

# MOVING PEOPLE

➤ *Solutions for Policy Thinkers*

## Public transport: funding growth in urban route services



Bus and Coach Industry  
*Policy Paper 3*



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## ***Policy Paper 3***

Public transport: funding growth  
in urban route services

### ***Author:***

Adjunct Professor John Stanley, Institute of Transport and  
Logistics Studies, Business School, University of Sydney

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## Foreword

This research policy paper is part of a series of six publications aimed at decision and policy makers, academics and students. This Policy Series focuses on land transport, land use, integrated planning and urban development challenges in Australia.

The Policy Series has been developed by the Bus Industry Confederation (BIC) of Australia and the Institute of Transport and Logistics Studies - Sydney University, and addresses specific subject matters and issues raised in the BIC's previous reports: "Moving People - Solutions for a Growing Australia" and "Moving People - Solutions for a Liveable Australia." Both publications are available at [www.ozebus.com.au](http://www.ozebus.com.au).

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*The art of taxation consists in so plucking the goose as to obtain the largest possible amount of feathers with the smallest possible amount of hissing.*

*(Jean Baptiste Colbert, French economist and Minister of Finance under Louis XIV).*

## Executive Summary

### Context

BIC's *Moving People* publications have made the case for increasing the provision of public transport services in Australia's cities, because of the benefits these deliver for service users but also, and perhaps more importantly, for the wider nationally significant economic, social and environmental benefits they deliver. A current Australian infrastructure backlog of about \$150b has recently been estimated.<sup>1</sup> Public transport infrastructure forms part of this backlog. This report examines funding opportunities to support the provision of improved public transport route service levels in Australian cities, drawing on international experience, particularly from North America.

### Funding sources

There are three main sources of potential capital/operating funding for transport services, including public transport route services:

1. **Government**, on behalf of the community. This funding could be from any level of government
2. **Users** (e.g. via public transport fares, road user charges, congestion taxes, road tolls)
3. **Other beneficiaries** (e.g. landowners who benefit from nearby transit improvement being levied for value capture, or levying a toll on freeway or bridge users who benefit from a nearby transit improvement).

The second and third of these funding sources constitute *beneficiary pays* funding approaches. As a general principle, BIC believes that *beneficiary pays* approaches to funding public transport route services should be used before resort is made to government funding.

Revenues from the three sources should be paid in to a transport fund at state level. This provides a line of sight between the charges and the related benefits, which should increase support for implementation. Establishment of separate road funds, as has been recommended by the Productivity Commission (2014b), should be avoided because they are antithetical to integrated approaches to land use and transport planning and delivery in our cities.

<sup>1</sup> Stanley, J (2014b). 'National Infrastructure and Cities Summit: Major Themes and Directions', in Stanley, J. and A. Roux (eds.) *Infrastructure for 21st century Australian Cities: papers from the ADC Forum National Infrastructure and Cities Summit, March 2014, Melbourne: ADC Forum.*

## Criteria for assessing funding options

Eight criteria have been used to assess public transport route service funding options in Australian cities:

- revenue raising potential of the measure
- predictability and stability of the revenue stream from the measure
- equity – *horizontal equity* (concerned with treating similar people in a similar way) and *vertical equity* (the relative treatment of different socio-economic groups or groups that are distinguished on other grounds, such as particular personal capacities)
- travel behaviour impacts - concerned with the extent to which the revenue measure affects travel behaviour in strategically desired ways
- strategic development objectives – how the funding measure impacts on, for example, the scale, type and location of development and how this aligns with strategic planning objectives, such as the achievement of more compact growth patterns
- public acceptability – often a stumbling block and, therefore, critical for implementation
- ease and flexibility of implementation - which includes governance considerations, such as whether new legislation might be required for implementation
- accountability and transparency.

## Funding option assessment

Increased funding to pay for improved public transport route services can be achieved in a number of ways. The best result is likely to be one that uses multiple methods to avoid large increases in any specific taxes or charges.

Based on the analysis in this paper, the preferred approaches that are worthy of serious consideration by all levels of government, with considerable revenue raising potential, are:

- **fuel indexation and allocating the increase plus a part of the current fuel excise revenue to fund public transport** (hypothecated to PT), including returning the road use charge currently paid by buses (26c/L) to fund improved bus services. Within a few years this measure should see >\$300m available annually in Sydney and Melbourne
- **increasing parking levies**, which can generate >\$100m annually in Sydney and Melbourne if the areas covered are expanded and charge rates lifted, to better reflect congestion costs and other external costs of road use
- piloting **HOT lanes** on some congested freeways (minimal revenue impact for some years but an important part of the transition to reformed road use pricing)

- in time, restoring the **carbon tax** and using the part that relates to road use for improving public transport, until such time as a widespread reform of road pricing is in place. On a conservative 10mt of carbon emitted by motor vehicles in Melbourne, for example, a low carbon price of \$10/t would raise \$100m annually, with much higher sums in prospect over time, as carbon pricing becomes more established internationally
- a **low rate payroll levy**, if possible based on employer distance to public transport, with higher rates being applied to premises close to multiple modes and no charge applied to premises more than 800m from public transport. This measure is capable of raising >\$300m annually in both Sydney and Melbourne
- a **metropolitan improvement levy** at a low rate across the city, the rate increasing with PT proximity (>\$200m annually in the larger cities)
- **project specific value capture** for specific big projects, like CBD rail, light rail and BRT, with substantial revenue raising potential tied to specific projects. This should extend to Federal TIF type involvement in Cities Deals, along the lines of those currently being pursued in the UK.

This package of measures provides a contributing role for each level of government and the private sector and would result in **additional funding** of at least \$1 billion annually for the largest cities. It requires improved intergovernmental co-ordination of land use/transport planning processes, to deliver initiatives that have support across government and the community. In time, **reformed road user charging** (based on mass, distance and location and reflecting all the external costs of road use, i.e. not revenue neutral) should become the dominant means of funding improved public transport.

Greater reliance on beneficiary pays approaches will improve the alignment of revenue raising with benefit/cost/expenditure incidence, because revenues will flow more closely to the level of government with the relevant functional responsibility. However, this would still leave the Federal Government as a major beneficiary through its broad taxation powers, even if it passes all its fuel tax revenues to the States and Territories (as proposed herein). Federal TIF funding support for infrastructure, such as public transport infrastructure, is warranted on this basis, along the lines of the UK New Cities Deals.

Public benchmarking of public transport system performance would assist the process of identifying opportunities and priorities for improvement and increase accountability for performance. To this end, BITRE should publish, on an annual basis, a wide range of public transport performance indicators, to better inform system comparisons both nationally and internationally. Australia lags well behind Canada and the US in this area.



# 1. Context

BIC's *Moving People* publications<sup>2</sup> have made the case for increasing the provision of public transport services in Australia's cities, both because of the benefits these deliver for service users but also, and perhaps more importantly, for the wider nationally significant economic, social and environmental benefits they deliver. These benefits include enhancing agglomeration economies, lowering road congestion costs, cutting transport greenhouse gas emissions, improving urban air quality, supporting social inclusion, lowering the road toll, improving health and reducing energy insecurity. In a case study of Melbourne's route bus services, benefits of almost four times the costs of service provision were identified (Stanley and Hensher 2011a), showing the scale of benefits that are achievable from well targeted public transport services.

BIC further argued in *Moving People: Solutions for a Liveable Australia* (Stanley 2012) that there is a strong case to be made that Australian land transport infrastructure spending is below the level that is needed, with consequences that include foregone productivity gains, higher levels of environmental damage, a higher road toll and greater social exclusion. Increased investment in urban public transport services should be an important element in addressing Australia's infrastructure shortfall.

This proposition about the need to increase infrastructure spending received strong support at the March, 2014, ADC Forum *Infrastructure and Cities Summit*, where Dr Peter Brain and colleagues showed that, between about 1985 and 2000, there was a very large relative fall in the rate of Australia's infrastructure investment. Looked at as a proportion of non-mining, non community services gross product (NMNCSGP) at factor cost, Australian infrastructure spending averaged 6.6 per cent from 1971-1988 but fell to an average of only 4.6 per cent in the 1989-2012 period (Brain et al. 2014). Figure 1 shows that transport infrastructure investment, in particular, has had a dramatic decline in relative terms, over a 40-50 year period (from the 1960s). Thus, while a short to medium term perspective might suggest transport infrastructure spending has been solid, a longer term perspective, better suited to infrastructure life cycles, is more problematic and suggestive of likely substantial backlogs.

Using both domestic and international benchmarks, Brain et al. (2014) estimated Australia's current infrastructure shortfall at around \$150b, rising to about \$350 billion over the coming decade in a business as usual environment. They noted that, for Australia, private capital investment appears to be pulling its weight, while public infrastructure investment has lagged, to be the fourth lowest in OECD countries in 2008, in relative terms. Investment to remove this backlog over the period to 2025 is estimated to lead to a continuing \$75b annual gain in non-mining, non-community services gross product (NMNCGP) at factor cost (Brain et al. 2014). Importantly, the removal of the backlog was estimated to deliver a sufficient increase in GDP and government revenue streams to be self-funding over time. Infrastructure Australia's investment pipeline shows that urban public transport projects should form a significant part of the response to backlog removal (Infrastructure Australia 2013).

Financing and funding have been identified by many commentators as a critical constraint on lifting the rate of infrastructure investment. For example, Infrastructure Australia has highlighted this problem, in the context of increasing demands on government revenues (Infrastructure Australia 2012, p. 46):

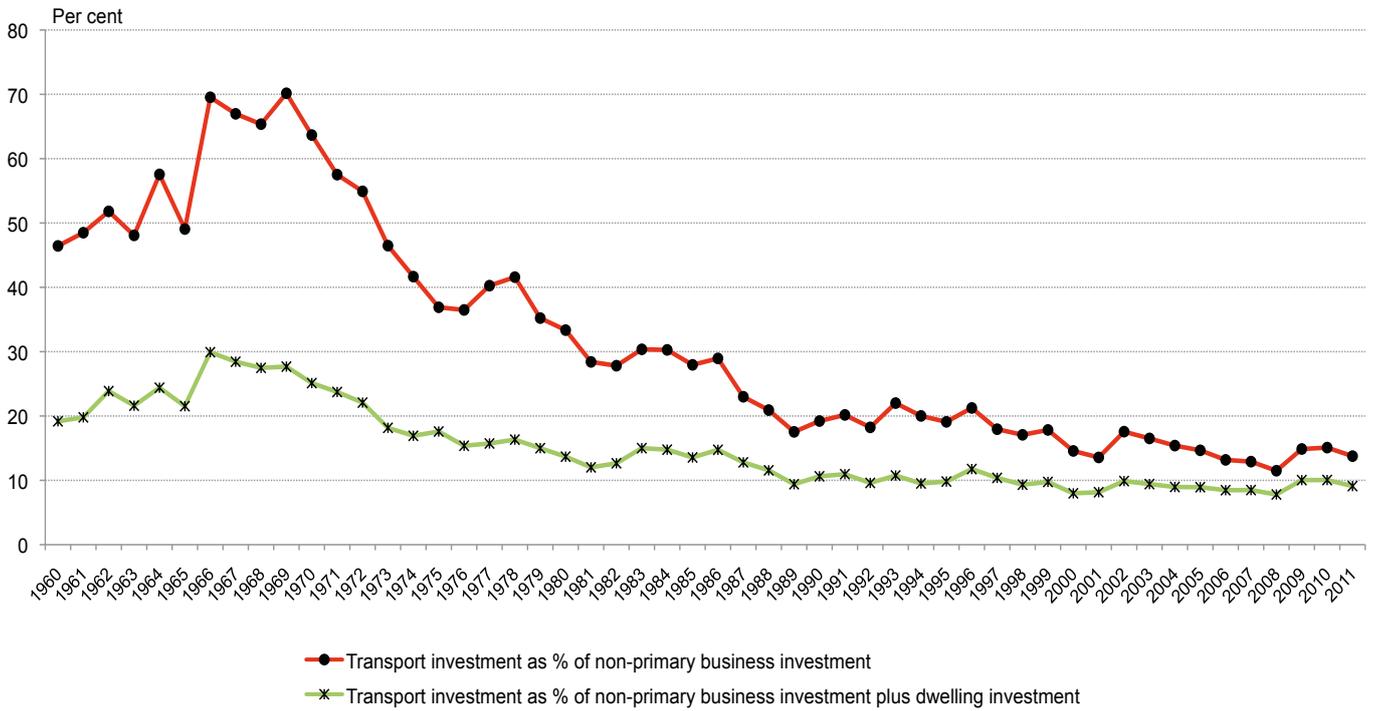
*Hard decisions about how we pay for our infrastructure or dramatic changes to outlays in other sectors will be required. In the absence of action on these fronts, it is difficult to see how governments will have the capacity to pay for the infrastructure proposed in current plans, let alone that which may be required in the future.*

This report examines some possible funding responses that might be well suited to increasing spending on public transport operations and capital requirements in Australian cities. Section 2 briefly discusses the distinction between financing and funding and argues that the major focus should be on funding. Section 3 puts forward a set of principles that are relevant to choosing between alternative funding measures, while section 4 explores the performance of public transport systems in Australian, Canada and US in terms of financial cost recovery. Section 5 considers a number of possible funding measures, illustrating their use in supporting public transport in various national and international settings. Section 6 presents the report's conclusions about the most suitable set of funding measures for growing Australian urban public transport.



<sup>2</sup> See, for example, Stanley and Barrett 2010, Stanley 2012, Stanley 2014a,b.

**Figure 1: Transport infrastructure investment: per cent of other Australian investment**  
 (Source: NIEIR)



## 2. Financing and Funding

In discussing infrastructure investment, it is important to recognise the distinction between financing and funding: funding is the source of funds that *ultimately pays* for the infrastructure, while financing is the means of paying up front. As the Committee for Melbourne neatly expresses it, *funding must be available to repay finance* (Committee for Melbourne nd, p.7).

The paper by Selth (2014) to the ADC Forum 2014 Infrastructure and Cities Summit indicates widespread agreement that *financing* of infrastructure should not be a significant problem for Australia, provided the risk/reward framework is right. It indicates there is currently \$1.8 trillion of funds under management in Australian superannuation, a sum that is projected to grow to about \$6t by 2030. Some \$80b is currently available in superannuation to invest in infrastructure but suitable projects are not available. This underlines the vital importance of a well developed infrastructure pipeline.

Finding good infrastructure projects in our cities depends on those projects emerging from high quality, integrated land use/transport/infrastructure strategies, that have involved meaningful and extensive community engagement, rather than simply selecting big projects that have been imposed on land use plans. It also depends on cost-effective project delivery. Selth (2014) makes the important point that re-building trust in government is at the heart of getting a pipeline of good projects, which is partly a matter of good governance around land use/transport infrastructure planning and delivery.

Selth (2014) suggests that increasing the flow of funds in to infrastructure requires a focus on access to long term debt on competitive conditions. There is great potential in this regard for some state asset sales revenue to be invested in state-based funds, run by an entity with a strong credit rating with the fund providing guarantees to support private sector borrowings for infrastructure. One such model is provided by the US Transport Infrastructure Financing and Innovation Act (TIFIA) but other approaches to such 'credit enhancement' could also be used. Some of the US projects supported through TIFIA include the Washington Metro Capital Improvement Program, the Transurban Capital Beltway Hot Lanes Project and the Miami Intermodal Centre. These are typically projects of about \$US2b, with about 10-30 per cent the subject of some form of TIFIA loan support (e.g. direct loan, guaranteed loan). Nicholson (2014) provides an outline of how such a fund might operate.

If the analysis by Dr Brain and colleagues is correct (Brain et al. 2014), the economic growth stimulus from removing the infrastructure backlog will go a long way towards making infrastructure expansion self-funding over time, provided project selection is well founded. Even if such self-funding were to occur, however, there are solid public finance grounds to seek more targeted ways of funding increased infrastructure investment.

BIC agrees with the Committee for Melbourne (nd) that infrastructure funding is where the main effort should currently be focused. This is possibly the single biggest impediment to an expanded transport infrastructure effort at present. As the Committee argues (CfM nd, p. 7)

*It is the willingness of government or users to commit funding, which ultimately determines the level and pace of infrastructure development.*

The focus in the current paper is, therefore, on funding, with public transport the particular focus of concern. Because urban public transport services in countries like Australia usually incur operating losses, funding needs to cover both capital requirements and also the on-going cost shortfalls involved in running services.

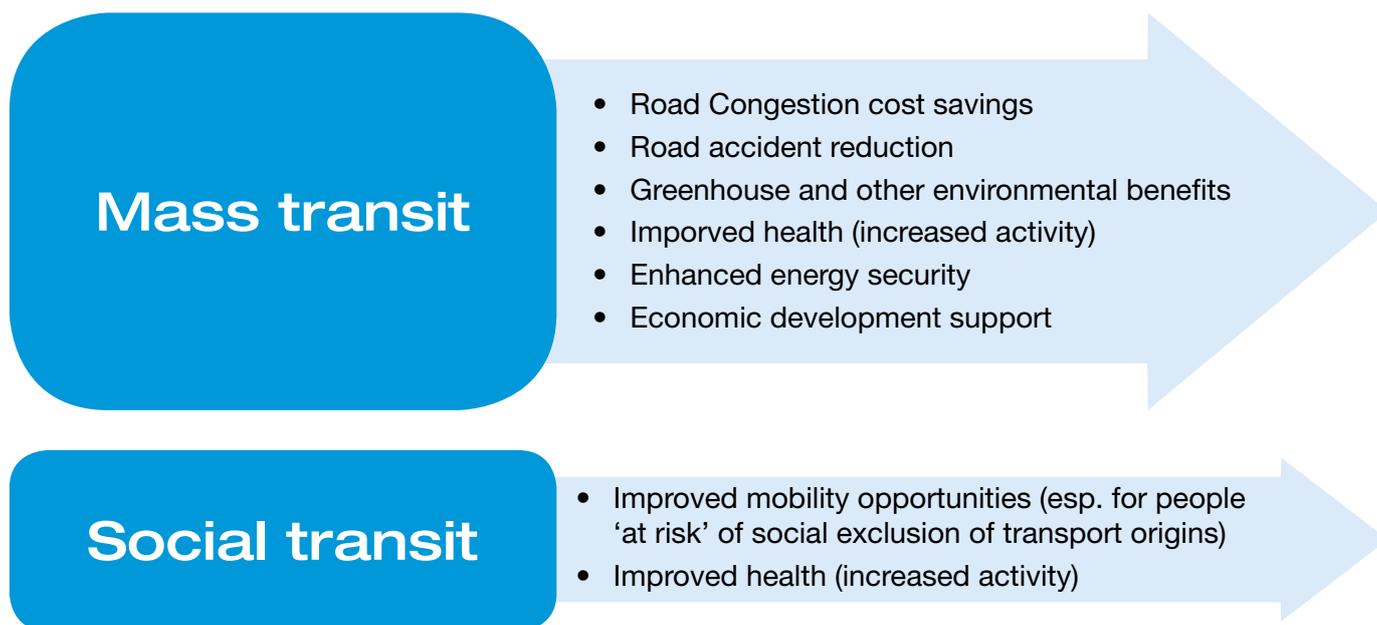
There are three main sources of potential capital/operating funding for transport, including public transport:

1. **Government**, on behalf of the community. This funding could be from any level of government
2. **Users** (e.g. via public transport fares, road user charges, congestion taxes, road tolls)
3. **Other beneficiaries** (e.g. landowners who benefit from nearby transit improvement being levied for value capture, or levying a toll on freeway or bridge users who benefit from a nearby transit improvement).

The second and third of these funding sources are aimed at different *beneficiaries* of transport infrastructure and/or services and, together, constitute *beneficiary pays* funding approaches.

In the case of public transport (or what is called *transit* in North America, from which many examples are drawn in this paper), *government funding* might be justified, in part, on grounds of the absence of *polluter pays* pricing of the external costs of road use, the associated benefits that transit creates in terms of lowering these external costs, and for the social safety net function that transit performs. BIC's *Moving people: Solutions for a Growing Australia* (Stanley and Barrett 2010) identified these benefits in terms of the mass transit and social transit roles performed by public transport, as shown in Figure 2.

Figure 2: External Benefits of public transport (Source: Based on Stanley and Barrett 2010)



It has long been recognised that transport expenditure, pricing and funding should be more closely connected and that *user pays* principles should underpin pricing, if efficient resource allocation outcomes are desired, while recognising a need to ensure distributive goals are not prejudiced in the process. The increasing focus on integrating land use and transport planning in recent years has encouraged a broadening of the *user pays* focus towards *beneficiary pays*, with attention to the role that various value capture techniques might play in helping to fund transport infrastructure. The *beneficiary pays* approach recognises that users are not necessarily the only ones who might gain from infrastructure/service improvements.

As a general principle for utility pricing, BIC believes that *beneficiary pays* approaches to funding (e.g. user pays; value capture) should be used to pay for infrastructure before resort is made to government funding. As the Productivity Commission (2014b, p. 141) argues:

*Direct user charges (prices) should be the default option because they can provide an incentive for efficient provision and use of infrastructure.*

Beneficiary pays funding, more generally, accords with widely accepted community notions of fairness (those who benefit should pay, in some way related to the size of the benefits they gain).

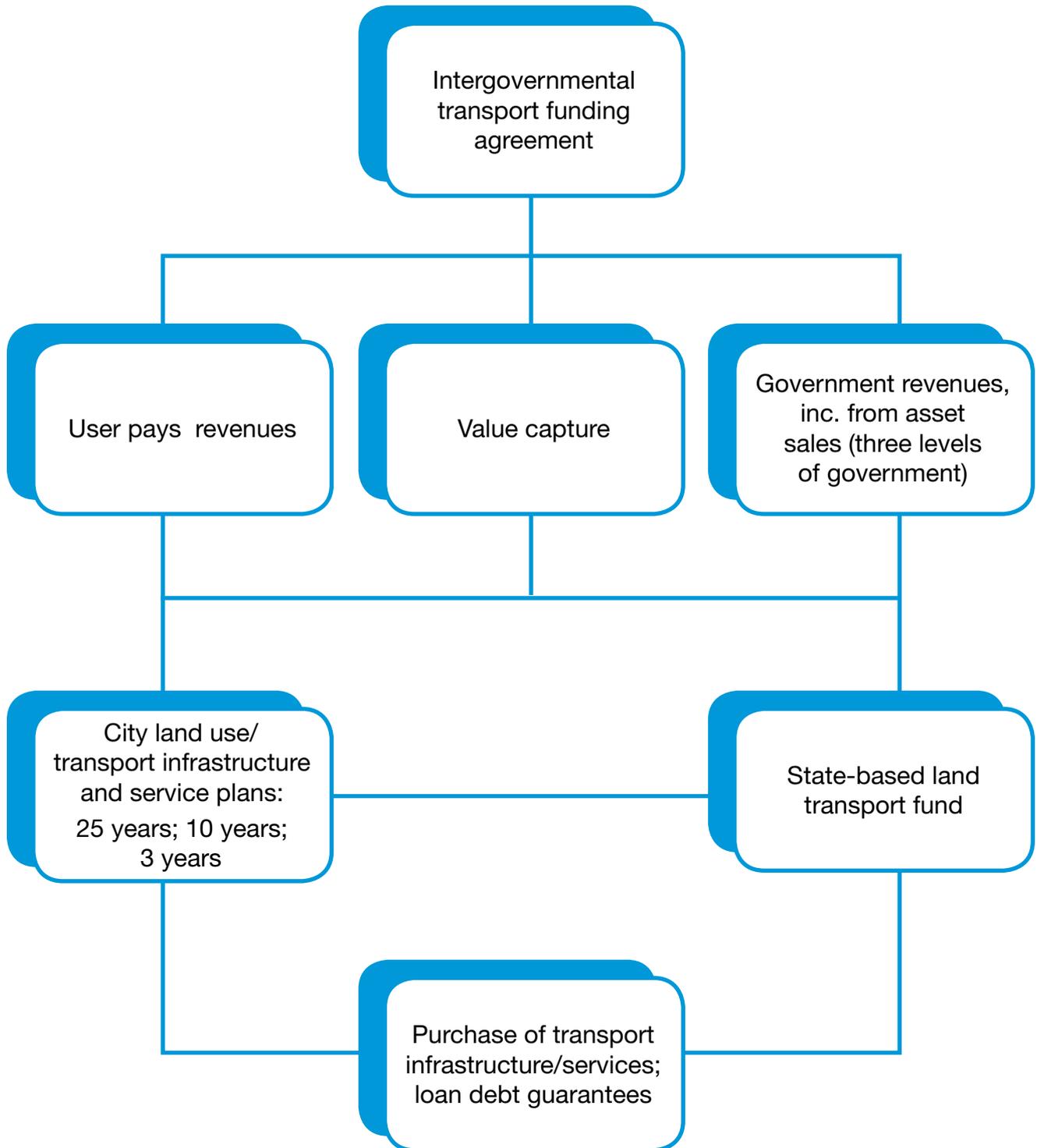
This prioritisation of funding sources (*beneficiary pays* before government funding) enables government funding to be reserved for infrastructure projects/programs that generate sufficient total net benefits, relative to their costs, but do not generate sufficient benefits that are readily monetised. The latter includes (for example) projects and programs whose purpose is meeting community service obligations and/or projects and programs that generate benefits that are too difficult to claw back from beneficiaries. This might be because the beneficiaries are too diverse and/or too hard to identify, or because the benefits arise in the form of reductions in (currently) non-monetised external costs, such as congestion cost savings or cleaner air. As implied in Figure

2, such benefits are very significant for public transport. BIC research suggests, for example, that the benefits of urban route bus services may be about ten times the value of fare revenue collections (Stanley and Hensher 2011a).

If road use was priced at its marginal social (or external) cost to the community, as argued in BIC Policy Paper 1 (Stanley 2014a), then monetisation of the relevant external benefits of public transport would be more of a reality and could be captured to help fund services and improvements. This should be a policy objective for the medium term, as it is for the Mayors' Council in Vancouver (Translink 2013b). In the absence of such marginal social cost pricing, government funding support for public transport services and infrastructure is justified on the basis of substantial external benefits to the wider community which should, of course, be demonstrated and quantified as far as possible in any particular decision-making context.

Figure 3 (from Stanley 2014b) suggests that transport funding from the three main sources could be paid in to a transport fund at state level, which could be the fund proposed by Selth (2014) for credit enhancement purposes in relation to infrastructure financing. An intergovernmental agreement, or similar mechanism, would be needed to ensure integration across all levels of government, since all have interests in well-performing cities. Such hypothecation of funding to a **land transport fund**, to pay for specifically identified improvements or categories of improvements, identified in integrated land use/transport plans, provides a line of sight between the charges and the benefits, which should increase support for implementation. **Establishment of separate road funds, as has been recommended by the Productivity Commission (2014b), should be avoided because they are antithetical to integrated approaches to land use and transport planning and delivery in our cities.** Land transport funds are better aligned with integrated city planning. Road funds are best suited to regional areas, where external costs of road use are much less significant than in cities.

Figure 3: Possible integrated land use, transport, infrastructure planning/funding model (from Stanley 2014b)



### 3. Criteria for selecting (public) transport funding measures

The principle that *beneficiary pays* measures should generally be used for infrastructure/services funding before resort is made to government funding poses the question of whether there might be other useful criteria that will help in the selection of public transport funding measures, from available alternatives. Four recent sources have considered this question:

1. The US National Surface Transportation Infrastructure Financing Commission set out six guiding principles for funding/financing transport at the national level in the US, which are relevant to public transport funding (NSTIFC 2009, pp 26-7)
2. Litman (2014) has proposed eight criteria for evaluating local funding options for public transport, which are perhaps more specific to the purposes of the current paper than the NSTIFC criteria but have much in common with those criteria
3. Metrolinx (2013), and Aecom KPMG (2013) for Metrolinx, for the Greater Toronto and Hamilton Area in Ontario, have published a set of criteria for evaluating funding options related to implementation of the Metrolinx *Big Move* program
4. 'The Mayors' Council (2014) in Vancouver, who have formal responsibilities to approve the Vancouver Translink ten year investment plan.<sup>3</sup>

Drawing on these various sources, the following eight criteria are suggested, using mainly the language adopted by Litman (2014) and Metrolinx (2013):

1. revenue raising potential of the measure
2. predictability and stability of the revenue stream from the measure
3. equity – *horizontal equity*, which is concerned with treating similar people in a similar way, and *vertical equity*, which deals with the relative treatment of different socio-economic groups or groups that are distinguished on other grounds, such as particular personal capacities
4. travel behaviour impacts - concerned with the extent to which the revenue measure affects travel behaviour in strategically desired ways. Translink (2013b), for example, is supportive of 'mobility pricing' of all modes on the basis that it makes users take account of all the costs of their travel decisions, as well as helping to raise revenue for transport purposes
5. strategic development objectives – how the funding measure impacts on, for example, the scale, type and location of development and how this aligns with strategic planning objectives, such as the achievement of more compact growth patterns

6. public acceptability – often a stumbling block and, therefore, critical for implementation
7. ease and flexibility of implementation - which includes governance considerations, such as whether new legislation might be required for implementation
8. accountability and transparency.

Metrolinx (2013) highlights, in addition, the dedication of revenues to specific outcomes, which is another fundamental underlying principle that should be followed when raising additional revenue to spend on public (or private) transport facilities/services, given citizen concerns about higher taxes and charges and a lessening of trust in government. As Metrolinx (2013 p. 8) argues:

*At all times the public should be able to see exactly what they are paying for and have an assurance that funds are not diverted to other priorities.*



<sup>3</sup> Translink is the regional transport planning and delivery agency for Vancouver, responsible for transit services and for major arterial roads.

## 4. Public transport funding measures for urban route services

### 4.1 Range of measures being used or considered

Internationally there is a wide range of revenue measures currently being applied, or under close examination, to fund public transport operations and/or infrastructure, in addition to direct government budget funding. To a greater or lesser extent, these measures reflect beneficiary pays principles. The following are commonly used and/or under serious consideration for route services in places like the UK, US, Canada and/or Australia:

- public transport fares
- miscellaneous PT service provider revenue streams - e.g. advertising; concession revenues. This is usually only a minor source of revenue (apart from in much higher density and larger cities than are found in Australia). Such revenue sources are not considered further in this paper
- fuel taxes
- road tolls - e.g. HOT lanes; freeway tolls applied to fund adjacent PT services
- transport/road pricing - externality based charging, called 'mobility pricing' in Vancouver, where it is envisaged as applying to all modes
- carbon taxes
- employer taxes - such as the French 'versement' or the Portland (Oregon) employer payroll tax and tax on the net earnings from self-employment
- parking levies
- property taxes
- sales taxes
- developer charges and various forms of value capture not included above (e.g. special assessments; impact fees; TIF districts).

These sources are discussed in more detail in section 5, after a high level overview of transit funding sources (operating and capital) in Australia, Canada and the US. There are other revenue tools that could also be used to generate funds for public transport, as discussed for example in Aecom KPMG (2013), but these are generally measure up poorly against the criteria outlined in section 3.

### 4.2 Overview on funding sources: operating costs

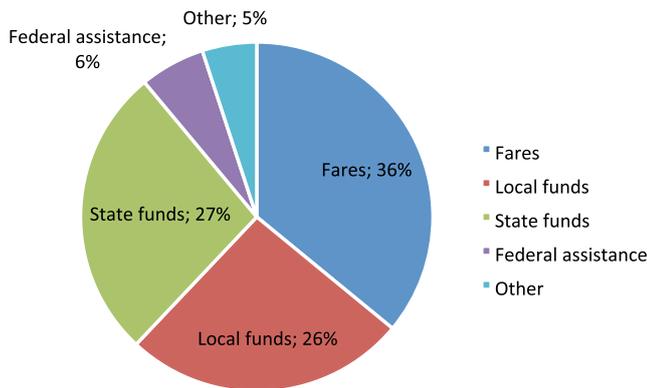
Australia's capital city public transport services recover a relatively small proportion of their operating costs from fares. Analysis presented in *State of Australian Cities 2012* (DIT 2012) suggests that the mainland capitals typically recover under 40% of operating costs (Perth being at about 40%) and more commonly around 30%+/- . The Queensland Translink 2011-12 Annual Report (TTA nd) suggests a cost recovery rate of 23.6% in that year (without detailed definition of inclusions and exclusions). By implication, funding is thus needed for two-thirds plus of operating costs in most Australian capital city public transport systems, plus capital. This funding is primarily sourced from State Government revenue streams, with some Federal capital assistance on the odd occasion in recent years (substantial in amount for some projects, like Melbourne's Regional Rail Link at over \$3b).

Figures 4 to 6 show, at an aggregate level, how public transport operating costs are met in US and Canadian cities. It is not exactly clear what is included within the scope of 'operating costs' between the US and Canadian data sets but accounting practices are usually consistent, such that variations should not create major problems in interpretation. For the top 50 public transport agencies in the US, Figure 4 shows that the cost recovery rate was of a similar order to, or slightly above, that of the Australian capitals, at 36%. Had the systems in the very largest cities been removed, which are larger than Australian cities, the average cost recovery rate through the fare box would have been 32%. State and local government (municipal) contributions each provide a little over a quarter of the revenue required to cover operating costs in the US and a small federal contribution is received (Figure 4).

Figures 5 and 6 show that Canadian transit systems in cities with populations exceeding 2 million generate revenues that cover about 60% of direct operating expenses, or 44% for systems in cities of between 400,001 and 2 million (CUTA 2014). The fare revenues that are included in this cost-recovery figure are not separately itemized in the source reference but separate sources suggest, for example, that Translink's fare collections provided 32% of its \$C1.42b total revenue in 2012 (Translink 2013a) and 35% in 2013 (Cummings 2014). Transit operation costs were 60% of total costs (of \$C1.43b in 2012 and \$C 1.44b in 2013), suggesting that fares recover almost 60% of operating costs, consistent with Figure 5. Similarly, the Toronto Transit Commission 2012 Annual Report (TTC 2013) shows passenger service revenues of \$C1.02b and Conventional Transit Services expenses of \$C1.81b, reflecting a cost-recovery rate of 56%. TTC's operating area is a significant part of urban Toronto but not the whole. The substantial 'other' component in Figure 5 is mainly revenues sourced from the local dedicated gasoline taxes and auto licence fees collected by TransLink (Vancouver) and AMT (Montreal).

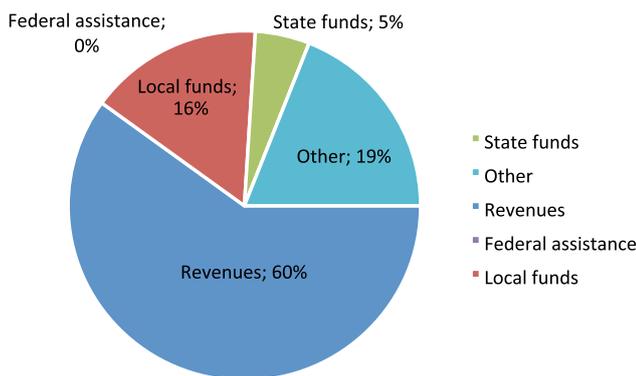
There is no Canadian federal assistance for operating costs, with local government being the major source beyond the fare box (Figures 5 and 6). Provincial governments only contribute a relatively small share of operating costs (5% in the largest city systems, on average, and 6% in cities with between 400,001 and 2 million population).

**Figure 4: Operating cost coverage for top 50 US transit agencies (2012)**



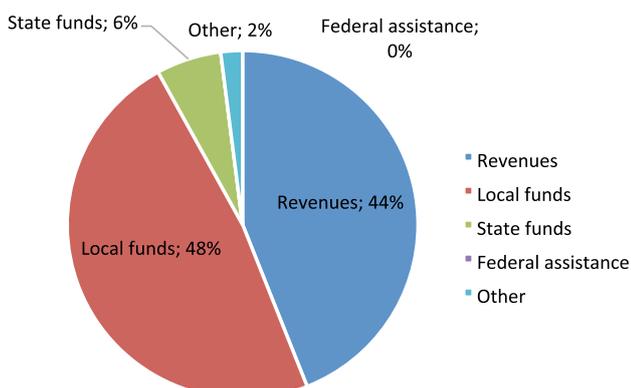
Source: US DOT (2013).

**Figure 5: Operating cost coverage for Canadian PT system in cities of over 2 million (2012)**



Note: Contributions exclude Provincial and Municipal debt servicing contribution (~\$C115K). Source: CUTA (2013).

**Figure 6: Operating cost coverage for Canadian PT systems in cities of 400,001 to 2 million (2012)**

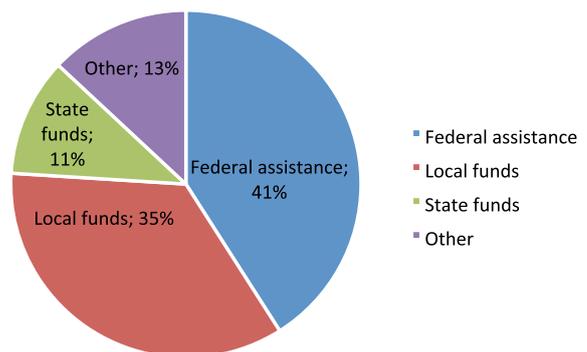


Note: Contributions exclude Provincial and Municipal debt servicing contribution (~\$C40K). Source: CUTA (2013).

### 4.3 Overview on funding sources: capital

Because public transport services in medium to low density cities in developed economies usually require a financial contribution from governments to meet their operating costs, the capacity to internally fund capital from fares is basically nil. Capital funding for the largest 50 reporting US transit agencies is substantially sourced from the federal government (41%, or \$US5.6b in 2012) and from local government funding sources (35%, or \$US4.6b), as shown in Figure 7 for 2012. Section 4.5 outlines the major categories of financial assistance available from the federal government in the US (operating and capital). Local (municipal) sources provided just over a third of capital funds for the 50 largest US systems (\$US 4.6b). US state governments are relatively small contributors (at 11%, or \$US1.5b in 2012) but are important contributors to operating costs (Fig. 4). Total capital funding in 2012 for the 50 largest reporting US transit systems was \$US13.5b in 2012.

**Figure 7: Capital cost funding sources for top 50 US transit agencies (2012)**



Source: US DOT (2013).

Figures 8 and 9 show comparable capital funding data for Canadian transit systems in 2012, a year in which capital spending totalled \$C2.25b by transit systems in cities of over 400,000 population (covering all systems included in Figures 8 and 9). State (Provincial) governments provided the largest share of funding for capital in systems of both sizes for which data is shown, at 38% (\$C508m) and 52% (\$C477m) respectively. Local municipal funds are also a major source of finance for capital expenditure, at 31% for the largest systems (\$C409m) and 24% for systems in cities of between 400,001 and 2 million (\$C221m) in 2012.

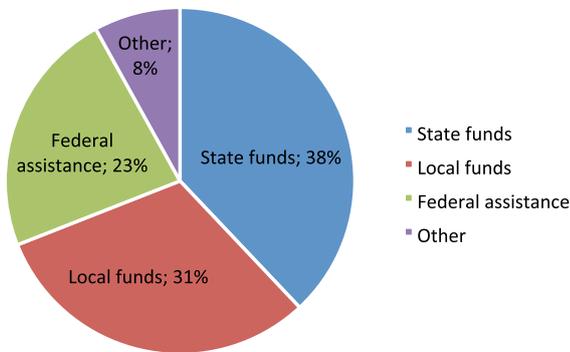
The federal government is an important contributor of capital funding for transit in Canada, providing almost a quarter of the capital funding requirement in 2012 for transit systems in cities with over 2 million population (\$C306m) and over one-fifth (21%, or \$C192m) for systems in cities of between 400,001 and 2 million. The total 2012 federal government contribution for systems in cities of over 400,000 was almost \$C500m, with small contributions also being made to systems in smaller cities (under 400,000 population).

Support provided to urban transit by the US and Canadian federal governments stands in stark contrast to the current Australian federal government's enunciated

position on funding support for public transport. Sections 4.4 and 4.5 summarise federal funding arrangements for transit in Canada and the US respectively.

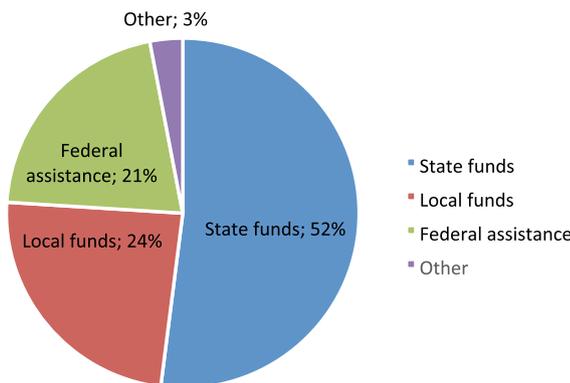
The ready availability of data on transit system performance in the US and Canada, across a wide range of performance metrics, can be contrasted with the very limited and readily accessible data availability for Australia. There is a lesson here in terms of transparency and accountability. **BITRE should publish, on an annual basis, a wide range of public transport performance indicators, to better inform system comparisons both nationally and internationally.** The US National Transit Database and Canadian Urban Transit Association Transit Stats are models that could inform relevant data to be collected and reported.

**Figure 8: Capital cost funding in Canadian cities of over 2 million (2012)**



Source: CUTA (2013).

**Figure 9: Capital cost funding in Canadian cities of 400,001 to 2 million (2012)**



Source: CUTA (2013).

## 4.4 New Building Canada Plan

The 2014 Canadian Federal Budget announced the New Building Canada Plan, a \$C53b funding commitment for the next ten years. This is the largest and longest federal infrastructure plan in Canada's history. Figure 10 sets out the main elements in the Plan.

Speaking at the Canadian Urban Transit Association's National Conference in June, 2014, Canadian Federal Infrastructure Minister Denis Lebel said that the Federal Government had committed \$C5.5b to transit since 2006, and that additional federally sourced money from the Gas Tax had been committed by the Provinces, taking the total transit capital expenditure sourced from Federal funding to over \$8b over the 8 year period.<sup>4</sup> The first project announced under the New Building Canada program was the Edmonton light rail expansion, a public transport project.

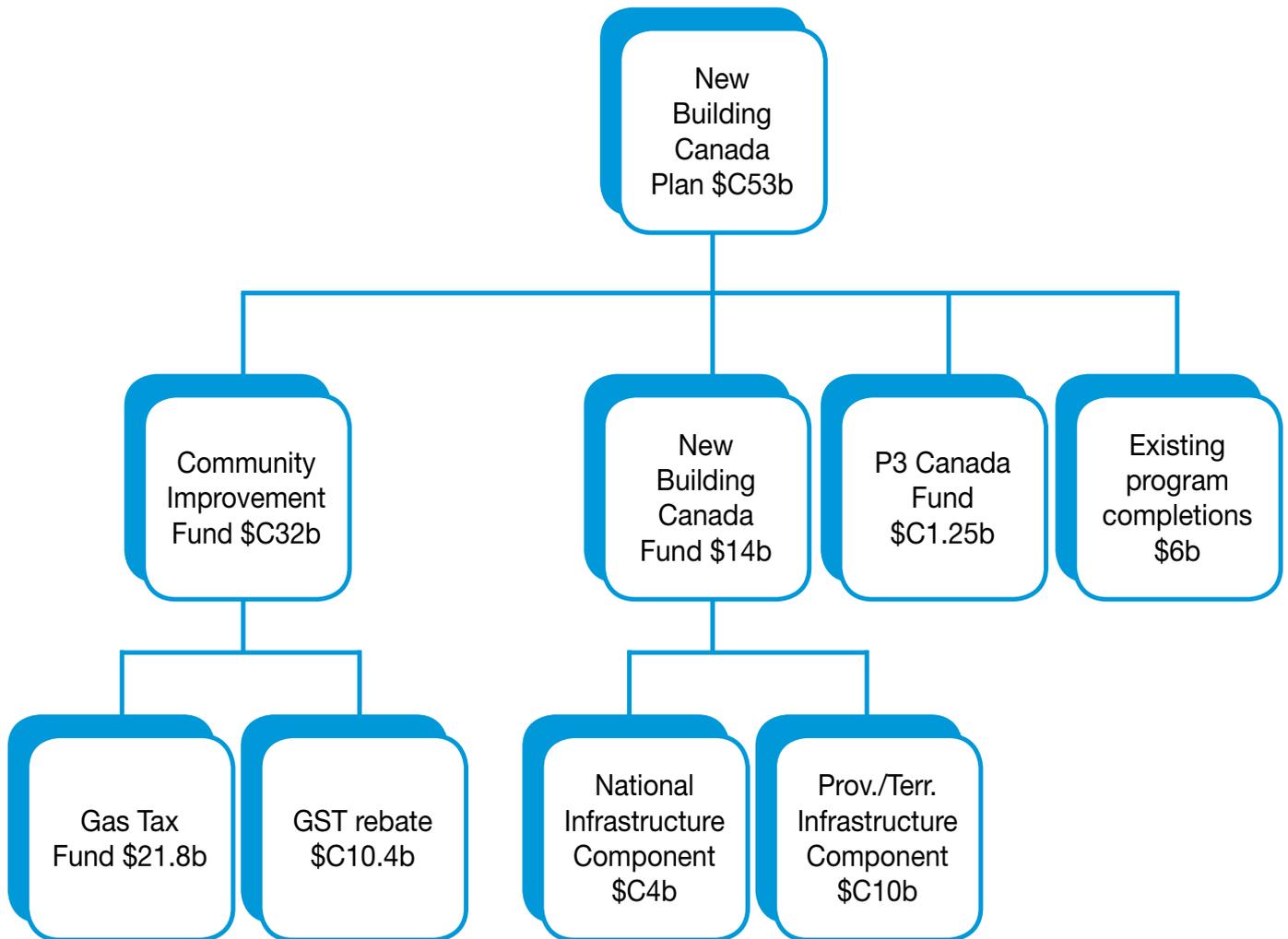
Within the \$C53b committed over the next decade, Minister Lebel pointed out that transit is eligible for assistance under all components of the plan, although there is no specific transit allocation set aside, unlike in the US. The Minister noted that the very substantial Gas Tax Fund revenue goes to the Provinces and Territories, and that five large cities have invested most of their Gas Tax revenues in transit.<sup>5</sup> Under the New Building Canada Fund (\$C14b) component of the Plan, there is a national infrastructure component, which supports projects of national significance, and a provincial-territorial component, that supports projects of national, regional and local significance. The Canadian Federal Government recognises that the Provinces and Municipalities own about 95% of the infrastructure base and this ownership needs to be respected in priority determination. Cost-sharing deals are thus common, with the Federal Government typically providing 1/3 of the capital funding of agreed projects but this share may increase to 50% for some transit projects. The Federal Minister's view was that:

*We will continue to support public transport because we know that it is important.*

<sup>4</sup> The author was a participant in that conference and these comments are from notes of the Minister's speech, supplemented by press reporting.

<sup>5</sup> The Gas Tax Fund provides ~\$C2b annually, which is permanent, indexed and distributed by formula for the period of the Plan. The formula provides a base amount plus a per capita allocation, with a guarantee for smaller communities 100,000 population.

Figure 10: Elements of the New Building Canada Plan



## 4.5 US Federal programs

Under the MAP-21 program (Moving Ahead for Progress in the 21<sup>st</sup> Century), a wide range of transit programs/projects in the US are eligible for federal assistance, some by formula and others discretionary. Examples include (all amounts shown are 2014 allocations):

- Bus and bus facilities (\$US428m)
- Bus testing facilities (\$US3m)
- Enhanced mobility of seniors and individuals with disabilities (\$US258m)
- Fixed guide-way capital investment grants (\$US1.9b)
- Flexible funding program- surface transportation program (\$US10.1b, which includes transit)
- Formula grant for rural areas (\$US608m for transit)
- Metropolitan and state-wide planning and non-metropolitan transportation planning (\$US129m, which includes transit)
- Public transportation emergency relief program (as relevant)
- Research, development, demonstration and deployment projects (\$US70m)
- State-of-good repair grants (\$US2.2b, for rail and high capacity bus corridors; a new program)
- Technical assistance and standards development (a \$US7m bus related program)
- Transit Asset management (no grants; this program includes cross-cutting requirements in other program elements)
- Transit safety and oversight (\$US22.3m)
- Transit oriented development planning pilot (\$US10m)
- Urbanised area formula grants (\$US4.46b for transit, mainly for capital but also for operations in some circumstances).

These various programs add up to a serious level of federal funding support for transit in the US, as was illustrated in Figures 4 and 7. The total federal MAP21 authorisation for 2014 is \$US10.7b, with the Urbanised Area Formula Program, State-of-good repair program and Fixed guide-way programs accounting for about four-fifths. This federal transit program is funded from two sources: (1) general revenues of the U.S. government (\$US2.1b in 2014); and (2), revenues credited to the Mass Transit Account of the Highway Trust Fund (\$US8.6b in 2014, based on 2.86c/gallon allocation from the 18.4c/gallon federal gas tax).

Both the Canadian and US federal governments are thus strongly supportive of transit. Each allocates roughly \$1b annually to transit, per ~30 million population, and each looks to fuel tax (the gas tax) as a major source of this funding. The major difference between the US and Canadian approaches to federal transit funding is that the US approach essentially specifies the types of programs that will be supported by the federal government, allocating funds against these

programs, whereas the Canadian approach depends largely on proposals put forward by those responsible for infrastructure, the Provinces/Territories and municipalities. Both federal governments clearly understand the national significance of transit to productive and liveable cities.



## 5. Individual funding measures

### 5.1 Fares

Public transport fares are a direct form of user pays charging for service. Section 4 has included discussion about public transport fares in relation to cost-recovery rates on operations, showing Australian capital cities and large US cities typically recover 25-40% of operating costs from fares and that Canada's cities generally achieve higher rates, at around 60% for the largest cities and 44% for cities in the 400,001 to 2 million population range. Canadian transit systems in cities such as Vancouver and Toronto aim for substantially higher cost recovery levels than Australian systems and achieve this, most likely because of service densities, system network economies and urban densities that, in combination, support higher boarding rates per service kilometre. In contrast to Australian, Canadian and US systems, London is currently in the fortunate position that its cost-recovery rate from fares is approaching 100%, which means that tools such as value capture can be kept for mainly capital purposes. Fare revenue is expected to provide £4.6b of the total estimated funding requirement of £14.5b for London's Crossrail project (Ware 2014).

As long as road users are not required to meet the societal costs attributable to their travel choices, than public transport services should not be expected to recover all their costs. IPART in NSW takes a systematic approach to reviewing public transport fare setting, taking into account some of the external benefits of service provision that flow from the absence of a proper system of pricing road use. Thus, for example, in setting fares for metropolitan and outer metropolitan bus services, the NSW Independent Pricing and Regulatory Tribunal adopts the following process (IPART 2013, p. 3):

- > Total Efficient costs of the benchmark operator
  - Less the efficient cost of providing school services
  - Less non-fare revenue
- > Equals efficient costs for the benchmark operator
  - Less external benefits for the benchmark operator
- > Equals revenue requirement
  - Less concession fares
- > Equals amount to be funded by passengers

The resulting target fare implies a 41% share of costs to be funded by passengers (the target cost-recovery rate).

This 'second best' pricing/fare setting approach has much to commend it, since it recognises the external benefits that bus provides in terms of reduced congestion and environmental costs. However, Stanley and Hensher (2011a) show that the biggest single external benefit of urban bus services is their contribution to social inclusion. This is completely ignored in the IPART analysis, as is agglomeration benefits (largely associated with rail). The IPART approach should be broadened to include social inclusion benefits and agglomeration benefits.

A major problem with second-best pricing, however, is that subsidising public transport to compensate for the lack of an effective road pricing regime encourages too much travel by all modes. Road pricing reform should be accorded a much higher priority, which would provide the opportunity to improve cost-recovery levels on public transport, making due allowance for impacts on disadvantaged groups/individuals.

As public transport service levels are improved, the opportunity should be explored to lift fares for new premium services, reflecting *user pays* principles. Thus, for example, delivery of one or other of the two mooted underground rail expansions for Melbourne will improve services to users and could reasonably be used as a basis for a peak rail fare supplement for journeys to/from the CBD, once road pricing better reflects external costs, just as a fare levy was used to help fund Melbourne's Underground Rail Loop 50 years ago.

### 5.2 Fuel taxes/road pricing reform

Sections 4.4 and 4.5 showed that fuel tax ('gas tax') is a major source of federal transit funding in Canada and the US. There are solid arguments in favour of using fuel tax paid by motorists as a way of helping to fund public transport operations and capital requirements, arguments which recognise fuel tax or excise as a charge for road use (albeit an imperfect one). These arguments are, in summary:

- the failure to properly price the external costs of road use, as noted in section 5.1. The societal benefits that public transport provides, in terms of reducing the size of these external costs, justifies some governmental funding support for public transport. Using fuel tax for this purpose is a form of 'polluter pays pricing'. Greater motor vehicle use implies bigger societal costs (economic, social and environmental) and higher fuel tax payments, which links the charge with costs imposed by the road user. Public transport, by lowering road traffic volumes, lowers the relevant external costs
- the benefits road users themselves derive from transit system/service operation, in terms of (1) easier road conditions and (2) the 'option value' benefit of public transport.<sup>6</sup> Fuel tax is again a convenient way of seeking payment, particularly for the first of these two sources of benefit, where benefit received is related to the level of road use, as is fuel tax paid.

BIC has long argued that road users are not meeting the full societal costs of their road use decisions and has proposed reforms to the way road use is priced to achieve better alignment. *BIC's Moving People: Solutions for a Liveable Australia* (Stanley 2012) further argued that the rapid growth in Australian road expenditure in the past decade has now reached a point where road users are barely paying their way in terms of covering road expenditures, much less meeting the wider external costs attributable to their road

<sup>6</sup> In addition to the direct benefits of transit to road users, services can also provide an 'option value' for road users and others, who may at some future time want to use such services and be prepared to pay something to preserve this option (a form of insurance value). DFT (2007) discusses measurement.

use. This point has been confirmed by the Productivity Commission (2014a), who indicated that in 2011-12 total road expenditure in Australia by all levels of government and the private sector was \$19.5b, which exceeded revenue collected from fuel excise, registration charges, driver's licence fees, stamp duty and tolls (of \$18b). When external costs are included, Stanley (2012) suggests that road users are currently only paying about 37% of the societal costs attributable to their travel decisions, which is of a similar scale to the cost-recovery rate for public transport in Australian cities (excluding the agglomeration and social inclusion benefits of public transport).

BIC supports the Productivity Commission's subsequent recommendation for trials of distance-based charging for road use (Productivity Commission 2014b) but is concerned that the proposed approach (which includes revenue neutrality, distance-based charges being offset by an equal reduction in fuel taxes) ignores most of the external costs of road use (all except road damage costs). The existence of substantial wider external costs should be acknowledged by the Commission and the importance of their subsequent incorporation into any reformed road pricing arrangements should be flagged by the Commission.

The existence of a large external cost deficit of road use is a major reason for government supporting investment in public transport services, to help reduce the size of the external cost overhang, at least until such time as that overhang is removed by pricing reform. It is noteworthy that the Vancouver Mayors' Council, in June 2014, indicated that it saw mobility pricing (pricing of all modes of transport to reflect the full range of societal costs involved, with due allowance for adverse distributional impacts) as its preferred long-term way of funding major transit and road improvements (Mayors Council 2014). Translink (2013b) argues that this funding model meets criteria of fairness, efficiency and revenue raising potential.

Prior to any widespread implementation of distance-based charging, the external cost overhang of road use is supportive of the recent Federal Government decision to resume indexation of fuel tax, a position strongly supported by BIC. The forward estimates indicate that this indexation will raise \$2.2b over four years.<sup>7</sup> Rather than being used to increase spending on roads, where there is already a revenue shortfall against road costs and a huge shortfall against all the external costs of road use, this increased revenue stream should be fully hypothecated to improve public transport services. This will directly contribute to reducing the external cost overhang of road use and, in so doing, deliver national economic productivity, social and environmental benefits.

A portion of the current fuel excise rate of 38.143c/L should also be devoted to improving public transport, for the same reasons. This could be achieved for bus, for example, by hypothecating the road use charge (part of the excise payment) of 26c/L that is paid by buses, for the purposes of improving bus services. This could include upgrading roads to provide bus priority. BIC estimates that this would mean about \$200m available annually to improve bus services (part of which would relate to route bus operation in the major cities), together with allocations from the increased indexation revenue stream. Using such revenue to improve trunk and local urban route

bus services would deliver significant savings in road congestion costs and substantial social inclusion benefits.

Stanley and Hensher (2011b) argued that the Federal Government should go much further and progressively increase fuel excise until it is 14c/L above the 38.143c/L level, to create a proxy charge for the external costs of road use. This would raise about \$A5b annually. If the full proposed 14c/L increase is achieved over time, then a major part of this revenue gain should be used to help fund and improve public transport services, until such time as comprehensive road pricing reform (mass, distance, location based road user charging) is implemented. At that time the fuel tax should be removed and public transport assistance arrangements reviewed, recognising (1) the need to continue supporting social safety net services and (2) the continuing wider external benefits of transit (such as agglomeration economies). These pricing reforms would enable some increase in public transport fare levels to be implemented, to improve cost recovery rates, with accompanying measures to support disadvantaged groups.

Canada provides a good example of the use of fuel taxes to fund public transport. As noted in section 4.4, the Canadian Federal Government's New Building Canada Plan includes 'Gas Tax Funding', to be passed through the Provinces to municipal authorities. This money is often used for transit. Canadian Provinces/Territories can also levy gas taxes, which can vary by region. In the Translink Vancouver operating area as at 1st July, 2012, for example, British Columbia added a 17c/L motor fuel tax dedicated to Translink,<sup>8</sup> a Province-wide 6.75c/L tax dedicated to the British Columbia Transport Financing Authority, a Province-wide 1.75c/L tax that went to general revenue and a carbon tax of 6.67c/L (Ministry of Finance 2014). The total motor fuel tax was 25.5c/L, with the carbon tax additional. There is also a 5% Province-wide HST/GST. Some 25% of Translink's revenue was from fuel tax in 2012 (\$C335m; Translink 2013a). Transit accounted for about 84% of total Translink spending on roads, bridges and transit in that year,<sup>9</sup> so the gas tax is clearly important for transit funding.

Ontario had a 14.7c/L Provincial gas tax and 13% HST/GST as at August 2013. Gas taxes are highly favoured for funding transit by Metrolinx in the Greater Toronto Hamilton Area, being seen as easy to administer, affecting road use and raising substantial revenues (Metrolinx 2008). The Metrolinx basis for the application of fuel taxes in Toronto is less about *polluter pays* than it is about recognising road users as *beneficiaries* of an effective transit system/service. Such 'benefit to road users' arguments were significant in the Metrolinx proposals to raise \$C330 million annually from an increase in the gas tax, to help fund its proposed \$C2b annual improvement projects.<sup>10</sup> This would involve an initial increase of 3c/L, going to 10c/L over ten years. Metrolinx (2013, p.9) argues:

*Drivers would be a clear beneficiary of increased transit and transportation investments, and should make direct contributions to the improvements.*

7 <http://www.abc.net.au/news/2014-06-04/will-the-fuel-excise-change-cost-families-only-40c-a-week/5457202>. Viewed 3rd July, 2014.

8 This is provided for under the South Coast British Columbia Transportation Authority Act.

9 Costs include operations plus depreciation and interest but exclude corporate costs. The latter can presumably be reasonably apportioned according to the direct modal expenditure shares, which reinforces the proportion cited.

10 A proposed one percentage point increase in the HST, the largest proposed funding source (~65%) for the Metrolinx Big Move initiatives, would also raise additional money from fuel use.

For example, in the absence of transit services, road congestion (in particular) would be considerably worse, given the shape of road traffic speed/flow curves. With an average commute time of 82 minutes already in Toronto, it is very clear that transit delivers huge benefits in terms of congestion mitigation and this is also true in Australian cities. For example, Stopher and Stanley (2014, pp 113-114) show that marginal arterial road travel time costs at a volume-capacity ratio of about one are \$1.86/mile, or about \$1.10/km. Fuel and pollution costs increase this cost. A peak bus carrying 50 passengers would thus lower road travel time (congestion) costs alone by about \$55/km.

Thus, in Canada, gas tax funding to support transit might come from the Federal (for funding capital) or Provincial governments (for capital and operating), an opportunity that is not available in Australia. However, in Australia, the Commonwealth currently collects far more from road users than it spends on roads. States and Territories are in the reverse position, spending much more than they collect in revenue. Moran (2014) has suggested that reducing the current degree of vertical fiscal imbalance, and better aligning governmental revenue raising capability with expenditure responsibilities, would be assisted if the Commonwealth returned its 'road surplus' from excise to the states and territories, to support their spending on roads and, by extension, to other transport modes. This includes greater recognition of fuel tax as a specific charge for road use and revenue hypothecation. If this was to be accompanied by an increase in fuel taxes (via indexation plus better aligning tax rates with external costs) and hypothecation of a specific part of the fuel tax to public transport, this could provide a significant transit funding boost, while providing price signals that encourage more efficient resource allocation.

### 5.3 Road tolls

By road tolls here we mean charges that are levied for travel on some particular roads or sections of roads (e.g. lanes), rather than the more generic road pricing discussed in section 5.2. For example, seven bridges in San Francisco have tolls levied and one has a congestion charge; tolls levied on bridges in New York go to the MTA. Toll roads could be levied on congested freeways, to reduce traffic volumes and cut congestion costs. Some freeways in the US have HOT lanes (high occupancy toll lanes), where single occupant vehicles can pay a toll for use of a lane that is otherwise restricted to high occupancy vehicles (that travel free). Toll roads of such types can, if desired, be used to help pay for public transport, on a beneficiary pays basis.

Aecom KPMG (2013, p. 113) note:

*HOT lanes are the only revenue tool which can practically guarantee trip time reliability and provide travel time savings for drivers willing to pay for these benefits, while leaving all road users the option not to pay and to travel on the free lanes instead. In other words, HOT lanes are the only revenue tool which improves the choices available to road users without imposing any charges – i.e. the charge is optional.*

Metrolinx (2013) has proposed HOT lanes for improving the efficient allocation of scarce highway capacity (on the '400' roads) in Toronto and to raise revenue that can be used to support transport system improvements, including public

transport improvements. However, the amounts likely to be raised by such measures are relatively small, relative to the costs of implementation (significant capital costs), suggesting that HOT lanes are unlikely to be significant opportunities for funding improved public transport services, even though they are effective ways of improving the efficient use of scarce freeway capacity. Revenue generation is usually a secondary objective to the provision of opportunities to avoid congestion. Implementation of a number of pilot HOT lanes on the congested freeway network, however, might be one part of an effective transitional strategy towards broader road pricing reform in Australia.

In terms of tolling an existing congested (free) freeway to help fund transit improvements, a *beneficiary pays* argument could be used (for example) to argue for tolling Melbourne's Eastern Freeway to help build the proposed adjacent Doncaster Railway, recognising that the existence of such a rail service would reduce congestion levels on the Eastern Freeway and improve the reliability of road travel times. Tolling of all traffic on an existing congested freeway would be a much bigger net revenue generator than HOT lanes but would be politically more difficult to implement, given likely community reaction to tolling a hitherto free link. Broader road pricing reform seems likely to be a preferred medium term direction.

An example of a jurisdiction that incorporates some tolling for roads and then uses part of the revenue thus raised to support public transport is Oslo, where cordon-based congestion charging has been implemented. A significant share of the Oslo car toll revenue (about 60% according to ITF 2013) is allocated to public transport, for the purposes of helping to meet both operating and capital costs. In 2012, for example, about 70% of the investment spending on local public transport in Oslo was from this source (EUR127m, in a total capital budget of EUR184m), as was about 10% of operating costs. However, the successful implementation of cordon tolling in Oslo and cordon and area-based congestion charging respectively in Stockholm and London, owes much to the favourable geography of the implementation areas, which is generally less favourable in Australian cities.

### 5.4 Carbon taxes

Land transport is a major source of Australian greenhouse gas emissions, with road transport accounting for by far the major part of these emissions. For example, private vehicle travel alone (exc. truck traffic) accounts for about 8% of Australia's total GHG emissions. If road use was priced properly, then a price would be put on carbon as part of this process and the arguments of section 5.2 would apply (as in British Columbia, as outlined in section 5.2).

In some jurisdictions where stationary energy is not strongly dependent on high GHG emitting fuels, particularly coal, the road transport *share* of GHG emissions is considerably higher than in Australia. Some such jurisdictions are looking to a price on carbon to help fund improvements to public transport. The Vancouver Mayors' Council's June 2014 transport vision, for example, asks the Province of British Columbia to direct \$C250 million of provincial carbon tax revenue collected in Metro Vancouver towards helping to cover the funding gap of \$C3.95b in its proposed \$C7.5b ten year Transportation Expansion Plan (Mayors' Council 2014). Should the province not agree to such a re-allocation, the Mayors' Council proposes increasing the

BC Carbon Tax rate to support transportation investment. In responding to this proposal, the Provincial Minister for Transport and Infrastructure (the Hon. Todd Stone) has indicated that re-allocation is not supported by the Provincial Government but that a new regional carbon tax may be an option for consideration by Metro Vancouver residents, in a referendum (British Columbia Newsroom 2014).

California has set up a cap-and-trade market system for pricing carbon and transport fuels come in to the scheme next year, increasing the available revenue stream. The California legislature has agreed (June 2014) to spending 40% of the cap-and-trade revenue on public transport, with 25% going to high speed rail, and 15% to public transport (10% for capital purposes, which cannot be spent on operations, and 5% for operations, which can be used for capital), with 10% for affordable housing and communities located close to jobs and public transport.<sup>11</sup> The total sum involved in 2014-15 is expected to be \$US870 million, growing rapidly to \$US5 billion by 2015-16, such that the public transport share is substantial. The State will pick the projects to be supported from scheme revenue.

BIC sees the recent abolition of Australia's carbon pricing scheme as a backwards step in terms of encouraging more sustainable land travel choices. In time, the restoration of some form of Australian carbon pricing is to be expected, as it becomes more common internationally. At that time, the revenue that relates to transport should be hypothecated to the state-based land transport funds proposed in Section 2 and illustrated in Figure 3.

## 5.5 Employer taxes

The most well-known employer levy to help pay for public transport is the French *versement transport*. The OECD's International Transport Forum (2013) reports, for example, that nearly 40% of public transport operating revenues in the Ile-de-France region (greater Paris) comes from this source, a dedicated transport tax levied on employers (based on gross salaries of employees in companies with nine or more employees), with fare revenues 30%, employer-reimbursed travel cards 9% and some social fare concessions 2%, accounting for another 40%, about in line with the typical Australian capital city share for the direct fare component.

The *versement* is seen as a form of *beneficiary pays* charge, because of the high levels of accessibility provided in the Paris region by public transport. Employers are beneficiaries of this accessibility, in line (for example) with the current understandings of agglomeration economies. Revenue from the charge passes through the Syndicat des Transports d'Ile de France (or STIF) to service providers (most to RATP but some also to SNCF and OPTILE<sup>12</sup>). The levy rate varies, from 2.6% in Paris down to 1.4% in four poorer departments bordering Paris, and to 0.9% in smaller urban areas. Such variability in the rate is useful from an equity perspective.

Portland Oregon covers about 25% of its public transport operational expenditure from fares but relies primarily on payroll tax (similar to the *versement*) to meet most of its

operating costs. Employers pay a portion of employee gross wages to TriMet, the principal public transport operator (\$US7.02 per \$US1000 gross wages). There is a similar requirement on self-employed people, based on earnings (ITF 2013). In 2011, for example, fares generated \$US107.7m and the payroll level \$267.4m, the latter meeting 61% of operating costs. The payroll levy is easily the major revenue source for meeting TriMet's operating expenses.

Australian State Governments are highly reliant on payroll tax revenue, this being typically their largest state tax revenue source. For example, NSW receives about \$7b annually from payroll tax (its largest state tax revenue item), Victoria about \$5b, Queensland over \$4b and South Australia about \$1.1b. Increasing payroll tax rates would be politically difficult, as would any increased charges to fund public transport or other services. However, a 3% increase in payroll tax applied in the capital city would generate (for example) \$100m+ in both NSW and Victoria, and smaller amounts in other cities. Because of the size of payroll tax revenues, only small rate increases would be needed to generate very useful revenue streams for improving public transport services (that benefit employers). This revenue measure should certainly be on the short-list of opportunities, given its revenue raising potential, the link to beneficiary pays and ease of administrative implementation (except for the political difficulty, which applies to all measures). It would not have much direct impact on travel behavior or on strategic land use considerations but spending the revenue raised by the measure could be targeted to be effective in these areas.

## 5.6 Parking levies

Parking levies are usually a government charge levied on parking spaces in defined areas, to discourage car use for travel to/from those areas and (usually more importantly) to raise revenue. A benefit of parking levies as a means of helping to fund public transport is that the charge can be argued to be one way, albeit indirect, of charging for congestion costs and other external costs caused by the vehicles that use the parking places that are subject to the charge ('through traffic' avoids any charge). It is thus a form of *polluter pays* charging.

A number of Australian states already levy parking charges and most use the revenue thus raised to help fund public transport. For example, Sydney charges \$2,210/space p.a. in the core urban area (CBD, North Sydney) and \$780 in category 2 areas (Bondi, Chatswood, Parramatta, St Leonards), raising about \$100m in 2012-13, similar to the amount raised by Melbourne in the same year. Melbourne has increased its charge rate recently and expects to receive \$122m in 2014-15.<sup>13</sup> All the Sydney parking revenue is hypothecated to a PT Fund, whereas only a small part of the Melbourne revenue is used this way. The government expects to raise \$26m in the first year. WA raises about \$35m annually from its parking levy and contributed revenue from this source towards central area bus station works.

In Canada, Metrolinx has proposed to raise \$C350 annually by a business parking levy, to help meet the estimated \$C2b annual costs of *The Big Move* infrastructure initiatives (Metrolinx 2013). This levy was to be on all

<sup>11</sup> <http://www.eenews.net/stories/1060001261>

<sup>12</sup> RATP = Regie Autonome des Transports Parisiens; SNCF = Societe Nationale des Chemins de fer; OPTILE is a grouping of 83 inter and intraurban bus operators serving the IDF region outside City of Paris (ITF 2013).

<sup>13</sup> The charge rate in 2014-15 is \$1300 in the CBD and \$950 in the extension area.

off-street non-residential parking spaces, at an average rate of 25c/day, with the actual amounts based on relative assessed values. The rationale for the levy was beneficiary pays, hence the business parking focus.

The fact that parking levies are already in existence, can be easily changed (given the political will) and have connections to both polluter pays and beneficiary pays principles are good arguments supporting this measure as a short-list candidate for helping to fund improved public transport services. The further fact that parking charges are usually confined to parking spaces in major urban nodes is also very supportive, since these are the locations on which the most dense public transport service networks are focused and in which much future urban development will be focused, requiring stronger public transport service support.

## 5.7 Property taxes

Property taxes are a major revenue source for local government in Australia and North America. With provision of public transport services being largely a municipal responsibility in North America, it is no surprise that property taxes are a major means of funding transit services. Figures 4 to 6 showed the significance of 'local funds' for meeting operating and capital costs in US and North American systems, with the shares ranging between 16% and 48%.

Translink Vancouver is in the fortunate position of having the legislative authority to levy property tax, under section 25 of the South Coast British Columbia Transportation Authority Act. This money is collected by municipalities and then passed to Translink. Property tax accounted for 21% of Translink's revenue in 2012 (Translink 2013a).

Under a more usual arrangement, the City of Toronto provides an operating subsidy to the Toronto Transit Commission, which totalled \$C389m in 2012, and \$C771m for capital purposes (TTC 2013; City of Toronto 2011). Property tax revenue is the City's single largest source of revenue, collecting \$C3.7 billion from residential and business property owners in 2012, which was 39% of its total tax-supported Operating Budget. This revenue stream is thus, indirectly, vital for the TTC. Financial support from responsible host municipalities is a key way that property tax revenue benefits transit operations and capital requirements in North America.

MetroTransit in Halifax Nova Scotia, the transit agency of the Halifax Regional Municipality (HRM), uses an interesting approach to property taxation, through its area rate taxation (Robar 2014). Two separate property levies are raised to help fund conventional transit:<sup>14</sup>

1. a regional transportation rate of 5.1c/\$C100 of residential assessment, which is for transit services that are more regional in nature, with an average household cost of \$C106 a year. 97% of HRM residences are covered by this charge
2. a local transit rate of 10.5c/\$C100, with an average residential cost of \$C220, paid by residential properties within a 1km walk of a local transit route.

The levies are shown separately from the General Rate on the householder's bill and, in total, are a little under a quarter

of the size of the general rate charge for those paying both the regional and local levies. The levies have helped to align the cost of the service with the incidence of benefits from the service, while providing increased funding predictability, stability and transparency. Council essentially makes two separate rating decisions: the general rate and the transit rates, with the latter decision linked to current and future system planning requirements and to consideration of alternative options for meeting such funding requirements (e.g. increase the property rates, increase fares, etc). Ratepayers can clearly see what they are paying for the transit services. This approach has many desirable features.

The incremental growth in municipal revenue that follows many major transport infrastructure upgrades is used in parts of the US as the revenue foundation for Tax Increment Financing, as discussed in Section 5.9.

## 5.8 Sales taxes

The High Court interpretation of section 90 of the Constitution has prevented Australia's states from imposing any form of sales tax (excise) on goods. However, this revenue measure is a significant source of funding for public transport in the US and Canada. Metrolinx (2013), for example, proposed that 65% of the \$C2b annual funding needed to implement its proposed *Big Move* initiatives should come from a Harmonised Sales Tax, by increasing this tax by one percentage point. A 'mobility tax credit' was proposed to help ensure that this did not disproportionately burden lower income groups. The idea of an explicit regional sales tax for this purpose was supported by the business-focused Toronto Board of Trade, recognising that congestion was already costing the city \$C6b annually.

In the US many areas use sales tax to help fund public transport. Measure R, passed in 2008 in Los Angeles, for example, is intended to help deliver a 30 year public transport improvement program in 10 years, with \$US14b of transit projects underway. A 0.5% sales tax will raise \$US36b over 30 years, with 65% to be used for transit capital and operations, 20% for highway capital and 15% for local government priorities. This was the third sales tax measure passed in LA for transit.

The Metropolitan Atlanta Rapid Transit Authority lost a measure in 2012 to impose a 1% sales tax for transit. The measure was made state wide by the legislature and was subsequently imposed in three districts where the referendum passed but the referendum failed in Atlanta. Conversely, the Denver Regional Transportation District recently benefitted from a 0.4% sales tax increase for transit purposes.

These examples illustrate that sales tax is used in some North American cities to help fund transit, particularly on the capital side. The main benefit of this measure is its *revenue-raising potential*. Arguments that try to link sales tax to beneficiaries paying seem pretty weak. There is little direct connection between paying sales tax and benefiting from transit, other than that most people pay sales tax and most people will benefit in some way from transit. This is hardly a demonstration of beneficiary pays! If Australian states were able to raise sales taxes, this measure would be seen as a low priority for funding public transport.

<sup>14</sup> As distinct from specialized transit services.

**Table 1: Examples of value capture mechanisms**

Beneficiaries	Measurement of benefit	Financial measure
Landowners	Land value growth	Land value taxes or metropolitan improvement levy
	Property tax growth	Tax increment financing
	Assessed special benefits	Special assessments
Developers	Off-site development opportunities	Development impact fees
	Off-site access benefits	Negotiated exactions
	Development privileges	Joint development
	On-site development opportunities	Air rights

Source: Based on part of Centre for Transportation Studies (2009), Table 1.

## 5.9 Value capture

The link between transport and land use is partly reflected in land prices, where accessibility is an important linking component. Value capture mechanisms are, therefore, an important potential opportunity for funding transport infrastructure, seeking to recover part of the value uplift attributable to the initiative in question. Value capture essentially involves payments by non-user beneficiaries (e.g. landowners), reflecting the principle of ‘the beneficiary pays’ rather than ‘user pays’. Table 1 illustrates a range of value capture mechanisms that may be relevant to transit, where landowners or developers are the beneficiaries.

### Metropolitan improvement levy<sup>15</sup>

A metropolitan improvement levy is, in effect, a specific purpose property tax, imposed city-wide to help pay for particular types of initiatives. In an Australian setting this might be a broad-based charge levied by the state government, collected by councils, related to all properties in a large area, set at a relatively low rate and used to fund specific government services, in this case transit. It might be levied on a flat rate per property basis or as a proportion of property value, and the rate could vary depending on access distance to transit (as in Halifax, Nova Scotia). The advantage of a value-based charge, rather than a flat rate, is that it implies more of an element of value capture (linked more to benefits received as property prices change in response to infrastructure improvements) and is not as regressive as a flat levy.

Such charges are already used in Australia. Victoria, for example, currently raises about \$150m annually via a Metropolitan Improvement Levy, which funds parks, and Western Australia has a Metropolitan Region Improvement Tax, which is used for a similar purposes. The Gold Coast City Council levies an annual transport improvement charge (\$111 in 2013-14), which funds Council cabs, bus stops, bicycle and pedestrian pathways, rapid transport and improvements to local roads, as well as expanded bus services across the city.<sup>16</sup> The Gold Coast charge was budgeted to raise \$27m in 2013-14. This revenue

source has helped to fund Council’s contribution to the Gold Coast Rapid Transit (Light Rail) project.

A metropolitan improvement levy could be used, for example, to help fund PT service costs in underserved, growing suburbs, on the argument that there are both direct user benefits (including social inclusion benefits), ‘option benefits’ (essentially insurance benefits, to those who might possibly need to, or wish to, use the service at some future time = a form of beneficiary pays) and reduced external costs of road use from the availability of such services. At an average value of \$200/property, the 1.7-1.8m or so private dwellings in Melbourne and Sydney (for example) would generate an additional ~\$340-360m revenue in each city. With additional revenue collected from non-residential property, this could fund a huge boost in outer/middle urban bus services, including new Bus Rapid Transit facilities. The redistribution of revenue raised from inner to outer areas implied in this arrangement would have equity benefits, since most public transport service benefits currently accrue to inner/middle urban residents, where the services are most heavily concentrated.

### Tax Increment Financing

Tax increment financing (TIF) is widely used in the US and can now be used by local government in the UK to help drive local investment and economic growth. In essence, TIF allows a (usually) local government to borrow against predicted growth in locally sourced (property based) revenues in a defined area, to help fund activities that will drive that growth. TIF has been used for fifty years in the US to fund a range of infrastructure and development projects, with almost every US state having passed relevant enabling legislation. Bonds are usually issued to provide the necessary upfront funds for infrastructure/urban renewal initiatives, additional annual local tax (rate) revenues being used to meet interest and principal repayments. TIF is particularly suited to an urban renewal context. TIF might also be relevant at state jurisdictional level, where the incremental revenues could be state property related taxes (primarily land tax and stamp duty), and at national level, where income and corporate tax revenues (for example) might increase from growth (as mentioned in Section 1, relating to the work of Brain et al. 2014).

A key issue in relation to TIF as a possible funding source is the extent to which the infrastructure programs being financed lead to a net increase in development-related

<sup>15</sup> The Committee for Melbourne (nd) calls this a Broad-based Transport Improvement Levy.

<sup>16</sup> <http://www.goldcoast.qld.gov.au/council/about-your-rate-notice-630.html>. Viewed 2nd July 2014.

revenues to the sponsoring government, as distinct from simply diverting revenue from one area to another (even within the same municipality). US evidence on this account is mixed, Dye and Merriman (2008), for example, finding little evidence that TIF actually led to net new development in a Chicago area case study.

A recent example of TIF application is the Enterprise Zone TIF associated with London's Battersea and Northern Line Extension. A third of the cost is to be met by developer contributions and the rest by borrowing against future rate income in an Enterprise Zone. Increased future rate revenue will be used to pay down debt, with a borrowing capacity of £1b against this revenue stream.

In the US, the City of Chicago (for example) has a large number of TIF districts, with funds used for purposes such as to build and repair roads and infrastructure, clean polluted land and put vacant properties back to productive use, often in conjunction with private development projects.<sup>17</sup> In Dallas, Texas, the City has established a Transit Oriented Development TIF District, with a 30 year life associated with station area development, for the Dallas Area Rapid Transit project. This has an estimated \$US185m cumulative revenue potential for public projects.<sup>18</sup> At a national level, the UK City Deals can be seen as a form of TIF, since they link city funding support to expected growth in regional GDP and associated revenues ('Earn Back' is a new payment by results model that provides an incentive for a city to invest in growth, in return for a share of the national tax take).<sup>19</sup>

## Special assessments and negotiated exactions

Special assessments impose charges on property close to a new facility, with the charges only being raised for those properties that receive a special (identifiable) benefit from the public improvement, such as a new transport facility. Committee for Melbourne (nd) uses the generic description of Benefitted Area Levy for this type of funding source. For example, Melbourne's Regional Rail Link and Sydney's North West Rail project will benefit properties located adjacent to proposed stations. Some value capture in relation to such properties may also be pursued through means such as air rights development or joint development projects, as discussed below, but all properties that will clearly gain could be subject to a special assessment, to value capture part of the relevant uplift. This approach is widely used across the United States, typically for local infrastructure improvement projects. An early Australian example of this approach was the 1963 Melbourne Underground Rail Levy, imposed by City of Melbourne<sup>20</sup> to help pay its share of the underground rail loop costs (ending in 1995). The approach has much in common with TIF arrangements in the fundamentals.

Negotiated exactions might cover similar types of costs to a development impact fee but are subject to negotiation, rather than being the outcome of a formulaic process. They may be

in-kind contributions (e.g. of open space), instead of money.

An interesting example of this type of approach is Portland Oregon, where in 2001 businesses decided, in effect, to tax themselves to develop a light rail project. They formed a Local Improvement District and decided to raise \$US10m out of the \$US60m project cost, agreeing to get the government to tax them to help pay for the project. The project has been very successful, driving \$US5b worth of private development.

A well-known example is the London Crossrail 1 project, which will increase London's rail capacity by 8-10% and is due to open in 2018. It will link shopping districts of the West End with financial districts of the City of London, Canary Wharf and Heathrow Airport. Funding is basically 1/3 from central government, 1/3 from fare payers and 1/3 from business. The business contributions will come from a Business Rates Supplement (BRS), which will raise £4.1b, and from developer contributions, raising a further £1.1b (of which £0.3b is in the form of a new development tax called a Community Infrastructure Levy, or CIL).

The BRS is a levy of 2% on non-domestic properties with a rateable value of over £55,000 in London. The London business community pushed hard for the project and is being seen as a beneficiary that should contribute towards the cost. Less than one in five of London's business and other non domestic premises are liable to pay the Crossrail BRS. The money is collected on behalf of the Greater London Authority by the 32 London boroughs and the City of London Corporation on the same bills as general business rates, as with the property tax levied in Halifax Nova Scotia (discussed in section 5.7).

The CIL is charged per square metre (at varying rates, depending on property value) on new development likely to add to, or create, congestion on London's rail network that Crossrail is intended to mitigate. This will be through planning obligations, in accordance with relevant legislation and policy guidance.<sup>21</sup> Both residential and commercial properties are included, the charge representing about 1% of finished value. It has been suggested that Crossrail will increase the value of commercial buildings near stations by 10% above already rising prices. Residential values near stations are expected to increase by 25% in London and 20% in the suburbs (Ware 2014).

Stage One of the Gold Coast light rail project is jointly funded by Gold Coast City Council, the Queensland Government and the Australian Government. This is the first time any public transport project in Australia has been jointly funded by all three levels of government, although this approach is common in Canada. As noted above, Gold Coast Council's transport improvement levy helps to fund Council's contribution (\$120m) to this project. Such projects may also provide revenue capture opportunities for governments if they own land that achieves realisable value uplift from the project(s) in question. The ACT Government is also considering a possible levy, for funding light rail in Canberra.

The Gold Coast example raises an important question: should all ratepayers contribute or only those who live near the new facility and are most likely to benefit from its development? The idea of scaling the level of impost based on proximity adds administrative complexity but would accord with ideas

17 <http://www.cityofchicago.org/city/en/depts/dcd/provdrs/tif.html>. Viewed 2nd July, 2014.

18 [http://www.dallas-ecodev.org/wp-content/uploads/2012/04/TOD\\_TIF\\_plan.pdf](http://www.dallas-ecodev.org/wp-content/uploads/2012/04/TOD_TIF_plan.pdf). Viewed 2nd July, 2014.

19 [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/221009/Guide-to-City-Deals-wave-1.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/221009/Guide-to-City-Deals-wave-1.pdf). Viewed 2nd July, 2014).

20 And administered by the current author's (late) father for many years, as City Treasurer!

21 [https://www.london.gov.uk/sites/default/files/SPG-planning-obligations-Crossrail-CIL-draft\\_0.pdf](https://www.london.gov.uk/sites/default/files/SPG-planning-obligations-Crossrail-CIL-draft_0.pdf)

of fairness. If a low level metropolitan improvement levy was implemented as a way of raising revenue to support public transport, linking the rate of the levy to the broad availability of local public transport service would seem fair, even if only two or three levy rates were adopted. 'Option benefits' and benefits to road users suggest a very low rate everywhere in a city, with higher rates closer to new facilities and in areas with higher service provision. The Halifax local transit rate, discussed in section 5.7, is broadly along these lines.

An interesting variant of the value capture approach is the sale of 'naming rights' to a major public transport project. Such opportunities will be limited but Cleveland, for example, sold the naming rights to a Rapid Transit Corridor to specialist health services providers that grew up along the route, which is now called 'Healthline'. Clustering benefits are likely to be enhanced for the health service providers as a result of this branding, which was part of the value capture process along the Euclid Avenue corridor. All such opportunities should be explored as part of a systematic approach to value capture.

## Development impact fees (aka developer contributions)

Development impact fees are one-time charges levied on new development. They are commonly used internationally and in Australia (e.g. for greenfields development and major projects such as Docklands) and are mainly levied on new development, to help recover costs of public infrastructure/services, growth-related public service costs, such as new rail level crossings (if a development creates a need for such a facility), parks/open space and perhaps local public transport. These charges have some similarities to negotiated exactions but differ insofar as development impact fees are usually determined by formula, related to a proportion of expected public service costs attributable to a level of new development, rather than through the negotiation processes typically used with negotiated exactions.

Equitably levying developer charges on a consistent basis across all new urban development is appropriate, including infill, particularly with infill being expected to play a bigger role in most cities. A difficulty, however, arises with the relatively high price of infill development, compared to development on the fringe. Any additional imposts on infill are likely to slow the necessary rate of infill development somewhat, unless ways are found to substantially lower the costs of such infill (e.g. by reducing on-site car parking requirements, introducing lower cost production techniques, etc). Development rights may be an opportunity in this regard, developer charges being linked (for example) to density bonuses.

## Joint development

In a transport context, joint development refers to the development of a transport facility and adjacent private real estate, often based around a railway station where higher density development might accompany station re-development (e.g. transit oriented development). In an Australian setting, this might involve a partnership between a public land development agency or transport authority, and a private sector developer. There are a number of possible joint development models, with varying

equity, risk allocation and revenue/cost treatments. Joint development may include air rights development, such as above a railway station. It is noteworthy, however, that WMATA (Washington Area Metropolitan Transit Authority), which has been active in this area in the US for decades, has reported only \$150M in value captured through joint development activities over approximately 15 years (Aecom KPMG 2013). Such proposals are, therefore, unlikely to generate sufficient funding to facilitate much investment/service development beyond those covered by the particular joint development arrangements. This measure is not taken forward to the conclusions section, therefore, because of the likely particularity of its relevance.

## Air rights

Major new transport projects, or urban development projects, may add value to the space above (or below) a transport facility. For example, air rights above Wurundjeri Way in Docklands (Melbourne) were part of a development proposal before the market for bidding in early 2012. Air rights agreements establish the right to develop above (or below) a facility, in exchange for a financial contribution or future additional property and/or income taxes (depending on jurisdictional income raising opportunities). Revenue from such an initiative may be used for a range of public purposes, such as place making, but is most likely to be retained within the development site.

In Australian cities, development above railway stations usually has a high cost for podium development, relative to surrounding land prices. This typically means high density development will be needed to establish a financially feasible opportunity. As with joint development, the particularity of this measure means it is not taken forward to the conclusions section.

## 5.10. Conclusions on measures

Table 2 presents the author's broad assessment (by category) of various measures against the assessment criteria outlined in Section 3.

**Table 2: Indicative assessment of funding measures**

Measure	Assessment criteria							
	Net revenue raising potential*	Stability and predictability	Equity (horizontal/vertical)**	Travel behaviour impacts	Strategic development impacts	Public acceptability	Ease of implementation and flexibility	Accountability & transparency
Fare increases	L	H	M/L	-	Low		Yes	H
Fuel tax/road pricing	H	M	L/L	++	++		Yes/No	M-H
Road tolls	M	H	M/M	+	+		**	H
Carbon taxes	M	H	H/M	+	+		Yes	L
Employer taxes	H	H	H/H	Low	**		Yes	**
Parking levies	M-H	H	H/M	+	+	?	Yes	**
Property Taxes	H	H	H/M	Low	Low		Yes	**
Value capture								
Metro Imp. Levy	M-H	H	H/M	Low	Low		Yes	**
Tax Increment Financing	M	M	H/H	Low	+		**	M
Special Assessments	H	H	H/H	Low	+		**	H
Developer levies	L	H	H/M	Low	**		Yes	M

Notes: \* Revenue raising potential, net of implementation and operational costs= potential to raise money that can be used widely for public transport in Sydney and Melbourne; >\$300m pa = H; \$100-300m pa = M; < \$100m pa = L; \*\* Signifies that the impact will depend substantially on how the measure is shaped and implemented, which is true to a large part with all measures and all impact categories. \*\*\* H signifies little equity concern; and L signifies serious concerns.

Public acceptability has been shown as a big question mark for all measures in the current political environment. However, opinion polling by ITLS suggests that the electorate will wear increased taxes/charges for improved public transport services **if there is a clear line of sight between the tax/charge and its use.**

The measures assessed in table 2 generally fall in to four types:

1. broad measures that are good at raising revenue, with some positive *beneficiary pays* characteristics, that should be technically easy to implement, do not raise major equity concerns and are relatively transparent (e.g. property taxes; employer levies; metropolitan improvement levy). These measures have a lot going for them as ways of funding improved public transport
2. measures that mainly target road users (*polluter pays/ user pays*) and, over time, have the potential to raise substantial sums because there are large numbers of road users and the external costs of road use are high. Equity concerns will be significant, indicating the need for programs to deal with these concerns.

Implementation costs for some measures (e.g. road pricing reform) are likely to be high but trials should be implemented to help establish pathways to improve resource allocation signals, because the long term benefits are substantial (e.g. HOT lanes; fuel taxes; carbon taxes; road tolls; road pricing reform)

3. measures that are purpose specific and can, in some cases, raise substantial sums for particular place-based initiatives, which will primarily be major initiatives like metros, LRT and BRT. Equity is unlikely to be a major issue, because of opportunities for targeting and value capture, and implementation can usually draw on successful examples (e.g. special assessments and, to a lesser extent, TIF and developer charges)
4. measures that have some revenue raising potential but some serious issues, for reasons such as equity and/or undesirable impacts on travel choices (e.g. increasing PT fares). Raising additional revenue from this source is best aligned with road pricing reform and with improved public transport services, including niche services that can command higher fares.

## 6. Conclusions

There is a strong case for improving public transport services in Australian cities and ITLS opinion surveying has consistently shown strong support for such improvements.<sup>22</sup> These improved services will include, for example, increasing the capacity of rail services to central business districts in some cities, improving tram/light rail services in inner suburbs, providing Bus Rapid Transit services in higher density corridors that lack rail, providing increased frequencies and operating hours for route bus services, particularly in middle and outer suburbs in the largest cities and across the entire area of medium and smaller cities.

Public benchmarking of public transport system performance would assist the process of identifying opportunities and priorities for improvement and increase accountability for performance. To this end, BITRE should publish, on an annual basis, a wide range of public transport performance indicators, to better inform system comparisons both nationally and internationally. Australia lags well behind Canada and the US in this area.

Increased funding to pay for such services can be achieved in a number of ways and the best result is likely to be one that uses multiple methods, to avoid large increases in any specific taxes or charges. Hypothecating funding to a **land transport fund**, to pay for specifically identified improvements or categories of improvements that are identified in integrated land use/transport plans, provides a line of sight between the charge and the benefit, which should increase support for implementation. Establishment of separate road funds, as has been suggested by the Productivity Commission (2014b), should be avoided because they are antithetical to the whole idea of **integrated approaches** to land use and transport in our cities.

Based on the analysis in this paper, the preferred public transport funding approaches that are worthy of serious consideration by all levels of government, and perhaps by the Productivity Commission and Infrastructure Australia, with considerable revenue raising potential, are:

- **fuel indexation and allocating the increase plus a part of the current fuel excise revenue to fund public transport** (hypothecated to PT), including returning the road use charge currently paid by buses (26c/L) to fund improved bus services. Within a few years this measure should see >\$300m available annually in Sydney and Melbourne. The paper has suggested, too, that the Commonwealth should return all its fuel tax revenue to the States and Territories, as part of a broader process of reducing vertical fiscal imbalance
- **increasing parking levies**, which can generate >\$100m annually in Sydney and Melbourne if the areas covered are expanded and charge rates lifted, to better reflect congestion costs and other external costs of road use
- piloting **HOT lanes** on some congested freeways (minimal revenue impact for some years but an important part of the transition to reformed road use pricing)
- in time, restoring the carbon tax and using the

part that relates to road use for improving public transport, until such time as a widespread reform of road pricing is in place. On a conservative 10mt of carbon emitted by motor vehicles in Melbourne, for example, a low carbon price of \$10/t would raise \$100m annually, with much higher sums in prospect over time, as carbon pricing becomes more established internationally

- **a low rate payroll levy**, if possible based on employer distance to public transport, with higher rates being applied to premises close to multiple modes and no charge applied to premises more than 800m from public transport. This measure is capable of raising >\$300m annually in both Sydney and Melbourne
- **a metropolitan improvement levy** at a low rate across the city, the rate increasing with PT proximity (>\$200m annually in the larger cities)
- **project specific value capture** for specific big projects, like CBD rail, light rail and BRT, with substantial revenue raising potential tied to specific projects. This should extend to Federal TIF type involvement in Cities Deals, along the lines of those currently being pursued in the UK.

This package of measures provides a contributing role for each level of government and the private sector and would result in additional funding of at least \$1 billion annually for the largest cities. It requires improved intergovernmental co-ordination of land use/transport planning processes, to deliver initiatives that have support across government and the community. In time, **reformed road user charging** (based on mass, distance and location and reflecting all the external costs of road use, i.e. not revenue neutral) should become the dominant means of funding improved public transport, as argued in BIC's *Moving people: Solutions for a liveable Australia* (Stanley 2012) and by the Mayor's Council (2014) in Vancouver.

Implementation of measures such as these needs to be seen against the backdrop of Australia's current vertical fiscal imbalance. This results in revenue dominance in Canberra and service responsibilities largely sitting with state and municipal governments. Vertical fiscal imbalance may be good for macro-economic management but it builds transactions costs into infrastructure and service planning, development and delivery processes and gives the federal government a greater influence over infrastructure priorities than would result if decisions were more closely aligned with the incidence of investment benefits and costs (instead of being so dependent on revenue raising capacity).

Increasing the revenue-raising for public transport that is undertaken by states and local government will improve the transparency and accountability of decision-making. Greater reliance on *beneficiary pays* approaches, as proposed in the current paper (user pays; value capture), will improve the alignment of revenue raising potential with benefit/cost/expenditure incidence, because revenues will flow more closely to the level of government with the relevant functional responsibility (based on primary benefit/cost incidence). However, this would still leave the Federal Government as a major beneficiary through its broad taxation powers, even if it passes all its fuel tax revenues to the States and Territories. Federal TIF funding support for infrastructure, such as public transport infrastructure, is warranted on this basis, along the lines of the UK New Cities Deals.

<sup>22</sup> In the regular TOPS surveys undertaken by ITLS, University of Sydney.



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**Tel:** +61 2 6247 5990

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**EMAIL:** [enquiries@bic.asn.au](mailto:enquiries@bic.asn.au)

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BUS INDUSTRY CONFEDERATION  
PO Box 6171, KINGSTON ACT 2604

**Tel:** +61 2 6247 5990  
**Fax:** +61 2 6273 1035

**Email:** [enquiries@bic.asn.au](mailto:enquiries@bic.asn.au)  
**Web:** [www.ozebus.com.au](http://www.ozebus.com.au)