

Opinion Pieces: Food for Thought

David Hensher
D.Hensher@itls.usyd.edu.au

OP24: (September 2009)

The new era of zero emissions is in sight – good news for Public Transport? Maybe

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS),
University of Sydney

There is a growing swell of opinion that the energy sources that has the current highest probability of replacing fossil-fuels is electricity via 'replacement advanced battery technology'. For those in the know, there is a lot happening in the development of vehicles driven on battery-power accompanied by a network of battery replacement stations (much like petrol stations).

It was announced on October 23, 2008 that Australia will become the third country in the world to have an electric car network (up by 2011) in a bid to run the country's 15 million cars on batteries powered by green energy. The international company Better Place (head office Canada) has teamed up with AGL Energy and Macquarie Capital Group to set up a network of "charging spots" and "battery exchange stations" to power electric vehicles in Brisbane, Sydney and Melbourne. The electric car networks, as they are called, allow zero emission vehicles to run on clean energy grids in order to reduce the dependence on oil. As we all know, but often fail to remember, there may be a shortage of oil but there is no shortage of energy.

Denmark and Israel have already begun to lead the way on this initiative by moving to establish the world's first electric car networks. Under the plan, charging spots, to top up batteries, are being located in places where cars park, such as home garages, shopping centres and office carparks. The charging spots, which would look like parking meters, provide cables to connect batteries to a green energy grid. AGL Energy provides the power from renewable sources including hydro and wind. On the urban fringe and on freeways, "battery switching stations" would exist for trips longer than 161 kilometres. A driver would enter a switching station (much like they do toady with filling up the fuel tank at a petrol station), and replace the car's battery before continuing on their journey.

Most notably, the advanced battery technology which looks very much like a flat disc will be slid into the undercarriage of a car and as a new battery is able to deliver power for up to 160 kilometres, which is plenty spacing between existing petrol stations which will become battery switching stations. As one approaches the battery switching station, one enters a facility that in a maximum of 40 seconds (once one is out of the queue), the flat battery is attached to the ground unit, slid out and a new battery placed in the

undercarriage and away you go (after paying naturally! using electronic equipment much like an ETAG for a toll road). Battery technology at present has a maximum of 160 kms before recharge (or switching), and this deteriorates over time. After a number of recharges the batteries being switched in the long distance interurban context loose power and can be relocated to other switching stations in metropolitan areas where the kilometres between switching and hence recharge are less. There will come a point in time after a number of recharges where the battery will no longer be of use (much like batteries in mobile phones).

It has been estimated that the operating costs of these vehicles will be as low as 3c/km, in comparison to 12c/km for petrol-powered vehicles. With less moving parts the maintenance costs will also be lower. We are told that such vehicle will cost around \$20,000 to purchase. This all sounds too good to be true! But it is happening and Canberra has started the process.

Although the focus is on cars initially, the evidence, if realised, will send a message about the carbon footprint of cars and (which should almost disappear – even allowing for the sourcing of battery technology and its power), and provide encouragement for the entire bus industry to move this way where it will be much easier to implement the battery switching network.

There must be a downside surely? Well if we fail to rethink the whole charging regime for car use, we will end up with much greater car use and hence traffic congestion in the big cities. In the rural and regional areas the lower cost of fuel and vehicle prices should mean that some who are disadvantaged but can drive will be better placed to buy a car. Hence in the cities this may signal greater urgency in introducing variable user charging where you pay per kilometer, so that we can properly reflect the cost of lost time, something I have explained in detail in previous opinion pieces. The bus industry can both benefit through lower operating and maintenance costs but also worry about the possible increase in costs due to traffic congestion and the move away from buses in favour of low cost energy-efficient zero carbon footprint cars.

Food for thought

OP23: (August 2009)

I Told you So!

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS),
University of Sydney

Have you ever stopped to think about how much people spend each year on tolls, compared with petrol, in using their cars in cities where there is an extensive and growing tolled road network? Let's look at Sydney (see the Figure below). It is generally assumed that the average kilometres that a car is driven per annum (privately and company

registered vehicles) is 15,000 kms. Given the current average retail price of unleaded petrol of around \$1.25 (accounting for premium unleaded in the mix), and an average fuel efficiency of say 9 litres per 100kms, then the average fuel bill per annum is \$1,687. Depending on where one lives in Sydney, as well as where one visits (including the work location), tolls paid per annum can be as high as \$4,400 per annum for someone living in the Hills district, working in the CBD and using the M2/Lane Cove Tunnel/Harbour Bridge each day of the week for 45 weeks per annum. If you choose to avoid Lane Cove Tunnel, the annual toll impost is \$3,100 per annum. Tolls in Sydney for those regularly using tollroads from the Hills district put the price of fuel in perspective!

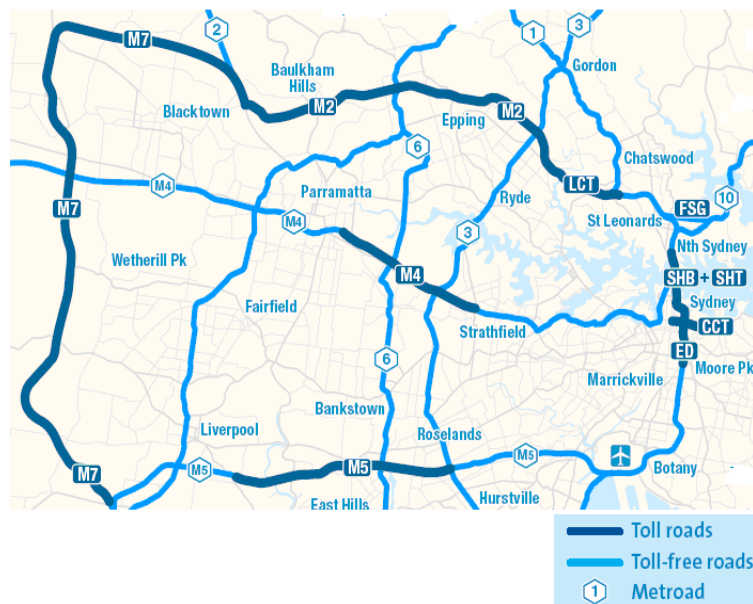


Figure The network of Sydney's Toll roads

Note: Metroad is the non-tolled metropolitan freeway network

Sourced from NRMA <https://www.mynrma.com.au>

Tollroad	Length	Current tolls (GST included)
M2	21km/	Based on the toll plaza and vehicle size
M4	40km/	\$2.75 for Class 2
M5	22km/	\$2.75 for Class 2
M7	40km/	Distance based charge, 33.25 cents per km (< 20 km), \$6.65 trip cap for all vehicles
CCT	2.1km/	Based on the route and vehicle size
LCT/FSG	3.6km/	\$2.72 (LCT) and \$1.36 (FSG) for Class A; \$5.45 (LCT) and \$2.72 (FSG) for Class B
ED	6km/	\$5.00 for Class 2 vehicles; \$10 for others (Northbound only)
SHT	2.3km/	Time of day tolling (Southbound only)
SHB	1.15km/	Time of day tolling Southbound only)

Of course, not everyone uses toll roads, and indeed the 38 kilometres of tollroads do not cover all trip contexts. Indeed 18 percent of all residents in Sydney regularly use tollroads, and from the Hills District we are talking about over 80,000 trips each way per day where tolls are paid, the equivalent of approximately \$125m per annum. This is equivalent to approximately \$3,300 per car per annum.

The fact that tollroads are getting expensive for many trip situations around the Sydney metropolitan area, should raise questions about how long people will be willing to pay increasingly high tolls? The answer must lie in part with the travel time savings offered and the service levels of alternative modes of transport. It is interesting to note that 9 of the top 10 roads with the slowest speeds in Sydney in the peak periods are toll roads (the worst road in Sydney being a free road – Victoria Road). With buses benefitting by a dedicated lane on a number of the tollroads, and which are often seen speeding past the crawling car traffic, the elements of a clear message that bus services can do a better job than the car is starting to emerge. What also is emerging, however, is the apparent patience of many commuters who would still sit in their air conditioned/heated car, especially in the cooler months, without coughing commuters on buses and trains, and having to stand for quite a high percentage of the journey. Clearly we are prepared to pay a lot for getting a seat, which is guaranteed with car use but not for bus and train (and appears to be getting worse for train in particular).

Food for thought

OP22: (July 2009)

Keeping the BRT Dream Alive

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS),
University of Sydney

I thought I had exhausted my plea to take BRT much more seriously in a country still driven by the emotion and ideology of rail solutions (which in some situations are eminently sensible, but not as an automated view that this is the only form of public transport for high capacity corridors). However a recent compliment on my submission to the Senate Inquiry in funding public transport has reignited the need to keep reminding all about the merits of Bus Rapid Transit (BRT). A commentator with reputation emailed me and said “It’s the first time that someone has made me take it seriously.” The essential message from my Submission is summarized below.

The advantage of bus rapid transit systems, if properly designed, is that they can, for given finite resources, provide much better coverage of the network in delivering the necessary services. One of the great risks of more expensive heavy rail - and I would say, to some extent, light rail, although it has a lot of similarities to BRT - is that we must not focus on just trying to solve the CBD problem, because the rest of the network, which is about 60 per cent of all trips in Sydney, is not going to have any money to be treated.

BRT, as we have seen in Brisbane and in many parts of the world, has the opportunity to provide the level of service that I think we need, given the capacity requirements of all the key corridors throughout the metropolitan area, not just in the CBD; to actually deliver much higher value for money. Generally speaking, although you could argue about the numbers, you can roughly get 100 kilometres of BRT for the price of a kilometre of rail, making assumptions about equivalent infrastructure like tunnelling and so on. That is why I also would say that, if you want to know how to do it, Brisbane has done it extremely well, and yet in other States there is some reticence to even want to know what the Brisbane system is. It is almost heritage stuff these days. You travel around the world and there are five BRT systems and, if you are serious about looking at value for money public transport solutions, you would spend a few weeks in Brisbane. I have to also say that a lot of this is working because of the institutional environment, where you do not have many organisations planning the outcome.

From a Federal perspective, at the end of the day where will the money come from to fund significant PT infrastructure? I would like to think that we would have a closer look at infrastructure bonds -I might even say expressly public transport infrastructure network and network bonds – (I was pleased to hear Lindsay Fox supporting this). I would also like to suggest that we have to rethink the whole issue of hypothecation, because we have underpriced this sector and we need to get it right, but we need to demonstrate what we are going to do with the revenue, so that those who use the system can see some return for the impost. I think one of the failings is that those who use the system at the moment, and who complain bitterly about the congestion and lack of time, are willing to pay but they want to see the benefit. It has to be made much more explicit, and I think the London congestion charging scheme with hypothecation is an excellent example of how you sell pricing to the community: you do not sell pricing, you sell revenue return.

Food for thought

OP21: (June 2009)

Individualised Marketing of Public Transport – Time to take it seriously?

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS),
University of Sydney

The recent ‘debacle’ with changed timetables and routings on buses in Sydney is a salient reminder about the power of the customer. All good intent was exercised by the operator to improve services; however the residual crumbs of discontent were not factored in.

Is it not time to actually visit households and identify the types of bus services (timing and routing) that would make a difference? This bottom up customer-focused individualised planning pays dividends. We know – just look at the accumulating evidence on the travel smart voluntary travel behaviour change program in South Australia in particular, that shows how many individuals have been informed one-on-one about specific services that might be of value to them (which are often not well known by potential users of public transport). Such an approach is especially useful when households have recently moved into a neighbourhood and are less familiar with the options, and possibly more open to consider public transport before habit sets in, provided that the information provided is seen as being tailored to suit the needs of the potential switcher to public transport. After all we buy a car, borrow money, and work with a travel agent to construct a vacation or business trip as a one-on-one arrangement, so why not do it for planning regular commuting and other local travel?

How does the travel smart program work? There are various versions, but essentially, a telephone survey can be used to sample individuals and then to classify them as ‘regular users’ (R) of alternatives to the car, and for householders to nominate themselves as ‘interested’ (I) in reducing their car use. The sampled households so classified can be offered access to a range of maps and brochures on travel options. Following the delivery of the information face to face by the public transport operator, they might be provided with a free travel pass for one month as an expression of interest. Importantly all participants who ordered information must be given a reward. For regular users of public transport it might be in the form of a letter from the public transport operator, or a small gift. Following the identification of the sample of interested persons, a follow-up meeting to take a close look at the person’s current trip activity and where public transport may be able to be used would be worked through, and the free pass used to encourage trying a particular bus and/or rail service.

While the human resources might be substantial, so is the task of attracting people out of their car. Since there are so many reasons why people stick with their cars, then why not try and identify those people who are sufficiently close to considering public transport but need a little help from the bus operators or regulator to assist in identifying ways of making the switch. The focus on the population as a whole is far too aggregate in nature if we want to make a difference where it can count. This also includes being on the look

out for pockets of serious discontent that would react the way people did in Sydney last month when a major timetable change occurred.

It is time that we also started to question the information that is provided in the spaghetti format of hard copy glossy timetables. I have great trouble understanding most of them. I wonder what the public think. Do we ever ask them?

Food for thought

OP20: (May 2009)

It is time for some demonstration projects that are Low Risk and Potentially high payoff

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS),
University of Sydney

In recent months I have been repeatedly asked by many individuals in government, industry and the media on what I would do to improve public transport in our major cities. We see many proposals – some sensible, some whacky and others brilliant but impossible to fund. So what would I ‘recommend’? Where do we start? Well let us recognize that there may be some very low cost initiatives that can be tested, and if they succeed then build on them; if they do not succeed then stop doing it. This clearly suggests that we cannot spend 5 years building something only to have it fail. There may well be some initiatives that can be tested immediately that might be the basis of identifying if there is a serious market of patronage growth that is worth focusing on, even with longer term more costly investments involving non-reversible commitments.

The one single initiative that I have been pondering on for some time, and testing on a few individuals, is a simple one. Given that frequency and connectivity are primary elements of any successful public transport initiative, why not select an area of a major capital city and triple the frequency of bus services (i.e., have buses serving existing routes with headways that are 3 times lower than currently exist). Or, even better, offer 5 minute headways in the morning and evening peaks in a particular geographical context where we have a sense that there is potential patronage growth. Some pundits might respond with – ‘who is going to pay and where are we going to get the buses and drivers?’

My response is – let us take an area in a major city where say 50 buses operate in the morning peak. Let us increase this to 150, and so we have to find 100 buses. Let us undertake the trial for 12 months (you must have at least this time so that the market can become aware of the new services and establish ongoing commitment). Leasing 100 buses would cost about \$15m maximum (which can be sourced for buses about to be retired as well as spare capacity that exists amongst quite a number of operators). In addition, government should support the use of existing buses in the off-peak where there exists a great deal of spare capacity, and test a number of service scenarios. These scenarios should include 5 minute headways in the peak, 10 minutes in the shoulders and 15 minutes in the off-peak Monday-Friday (at least). We would need to source drivers and also ticketing machines compliant with the local area as well as destination signage and marketing of the new services. This seems a very small price to pay compared to commitments to expensive alternatives.

Where the new services deliver noticeable patronage growth, one should refine and extend the services; and where this is not evident, the services can be removed.

There is nothing like testing the market in real time, compared to spending huge sums of money of patronage prediction models that so often bear little relationship to how the market actually responds.

I encourage Minister's of Transport and their senior advisers to take this opportunity seriously and act on it. The benefits may surprise everyone.

Food for thought

OP19: (April 2009)

The Senate Inquiry: Will then Listen, Learn and Act?

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS),
University of Sydney

It is pleasing to see that the Senate of the Federal Parliament is conducting an inquiry into investment of Commonwealth and State funds in public passenger transport. I was invited to give my views to the public hearing of the Senate standing committee on rural and regional affairs and transport. A summary of some of the points that I encourage the Inquiry to consider are summarized below and which I offered in my overview introduction.

The focus at the Federal level should be on the strategic emphasis of what this is all about and the connections between the federal government and the rest of Australia. Far too frequently there is too much focus on operational issues without getting the broad strategic vision right. The issue that challenges us is the ability to make good decision making with finite resources and to try and break away from some of the more modal ideology that this field unfortunately has suffered from over the years. What that means is that the crucial issue is recognising the nature of accessibility. Accessibility is what it is all about, not movement for its own sake; to get people to places. That means that we have to look at our networks much more seriously and, although corridors are not unimportant, our cities in particular are extremely low dense on a corridor basis, even though the CBD is dense, and it is the connectivity that is the challenge. My favourite words on this are that we have to focus on what I call 'the system-wide test of connectivity frequency and visibility'; visibility especially in terms of buses, because one of the advantages of trains is that you know where they are going; often you have not got a clue with a bus.

One of the major failings is the lack of a strategic vision that is maintained and which frequently breaks down as a result of institutional failures. There are too many organisations working in the public transport and transport in general fields and not actually working well together. Sydney has the greatest challenges in this respect. It is a lot better in other places like Brisbane and Melbourne.

In order to make progress in terms of the federal connection, we have to look at the issues in terms of what does it also mean for climate change? Critically, we cannot ignore the fact that, in order to make public transport more successful, we have to make the car less attractive (where the greatest potential savings in CO₂ emissions resides). At the national level, we should seriously

start rethinking what we are going to do about charging for the congestion on the roads, and I would like to think that, with the support of the federal government, we could link this to some sort of incentive for state governments to work their way through this issue which is rejected every time it is mentioned, 'If you want money from the federal government, you've got to put it to the system-wide test and show that it's value for money.' One of the real risks we have is that, if we focus heavily on projects which are easy to define and not on the system, we may end up spending most of our money on a few large projects and not getting the real return that we need. So the value for money test is what I am interested in.

On some other issues, I would like to see the federal government leading on standards. They have done it on toll roads with E-tag and interoperability. I would like to see the federal government doing this on smartcard technology as we roll it out with integrated ticketing, because my feeling is that we are going to get a spaghetti of differences across the country and we are not benefiting by the advanced nature of the expertise in some parts of the country, like Western Australia.

By way of conclusion, the Inquiry should not be just about cities; it should also be about regions and rural areas, and I think that we have thoroughly neglected the regional and rural areas in terms of the way governments go about their planning. Social exclusion is an absolutely crucial issue. Finally, 1976 was the last year that we ever did a national travel survey, so half the time we do not have a clue about what is happening outside the cities and it is about time we made decisions on better data.

Food for thought

OP18: (March 2009)

We need a National Vision Statement

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS),
University of Sydney

Congested roads, overcrowded public transport services and delays in agreeing, and then implementing, the kinds of changes that are needed to respond to such challenges in our cities are symptomatic of a long term lack of strategic planning and investment in Australia's transport systems and infrastructure more generally. From about 6 percent of Gross Domestic Product in the early 60s, Gross Fixed Capital Formation in the key economic infrastructure sectors (transport and storage, electricity gas and water, communications services) fell to a little over half this share in the 90s. Over half of this decline in share was in the transport sector. National Competition and National Road Transport reforms have helped deliver improvements in the efficiency of infrastructure utilisation over the last decade and a half, including in the transport sector, and investment levels have recovered somewhat in the last decade. Yet there remains a considerable catch-up in store and much thinking to be done about long term priorities.

There is a need to radically overhaul the policy and system planning processes that drive urban transport infrastructure and services in Australian cities. An inability or unwillingness to take a long term, vision based, approach has given us incremental approaches, which change with election cycles, or quicker. This will not resolve the long term problems of transport in our cities.

The long term pressures of responding to climate change, in particular, should drive a transformation in the way Australian cities approach their transport systems. This should flow through to how we shape out cities in coming years, and that a carefully targeted approach, affecting only a small part of our cities, can meet requirements. While transport infrastructure requirements attract most media attention, major transport pricing reform must accompany infrastructure development, to ensure that we make the best use of existing capacity. Pricing reform is a virtuous initiative, delivering its own direct welfare benefits and pushing travel choices in a direction that are more sustainable long term.

Infrastructure requirements in urban transport are substantial, partly reflecting three decades of declining investment share from the 1960s. Responses to investment backlogs and to emerging pressures must be framed in a way that helps to shape a more sustainable future, not simply be a response to “apparent” transport problems. Transformational change is required, not more of the same.

International experience suggests that champions can be very important in achieving transformational change of the scale suggested in this paper. This is currently a case of “situation vacant” in Australia. The Federal Government’s creation of Infrastructure Australia provides a unique opportunity to change this dynamic.

Food for thought

This commentary is based on joint research with Professor John Stanley.

OP17: (February 2009)

Extra Bus Capacity in Sydney - Does it Make a Difference to Patronage Growth?

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

When asked what I believe are the essential elements of a successful patronage growth strategy for public transport, I mention ‘connectivity, frequency and visibility’. The first two elements remind us that the ultimate test of impact is a network test and not just patronage along a single corridor. Visibility refers to ensuring that potential patrons know where the PT vehicle can be boarded and alighted (and is especially relevant to buses). A delicate balance is required between coverage (which is clearly linked to connectivity) and frequency. A tendency in recent years has been to recognise the importance of network connectivity, but then to focus on investment in a corridor (or project-based) ‘solution’ to the accessibility and mobility challenge of metropolitan areas. On the upside, the project approach can define with great clarity exactly what investment is required and make the investment need more transparent when funding is sought from Federal Government (e.g., under the Infrastructure Fund) or from a public-private partnership (PPP). The downside is that system-wide investments that are difficult to compartmentalise as discrete projects often miss out for a serious injection of funding and have to be incrementally appended to a project-based planning system that is not ensured

to be consistent with what a system-wide approach in the first place would arrive at. Instead we are forced to look for sub-optimal solutions that could be even more expensive than what we need if the focus was on network investment and not large scale stand alone corridor 'solutions'. It appears that it is this 'reductionsism' philosophy that takes bite chunks of a system in isolation that inevitably results in over-supply of capacity in some locations and serious under-supply in the greater network. What can be done to resolve this? The Senate inquiry into public transport provides an opportunity to engage the Federal Government in a responsibility to link its funding (from all sources) to State governments to require a system-wide test on value for money and in particular to at least make the case that a specific project, especially those that absorb huge amounts of budget (with evidential cost overruns of about 50 percent), is indeed best value for money and that other explicitly evaluated alternatives are less attractive. We seem to have failed to do this in the recent past.

Food for thought

OP16: (January 2009)

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

It is not so long ago in (September 2008 'Food for Thought') that we were looking at fuel prices being \$2 by January 2009. Instead, at the end of January 2009 they are around \$1.10 for petrol and \$1.30 for diesel. What does this mean for the future use of public transport? We know that the short run fuel elasticity of demand for car travel (in kilometres) is close to -0.36, and for trips it is closer to -0.21. What this tells us is that if we were to reduce fuel prices by 10 percent, then holding all other possible influences fixed, we might expect a 3.6 percent increase in total vehicle kilometres, and a 2.1 percent increase in the number of trips. So if we take the \$1.65 per litre for regular unleaded in September, and compare it with \$1.10 per litre today, we have a drop of 55 cents per litre, or a massive 33 percent. This equates to an increase in car trips of close to 7 percent, and an increase of 11.9 percent in car kilometres. This is not good news for public transport in general, or for road congestion.

However, today we also have other factors at play that are in the 'all other possible influences fixed'. Some will work to cushion the downside impact on public transport, while others will work against public transport. Specifically the key forces at work, at least in 2009, are likely to be reduced interest rates that make car use more affordable (after netting out the major expenses in mortgage repayments), and the loss of employment that works in favour of public transport (both in absolute numbers and in taking some pressure off the peak hours services). The other key element is the containment of getting out and about. We can expect a reduction in travel for discretionary purposes (i.e., to restaurants, shops etc.), accompanied by an increase in the purchase of specific entertainment items for the house to compensate for the reduced non-home activity. With electronic goods declining in price (given the exchange rate advantage on imports in the last 6 months), car prices dropping (especially those

currently on sale which were paid by importers at very attractive exchange rates), and fuel prices dropping, the net impact is likely to be a reduction in public transport use. By how much is hard to tell, but a reasonable estimate might suggest around 5 percent overall by the end of 2009 in our major cities. This will change the modal shares quite a lot; for example a five percent drop on the 12 percent share in Sydney reduces the share in absolute terms by 0.6 percentage points or from 12.0 to 11.4 percent. This difference may be a positive for overcrowded trains and buses, but not good for the general health of the sector.

Food for thought

OP15: (December 2008)

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

Let's Flatten the Camel and Use all of our Transport Capacity a whole lot better

In November each year I head north to spend one week as a member of a small international advisory panel (IAP), chaired by the Singapore Minister of Transport, the Honorable Raymond Lim. As part of the 2008 meeting a 'World Urban Transport Leaders Summit' was hooked onto the IAP activity. Attended by over 100 delegates, a big theme was the shape of our cities and the role that public transport might and should play. During the final panel session, there was a lot of discussion on the benefits of having a metropolitan setting with one high density node (namely the CBD) as the basis of ensuring the viability of public transport.

A number of senior and well articulated participants were horrified at the thought, especially those from developing economies where more density is the last thing they want. As the discussion ensued it became clear that there is a lot of global support for a move away from a CBD centric view of the world, in which all transport is radial to the cause of the CBD; often to the neglect of the rest of the system which caters for a far greater number of trips and demands for accessibility.

The largest capital cities in Australia - notably Sydney, Melbourne and Brisbane - would in my opinion be far better off as liveable places if we stopped focusing so much on a single CBD, and recognized that we have cities of cities with great prospects of providing greater accessibility benefits. Some might say we already have refocused; yet when one looks at what is happening on the ground, it is hard to see what strategic plans, actions plans, and vision statements actually meant. "Lost in translation" comes to mind!

With a cities of cities focus, we can design our metropolitan fabric so that there is good connectivity between key nodes (i.e., a trunk level of service) as well as good connectivity to each of the nodes (i.e., a feeder level of service), which can use transport means that are very cost effective and capable of delivering the required levels of service capacity. (I distinguish between vehicle capacity and service capacity per hour; the latter

is what matters and not the former and when this is accepted we can see the attraction of bus solutions in contrast to rail solutions for most of the truck corridors in our capital cities).

Importantly we are not talking about urban sprawl but about making good use of the existing urban setting in order to give greater accessibility and living environments to all. The next time someone talks about improving access to the CBD, ask them why and at what opportunity cost to the rest of the system.

Food for thought

OP14: (November 2008)

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

The Political Interest in Doing Something about Congestion is finally surfacing?

The Australian Transport Council (ATC) moved forward on tackling urban congestion, at its meeting in Adelaide in November. State and Territory Transport and Roads Ministers met with the Commonwealth Minister for Infrastructure, Transport, Regional Development and Local Government to discuss a national transport policy. In relation to congestion, the ATC Joint Communique issued 7 November said:

“It (ATC) agreed that road pricing schemes need to be carefully designed and specific to their proposed locations. Jurisdictions will cooperate in modelling the congestion, network, socio-economic and emissions outcomes of various targeted pricing scenarios.”

Ministers are now openly discussing a suite of significant and even ambitious objectives that would have been hard to imagine a year ago. Although ministers have yet to bite the bullet on road pricing, they are seriously considering a range of road pricing schemes including HOT lanes, cordon fees, distance-based fees, parking measures, time-variable congestion pricing.

Some of the additional transport policies needed prior to a road pricing scheme to ensure success include improvements to public transport, walking and cycling facilities enhancement of traffic management to mitigate adverse effects encouragement to use mixed-modal travel such as park and ride services. Some of the other challenges, along with choosing the right road pricing scheme, are the costs of establishing and operating the system and the interoperability of technology.

We should be encouraged by these statements, but not ready to rejoice. Just when we thought there might be action in Sydney when the Premier Rees got headline news with his commitment to tackling traffic congestion with differential tolls by time of day (initially on the harbour bridge and tunnel crossing), we were reminded by the Treasurer

that he had no intention of introducing any form of congestion charging, but believed that the initiative of differential tolling in one location on the harbour crossing would have a noticeable impact on peak-hour traffic into the CBD of Sydney. With a differential of \$1 in one direction only for individuals living on the leafy north shore in liberal electorates, we are unlikely to see any noticeable reduction in traffic level. Nevertheless we should give credit for recognising the potential merits of time of day pricing. A great pity it is limited to one harbour crossing location and not all entry points into the CBD. Talk of applying differential tolling to other tolled roads will require careful negotiation with the private sector concession holders since they would not be interested without some guarantee that their revenue would not diminish.

We all know that a successful public transport system would ideally like to flatten the camel and have no peak humps at all, but a flat level of activity throughout the day. The same logic applies to the road network, and it is not hard to speculate that with appropriate time of day pricing throughout the entire network (not just tolled crossing and for that matter just tolled routes), we might just find that we have plenty of road capacity. We are not aware of any other policy instrument that can achieve this.

Food for thought

OP13: (October 2008)

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS),
University of Sydney

Will we ever have enough Government funds to sort our Infrastructure?

The Australian Infrastructure Fund has recently received over \$235bn worth of bids for the opportunity to access the \$20bn Infrastructure fund. We are advised that a proper benefit-cost analysis will be applied in the determination of what projects will get up. While we strongly support the initiative of government, we raise the more fundamental concern about how seriously the evaluation process could possibly be in determining which requests will be approved. There is a feeling abroad that such processes end up funding a few very large mega projects that have strong political visibility but may well be down the list of benefit-cost ratios, regardless of the level of detail associated with the benefit-cost appraisal. What this suggests is that we have to find other ways of funding infrastructure if we are to make a difference. The skeptic in me suggests that \$20bn spread across the nation might (and between many sectors such as telecommunications and transport) deliver no more than \$2bn to a capital city for transportation. With the focus on rail 'solutions' in Sydney and Melbourne, which will cost around \$6-7bn (despite government pronouncement of the order of \$4bn), it is unlikely we will see enough financial action to make a big difference. Even more concerning, projects that promote systemwide and network-based solutions in contrast to corridors are unlikely to get up. This is not good news for the bus sector unless by some marvel of turn, we see the occasional bus rapid transit system (BRT), which could if taken seriously deliver at least ten times the amount of transport capacity for the same financial outlay as expensive rail

'solutions' (even with tunnelling where above-ground access is not available). Brisbane has recently completed tunnelling for its BRT, demonstrating that buses can operate efficiently in tunnels, despite claims to the contrary by those who support rail.

It is time to start thinking about alternative infrastructure funds. The obvious one, that built the Opera House, is a lottery. This alone, in a nation of gamblers and risk-takers, might be expected to deliver far more dollars for public transport than the Australian Infrastructure Fund will ever deliver. I am surprised that governments have not, at the very least, sought the views of the electorate on this very attractive way of finding the huge sums that we need. Let's look at a scenario. Suppose PT lottery tickets were sold for \$10 per ticket, and that 10 percent of the population in Sydney purchased two tickets through the year. This would raise in gross terms \$80m per annum. If we deducted administrative costs and prizes, this sum might decrease to \$60m per annum. Over five years, a period acceptable for a decent piece of infrastructure investment (compared to 10-12 years for rail)(ignoring inflation and adjustments into present value terms), we would raise a net sum of \$600m. and build at least 20-25 kilometres of high quality (Brisbane-style) BRT.

Food for thought

OP12: (September 2008)

Rethinking Stereotypical Segments of Potential Public Transport Users

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

Passengers are individuals, so let's seek out those who seriously might switch to public transport and stop trying to sell generic policies that are ignored by most

As populations age and remain healthier well into their senior years, the standard socio-economic descriptors (i.e., age, income, car ownership, stage in lifecycle, occupation) that have evolved as stereotypes for public transport use begin to fail. It is commonly asserted that elderly¹ residents are prime candidates for public transport use, described as short on money and long on time and hence captive to public transport. Thus low fares go with long meandering routes with relatively low frequencies. Increasingly, however, elderly residents fail the stereotypical test. Many are relatively wealthy, have a driving licence and a car, lead active lives and are short on time². Speed and comfort may be more important than low fares.

An alternative segmentation may be best defined by service perceptions and attitudes. Lieberman et al (2001) proposed a very interesting grouping based on the need for

¹ Strictly speaking the Australian official definition of an elderly person is someone over the age of 85. The age range 55-85 is referred to as 'seniors'. The advice from Bronwyn Bishop (MHR for Makeller) is appreciated.

² They also have a strong preference for car use.

flexibility, speed and personal safety. They proposed six classes of individuals in terms of their travel requirements and expectations (see Figure 1):

- *Road runner* – high need for flexibility and speed and high sensitivity to their personal travel experience.
- *Cautious runabout* - high need for flexibility and speed but moderate sensitivity to their personal travel experience, distinguished from intrepid trekkers by their lesser concern for personal safety.
- *Intrepid trekkers* - high need for flexibility and speed but moderate sensitivity to their personal travel experience, distinguished from cautious runabout by their greater concern for personal safety.
- *Flexible flyers* - high need for flexibility and speed but low sensitivity to their personal travel experience
- *Conventional cruisers* - low need for flexibility and speed but high sensitivity to their personal travel experience.
- *Easy goers* - low need for flexibility and speed and low sensitivity to their personal travel experience.

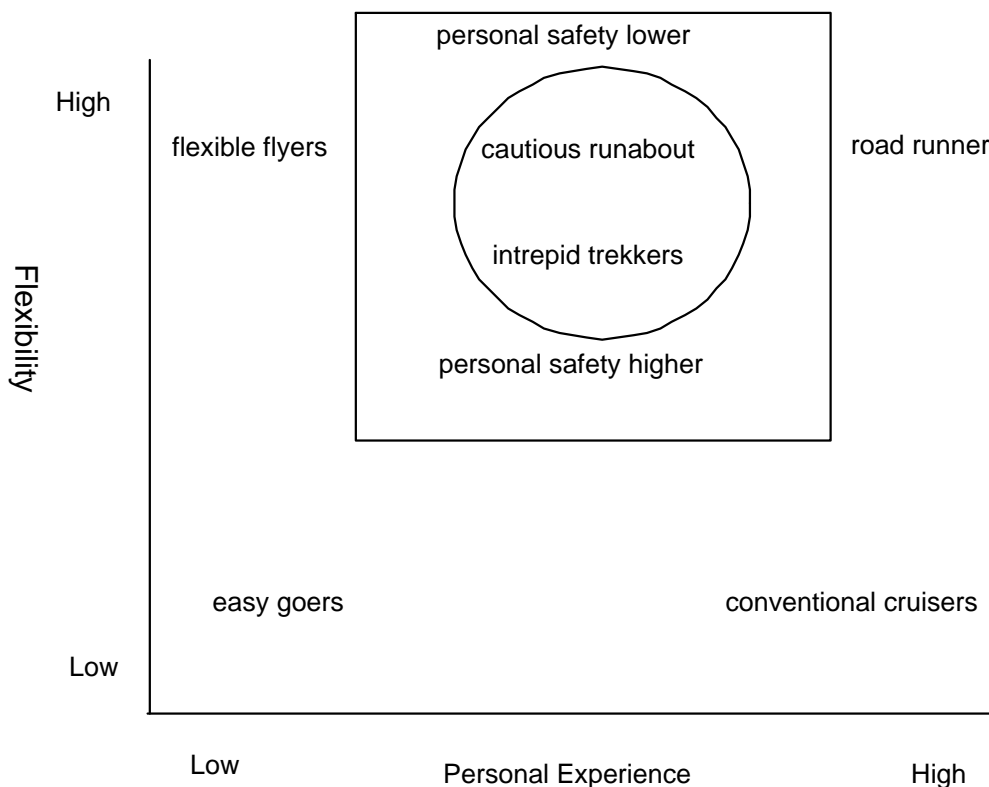


Figure 1. The Diversity of the New ‘Stereotype’

These segments mapped to socio-economic and demographic descriptors are likely to provide a more useful basis for seeking out potential patronage for public transport. The presumption that this classification can be ‘explained’ by age and income is likely to be

false. In particular this classification process can materially assist the 'search' for high eligibility candidates for switching to public transport under individualised marketing programs to which we now turn.

Lieberman, W., Schumacher, D., Hoffman, A and Wornum, C. (2001) Creating a new century of transit opportunity: strategic planning for transit, *Transportation Research Record* 1747, 60-67.

Food for thought

OP11: (August 2008)

What if petrol was \$10/litre? – how would motorists react?

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

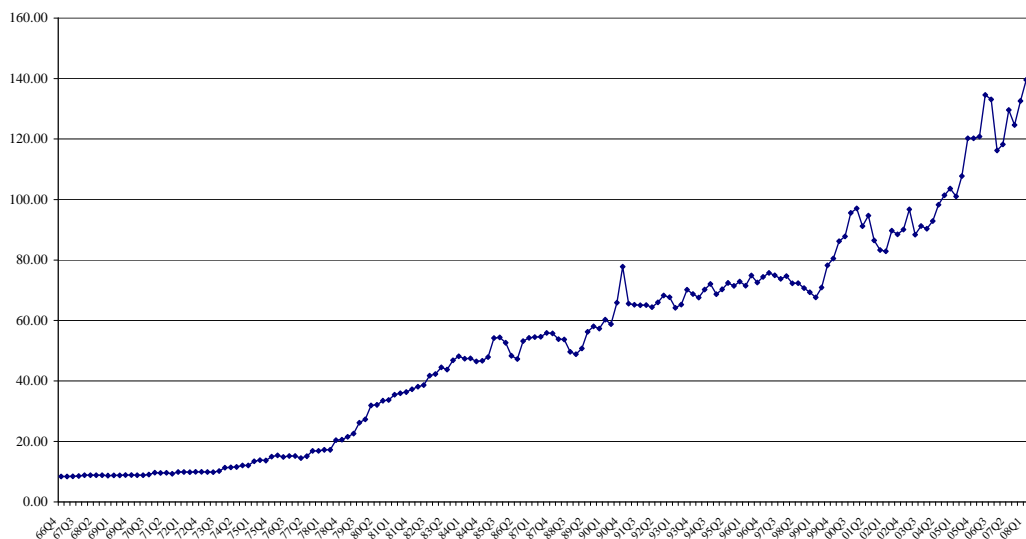
Traffic congestion, high fuel prices, and crowded public transport are three transport themes that are daily headlines that hit home to all urban populations. Until very recently when fuel prices began increasing at a non-marginal rate (see Figure below), traffic congestion was attributed as the major cause of the switch from car to public transport in many jurisdictions, creating high levels of overcrowding and congestion on trains and buses. The large increases in fuel prices in 2007³ are now being suggested as the main reason for reduced car use and increased public transport patronage.

Petrol prices are increasing at a formidable rate. In July 2007 unleaded regular petrol was just under \$1.30/litre and 12 months later the price is \$A1.65/litre. Pundits predict that the price will be \$2/litre by the end of 2008, and long-term forecasts by the CSIRO suggest a price as high as \$8/litre in 2020. Given these recent hikes in petrol prices, we are seeing almost daily commentary on what this will mean for the future of mobility and accessibility and especially public transport patronage growth.

Commentary ranges from fear mongering using analogues from theology such as 'the war on mobility has finally arrived', 'the end of western life styles as we know them', through to views that we must not allow this to happen and government must act by reducing fuel excise, and views of elation that finally we have pricing signals that might encourage earlier investment in substitutes that include public transport, more fuel efficient cars as well as lower polluting vehicles.

³ Typically increasing from around \$1.20 for a litre of petrol at the beginning of 2007, to over \$1.60 in June 2007.

Quarterly petrol price Q4 1966-Q2 2008



Trend in Nominal Petrol Prices: Q3 1966 to Q2 2008 (source: ABS, ITLS)

Using TRESIS, an integrated transport, land use and environmental strategy impact simulation program developed by the author, we are able to move away from the value laden commentary and assess the influence of higher fuel prices on short run and long run passenger travel activity in major urban areas in Australia. Using Melbourne as an example, when we evaluate petrol prices in the range \$2 to \$10 over the period 2009-2017, to establish likely impacts on car use, modal share, and greenhouse gas emissions, we find (see Table below) that the growth in bus patronage over nine years increases from 15.6 percent in 2009 to 2.5 times the current patronage today. This is equivalent to reducing car kilometers by 25 percent and greenhouse gas emissions by nearly 40 percent.

Indicators	Increase petrol and diesel prices by \$1 pa		
	2009	2013	2017
<i>Commuter Mode growth:*</i>			
Drive alone	-3.92%	-35.06%	-57.42%
Ride share	-4.18%	-36.54%	-58.93%
Train	18.66%	162.28%	254.44%
Bus	18.56%	163.09%	260.41%
Light Rail	8.67%	76.64%	133.74%
Busway	10.58%	62.37%	109.97%
<i>Greenhouse gas emissions:</i>			
TCO ₂ (kg)	-6.76%	-22.64%	-29.62%
CO ₂ per car vehicle kilometre	-0.30%	-2.86%	-5.64%

<i>Passenger vehicle kms</i>	-6.48%	-20.36%	-25.41%
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* These percentages are growth in patronage, noting that bus, tram (light rail) and train are off a very small base.

The evidence herein suggest massive opportunities for public transport, which if not delivered will be converted into coping strategies centred around car use and relocation activity (including revised distributed work practices and even more ‘peak’ spreading). However, as substantial and impressive as these changes are, there are scary since the public transport system would be unable to cope given the current infrastructure investments plans for the next 20 years.

Food for thought

OP10: (July 2008)

Prices and paying for car use

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

There has been a lot of talk about the rising price of petrol and what it will do for “working families” of Australia. Add to this emissions trading and its implications on price hikes, and dare I say some more serious consideration of variable user charging such as a congestion charge, and the air is full of prices and higher prices. Some might say that finally we are starting to recognise the true cost of motoring, which is generally regarded as underpriced in that the full costs of motoring (including congestion and emissions) are currently not recovered from those who impose them on society. Indeed higher fuel prices may just begin to be a proxy for a preferred variable user charging scheme which is being denied by politicians in Australia both State and Federally.

The mere mention of efficient pricing in Australia and the political sky falls in on oneself. Recently, I commented in the media on ways of reducing traffic congestion and providing revenue to plough back into public transport. The political reactions were very disappointing. They were immediately dismissed by one State Minister. The Federal member for Mitchell, Mr Hawke, is stated as saying (to a journalist from the Hills News in Sydney) that “I find it particularly ironic that the day after I raised this matter [traffic congestion] of great concern to motorists in north-west Sydney we have an out-of-touch academic calling for another charge to be levied on already suffering motorists – a proposal which rather than calling for greater investment in public transport.... seeks to further slug motorists” He then goes on to state “...a more practical measure would be to levy on all academics who come up with impractical and ill thought out proposals that have no application in the real world....With the amount of impractical suggestions that are proposed each year by academics, this type of levy would raise a significant amount of money to help fund infrastructure” Mr Hawke said.

Such commentary, while amusing to an extent, is a sad reflection on the state of political appreciation of ways in which we can reduce congestion, improve trip travel times and fund investment into public transport. It is the lack of intellectual thinking, so eloquently illustrated by the uninformed commentary on academia that has given us the current transport situation in our larger cities. With some relief, not all politicians think this way; however the politicians staying attuned to the global debate on these matters and even starting to implement some of the ideas are contributing to the economies of The Netherlands, the USA, the UK, Italy and dare I say Singapore. Given that the Netherlands is about to remove fuel excise and introduce a variable user charging scheme that is aligned with my recent media commentary, I can but only assume that the Member for Mitchell would lump them in with the ill informed academics. Ah Ah! it also appears that Professor Garnaut and his emissions trading scheme, with pricing of petrol, fits the academic set of ‘impractical suggestions’. After all it is similar to a congestion charge – another increase in the cost of motoring.

One might hope that this opinion piece might encourage more carefully thought and responses from those who we elect to move our great country forward.

Food for thought

OP9: (July 2008)

For Whom the Bell Tolls

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS),
University of Sydney

At the recent Colloquium in Canberra I spoke on the topic of infrastructure as a network system and not as a series of potentially disconnected projects in corridors. Prior to my talk I had raised a question in discussion time on the missed opportunity, through the public-private partnerships in toll road concessions, to require under contract the provision of dedicated lanes for buses throughout the entire length of all tollroads. The speaker who was the general manager of a tollroad company responded by telling me that buses do not work well on tolled roads because they need bus stops for the travellers who would need to get on and off at frequent intervals. He went so far as to suggest that buses are best as modes to feed trains and to not be considered as viable options on tollroads. Fortunately I was not the only person who found such a response quite amazing and wrong. He missed the point entirely that some of the most successful bus services in terms of patronage growth are those that deliver passengers over long distances (for example the Hills service between the Hills District and the central business district in Sydney). The figure below shows very clearly, admittedly schematically, that buses can make a high difference to delivering long-haul metropolitan public transport, at a high value of money to the taxpayer which operate as both feeder and truck. What is missing

in most Australian cities is a decent road network to be able to support much higher levels of service that buses are capable of delivering.

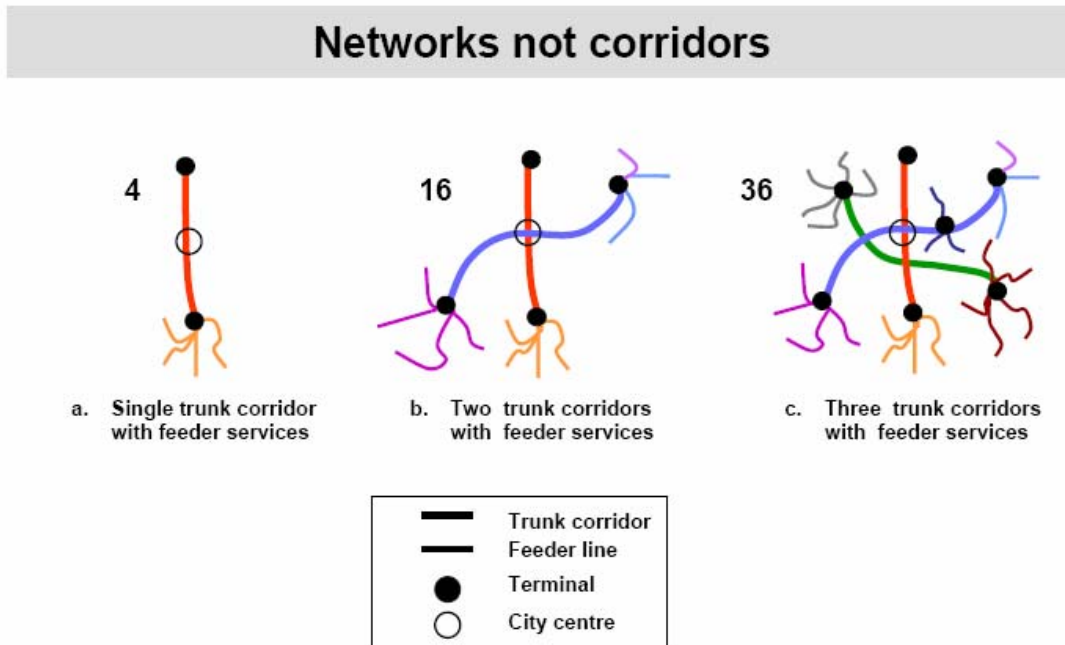


Figure represents the number of permutations of corridor segments available to the customers

corridor and direct connections. Tollroads should be seen as crucial to this network solution since in recent years they offer the greatest prospects for a truly multi-modal corridor that can accommodate a greater amount of public transport activity over longer distances than any other public transport infrastructure project.

The message herein is clearly in support of bus-based public transport that can deliver service levels, as high, if not higher than conventional views about rail. Value for money is assured. Unfortunately my views will again be described as those of a bus-lover. How sad, since the mode is really irrelevant in the search for the best accessibility outcome per dollar outlay. In introducing my talk in Canberra I made a plea to have the audience remove its modal bias and listen to the arguments and evidence. Sadly I suspect that is impossible.

Food for thought

OP8: (May 2008)

Future Directions to Fund our Roads that Buses Use: Listening and Learning from Other Countries

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

The provision of road infrastructure globally is undergoing major institutional change as governments increasingly hit budgetary constraints on traditional sources of public sector financing. The funding of roads from common sources (e.g., fuel taxes) is becoming more problematic than ever before. While in some jurisdictions it is a matter of allocation, in other contexts, it is a more serious concern about the total amount available to allocate. In California, for example, a 2007 Road User Fee Task Force Program issued a White Paper from the Californian Performance Review (CPR). Initiated by the Californian Governor with reporting back directly to the Governor's Office, it has been promoted in response to the diminished proceeds from fuel taxes. Funding 'by the gallon' from fuel-use taxes no longer suffices, despite some additional Federal Government contributions.

The 'new' funding sources are primarily private capital and road user charges. The growth in congestion in many urban areas accompanied by increased emissions (air pollution and enhanced greenhouse gas) from cars and trucks has refocused interest on user charging to both reflect efficient internal cost recovery as well as to internalise the increasingly damaging negative externalities of road transport activity. Kilometre fee development (all networks), with/without fuel tax compensation is an example of the future direction. Paying by the mile is now on the political agenda in California. As little as 0.1 of a US 1 cent fee per use-mile, it is suggested, would generate annually \$US310m towards the road funding bill in California.

As an illustration of a dramatic institutional reform linked to the provision of road infrastructure, the Dutch Transport Minister, Camiel Eurlings, announced in early 2008 that satellite-based road user charging will be implemented throughout the Netherlands to reduce congestion and finance future road infrastructure. The 'kilometre price' proposed is to be differentiated by location, environmental properties of the vehicle, and time of day (effectively a peak/off-peak or congestion charge)⁴. It is to be introduced for all vehicles on all roads in the entire country, starting with trucks in 2011 and phasing in a scheme for cars from 2012 to 2016. The Dutch government plans to scrap road tax as well as purchase tax on new cars when the system is introduced. Eurlings states this will provide a fairer system which taxes vehicle use, rather than ownership. Indeed, the minister says that more than half of Dutch road users will actually pay less under the road user charging scheme. According to calculations by motoring organisations, only

⁴ The road user charge scheme will be facilitated by GPS/speed sensor vehicle tracking, calculated by onboard electronic accumulating odometers, remotely assessing travel from central computers that are capable of applying a range of charging regimes. These include uniform road-use charges and congestion pricing (differential charging according to traffic conditions) including adjusted-upward charges for road use in remote areas (perhaps excluding local residents) where maintenance costs are high and distances travelled are relatively less. Graded distance fees can also be introduced if desired – possibly on equity grounds.

motorists who drive more than 18,000kms a year are likely to be worse off under the new scheme. Importantly, the Dutch government has determined that the costs of operating the national road user charge will not exceed five per cent of the proceeds.

This must be good for road based public transport. With a Federal government repeatedly supporting a greater engagement in the cities in order to tackle road congestion, amongst other agendas, the activity overseas must be good news for Australia if we listen and learn and do something about it.

Food for thought

ABC Magazine Opinion Piece: Food for Thought

Time to be Innovative with Freeway and Toll Roads

OP7: (April 2008)

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

One of the topics in any discussion about ‘what to do with growing traffic congestion and the dominating role of the car’ is to find ways by which we can still allow car users to travel without incurring any extra costs, while providing opportunities for car users who are willing to pay more to save time. Since buses also use roads, then there may be real cost-effective opportunities that enable buses to be the beneficiary of any innovative car strategies. There is one which has been staring at us for a long time - the HOT (high occupancy tolled) lanes for high valued car trips and buses.

This is how it might work. Let us use the M4 in Sydney as an example and assume that we are able to provide three lanes in each direction (at present there is a mix of two and three lanes in each direction). The inner lane would become the HOT lane so that the inner and outer lanes are available for entry and exit from the road. Some investment would be required to move the other two lanes slightly to the left and right respectively, to enable a distinctive separator for the HOT lane. The rule of use of this HOT lane would be based on a distance-based charge (or even a fixed premium toll) for car users willing to pay a greater amount to have a higher guarantee of travel time savings (essentially buying time savings and travel time reliability or predictability). The buses would use this lane as well and be exempt from the tolls. Importantly the toll level must be varied as evidence of traffic build up occurs in the HOT lane (as is done in Southern California for cars), so as to deliver target travel times.

In Southern California, the HOT lanes are the innermost lane (i.e., the one by the median). They have limited access and egress points which also helps to control the volumes of traffic. There is an exit/entrance about every three regular exits/entrances to the freeway, so that a vehicle that wishes to use the HOT lanes must anticipate its exit

and get off in plenty of time to transition across the remaining lanes to exit. This should work well with a 6-lane freeway.

This idea may sound like bus lanes; however it is different in that we have a way forward of funding the initiative through the differential between the baseline toll on other lanes on a tollroad such as the M4 and the premium toll for cars. We would advise car users that the increment in toll that delivers a faster trip will be used to reinvest back in delivering more HOT lanes that can also benefit public transport. No more will we see cars users complaining about the empty capacity of a red-painted bus lane, for they can use the HOT lane with buses without impeding travel times of both modes, as long as car users are willing to pay a premium in toll.

Strategic thinkers would surely see this as having great merit.

Food for thought

ABC Magazine Opinion Piece: Food for Thought

Frequency and Connectivity – Key Drivers of Reform in Urban Public Transport Provision

OP6: (March 2008)

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

Public transport investment is being touted as a key springboard for a sustainable future, especially in large metropolitan areas with growing populations. Whether such investment will turn the tide away from automobility is a big question; however regardless of the likely outcome, any commitment to improved public transport has a growing number of options to pursue. Although variations in rail systems typically loom dominant in many strategic statements on urban reform, ranging from heavy rail through to metro rail and light rail, there is a growing interest worldwide in ways of making better use of the bus as a primary means of public transport, and not limited as a service that feeds a rail network.

In establishing a role for public transport, it should be enshrined in the motto of delivering ‘frequency, connectivity and visibility’ that is value for money as defined in terms of net social benefit per dollar outlaid. Connectivity refers to the provision of services that offer door-to-door services with minimum delay and almost seamless interchanges. Visibility is predominantly ‘knowing where the mode is going from and going to, and when’.

There are many ways in which bus transport can be developed as part of an integrated network-based public transport system, typified by the best practice bus rapid transit (BRT) systems in South America such as Curitiba in Brazil and TransMilenio in Bogota, Colombia. Bus Rapid Transit is "...a high-quality bus based transit system that delivers fast, comfortable, and cost-effective urban mobility through the provision of segregated right-of-way infrastructure, rapid and frequent operations, and excellence in marketing and customer service. BRT essentially emulates the performance and amenity characteristics of a modern rail-based transit system but at a fraction of the cost. A BRT system will typically cost four to 20 times less than a light rail transit (LRT) system and 10 to 100 times less than a metro system."

Recent research shows the appeal of BRT in Los Angeles when comparing the Orange line BRT with the Pasadena, California Gold Line light rail (LRT), both of which connect to the Red Line subway and have similar service patterns and length. The BRT is performing considerably better than the LRT. The latter costs considerably more and carries fewer riders. Capital costs per average weekday boarding for the BRT line is \$US16,722 in contrast to \$US45,762 for the LRT line; cost per revenue service hours for BRT and LRT are respectively \$US243.18 and \$US552.54; and cost per passenger mile are respectively \$US0.54 and \$US1.08. These are impressive evidence of the value for money from BRT compared, in this instance, to an LRT system. Metro rail and heavy rail would be even more unattractive within the service capacity range studied.

What lessons can be learnt from the most successful BRT system in Bogota, Columbia, the TransMilenio, and what is its applicability to Australia. The most important findings relate to connectivity and network integrity, reinforcing the view that it is all about networks and not corridors per se. They suggest that BRT is capable of playing a role in the achievement of a wide set of objectives such as sustainable accessibility and urban renewal when implemented as part of a holistic package of integrated strategies. Importantly it is the commitment to a *network* of BRT routes (and not a corridor view of planning per se), which gives a metropolitan area the opportunity to enhance the accessibility and urban renewal benefits from corridor level to metropolitan wide level. The relatively low capital costs have made this possible in many countries within a relatively short time frame (up to 5 years often). Whether this is a transition strategy to other forms of public transport or an end in itself should be determined by how the market responds. It is not uncommon to see BRT promoted as a transition to light rail, metro and even heavy rail (e.g. in Brisbane and Pittsburgh), partly to get something started within constrained budgets, but to also appease anti-bus groups who see public transport as singularly rail. What is encouraging is that the success of many of the BRT systems has resulted in its expansion without the need to go to a rail 'solution'. Carrying capacities of BRT (see Figure 1) are increasing all the time and moving the case solely for rail off of many agendas.

New view of transit capacity

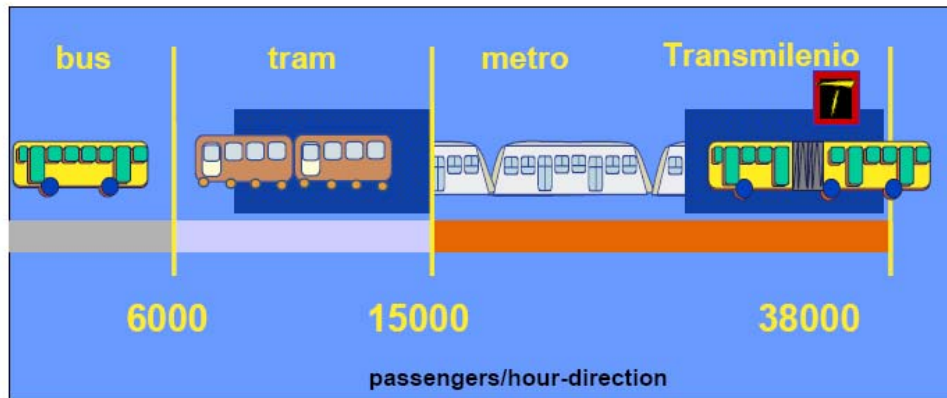


Figure 1 The changing capacity capability of the modes

Food for thought

ABC Magazine Opinion Piece: Food for Thought

OP5: (February 2008)

537 words

Why are bus operators not taking advantage of alliances to share costs and grow business?

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

If one studies the airline industry, one is struck by the amount of alliance activity amongst two or more operators. These alliances come and go, and are restructured regularly and re-focused as required. In aviation, such alliances range from very light alliances such as purchasing fuel together to get a bulk or super bulk discount, to maintenance cost sharing, and heavy alliances in code sharing of flights amongst passengers booked onto different airlines.

For many years of lecturing in the NSW Certificate of Transport Management (CTM), I have suggested that there are many opportunities for bus and coach operators to work cooperatively together in getting better deals on cost inputs, even if the operators may compete for patronage business (this is known as cooperative competition). It is good for all, since it ensures greater efficiency in consumption of resources, as well as opening up opportunities under contract or otherwise for the scarce government dollar to go further, giving even more value for money. Yet bus and coach operators, with rare exception, do not do this, and as far as I can tell, my advice through the CTM is rarely acted on.

It has taken me some years to try and work out why this opportunity is not grabbed. Bus and coach operators in the main (there always are exceptions), regardless of size and ownership, are very conservative (certainly when compared to the airline sector), and are heavily focused on operating a business in a very day-to-day manner rather than thinking about strategic opportunities that can actually assist in operating a business more efficiently and effectively. Years of dependence on government and declining patronage (often for very easily explained reasons), have made the industry somewhat inward looking. It is true that bus and coach associations play an important role in facilitating a wide range of financial deals for members, but this is not the same as individual operators working with other operators to gain even better cost and service outcomes.

Maybe some more lateral thinking on this matter could be used to give an operator a strategic advantage as we move into benchmarking of operators. Those who form an alliance for specific cost input savings relative to what they pay out by going it alone must be advantaged. This is not a matter of 'getting into bed with the direct or indirect competitor' since contacted operators who will be increasingly subjected to benchmarking to earn the right to re-negotiate their contracts (in contrast to being subject to competitive tendering), should all be trying to assist government who pay most of their bills, to reduce the cost of providing bus transport. Future benchmarking programs would include recognition of this cooperative alliance process through higher rankings of such operators.

There are so many innovative ways of creating input cost alliances, that the smarter strategically thinking operators(s) will always increase their chances of entering re-negotiation and moving themselves further away from the risk of being subject to competitive tendering.

Food for thought

ABC Magazine Opinion Piece: Food for Thought

OP4: (January 2008)

581 words

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS),
University of Sydney

It is all about dollars – there is a will but a difficult way

Many years ago I said that ‘One will never make public transport more attractive without making the car less attractive, if buses and trains want to make a serious dent in the mainstream travel market, in contrast to the number of niches which keep public transport, buses in particular, afloat’. The situation appears to have hardly changed with one exception – the real curse of the road system, namely traffic congestion, may be the savior of public transport, but only if governments are able and willing to invest literally billions of dollars into public transport infrastructure in metropolitan areas. Sadly in Australia, the lack of political will at all levels of government, in supporting congestion charging and some amount of hypothecation, means that revenue sources will be hard to come by.

Despite the long list of offered ‘solutions’ by ‘experts’ and the democratic community of the partially informed ‘lay experts’, the simple facts are that until we can offer a substantially improved public transport system, there is very little chance that any major policy effort to attract significant car users into public transport will be anything than a short term nightmare, with a consequential return back to the car. With a modal share in Sydney of 10 percent of passenger trips by public transport, and with rail struggling to cope now that any spare capacity has been taken up, imagine getting even two percent of car trips into the rail system or the buses. This would increase public transport trips by 20 percent and the current system simply would not be able to cope. A similar situation would exist in Melbourne. What this suggests, time and time again, is that a focus of substantially higher frequency of bus services combined with efforts to establish dedicated rights-of-way for buses, is not only a sensible value for money strategy, it is also the way of delivering accessibility and connectivity to the entire metropolitan area. A mix of good coverage and good frequency is essential. Focussing on specific corridors with high cost investments such as heavy rail, while appealing to some and also sensible to some degree, comes at a very high opportunity cost of being unable to invest in the rest of the public transport network, which is essential to ensure a mainstream move back to public transport.

The good news is that politicians and government advisers agree with all of this; the bad news is that they have limited resources to do a great deal about it. It is just a matter of time before we have to involve the private sector and introduce more efficient variable user charging for car use. If it is done properly, most car users will be better off. As an example of taking the hard decisions, the Dutch government, in 2011, plans to scrap road tax as well as purchase tax on new cars. This will provide a fairer system which taxes vehicle use, rather than ownership. Indeed, the minister says that more than half of Dutch road users will actually pay less under the road user charging scheme. According to calculations by motoring organisations, only motorists who drive more than 18,000kms a

year are likely to be worse off under the new scheme. In Australia, the average kms per annum of urban residents using their private car is 12,500kms.

Food for thought

ABC Magazine Opinion Piece: Food for Thought

OP3: (December 2007)

350 words

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

Buses are boring and trains are sexy – time to do something about it?

The image of the simple bus is not good. It has essentially remained as a rectangular box (with the occasional mild curve) since we moved away from showing off the bonnet in the 1950's. I have formed a very strong view that public transport in general and bus services in particular should be enshrined in the motto of delivering 'frequency, connectivity and visibility'. Connectivity refers to the provision of services that offer door-to-door services with minimum delay and almost seamless interchanges. While the idea of visibility is predominantly 'knowing where the bus is going from and going to, and when', good looks would not go amiss. It has the same implications as a car driver who prefers to travel in a smart looking sports car or modern Mercedes or BMW. When I discussed this with one of our very reputable bus body builders, the response was that we do need to make our buses look more interesting, but that government regulation requires specific angles for lights etc.

What I find very odd about this is that in many countries, notably in Europe, we have some really attractive buses that appear to preserve this feature without having to stay rectangular. A set of pictures that I often show people are given below. The first reaction is 'what a nice looking light rail'? Wrong – they are actually buses. Indeed such better looking buses when manufactured in large volumes are very cost competitive with the rectangular box, and with some thought, can carry the same number of people. Combined with low floors, Euro 4 or better engines and style, they must surely be given more serious consideration than we see today in the Australian way of designing buses.

We eagerly await the first Australian-based bus body builder's new offerings.

Food for thought.

Flex Trolleys



A number of cities have been experimenting with or using rail-like "flex-trolleys." In the U.S., Las Vegas will use them this year.

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What Do People Identify With?



**Or Small
and Cute**

Transparent

**Sleek and
Aerodynamic**

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ABC Magazine Opinion Piece: Food for Thought

OP2: (November 2007)

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS),
University of Sydney

Things could be better but relative to other countries it is.....

I have just returned from Singapore where I am a member of the International Expert Panel to advise the Minister of Transport and the Land Transport Authority (LTA) on its transport policies and strategies, and help keep LTA abreast of the latest global trends and developments in land transport. You may well ask – what can we offer Singapore?; whom I am sure many ABC readers would hold up as a 'jewel in the crown' in the provision of public transport and how it deals with the car by electronic road pricing. True that the return on investment is something Australian operators only dream of (lets

leave it at 20 percent plus and no operating subsidy), but it may come as a surprise to know that the bus system is not any more cost efficient and service effective than many urban operators in Australia (after exchange rate conversion). This means that if one wants to dip one's toes offshore, that there are serious entrepreneurial openings when and if competitive reforms take place (keep a vigilant watch on this). Never deny the fact that many Australian based operators have been through tough times and the survivors are healthier for it. Take this experience and use it to stand up and be counted amongst the set of globally mobile operators who are in the business of dividing up the world into 25 main players (yes – you did hear it right – that is the view of many in the know).

Some of the challenges in Singapore are not dissimilar to those in Australia. For example, the debate on fare structures under fully integrated and seamless multimodal public transport ticketing is alive and well in many countries. We are not alone and unoriginal. The big issue is the flag fall component on each mode and the impost of having to pay it each time one changes mode. The solution is amazingly easy apart from the modal politics – namely do away with flag fall, have a distance or time-based fare structure (just like the direction that tolling of roads in heading) and set up a clearinghouse (again like fuller interoperable toll roads) to receive revenue and disperse it appropriately. In some countries they are using the move to smartcard fully integrated ticketing to review and revise many outdated fare structures and introducing simpler fare structures that reflect both efficient and equitable fares and most important are sensible ways of attracting people back to public transport. Food for thought!

ABC Magazine Opinion Piece

OP1: (October 2007)

480 words

The Data Trail - Keep it Simple but make it Meaningful

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS),
University of Sydney

My recent participation in a number of inquiries into ways to improve the efficiency and effectiveness of public transport has highlighted the inadequate focus on really knowing what does make a difference to actual and potential users of public transport. There appear to be a large number of customer satisfaction surveys which seem on balance to focus mainly on looking at how satisfied (happy?) existing users are with a range of existing service attributes. There is something missing – someone may be eternally

satisfied with a specific feature of a service (e.g., the attitude of the bus driver or the inspector on the train or the attendant at the Ferry wharf), but is that really so important as to influence whether someone would choose to use or not use a bus or train or ferry? An obvious and simple improvement would be to identify how important specific service features are in one's choice of means of transport and how well is the operator performing in providing the service in terms of that feature. As an example, we might think about asking how does the stakeholders' perception of how successful the operator has been in addressing each of the issues compare with their perception of how important each of the issues are? To determine this, a simple "difference score" might be used, defined as the difference between the importance and success ratings given by each respondent to each issue as shown in the Table below.

Levels of Difference Scores

How Important Scale:	How Successful Scale:			
	1	2	3	4
1	0	-1	-2	-3
2	1	0	-1	-2
3	2	1	0	-1
4	3	2	1	0

A positive score indicates that the success in addressing an issue is lagging behind its importance in choosing a means of transport. Its magnitude is indicative of how much success is lagging behind importance. For example, the score "3" is obtained when the stakeholder considers an issue to be very important but the same issue has been unsuccessfully addressed by the Operator. A negative score indicates that the Operator has over addressed an issue given its importance to actual and potential passengers. For example, the score "-3" indicates that a stakeholder considers an issue to be unimportant even though it has been very successfully addressed by the Operator. A zero score indicates that the Operator has addressed the issue in line with its importance.

Given the growing importance of measuring the passenger's (existing and potential) assessment of the effectiveness of public transport services, it is timely that we at least ask the question: *Do we Really Know our Passengers? Are we measuring incorrectly if we want to grow patronage? Information is only relevant if it is useful.*