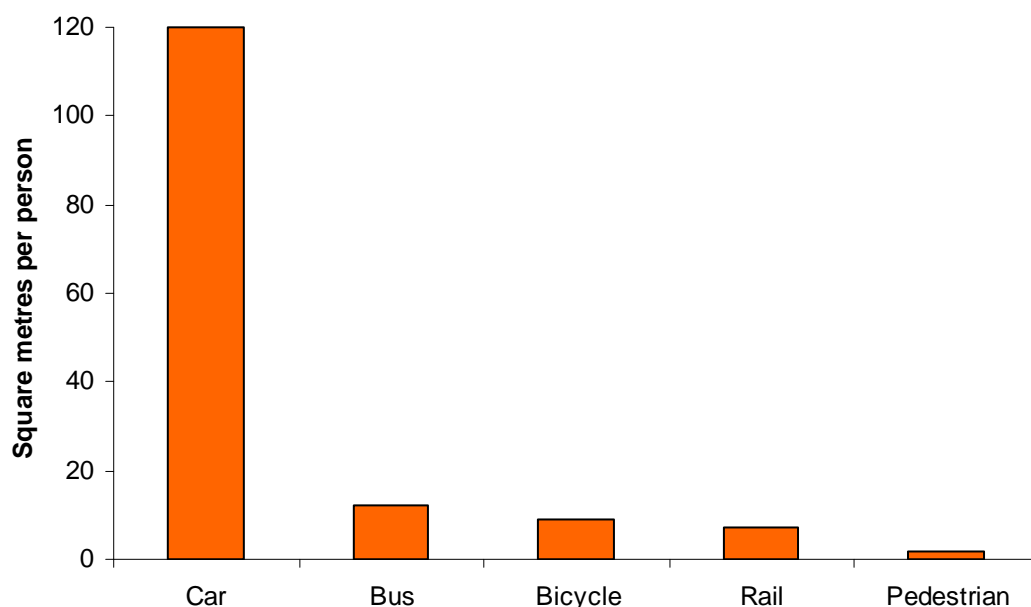neglected resource in the community.

People who are dependent on public transport often do not have a choice whether or not they regard their local railway or bus station as a "desirable" place. Because they are reliant on its services, they must engage with it regardless of its impact on their sense of wellbeing (VillageWell 2006).

However, the flipside of this argument is the potential of a well-maintained transport hub to positively impact on people's mental and physical health and hence community strength (Baum & Palmer 2002). Rather than being neglected, transport hubs should be managed as "places" - incorporating the fact they have meaning, encourage social interaction, engagement, learning and other positive experiences (VillageWell 2006).

Measures to improve the physical features of transport hubs should include: increasing staffing levels to provide on-site custodianship; the development of activity areas in or around stations to reduce isolation for passengers at off-peak times and encourage passive surveillance (and hence increased security) of the site (PTUA 2002).

Melbourne has one of the largest rail networks in the world, notwithstanding a number of crucial gaps. Thus, the impact of improving the physical features of railway stations on community wellbeing is likely to be significant.

Figure 5: Road space requirements by mode

Source: Teufel 1989

In addition, the PTUA supports the VCEC's acknowledgement of: "[t]he importance of 'green space' to urban communities" (p.67). The percentage of green space in people's living environments has a positive effect on the perceived general well being of residents (Maas et al 2006, Giles-Corti 2006) and the level of social capital present (Baum & Palmer 2002). Therefore, such spaces should not be regarded as a "luxury" but rather a necessity of a strong community and protected from future road or other

developments. The "space efficiency" of different forms of transport (Figure 5) and their resulting tendency to "consume" green space is particularly relevant in this regard (see also Bignal *et al* 2007).

Community Safety

The VCEC draft report indicates that community safety encompasses: "the ability of people to lead their lives free of nuisances, such as unwanted noise or disruptive behaviour and crime" (p.68).

The PTUA has researched people's perceptions of safety in relation to train stations and found that empty and isolated train stations were among the three most feared places for people in Melbourne (PTUA 2002). Such amenities are obviously not contributing to feelings of community safety. According to Wood et al's (2008) research about factors influencing residents' perceptions of safety, measures such as increasing staff presence and ensuring regular upkeep of the station are likely to improve the community's perception of the safety of their train stations.

Residents' perceptions of safety within a community also affect their view about its walkability. Given the evidence demonstrating that increasing walkability increases social capital (Baum & Palmer 2002), measures to improve community safety in this area are vital. Employing design approaches such as Crime Prevention through Environmental Design (Geason & Wilson 1989; DSE 2005) would assist in encouraging walking and active transport in different communities (see also Section 9.2).

6.3.4. Access to services

The PTUA strongly supports the inclusion of a subsection on "Transport" within this section.

Transport

Access to reliable, equitable transport options will improve people's ability to engage with the social, economic and civic resources of their community and therefore increase community strength. Making improvements to existing public transport services, decreasing traffic volumes and facilitating increased levels of active transport will have positive impacts on increasing people's access to community resources.

Unfortunately, transport policy often focuses on vehicle mobility rather than access. Thus, a person who acquires a car gains increased access at the expense of another whose access is decreased through the effects of increased road danger and traffic (Woodcock *et al* 2007).

Equitable transport options such as walking, cycling and public transport will assist in increasing access for all. Transport policies and neighbourhood plans that improve

access to walking for all pedestrians (including those with physical impairments) should be encouraged (Land Transport New Zealand 2007).

People with physical impairments have particular design needs which impact upon their ability to access public transport. Measures to address these needs already proposed by the Department of Transport are welcomed by the PTUA. However, more widespread use of Universal Design principles will assist a greater number of people with a diverse range of physical needs to access public transport (Victorian Transport Policy Institute 2007).

People with physical impairments can also experience disadvantage in using active transport in areas of high traffic volume. Where there is increased traffic flow, there are additional challenges for a pedestrian with a physical disability to negotiate such as: the need to judge traffic speeds; to see over traffic; and cross roads quickly (Woodcock et al 2007). Therefore, measures to reduce traffic volumes and speeds will also assist with transport access.

Information and communication technology

In response to the VCEC's information request for examples of the benefits of information and community technology in enhancing liveability (p.83), the PTUA suggests the inclusion of the benefit of ICT to regional rail passengers who are able to work and access wireless internet while in transit hence boosting their productivity (Hanna & Drea 1998; Armitt 2004; Economist 2006).

6.3.5. Community engagement

The PTUA supports the VCEC's finding that: "including residents or community members when identifying issues, and considering solutions or alternatives leads to better informed decisions... It can also result in outcomes that are better targeted to people's needs..." (p.73).

The PTUA recommends the transport community model of transport planning as discussed in Section 3.3.1.

6.4.3. Government

The PTUA suggests consideration could be given to the introduction of payments based on the National Competition Policy (NCP) payments (National Competition Council, 2008) for local governments who are able to boost sustainable transport mode share within their communities. Such payments would provide a tangible incentive to encourage equitable transport options whilst also addressing the issue of limited resources at the local government level that was recurrent through report.

6.5 Summing up

The PTUA supports the inclusion of "availability of transport" as a determining factor in community strength (VCEC, p.84) in the conclusion of this chapter. However, a closer analysis of how transport affects key features of community strength such as community connectedness, amenity and place, and access to services is required. When such an analysis is completed, it indicates that transport must be integrated into all of these features - not regarded as a separate entity or solely as a "method" of accessing existing community capital.

7. Provincial Victoria

Australia has more to lose from climate change than most developed nations (Garnaut Climate Change Review 2008) and provincial Victoria is expected to be among the worst affected areas due to massive reductions in water availability and increased incidence of bushfires, droughts and other extreme events (CSIRO & BOM 2007). This underlines the vital importance of sustainability to the liveability of provincial Victoria and the need to respond proactively to the carbon constraints of climate change and peak oil.

Liveability in provincial Victoria is compromised by failure to provide decent alternatives to driving. The failure to provide adequate transport impacts on individuals and families in regional Victoria just as it does in poorly served locations in metropolitan Melbourne. It reduces the independence of young people (and their parents who may be called upon to drive them), affects the well-being of older people who find themselves relying on public transport and any others who cannot drive. It also affects those households who wish to save money by avoiding the purchase and running costs of multiple cars, and makes it more difficult for people who are reliant upon government financial assistance to get to study, job interviews and workplaces. It also makes it difficult for national and international visitors to travel independently in those regions, cutting the regions off from the benefits of outside links and tourism (Parliament of Victoria, pp.67-72).

One way of keeping young people in regional areas for longer is by providing them with supporting services - and public transport is one of those services that is particularly valued by young people. Young people often find themselves in the position of paying for the purchase and maintenance of a car or moving to places that have better services. The example of the difficulty of getting to Monash University's Gippsland campus (p.95) is replicated at regional campuses throughout Victoria, even at the Deakin University Waurn Ponds campus of Victoria's largest provincial city, Geelong. The need to consider public transport access in transport and land use planning is therefore not restricted solely to metropolitan Melbourne.

It is true that most regional areas will not have the impetus of traffic congestion to switch to public transport, but this does not mean that well coordinated, well run public transport is not possible now. Similar congestion-free conditions exist in small towns and rural parts of Europe, but that doesn't stop a high quality, well-coordinated network of services running there. These services may be infrequent (e.g. half-hourly or hourly) but they are planned to form a network and offer reasonably competitive travel times.

In large regional cities like Geelong, reported problems with parking shortages and traffic congestion (which have led to large investments in urban freeway infrastructure such as the Geelong bypass- which is designed mainly to serve local traffic outside holiday periods) shows that adequate public transport isn't provided even where there are clear signs that it is needed.

Regional cities will need to have good public transport services in a world of high fuel/energy prices and carbon constraints - but even the major cities in regional

Victoria will find their public transport services to be inadequate. There appears to be little urgency or strategic planning for local bus services, with most of the focus of government policy on the intercity rail system (and within that, mainly in the commuter belt to Melbourne) rather than on providing a network of local transport that also feeds in to intercity services.

In planning terms, local public transport in provincial Victoria is often so invisible that the location of bus routes and public transport corridors is rarely considered in planning: why bother directing commercial development to a more transit-oriented location if there is almost no public transport to use? Anecdotal evidence suggests that planners often believe that such planning provisions are only meant to apply to metropolitan Melbourne and are irrelevant to provincial Victoria. However, the same considerations of walkability, access to public transport services and the provision of car parking apply in major regional cities as they would in major suburban centres. Furthermore, considerations of access to public transport is needed to "future proof" development and maintain productivity and liveability in regional Victoria in an environment of increasingly high fuel prices.

There have been anecdotal reports of developers saying that the cost of developing office buildings is prohibitive in regional city centres due to the need to provide large amounts of car parking- on the usually correct assumption that regional bus services are inadequate (e.g. in terms of frequency and hours of operation) to meet the travel needs of employed people. This clearly reduces the economic competitiveness of office locations in regional centres, a significant concern in an increasingly service-oriented economy.

There is a need for local transport governance, which recognises regional cities and their transport systems as entities in their own right. Regional town bus services aren't given adequate recognition as public transport systems for their communities, and this is reflected by the failure of the Department of Transport to publish disaggregated figures for the patronage and revenue performance of buses in regional centres. The PTUA has therefore suggested that recognisable transport planning authorities be established for each of the major provincial cities that engage local government and communities more effectively (see Section 3.3.1).

Rising transport energy prices are also highlighting the importance of efficient rail networks (p.95). Despite a long-standing bias towards improving the road network and serious deterioration of the state's rail network, there are indications that rail freight is increasingly recognised as an appropriate response to capacity constraints in the road freight industry and carbon constraints more broadly. Efficient supply chains are crucial to businesses in provincial Victoria, and transport costs are likely to continue to escalate without renewed focus on the regional rail network for both freight and passengers. This applies both to connections towards Melbourne and Victorian ports such as Portland and Geelong, as well as existing interstate connections to Adelaide and Sydney and potential new connections to Brisbane and from Mildura to the Sydney-Perth line at Broken Hill. The efficiency of the network and interstate connections would also be greatly aided by progressive conversion to standard gauge.

7.4. Local government

Notwithstanding any differences between Melbourne and provincial Victoria, the future liveability of provincial Victoria still requires growth to be well-managed and sustainable. Rapid population growth in some centres is contributing to urban sprawl and non-contiguous low density development that could exacerbate car dependence and harm the ability of residents to access employment, education and other services, particularly in the context of an ageing population (p.101).

For this reason the Victorian planning system should recognise and accommodate genuine differences between metropolitan, provincial and rural locations while also actively working towards reduced car dependence and enhanced sustainability right across the state.

7.6 Summing up

The final report should note the severe impact that climate change and carbon constraints could have on provincial Victoria, and the need to greatly enhance transport alternatives such as active transport, local and rural bus networks, intercity passenger rail services and rail freight (draft finding 7.2).
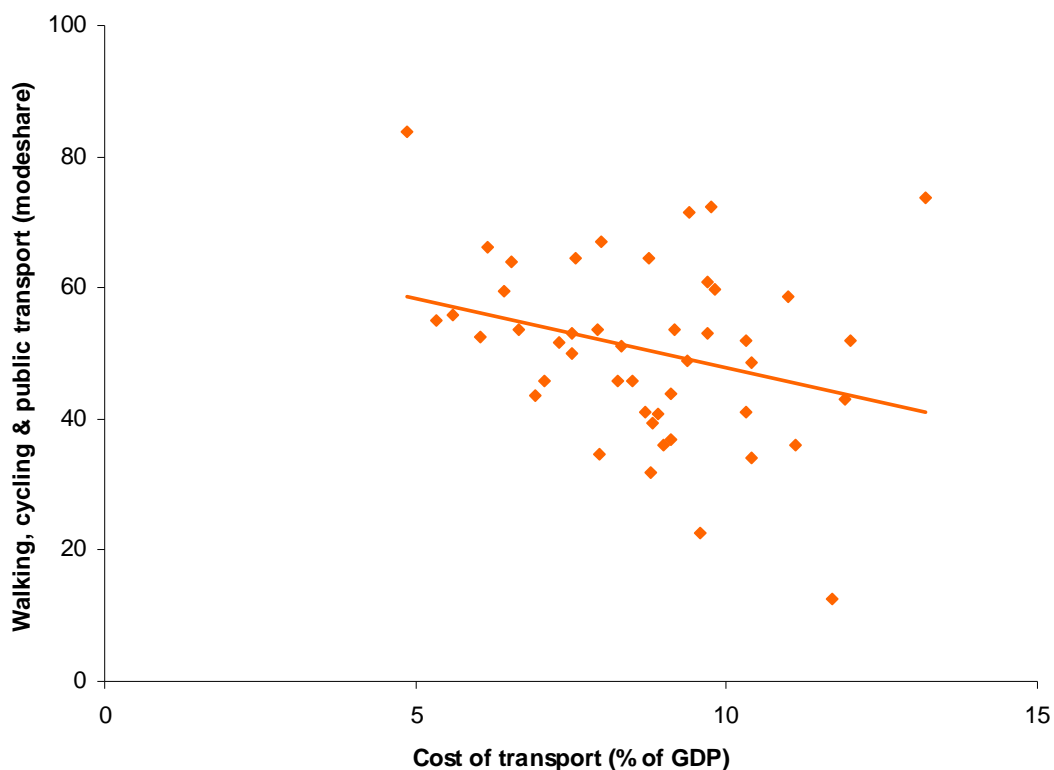
8. Urban planning & design

Good urban design that minimises car dependence has social, economic and environmental benefits and enables transport *systems* that are more efficient (Litman 2005). The economic benefits of reduced car dependency can be considered in two ways:

- o   the cost to the economy of transport systems; and
- o   the employment and economic impacts of transport expenditure.

Cost of transport

The cost of transport for a city is inversely related to the share of journeys undertaken by walking, cycling and public transport. In cities where these sustainable modes account for the majority of journeys, the proportion of local income that must be devoted to transport is around half the level of cities where these modes only account for a quarter of journeys or less (Vivier 2006). With a combined modeshare for sustainable transport of about one quarter, Melbourne is forced to spend about twice as much on transport as Helsinki and Singapore where over half of journeys are made by walking, cycling and public transport (Vivier 2006, pp.10-11).

Figure 6: Modeshare and the cost of transport to the community

Source: Vivier et al 2006

Employment and economic impacts of transport expenditure

Private transport is a capital intensive industry with a high level of imported content and foreign ownership (Litman & Laube 2002, pp.10-11). A large proportion of expenditure on private motor vehicle ownership and use therefore leaks from the local economy and contributes relatively little to local employment and economic activity (Table 2). Urban design that reduces car dependency allows a greater proportion of consumer expenditure to be directed to goods and services with higher local content or to savings (information requests p.110 & 117).

Table 2: Impact of $1 million expenditure

Expenditure category	*Regional income*[*]	*Regional jobs*[*]	*Full-time jobs*[#]
Petroleum			4.5
General automobile expenditure	$307,000	8.4	7.5
Non-auto consumer expenditure	$526,000	17.0	
Public transport	$1,200,000	62.2	21.4

* Analysis performed in Texas, USA (Miller et al 1999)
 # Analysis performed in British Columbia, Canada (BC Treasury Board 1996 in Litman & Laube 2002)

8.3 Costs of poor urban design

Good urban design incorporates Crime Prevention Through Environmental Design (CPTED) principles that reduce opportunities for criminal activity (see also Section 6.3.3 and Section 9.2). A recent international example is a reported decrease in crime figures at an inner London station and greater public confidence in using the facility following a refurbishment that provided greater visibility and passive surveillance (TfL 2008).

Urban design that fails to deter crime results in higher policing costs, higher incidence of crime against property (which can be costly to property owners, taxpayers and insurers), and physical assault. The perceived lack of security resulting from poor urban design also leads to social isolation among people who rely on public transport and greater pressure on road infrastructure from people that choose to drive rather than use facilities they regard as unsafe. This applies strongly to 'park and ride' facilities which are almost inherently prime examples of poor urban design due to isolation, plentiful opportunities for concealment and lack of passive surveillance (p.111). A much higher level of passive surveillance is provided by transport interchanges with well-integrated stops for feeder buses or trams and nearby after-hours commercial activity (in line with Transit Oriented Design principles).

Poor urban design also impacts severely on the mobility of pedestrians and cyclists, particularly by creating barriers of high volume roads that sever nearby locations from each other (p.111 & p.114). This problem is part of the broader impact on social capital and isolation resulting from transport patterns (see Section 6), including the amount of green space that can be lost (p.115) by allowing cars and roads to consume large areas of our cities (Figure 5).

Poor urban design and car dependency are also strong factors in sedentary lifestyles that contribute to obesity and a range of related health problems (PTUA 2007a, pp.9-12; Ming Wen & Rissel 2008). Conditions associated with obesity – such as diabetes, cardiovascular disease and various types of cancer – are estimated to cost $58 billion per annum nationally, with $14.4 billion of this attributed to Victoria (Access Economics 2008). Urban design and transport policies that reduce car dependence would make a major contribution to reducing the incidence of obesity and costly associated health conditions.

8.4. Sustainable urban concepts internationally

The draft report notes that "all the cities studied [in a report by Urbis] had governance structures in place to permit an holistic approach to planning across the greater city area" (p.118). This accords with a range of research into effective public transport governance that demonstrates a public transport authority is an important success factor for public transport (Vuchic 1999; WS Atkins 2001; Colin Buchanan and Partners 2003; HiTrans 2005; Kennedy *et al* 2005).

The summary of governance arrangements provided in Section 3.3.1 above is also consistent with this observation and with the conclusion about the importance of collaboration with local government, and provides another key lesson from international experience that should be reflected in the final report.

See also Appendix D below.

8.5. Role of government

Good urban design relies on an effective planning regime that is consistently and fairly applied. Exemptions from local planning requirements for state or federal governments could thwart local strategies and undermine good urban design principles (p.120).

In addition to complying with local planning requirements, the Commonwealth Government also needs to commit resources to ensuring urban development is sustainable and improves long-term liveability (p.122). A key part of this is investing in public transport on a scale at least comparable with the sums expended on road networks (PTUA 2007a, pp.13-15).

8.5.4 Opportunities for improvement

The draft report notes that all tiers of government have a role in ensuring good urban design (p.124). We concur with this view, and note that this also applies to transport planning. A public transport authority modelled on the best international examples

(see Section 3.3.1) would involve all tiers of government in coordinated transport planning, including Commonwealth and local governments.

We propose that a public transport authority be established – modelled on 'transport communities' or 'federations' such as those outlined in Section 3.3.1 - as a pilot for a broader Greater Melbourne Authority (information request p.134). This authority could take control of strategic and tactical planning of public transport across metropolitan Melbourne and engage with the new Commonwealth Better Cities Unit and Infrastructure Australia to plan and manage a public transport system suited to a carbon constrained economy. Such an authority could also administer NCP-style incentive payments proposed in Section 6.4.3 to provide local government with incentives (p.132) and resources (p.130) to deliver improved sustainability outcomes.

9. Transport & liveability

9.2. Transport, liveability & competitiveness

Current trends in energy costs and concerns about GHG emissions and congestion point to a new direction for transport and how it impacts on liveability and competitiveness. The upwards trend in oil prices is placing car dependent households under greater and greater stress (Dodson & Sipe 2008). We believe that the attractiveness of the 'fringe+car' option will continue to be eroded by unavoidable carbon constraints (p.137).

Businesses who have built supply chains predicated on cheap fuel are also facing higher costs that are harming competitiveness (PTUA 2007, pp.15-20; PTUA 2008c, p.29). As a consequence, we do not believe projections of continued high growth in road freight volumes can be relied upon (pp.138-9). Our future liveability now relies on more efficient transport *systems* that reduce reliance on oil and private motor vehicles.

The PTUA believes cycling has a very important role to play in its own right and as a complement to public transport. While cycling has grown rapidly in some areas, it flounders as an insignificant mode in areas lacking good provision for cycling. Unfortunately there is a tendency to tie improvements in cycling infrastructure to road network expansion in an apparent attempt to make roads seem more 'integrated' and sustainable. This entails serious compromises for the quality of the cycling infrastructure. Cycle routes can be less than ideal as a result of following the desired alignment of major road projects rather than focussing on the needs of cyclists wishing to access trip generators or public transport interchanges.

Figure 7: South Road extension bike path

Note: The new South Road extension bike path lacks natural surveillance and lighting. The route is characterised by back fences facing the path and potential entrapment spots (DSE 2005, pp.36-37).

Deliberately integrating major cycle routes with major roads and freeways exposes cyclists to higher levels of air pollution than necessary which could have serious health impact (Bignal *et al* 2007; Kalavrouziotis *et al* 2007; Morgenstern *et al* 2008). The design features of major roads in urban areas also make it very difficult to ensure

good natural surveillance in keeping with Crime Prevention Through Environmental Design (CPTED) principles (DSE 2005) that are espoused by the government (p.138).

Public transport encourages landuse patterns that foster personal interaction (see also Section 6.3). The more compact activity centres allowed by space-efficient public transport (Figure 5) are more conducive to face-to-face contact (p.138). In contrast, car-based transport systems encourage sprawl that makes interaction and face-to-face contact more difficult. Advances in ICT also make the use of teleconferences, videoconferences and online collaboration possible for a wider range of business needs, thereby reducing the need to travel for business.

9.4. Scope for improvement

We do not believe the East West Link Needs Assessment (EWLNA) provides a sound basis for transport planning in Melbourne (p.147). The final report from the EWLNA Study contains a raft of flawed assumptions and dubious conclusions. For example:
   o undervaluing the cost of carbon emissions at a mere $10 per tonne of CO2-e (e.g. Downing *et al* 2005 suggest £35 would be a **low** estimate, with upper benchmarks stretching into hundreds of pounds per tonne);
   o grossly underestimating the cost of transport fuel compared to real-world experience (BusVic 2008, pp.15-18);
   o overestimating future freight volumes (PTUA 2007b, pp.15-20; PTUA 2008c, p.29);
   o underestimating the propensity for people to use public transport for non-CBD journeys when offered attractive services (Dowling 2008; Johnston 2008); and
   o overestimating the future contribution of technology to reducing emissions from private transport (PTUA 2008b, pp.12-21; PTUA 2008c, pp.23-24).

Along with the measures outlined in our original submission (PTUA 2008a, p.32), the key areas for improvement in public transport can also be summarised by the acronym *SCARCE* (PTUA 2008b, pp.28-33):
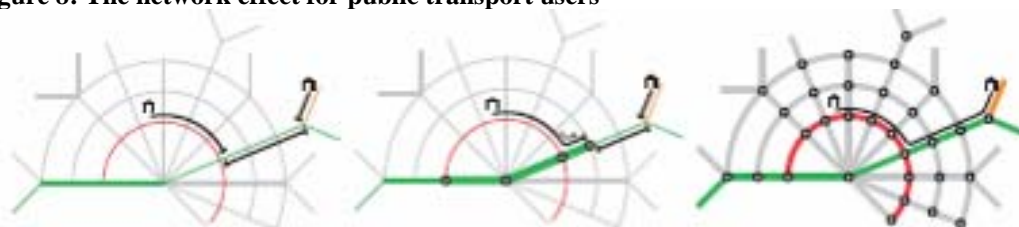   o **Safety** - Fear of physical assault can be a major deterrent for would-be public transport users, especially women. This should be addresses through staffing (e.g. conductors and station staff) and 'Crime Prevention Through Environmental Design'.
   o **Comfort** - Poor passenger comfort compared to private motor vehicles can deter people from using public transport. While rail services tend to provide a smoother, more comfortable ride compared to buses, it is also important to minimise overcrowding and time spent waiting without weather protection for passengers of all forms of public transport in order to attract people out of their cars.
   o **Accessibility** - The availability of public transport is arguably the most fundamental determinant of mode share. This needs to be addressed by expanding the coverage and operating hours of fast and frequent services so that public transport can be accessed where and when people need it.
   o **Reliability** - Poor reliability will drive many people away from public transport, so performance should be enhanced through measures such as grade

> separation of public transport services, active traffic light priority, effective fairway enforcement, track duplication and staffing.
>
> o **Cost** - Fares that are uncompetitive with the marginal cost of car use will deter people from using public transport. Fares in Melbourne have increased faster than CPI and the cost of motoring over recent years, and compare unfavourable to other cities (PTUA 2007c). There is therefore a need to improve value for money for current and potential public transport users.
>
> o **Efficiency** - The relative speed and ease of use of transport options will play major roles in mode choice. Improving the coverage of fast, frequent, well-integrated and user-friendly services will maximise the contribution of public transport to mobility, congestion management and emissions reductions.

The ability of public transport to serve complex or chained journeys depends upon the quality of the *network* created by the component routes or services that make up the system (p.148). A system comprised of infrequent or poorly integrated services will be inadequate for most journeys other than to destinations on the same routes as those passing by the starting point. With poor frequencies, journeys requiring a transfer to intersecting service will often entail excessive waiting times that ensure the system is unable to compete with private transport.

An effective and competitive public transport *network* comprises fast, frequent and well-integrated services that enable people to transfer to intersecting services with minimal waiting times and thereby access a much larger proportion of destinations with journey times that can compete with private transport.

Figure 8: The network effect for public transport users

An unlinked collection of low-frequency routes (a non-network)
The area you can reach by a simple journey is restricted to walking distance from your closest line. Users need to have detailed information about timetables.
Transferring is difficult and crossing points have little value.

Some high-frequency services
Good service along high-frequency lines makes some transfers more attractive, but only in the direction towards the high-frequency service. Increased frequencies on the best sections will do little to improve general conditions.
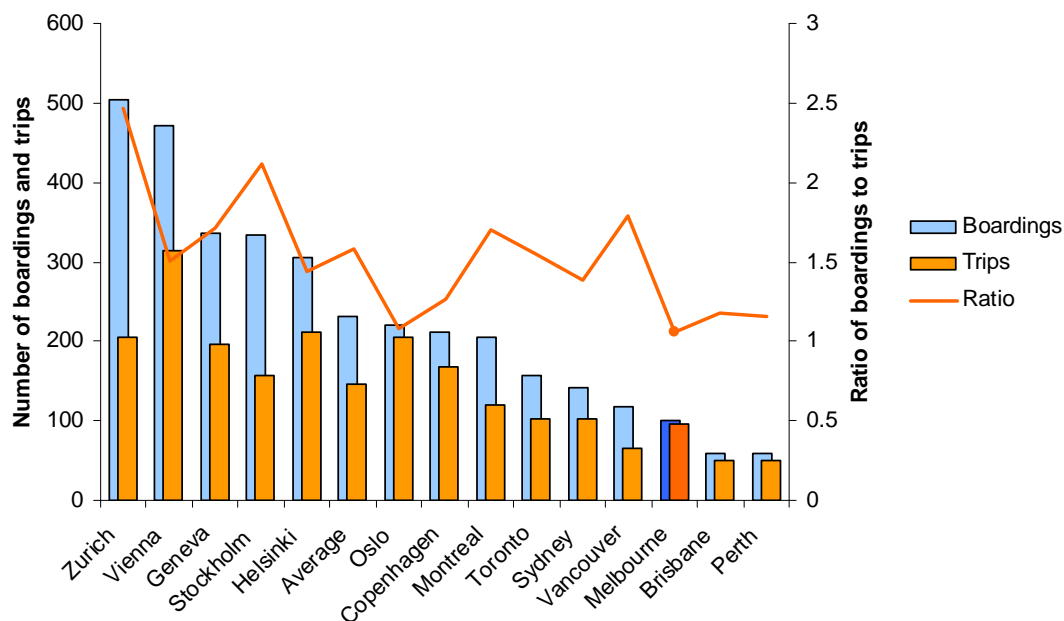
The full network effect
Many lines operating at high frequencies, or with coordinated timetables, create a network.
In the same way that motorists use intersecting roads, travellers can go anywhere, anytime. Transfers open up many travel options.

Source: HiTrans 2005; Stone 2007

Compared to cities with successful public transport networks, a relatively low proportion of public transport journeys in Melbourne are linked (i.e. involve a transfer, or more than one boarding per trip). This indicates that public transport in Melbourne performs poorly in serving complex or chained journeys compared to

effective public transport systems elsewhere in the world (Figure 9). It is also apparent that the low frequency of many routes and poor integration between services has lowered the expectations of many Melburnians who consequently assume that private transport is the only options capable of meeting their needs. The end result is car dependence, congestion, rising vehicle emissions and declining liveability.

Figure 9: Ratio of Public Transport Trips and Boardings

Note: A larger difference between the number of boardings and trips indicates a greater proportion of linked journeys or transfers to connecting services. Despite multi-modal ticketing, linked journeys are relatively uncommon in Melbourne compared to cities with higher public transport modeshare.
Source: Scheurer et al 2005, p.8

The congestion resulting from inadequate public transport networks and associated car dependence creates political pressure for road capacity expansion to cater for ever-rising traffic volumes. Perversely, this results in public transport being even less able to compete with private transport, and the subsequent modeshift away from public transport leads to further reductions in service frequency and less ability to cater for complex or time-sensitive journeys, and greater pressure on the road network. This self-reinforcing deterioration in transport performance resulting from road capacity expansion is known as the *Downs-Thomson Paradox* (PTUA 2008, pp.15-19).

While an inadequate public transport network and long-standing bias towards roads expenditure has given rise to the perception that only private motor vehicles can offer the convenience most people have come to expect and take for granted, analysis of the *effective speed* of car ownership and use paints a very different picture. Tranter (2004) found that anywhere between 14% and 43% of a vehicle owner's work hours are typically dedicated to paying for vehicle ownership and use, which makes car use slower than public transport and cycling when travel distance is spread across travel time and work time required to cover vehicle expenses. In other words, cars could be described as the most time-consuming time-savers known.

The costs of car ownership identified in the draft report should be updated to reflect the increase in the cost of petrol since 2004 when the expenditure data was collected (pp.137 & 150). The estimate of $133 per week for the 'average' cost of car ownership is based upon the 2003-04 ABS Household Expenditure Survey which was conducted when petrol ranged from about $0.85 per litre to $1 per litre. With petrol prices now being close to double the levels of 2003-04, we estimate that the 'average' household would be spending nearly $1,500 extra on petrol each year. This financial drain on car dependent households is only likely to worsen, with recent warnings that petrol could head towards $8 per litre over the next ten years (Future Fuels Forum 2008) and energy agencies downgrading estimates of future oil supplies (King & Fritsch 2008).

The 'average' figure is also likely to disguise significant variations between households (Dodson & Sipe 2008, pp.4-5). The costs of forced car ownership are particularly acute in outer suburbs where public transport services are at their worst and dependence on private motor vehicles is consequently high (p.149). Motor vehicle census figures reveal rapid growth in the number of households with three or more cars on the fringes of Melbourne, while some inner city households have been able to reduce the number of cars they own (Lucas 2008). Senbergs and Currie (2007) found that the proportion of low income households with two or more cars increases sharply the further they are from the rail network, which means car ownership costs will be substantially 'above average' in car dependent areas. Even with current high petrol prices, vehicle finance costs can range from two to five times the cost of fuel (RACV 2008) which means households forced to own several cars would also be disproportionately affected by rising interest rates (p.137).

In addition, people in outer suburbs are likely to have to travel further for employment, so car operating costs will also be 'above average' (Coalition for Peoples Transport 2006, pp.19-20; Dodson & Sipe 2008, pp.4-5). Together, these 'above average' costs of car ownership and operation will make car-dependent households much more vulnerable to rising fuel prices and interest rates (Dodson & Sipe 2006; Dodson & Sipe 2008). It is therefore vital to the future viability of such areas that public transport be improved so that it can cater for a significantly enlarged proportion of journeys consistent with the Government's commitment to getting 20% of motorised journeys onto public transport by 2020.

Not only are car ownership rates lower in inner suburbs than outer suburbs (p.149), many inner suburban roads are seeing reduced traffic volumes as rising fuel prices encourage people to chose alternative forms of transport where available (p.150). The fact that traffic volumes have continued to climb in outer suburbs despite broader trends downwards further underlines the lack of transport alternatives in car dependent areas, but also the willingness of people to forego their cars where adequate alternatives are available (BusVic 2008, pp.21-22).

Genuinely optimal transport investment decisions are also unlikely while ever roads enjoy privileged access to both hypothecated funds (e.g. *Better Roads Victoria*) and politically determined annual budget allocations from multiple tiers of government, while public transport remains vulnerable to the annual budget process of effectively only one tier of government. The absence of a sizeable and reliable funding stream

for public transport has ensured that appropriate planning and investment has not taken place to cater for either actual patronage growth in recent years, for targeted patronage growth under *Growing Victoria Together* (i.e. 20% by 2020) or for the patronage increases of up to 84% projected under the initial privatisation of Melbourne's rail operations (Mees 2005). This must be rectified by ensuring public transport has genuine, effective access to all sources of funding that roads enjoy and basing expenditure decisions upon strategic landuse, transport and sustainability goals.

This should also be supported by short and medium term measures that enable more effective use of existing capacity (PTUA 2008c), such as:
- o More direct and through-routing of train services;
- o Additional platforms at Flinders Street and Southern Cross stations;
- o Station staff to speed up loading and unloading of passengers in wheelchairs;
- o Peak spreading by offering more frequent off-peak services;
- o Duplication of single track sections of line; and
- o Updated signalling and control systems.

We are alarmed by suggestions that lower targets for public transport mode share may be considered for outer suburbs (p.152-3). The purpose of a target is not to confirm existing patterns, but to provide a clear and ambitious objective in recognition of the contribution made by the public transport to desired liveability and sustainability outcomes. As discussed elsewhere in this report and other documents (CfPT 2006; PTUA 2006; PTUA 2008a) public transport has a vital role to play in inner and outer suburbs alike, and targets should reflect the pressing need to boost overall mode share dramatically, not just where it is 'easy' to do so.

Fundamental to this are stronger measures to improve coverage and integration to provide a more comprehensive *network* that is capable of serving more journeys across a wider area. For most journeys in Melbourne, capacity into the CBD is much less an issue that the simple availability of time-competitive services (Bowen 2008). Improving the ability of public transport to serve non-CBD journeys by enhancing the network effect would also enable greater off-peak mode share and achieve more efficient asset utilisation (p.152).

While great care must be taken with measuring and reporting congestion trends due to the lag between the addition of capacity and growth of induced traffic (Litman 2007, p.7), we do see great value in reporting indicative door-to-door journey times for public transport users (p.153). Such indicators should be developed for a broad range of journeys (including, but not restricted to, CBD journeys) and incorporate factors such as walking/cycling distance to public transport, public transport vehicle speeds and waiting times (including connections) (p.154). Consistent with the 'Efficiency' mode choice factor mentioned above, this would be a good leading indicator of mode choice and sustainable congestion trends (PTUA 2008a, pp.16-18).

We agree with the Commission's belief that enhanced consultation would improve transport planning (p.154). This underlies our strong support for the transport community model of transport planning discussed in Section 3.3.1 above.
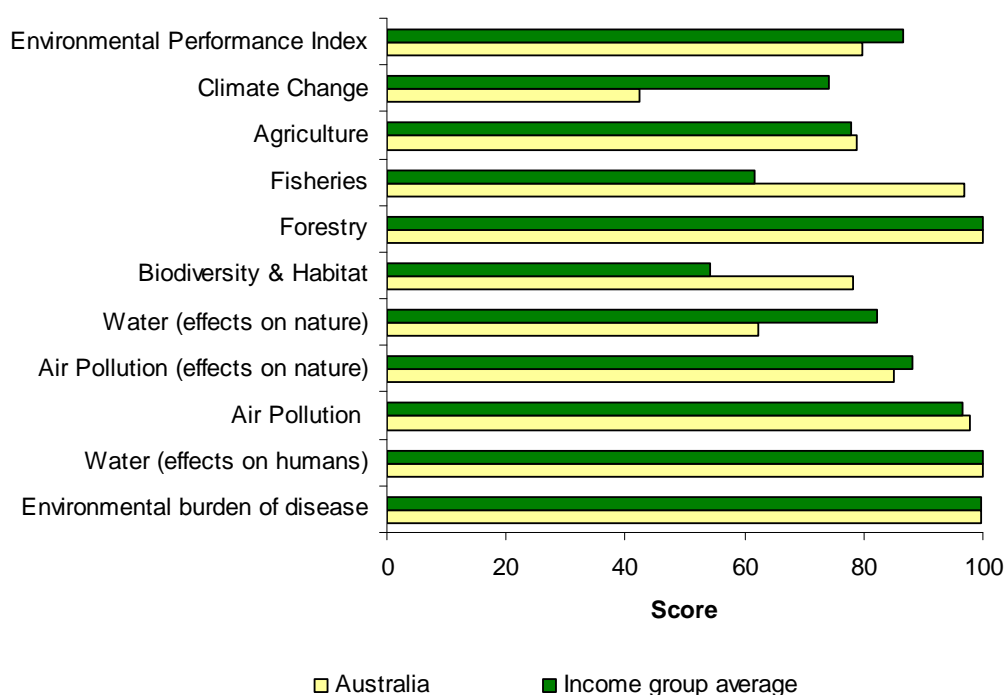
9.5. Summing up

The final report should note that:
- o The future of liquid-fuelled private transport is quite insecure with a looming supply shortfall relative to projected demand expected to lead to a continued upward trend in petrol prices (p.158);
- o The current lack of transport alternatives places significant financial pressure on households in car-dependent areas;
- o Expanding the coverage of the rail network would boost access to time-competitive, high capacity public transport and support the landuse objectives of Melbourne 2030 (p.158).

10. Environmental quality

We agree with the strong consensus that sustainability is central to liveability. For example, failure to reduce greenhouse gas emissions sufficiently to ensure a safe climate would result in a deeply inhospitable planet and massive deterioration in quality of life (Lynas 2008; Spratt & Sutton 2008). It is also worth noting that some greenhouse abatement measures (such as increasing the role of walking, cycling and public transport) could also enhance liveability by reducing car dependence and associated congestion and pollution (PTUA 2008b, pp.36-37).

The draft report notes the existence of targeted measures of sustainability (p.161). The Environmental Performance Index (EPI) is one such measure that analyses a range of criteria including greenhouse emissions, impact on biodiversity and habitat, and air and water pollution (Esty *et al* 2008). The EPI demonstrates that Australians are endangering their future quality of life by living well beyond the ability of the planet to sustain them, and compare poorly on many measures compared to other countries with similar incomes (Figure 10).

Figure 10: Environmental Performance Index - Australia in the context of high income countries

Note: Australia's overall Environmental Performance Index (EPI) score is among the lowest in its income group. Lower population and a shorter history of European settlement has reduced Australia's impact on habitat compared to many European nations, however Australia rates poorly on criteria such as greenhouse gas emissions, and pollution.
Source: Esty et al 2008

It follows that sustainability is not currently given sufficient weight in decision making and is arguably overlooked at a strategic level (p.173). It is also clear that Environmental Effects Statements (EESs) are failing to redirect decisions away from

seemingly innocuous activities that are at odds with the required strategic direction. We therefore endorse the comments by the Commissioner for Environmental Sustainability (sub.43) regarding the potential of Strategic Environmental Assessment (SEA) and believe draft finding 10.1 could be strengthened to reflect this. Similarly, there is a clear case for an environmental burden trigger for Regulatory Impact Statements (p.175) as proposed by draft recommendation 10.1.

The principles outlined in the draft report for governing institutional arrangements provide a solid foundation for addressing sustainability and liveability issues (p.168). These principles are directly relevant to transport governance and largely describe the features of successful public transport authorities around the world including Vancouver, London and Zurich. The transport community or federation model discussed in Section 3.3.1 above provides an effective channel for local government to address sustainability and liveability concerns related to transport (information request p.170).

D. Sustainable urban concepts

D.2 Vancouver

Based upon a consultant's report, the draft report states that "Vancouver public transport usage is … relatively low (with 11.5 per cent of commuters taking public transport compared to 14.5 per cent in Melbourne)" (p.219). It should be noted that these figures are now out of date and relate to a time when patronage in Vancouver was unusually low due to industrial action. The figures and comments in the draft report should be replaced with more typical and recent figures that are now available.

Canadian Census 2006 shows that Vancouver public transport modeshare has grown from 11.5 per cent in 2001 to 16.5 per cent in 2006, and median commuting distance fell from 7.6 kilometres to 7.4 kilometres compared to a general increase in commuting distances in other Canadian cities (Statistics Canada 2008). This means that public transport modeshare in Vancouver has once again overtaken that of Melbourne, despite widely publicised growth in Melbourne public transport patronage in recent years.

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