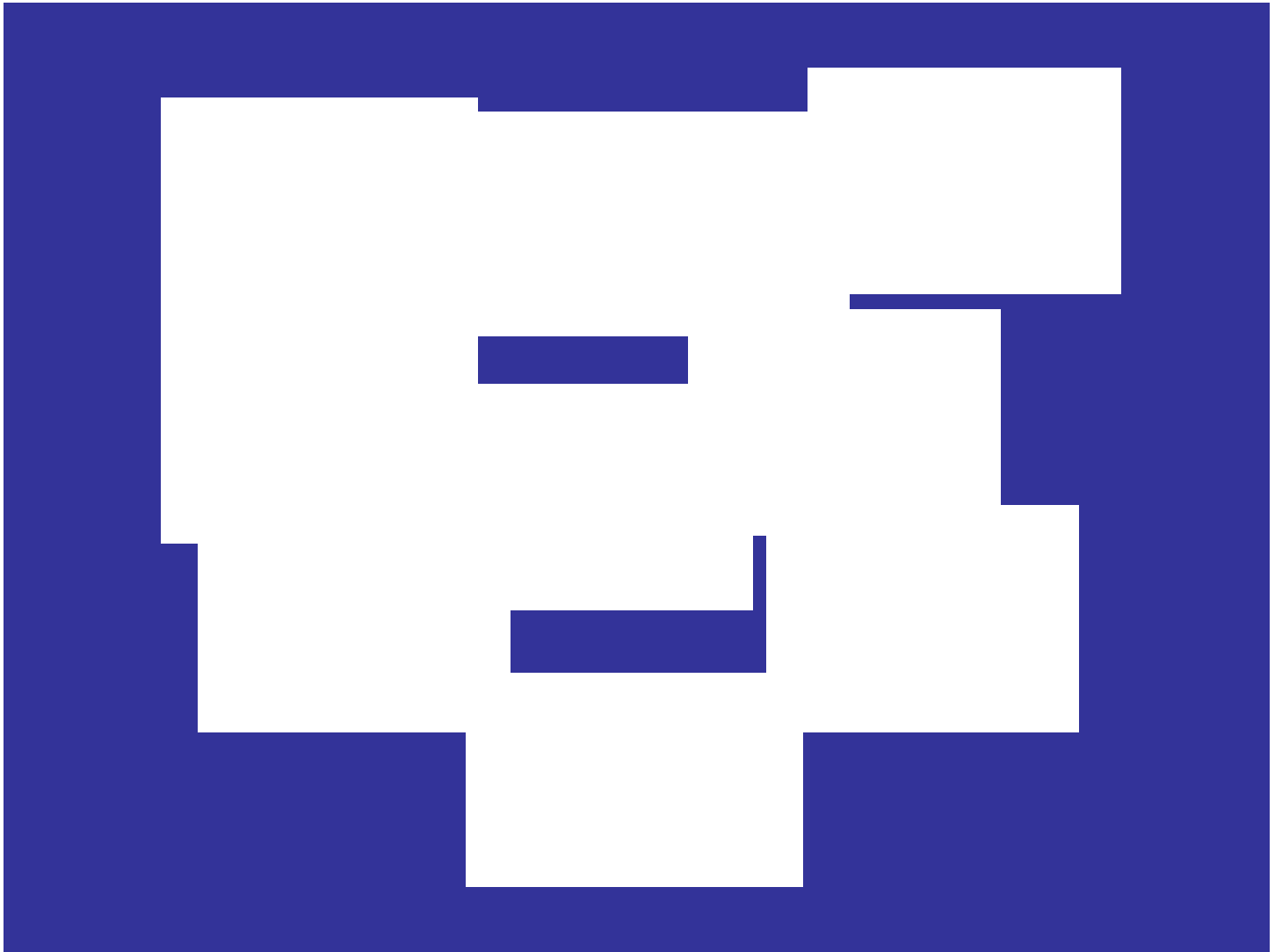


Funding public transport development through land value capture programs



By

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ABSTRACT

This paper examines the potential to raise capital for funding public transport development through the use of land value capture programs. A literature review of studies that examine examples from Australia and abroad has been undertaken to do this. Among the mechanisms considered are development land taxes, systems of property rating, taxation models and specialised loans. These are considered alongside other funding measures such as statutory charges, CBD parking levies, business rate supplements and recent international methods of congestion charging.

Pressure is mounting to devise new ways of raising capital as access to traditional revenue sources declines and governments become increasingly reluctant to increase state debt. At the same time, most governments are pursuing urban consolidation programs in Australian cities in an attempt to reduce infrastructure costs. The value of such programs is highly dependent on public transport and mass transit provision, making the search for new funding sources an imperative if adequate services are to be sustained.

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1 INTRODUCTION

This paper provides a review of the literature that examines the links between land values and transport systems, and the funding mechanisms behind various transport infrastructure projects. The rationales underpinning these mechanisms are also investigated. It has been taxpayers who have traditionally funded the development of public transport infrastructure in Australian cities, with subsequent contributions from end-users through various charges. Yet the public sector now faces significant resource challenges and a range of competing priorities for government spending.

The primary source of revenue studied here is the possibility of value capture funding. There are different mechanisms available that recoup for the government some degree of the value created through individual projects. Collectively referred to as value capture, these mechanisms include: development land taxes, systems of property rating, taxation models and specialised loans. Other funding mechanisms referred to include public debt, statutory charges, parking levies, business tax rate supplements and federal funding. Novel methods of fund raising including congestion charges are also drawn from overseas examples.

The importance of accessibility is a key determinant in understanding land use and shaping the form of cities. There is a strong connection between the available transport infrastructure and land use, which in turn impacts on land value. The factors in determining land value are diverse and include the overall planning context, yet numerous studies examined reveal the close correlation between transport facilities and increased land value.

This review has three parts. The first deals with the suggested connection between transport facilities and land value. Evidence of increases in land value associated with transport projects is analysed as well as the need for a multi-faceted approach to the question of land values. The failure of governments to recoup a portion of the additional value created through public works is identified as a significant obstacle to further government funding of significant infrastructure projects.

The second part examines the wide variety of value capture funding mechanisms used internationally and in Australia. This incorporates examples of development land taxes, property rates generally and the notion of value increment financing (which in itself incorporates different funding models). Mechanisms of joint development are also relevant in raising capital for infrastructure projects. International experience is valuable here and a variety of alternative funding mechanisms are examined. The final section of the paper deals with the opportunities and constraints imposed by various political and legal realities. This includes notions of equity (understood across different indices) and constitutional limitations on the ability of governments to act.

The contention of this paper is that the comparative advantages that public transport infrastructure gives to residential neighbourhoods, by improving accessibility, lessening congestion and reducing transport costs, make locations served by public transport more valuable than locations without it. These advantages also apply in business and are reflected in higher office rental values and business profitability along key transport corridors and around transport nodes.

In light of this private gain, mechanisms of value capture need to be fully investigated for their potential in terms of providing the start-up capital necessary for public infrastructure.

2 THE CONNECTION BETWEEN TRANSPORT AND LAND VALUE

The transportation priorities of a city will be a major factor in shaping the land-use of the city. One of the features of 20th century urban planning has been functional isolationism.¹ Land use patterns, and changes in land use morphology over time, generally follow transport infrastructure. Other factors not to be discounted include historical, economic, cultural and social issues. If land use patterns render a site more accessible to consumers in its economic, cultural and social aspects then this will be reflected in the value of land. The land-use priorities of a city will in turn influence the values attached to different property. The importance of accessibility improvements gained through transport infrastructure changes, for both residents and businesses, is a key element in the determination of land value. If property is accessible for consumers then its value will theoretically rise. The advantages of a property served by reliable transport links have many more aspects, such as user convenience, than can be comprehensively detailed here. Nevertheless, the issue of accessibility plays a key role throughout this paper.

Property is a complex asset whose value cannot be measured by one simple and comprehensive set of indicators. The need for contextual analysis regarding land value is discussed below. Areas lacking transport infrastructure generally, or where there are bottlenecks in the transport network, as is the case for many parts of Sydney, can expect to see significant effects from targeted transport investment.² This report examines evidence of changes to accessibility profiles that follow transport projects, and related land value changes, from different societies around the world. Where accessibility is more or less uniform among city residents, major public transport projects may have a reduced impact on commercial decisions about location. However, it is argued that in the auto-dependent city this ‘ubiquitous accessibility’ is illusory for residents in specific locations, especially on the fringes of the city. Residents without reliable transport alternatives can become ‘locationally disadvantaged.’

Town planning is central in identifying the connection between transport and land value. The broad purpose of town planning is to regulate the development and use of land in the public interest. Strategic town planning along transport corridors and around transport nodes can ameliorate inequality of access and improve linkages between a greater mix of transport modes and land use. Integrated land use planning will take into account, alongside transport considerations, factors of mixed land use, air quality, greenhouse gases, jobs-housing balance, sub-centre development, and the facilitation of communities through better urban design.³

¹ For a discussion of ‘The New Urbanism’ in shaping our cities see Peter Newman & Jeff Kenworthy, “The land use-transport connection: an overview,” *Land Use Policy*, vol 13, no.1, pp1-22, 1996

² Hall and Marshall (2002) as quoted in RICS Policy Unit and Office of the Deputy Prime Minister, U.K., *Land Value and Public Transport*, October 2002, p22

³ P. Newman, ‘A proposal for Restructuring the Funding of Transport in Australia’, Murdoch University, 2000, p3

2.1 Evidence of land value increase

It can be seen that land value, in general, has risen around transport nodes and corridors in the context of public transport initiatives around the world. In this paper, evidence of this phenomenon is drawn from North America, the UK and Europe, as well as from a limited number of empirical studies of Australian projects. In North America, discussed further below, studies have shown a “strong relationship” between the impact on land value and transport investment. This can range from 5-10 percent on residential values to 10-30 percent on commercial properties within the immediate transport corridor.⁴

Other studies have revealed even greater value increases. Data from the city of Dallas, Texas, from 1997 to 2001 reveals that proximity to a rail station has a positive influence on property values. Median values of residential properties increased 32.1 percent near the Dallas Area Rail Transit (“DART”) rail stations compared to 19.5 percent in the control group areas. For office buildings, the increase was 24.7 percent for the DART properties versus 11.5 percent for the non-DART properties.⁵ Data from San Diego, California, indicated similar effects with an analysis of land-value premiums.

Studies that focus on fixed-track rail projects, as opposed to motorway or busway projects, is the preferred contextual analysis for this review. This bias is due in large part to the greater availability of studies that relate to rail. Studies have found that “the single most important feature of a city which has a successful transit option ... is the significance of rail in the overall transit system.”⁶ Some studies in the UK and U.S. have, however, demonstrated great increases in land value in response to road improvements, such as road bridges, and this helps to reiterate the importance of accessibility generally to property values. Anecdotal evidence in Sydney relating to motorway development and property values also reflects this importance.⁷

In terms of the methodology employed in these studies, a range of techniques have been used, including trend-based extrapolation, modelling, accessibility mapping, qualitative surveys and growth assessments. Statistical studies have involved (multipolar) regression analysis and hedonic analysis examining effects over time. Factual studies conducted following completion of transport projects are more valuable and robust than projections made prior to the projects.

2.2 Land Valuation

There have been many studies from around the world on land value and the factors that influence it. The value of each particular site is always affected by numerous variables. An analysis of the link between transport and land value needs to bear in mind the array of competing features including, importantly, the planning context for new developments. Land

⁴ Jeremy Edge, “The impact of transport schemes of land values: what is the evidence?” *Self-financing Transport Projects Through Land Value Gains: Too Good to be True?* Conference, London, 20 May 2003

⁵ Bernard L. Weinstein & Terry L. Clower, *An assessment of the DART LRT on taxable property valuations and transit oriented development*, Dallas, September 2002

⁶ Kenworthy et al, “Indicators of Transport Efficiency in 37 Global Cities,” A Report for the World Bank, ISTP, Murdoch University (WA), February 1997, p10

⁷ R. Kumar, ‘A long road to potential riches’ *Australian Financial Review*, 16 January 2001, p21

values in Sydney have risen significantly in recent years and this paper recognises that among the factors driving this has been a shortage of housing supply and low interest rates. Numerous studies have been conducted to examine the relative increase in accessibility provided by new public transport and rail investments and its role in increasing residential and commercial property values around transport nodes.⁸ Both Australian and international examples will be used to demonstrate that significant increases in land value can be attributed to public planning and infrastructure (notably transport) decisions.

Land value movements according to infrastructure changes may not be consistent. The results of research reviewed for this paper have contained some variable results on the increases in property value associated with transport investment in different areas. The question of whether the addition of new transport infrastructure in itself creates value or whether it merely releases latent property values is not material to this paper. Indeed this relationship may be one of correlation rather than direct causation.⁹ This paper examines funding mechanisms including value capture, and as such one key to any proposal to use land value gains as a means of securing finance to support infrastructure projects will be the land valuation industry.

There is a well-established land valuation industry in NSW today. Certain of the proposals for value capture below depend on the availability of precise land valuations. The land valuation industry may not be as well developed, as it needs to be for these purposes.¹⁰ Hence, close attention needs to be given to the methodology for assessing land value, and this should include the use of new land-mapping technologies such as Geographic Information Systems (GIS).

2.3 Contextual Analysis and the dynamics of property location

Analysis of the impact a specific infrastructure project has on land value is a complex task. It is a multi-faceted question and, for each particular project, will require a many-layered approach.¹¹ It is not the contention of this paper to suggest a simple, linear relationship between transport infrastructure and property values. Town planning connected with such projects may require consideration of a range of local social, economic, cultural, political and other factors, factors that may be difficult to measure. It is also noted that the impact of infrastructure projects on a local community can change over time, and the treatment of time is critical. Changes in land value can occur before the completion of a project (i.e. in anticipation of its completion), upon such completion and the longer-term impact as the full benefits of the project are realised. The development of transport infrastructure, although often necessary to propel urban regeneration, may not in itself be sufficient to generate development.¹² In terms of the literature reviewed some research studies experienced

⁸ Roderick B. Diaz, *Impacts of Rail Transit on Property Values*, APTA Rapid Transit Conference Paper, May 1999

⁹ Howard Smith, Docklands Light Rail, "Case Study: DLR, regeneration and land value gains," *Using Land Value Gains to Finance Transport Infrastructure* Waterfront Conference, London, 12 March 2002

¹⁰ Dr Jim Whelan, "Using land value gains: philosophical and practical issues," *Self-financing Transport Projects Through Land Value Gains: Too Good to be True?* Conference, London, 20 May 2003

¹¹ For a comprehensive analysis of this subject area see Schiller, *The Dynamics of Property Location*, London, 2001

¹² Jeremy Edge, *supra* note 4

difficulties in quantifying how much development is directly caused by the project in question, relative to other planning policies or general market conditions.¹³ Nevertheless, it was found that, after controlling for other factors, useful data was collected in most studies related to the transport projects examined and conclusions were reached.

The benefits of urban light rail, for example, tend to relate to developments that can take direct advantage of it as a street-level transportation system, and a number of supporting measures need to be in place, such as the availability of attractive development sites, supportive planning policies and strong local economies.¹⁴ The benefits of a supportive planning environment can be seen in the experience of Toronto. The construction of an effective metro system there was partly due to an urban development strategy that sought to channel growth into the corridors served by the new metro system.¹⁵ This example provides a persuasive argument for zoning changes to accompany transport infrastructure improvements including changes toward both mixed land uses and higher densities.

The evidence of changing property values alongside rail transit systems is not, however, uniform. The regeneration of London's Docklands, and the associated Docklands light rail system, demonstrate the importance of contextual analysis at each stage of a project. The project clearly required good transport links, but site remediation, decontamination, schools, roads and other community services were also needed.¹⁶ The original Docklands railway of 1987 was built on a turnkey contract; the subsequent extension to Bank was part-funded by the developer of Canary Wharf who was a clearly identifiable beneficiary and was prepared to contribute. Subsequent extensions occurred but the beneficiaries were diffuse and developer contributions were not forthcoming. A key issue for consideration is that the development cycle for infrastructure and the development cycle for the property market do not regularly coincide.¹⁷

Studies from California have shown that proximity to the CalTrain commuter rail service, the Sacramento light rail system and the San Jose light rail transit system exhibit a negative relationship between proximity to the line and property values. The study suggested, however, that this negative effect may have been due to proximity to heavy industry and freeways near the light rail tracks.¹⁸ Similarly, a study of values near the East line of the Atlanta rail system showed dramatically different effects on either side of the railway line. To the north of the line lie predominantly affluent neighbourhoods, whereas to the south the areas are economically depressed. Property values in the south rose with proximity to the commuter

¹³ UK DfT, *Transport and City Competitiveness: Literature Review*

¹⁴ *ibid*;

for further investigation of the range of supportive public policies necessary for transit development see Gwen Chisholm, "Transit-Oriented Development and Joint Development in the United States: A Literature Review," *Transportation Research Board of the National Academies*, October 2002

¹⁵ Scheurer, Newman, Kenworthy, *Can Rail Pay? Light Rail Transit and Urban Redevelopment with Value Capture Funding and Joint Development Mechanisms*, Institute for Sustainability and Technology Policy, Murdoch University, 2000, ch.4

¹⁶ Howard Smith, *supra* note 9

¹⁷ *ibid*.

¹⁸ Roderick B. Diaz, *supra* note 8, p5

line whereas values in the middle-class north showed the opposite relationship; numerous other factors were in play in this example, such as fear of crime.¹⁹

This study has focussed on the potential for transport infrastructure to positively affect land values. This analysis does not ignore another side to the equation, namely the development potential that such infrastructure delivers over time. Transport infrastructure may make locations near transit more valuable as sites for potential development, or higher levels of development, thereby increasing the value of property at those locations. Property value premiums due to increases in the ability to develop or redevelop property may depend on land use and planning controls. This aspect is considered further below in the context of joint development.

2.4 Residential and Commercial property

Whether located in lower- or higher-income neighbourhoods, proximity to public transport nodes positively affects the value of single-family homes. This conclusion is based on several measures of property value such as sales prices of single-family homes, apartment rents, and median home value.²⁰ This effect is not always uniform and the need for contextual analysis is referred to below. Data indicates that single-family homes in San Francisco were worth \$3200 to \$3700 less for each mile distant from a transit station.²¹ Studies in Chicago have demonstrated that apartment properties in close proximity to train stations tend to realise higher rents and occupancy levels than similar apartments located further away.²²

It has also been found that the value of commercial properties may be significantly affected by their relative proximity to public transport nodes. For example in San Francisco the average land price per square foot for office properties decreased as distance from a rail transit station increased, from US \$74 per square foot within one-quarter mile of a station to US \$30 per square foot for more than a half-mile distant. In terms of the Light Rail system developed for Santa Clara County (U.S.), results indicate that office properties within a quarter to half mile of a light rail station command a substantial rental premium.²³ The commercial advantages of location near transport nodes are such as to result in business being prepared to pay a premium for these properties.²⁴

¹⁹ Roderick B. Diaz, *supra* note 8, p3

²⁰ Roderick B. Diaz, *supra* note 8, p1

²¹ Bay Area Rapid Transit (San Francisco), *Regional impact study commissioned by Bay Area Rapid Transit District (BART)*, July 1999

²² Gruen Gruen & Associates, *The effect of CTA and Metro stations on residential property values*, A report to the Regional Transportation Authority, Chicago, June 1997.

²³ R. Weinberger, "Commercial Rents and Transportation Improvements: Case of Santa Clara County's Light Rail", *Lincoln Institute of Land Policy – Working Paper 2000*; see also Robert Cervero and Michael Duncan "Rail Transit's Value-Added: Effects of Proximity to Light and Commuter Rail Transit on Commercial Land Values in Santa Clara County, California," National Association of REALTORS® and the Urban Land Institute, 2002

²⁴ Dave Wetzel, "The potential of using land use gains to finance transport infrastructure," 12 March 2002

Research results vary on the impact of transport investment on decisions relating to industrial location. Negative impacts of rail on property values are generally attributed to noise, visual intrusion and the association of the rail right-of-way with industrial uses. Areas in economic decline, such as Tyne and Wear in the UK as studied by Walmsley and Perret (1992), demonstrated no significant effect from the new Metro transport investment on industrial locational decisions.²⁵ The presence of a growing local economy and clear planning direction is central to positive land value changes accompanying transport improvements. The land use mix, in association with transport infrastructure, is critical in developing communities with potential for economic growth.

2.5 New projects in Sydney

As Sydney expands there is increasing pressure to develop both greenfields sites - semi-rural properties on the city's fringe - and brownfields sites - former industrial lands within the city. Development of these sites provides government and planning authorities with opportunities for leadership in the provision of transport infrastructure. The Metropolitan Strategy, released by the NSW Government in late 2004, provides that 70% of Sydney's growth be accommodated on redeveloped brownfields sites, whereas urban sprawl is to be contained with 30% of new housing development. One fact consistent throughout this future growth will be the importance of transport to land values and a healthy community in such localities.

Greenfields sites on Sydney's fringe include the extensive land releases planned for the south-west at Bringelly and north-west at Marsden Park. Transport corridors to and within these areas have been identified, in terms of both road and rail, and planning for provision of other services continues, albeit slowly. The need for adequate transport facilities is central for these areas in the provision of services but also in optimising their potential values. Principles of equity demand that the residents of these new developments not be forced into situations of near absolute car-dependency as has happened in other parts of Sydney. Hence these projects need to have adequate transport infrastructure from the outset.

A recent example of brownfields development is in the redevelopment of South Sydney in the Green Square area. Public transport (including the Airport railway line) was put in place that benefits the surrounding area. Developers of these sites did not contribute to the cost of this tremendous asset to their properties. The opportunity to recoup even a small portion of the land value gain was missed by the State Government. This mirrors the development of greater Sydney. Provision of infrastructure in new developments should not ignore the primary beneficiaries of such services, namely the landowners.

²⁵ as quoted in RICS Policy Unit and Office of the Deputy Prime Minister, U.K., *Land Value and Public Transport*, October 2002, p23

3 VALUE CAPTURE FUNDING

Value capture refers to the process by which all or a portion of increments in land value attributed to "community interventions", rather than landowner actions, are recouped by the public sector and used for public purposes. These "unearned increments" may be captured indirectly through their conversion into public revenues as taxes, fees, exactions or other fiscal means, or directly through on-site improvements to benefit the community at large.²⁶ Value capture funding is not merely one mechanism for recouping the costs of public infrastructure investments but rather should be seen as a complex of methods.

Many planners and economists, including Nobel laureate William Vickrey, have suggested that cities could benefit by funding transit system development costs and a major portion of operating costs from land taxes or value capture. Value capture may raise the taxes on land impacted by infrastructure projects and as such can serve two purposes: (i) it removes the invitation on titleholders to speculate; and (ii) it raises holding costs high enough that there is immediate reason to try to develop unused lands.²⁷ Value capture funding has been suggested as contributing towards the massive costs of the U.K's Crossrail project in London.²⁸ Value capture funding may be a way forward, with property owners contributing a portion of the infrastructure cost, yet contributions need to be equitable. From the developer and community's point of view they must be easily understandable, collectable and not constituting economic disincentives that penalise employment or development.²⁹ It is essential that land value capture mechanisms do not contradict policies seeking to encourage development at localities well served by public transport.

A substantial part of the capital costs associated with constructing public transport facilities is *land acquisition*. Railway development corporations in Japan buy land to be used in a new railway and hence are the beneficiaries of increases in value. This might entail the government as landowner in the New South Wales context; private sector participation in the NSW rail sector has a limited past. The cost of land acquisition could also be effectively reduced if the government were to capture incremental land value increases through the general property tax and through special levies on land holdings in transit corridors. There are many complexities involved in the design of these schemes and modifications may be necessary in particular circumstances. One danger is that property developers may choose to simply pass on these levies to homebuyers, yet this would only occur as far as the market allowed.

Value capture funding has also been known as 'betterment tax' in the UK and is discussed below. There may be some concerns in the collection of such taxes including that it may be difficult to disaggregate the land value increase attributable to discrete transport improvements from other improvements and other causes. It may not be clear when

²⁶ The Lincoln Institute of Land Policy, USA, www.lincolnst.edu

²⁷ H. William Batt, "Value Capture as a Policy Tool in Transportation Economics: An Exploration in Public Finance in the Tradition of Henry George," *The American Journal of Economics and Sociology*, January 2001

²⁸ Robert John, "Financing transport projects through land value gains: how do developers view this? Perspective 1" *Self-financing Transport Projects Through Land Value Gains: Too Good to be True?* Conference, London, 20 May 2003

²⁹ *ibid.*

landowners would become liable for the tax, given that the benefits of a new transport scheme may not be readily discernible at a given point in time. Arguments of inter-generational equity may also play a role in consideration of funding mechanisms for infrastructure gains and favour the use of public debt as a funding mechanism. Other issues to be considered in designing a value capture scheme include how to define the landowners to be benefitted by the scheme; arbitrariness should be avoided in any determination as to the properties to be included in a value capture scheme. A value capture or betterment scheme may also need to make provision for compensation for those adversely affected by planning decisions (the concept of 'worsenment').

These issues can, however, be avoided through innovative use of the property tax rate. There are alternatives to the straightforward imposition of betterment taxes in terms of value capture funding. In Los Angeles what are known as 'Special Assessment Districts' are used whereby a differentiated property tax rate is applied within designated areas. These feed a share of the increase in property values usually associated with a newly established rail line on sites typically within 400-800 metres of the stations back into funding the transit system. Property values prior to construction of the transport infrastructure are determined as the baseline for value increases and value capture. 'Special Assessment Districts' are an innovation whose utility needs to be fully explored in the local context, and the applicability of the system needs to be finely attuned to the city's equity and development needs. Other means of value capture are discussed below.

3.1 A brief history of value capture in Australia

There are few examples of direct value capture mechanisms employed in Australia. However, one levy, known as the ACT Change of Use Charge (the "CUC"), has existed since 1970 in various guises. The property system of the ACT involves grants of leasehold land from the Crown. When a lease is first granted, the Government is paid an amount that is based on the user rights that the lease contains at that time. If the lease is varied in such a way that its value increases, a change of use charge based on that 'added value' is payable to the Government. The purpose of the charge is to give back to the community some or all of the 'added value' of a lease (land and buildings) that results from changes to that lease. Administration of the CUC is not without problems and there have been seven revisions over the past ten years. The charge is used in relation to changes in land use zoning and is not hypothecated to transport or other infrastructure. Nevertheless, the charge is helpful in providing an example of value capture funding in Australia.

In New South Wales a 'betterment' tax was in place between 1970 and 1973. The *Land Development Contribution Act 1970* and the *Land Development Contribution Management Act 1970* imposed a levy on specified non-urban lands in the Sydney Metropolitan Region. The levy was abolished for political reasons despite it being "probably the most successful of the schemes since World War 2."³⁰ Fensham and Gleeson note that this system was "administratively straightforward, provided worthwhile revenues at a reasonable collection cost ... and had a nexus to promised public works."³¹ In a 'sellers market' the levy did increase purchase prices but its abolition did not lead to a fall in prices. The levy did not provide all the necessary funds for public infrastructure that were needed.

³⁰ R.W. Archer (1976) as quoted in Fensham & Gleeson, *Capturing Value for Urban Management: a New Agenda for Betterment*, University of Western Sydney, April 2002

³¹ *ibid.* at 16

Alternative funding mechanisms, including value capture funding and joint development, have been examined in relation to construction of the Fremantle-Cockburn light rail link in Western Australia.³² This was in the context of urban/coastal redevelopment and further emphasised the importance of integrated and supportive planning mechanisms. The research incorporated several mechanisms of value capture including one-off impact fees and Value Increment Financing (see below).

3.2 Development Land Tax

A Development Land Tax or levy, charged against the developers of land in Sydney recently re-zoned residential, is one idea for a value capture mechanism in New South Wales. Developers of formerly non-residential land are presently expected to contribute towards some of the necessary infrastructure such as drainage and community facilities (as s94 contributions in NSW). However, when the government constructs transport links, including road and rail, the developer benefits as his/her property values rise significantly. This paper argues that any levy paid by local landowners to fund transport improvements will be returned to them over the years in the form of increased land value. There needs to be a tax or charge capable of recouping this community-generated benefit, and yet there is an issue of social equity in expecting new landowners to meet the bill not charged against other owners who are fortunate to live in already-established suburbs. The key to the introduction of any such mechanism would be detailed negotiations with all affected landowners and clear hypothecation of funds to services benefiting that location.

A development land tax was introduced and repealed on three occasions within 30 years in the UK. In 1947, 1967 and 1976 Labour governments introduced such a tax but this has failed on each occasion, as developers have not developed their land to its full potential. The tax is inefficient and developers have been able to wait for an incoming government to abolish the tax; this has been the outcome on each occasion through new Conservative governments. It is not unfair that new developers be asked to contribute towards infrastructure, but where to do so would impose new charges that other developers, earlier in time, have not been required to pay would lead to claims of inequity. This has led to arguments for a recurrent tax on annual land values to capture a portion of rental value increases.³³ This claim bears similarity to arguments for land value taxation as the basis of a new tax system and as such is beyond the scope of this paper. Nevertheless, in its more modest form this recurrent tax deserves close examination. It is again noted that specific land parcels and values will not always be benefited by transport policy. Hence, a recurrent form of land value taxation, which treats properties whose value is appreciating at a slower rate more leniently, may be more appropriate.

Some proponents of value capture charges, hypothecated towards the construction of public transport infrastructure, favour a levy on existing landowners. This may be in the form of a one-off or a recurrent charge and could be targeted to the landowners of a specific area if necessary. The charge should be on the unimproved value of land; i.e. enhancements the results of human activity are to be disregarded. This would prevent the charge from acting as a disincentive to economic activity such as improvements to buildings. Annual valuations are

³² Scheurer et al, *supra* note 13, appendix, section 3

³³ Dave Wetzel, "The potential of using land use gains to finance transport infrastructure."

necessary yet this is not beyond the capability of modern land valuation experts (see above). Whether the charge should be targeted at smaller areas (eg landowners in transport corridors expected to benefit from new infrastructure) or a larger area (landowners in the Sydney metropolitan area, irrespective of existing transport infrastructure), as discussed above, is a question for political resolution. A *combination* of a modest charge laid upon all landowners in greater Sydney and the value capture levy on specific landowners may be appropriate. The unjust enrichment of landowners who have benefited from recent infrastructure gains, such as those in the Green Square re-development, and not been subject to appropriate tax measures is behind this view. The charge should also be aimed at all land including residential, commercial and industrial properties. Equity must play a large role in the development of such a mechanism.

A US variation on this method is to collect a once-only 'Impact Fee'. This occurs where a local government declares a development area and then collects a one-off payment from the developers.³⁴

An alternative to such charges may be in revising the existing Capital Gains Tax exemption for the sale of residential property. It is noted, however, that this tax is a Federal tax and the State of NSW may only have access to these funds through negotiation with the Commonwealth. Examination of Federal-State financial arrangements is beyond the scope of this paper except as discussed below in the context of AUSLINK funding.

3.3 Value Increment Financing

Another method employed in the US to fund transport infrastructure improvements is Tax Increment Financing (TIF), known in Australia as Value Increment Financing (VIF). There are different mechanisms included under this heading. VIF applies to property within station districts and can act much like a government-subsidised loan to a private developer. VIF promotes a greater efficiency from public investment in infrastructure by creating an incentive to locate where infrastructure capacity exists (i.e. around rail stations) thereby creating overall savings on infrastructure investment over time.³⁵

One means of transport financing through TIF schemes in the US is where local governments agree with the private developer that they will not tax that developer for 20 years because the community will end up healthier because of the private investment. The Australian alternative developed by Scheurer, Newman and Kenworthy is a modification of this whereby the State government assesses the value of the new development in the station district area. That value may be the savings promoted by a more efficient infrastructure investment strategy. The State government, calculating the incremental value added by the new development, loans the developer that incremental value, which is to be repaid over ten years or more at a low interest rate.³⁶ This is in effect a new form of public-private partnership. It is a form of reallocating taxes so that the tax does not go back into general revenue but is effectively hypothecated for the designated area(s).

³⁴ Dai Nakagawa & Ryon Matsunaka, *Funding Transport Systems – A Comparison among Developed Countries*, Pergamon, 1997, p22

³⁵ Scheurer et al, *supra* note 15, appendix, section 3

³⁶ *Ibid.*

Another VIF method that can be used is using an initial stream of payments originating out of modified rate payments as part of the scheme. This can then be used in order to secure loans for the construction period. This is similar to the raising of public debt with which all governments are familiar. Another alternative is to allow the private developer to securitise a private loan on the basis of these expected public monies. The authority can, in the alternative, float bonds for the total amount of the redevelopment and dedicate the expected tax increments to pay the debt service.³⁷

The VIF funding method does not place an additional tax burden on businesses. It is a flexible tool; the revenue can be used to secure a loan, or to encourage an up-front investment or a pay-as-you-go development initiative in the area. Furthermore once a project in an area has been completed the VIF mechanism can be dissolved, it need not be an ongoing process. Professor Lloyd of the University of Dundee, Eire, in his comparative study of the U.S. and Irish experiences and relating them to the U.K., cautions about the need for care in integrating such mechanisms into different societies and institutional settings.³⁸ Nevertheless, the potential of VIF mechanisms for the local context is strong.

3.4 Joint development mechanisms

Joint development, in the context of funding sources for public transport projects, can be understood as the cooperation between railway track owners (often governments) and private developers to specifically target railway property adjacent to, above or below rail stations for commercial and/or residential development. This can provide a direct source of income towards the installation of the service while guaranteeing superior accessibility and a certain volume of potential customers frequenting the site.³⁹ It also contributes some degree of guaranteed ridership for the transport project.

Joint development avoids, to some extent, the problem of identifying the beneficiaries of a particular project. It is much easier to target station precincts, as with the Docklands light rail extensions in London, and seek contributions from the affected businesses.⁴⁰ These need not be financial contributions and can include, for example, improvements to the streetscape. Business interests in Edinburgh, U.K., have stressed the need to create an environment where the developer sees the benefit of co-operating and the local authority or the transport provider gets some of the money as well. It is a voluntary process.⁴¹

In the US, 'transit oriented development' is compact, mixed use development near new or existing public transportation infrastructure that serves housing, transportation and neighbourhood goals. It is pedestrian-oriented design that encourages residents and workers to drive their cars less and ride public transport more. Design can also factor in enhanced cycling facilities. Some of these projects are a significant source of non-farebox revenue. In a

³⁷ Rachel Weber, "Can Tax Increment Financing (TIF) Reverse Urban Decline?" *Lincoln Institute of Land Policy Working Paper*, 2003

³⁸ Prof G. Lloyd, "Experience of tax incremental financing in the US and Ireland" *Self-financing Transport Projects Through Land Value Gains: Too Good to be True?* Conference, London, 20 May 2003

³⁹ Scheurer et al, *supra* note 15, ch3

⁴⁰ Howard Smith, *supra* note 9

⁴¹ John McGregor and Professor George Hazel, "Case study – The E-rail consortium and the plan to reopen the Edinburgh South Suburban Railway," *Using Land Value Gains to Finance Transport Infrastructure* Waterfront Conference, London, 12 March 2002

case study of Orange County, New York, it was found that joint development programs coupled with permissive zoning to encourage high density “pocket communities” near transit stations would increase land values that can be recaptured to pay for the capital costs of rail infrastructure.⁴²

It is noted that development is already occurring around key nodes on the CityRail system in Sydney including Bondi Junction, North Sydney and St Leonards. Development is proposed for Burwood station and at an advanced level of planning with the local council. These and other instances provide the NSW government with excellent opportunities to pursue the benefits of joint development mechanisms; however, effective hypothecation of funds for further transport infrastructure has not occurred to date.

3.5 International experience

The United Kingdom

Value capture in the United Kingdom has commonly been in the form of ‘betterment’ taxes. These taxes have been collected in Britain for centuries under ad hoc legislation. In 1909, this was incorporated into the planning system through the *Housing, Town Planning, Etc., Act*. The scheme was not without difficulty and was followed by the *Town and Country Planning Act* 1932. There have been three attempts at land value capture in the UK following the Second World War. The first of these was part of the *Town and Country Planning Act* 1947. Importantly land value capture became associated solely with new development. This approach to infrastructure funding was introduced and repealed three times in the second half of the twentieth century.

A ‘windfall tax’, or one-off tax levied where some unexpected increase in profits or value is made which the public think is unreasonable due to the public intervention that preceded it, has been proposed and implemented in only limited circumstances in the UK. The first of these was in 1997 when the privatised utilities, including British Gas and British Telecom, were required to pay a levy on profits made in their first four years in the private sector following unexpectedly high returns on investment. A windfall tax was considered by the UK Treasury and Deputy PM, John Prescott, to rescue plans for London’s \$13 billion Cross-Rail link and the \$85 billion rail network. This proposal was not pursued. The Mayor of London, Ken Livingstone, attempted (unsuccessfully) to have the Government raise revenue by a windfall tax to finance the renovation of the London Underground railway system. Neither of these transport-financing options was adopted. A congestion charge has been successfully implemented in London, and the policy goal of reduced motor traffic in the city achieved. However following the Greater London Authority’s announcement of a £130m revenue result from the charge, the central government accordingly reduced its grant to the Authority by £125m. This demonstrates the need to hypothecate revenue toward transport, whatever funding mechanisms are chosen.

Continental Europe

There has been significant exploration of alternative funding mechanisms in Europe for transport infrastructure. In France, national legislation requires employers to contribute to public transport operation costs via a special tax (‘versement de transport’), in order to

⁴² P.J. Shinbein and J.L. Adler, “Land Use and Rail Transit,” *Transportation Quarterly*, vol 49, No. 3 (1995), pp83-92

contribute to public transit as an indirect benefit for the accessibility of workplaces. This has provided a stable funding base for the development or extension of 10 light rail systems since 1985.⁴³ In the city of Montpellier a further innovation was pioneered, whereby a payroll tax was levied on all employers in the city, with the consequent funds going to support a light rail network.⁴⁴ The latter scheme involved many complex and difficult negotiations with local employers.

In Ireland there has been some use of funding mechanisms similar to the U.S.' tax increment financing. This has been based largely on 'highly focused tax breaks' that are hypothecated for urban regeneration. An example of this is in the redevelopment of Dublin's Temple Bar district from the mid-1980s. The reason that this tax-based approach was pursued rather than a simple command-and-control approach was simply a lack of money from government sources.⁴⁵ Another lesson of the Irish experience is that new funding mechanisms require time, certainty and an institutional structure in which they can work, and that this needs to be managed in an open and transparent way.⁴⁶

North America

In addition to the examples cited above, the United States has a broad experience and many studies of the impact on land values associated with rail transit projects across many US cities. This includes both cities with established and well-patronised transit facilities, such as New York, Boston and Chicago, as well as pioneer projects in other cities like Portland, Oregon.

Modest increases in state-based sales taxes, often approved at local referenda, have been used to fund public transit in the US. Used in California are 'piggybacks' on petrol taxes that raise funds for multi-modal transport investments. Federal funding is available in the US for local transport initiatives through the *Intermodal Surface Transportation Efficiency Act* (ISTEA) and the related *Mass Transit Program* (MTP) as discussed below.

The U.S. is also experienced in using TIF methods. Local authorities in the U.S. have used TIF mechanisms to raise more than \$10 billion for a variety of development and regeneration projects.⁴⁷ The city of San Jose, California, which is the U.S.' fastest growing city, has raised \$1.5 billion since 2002 through a bond offering of \$350 million.⁴⁸ The city of Portland, Oregon, has been able to raise money through estimating the property tax income they would have received from a conventional density and estimating the income received at the higher

⁴³ Scheurer et al, *supra* note 15, p1-5 and ch 3

⁴⁴ Dr Nicholas Falk, "Reforming the Business Rate system: new sources of funding for public projects" *Self-financing Transport Projects Through Land Value Gains: Too Good to be True?* Conference, London, 20 May 2003

⁴⁵ Prof G. Lloyd, *supra* note 38

⁴⁶ *ibid.*

⁴⁷ R. Kiley, "Funding London's transport infrastructure," *Self-financing Transport Projects Through Land Value Gains: Too Good to be True?* Conference, London, 20 May 2003

⁴⁸ *Ibid.*

(proposed) density. They have then borrowed against the second figure in order to improve the transport infrastructure.⁴⁹

Experience in Canada has amplified the point that effective transport systems need to be grafted on to a good planning system. Toronto has developed an effective metro system whereby ‘transport policy was supplemented by an urban development strategy that successfully sought to channel growth into the metro-served corridors.’⁵⁰

3.6 Other funding mechanisms

There may be other funding mechanisms available to help fund public transport infrastructure projects. The following funding mechanisms may be of relevance to the urban context in New South Wales although this is not intended to be a comprehensive summary of methods available.

Public debt

The traditional means of financing the construction of transport infrastructure⁵¹ has been through public debt. Taxation may be necessary to underpin either the up-front capital cost of projects or the longer-term revenue costs, depending on the way these projects are to be set up. There is an enormous imbalance in government spending on road and rail projects throughout Australia and this has been modified only slightly by the recent AUSLINK announcement by the Commonwealth Government (discussed below). The Bureau of Transport Economics, for example, estimated that between 1987-88 and 1996-97 the total investment in rail by all levels of government was \$12.75 billion, compared to \$53.39 billion on road-related expenditure.⁵² A sample of further alternative funding mechanisms available in NSW is examined below.

There is also an issue simply in the terms we use to frame the debate on public funding. Rail companies, for example, create enormous increases in land value yet at the same time must take the ‘begging bowl’ to government so as to seek further operating ‘subsidies.’ If the situation is approached as the railway network seeking to recycle the returns on its investment (enhanced land values) into funds to cover that investment, then a rational financing system

⁴⁹ Falk, *supra* note 44

⁵⁰ Scheurer et al, *supra* note 15, ch4

⁵¹ Although public debt financing of infrastructure construction has only come to the fore in the period after WWII. Historically in both England and the US rail projects were financed and constructed through private companies; this continues to be the norm in East Asian countries such as Japan.

⁵² *House of Representatives Standing Committee on Communications, Transport and Microeconomic Reform*, “Tracking Australia – An Inquiry into the role of rail in the national transport network,” July 1998, Commonwealth of Australia, Canberra; see also Phillip Laird on the AUSLINK white paper – “Finally, money to smooth the railway curves,” *Sydney Morning Herald*, 11 June 2004.

becomes a possibility. The policy solution is then one that is continuously taking advantage of the benefits that are created by the investment.⁵³

Section 94 contributions

Under section 94 of the Environmental Planning & Assessment Act (NSW) 1979, the proponent of a development may be required to commit a sum of money, or a land dedication free of charge, towards provision of surrounding infrastructure (such as footpaths and drainage systems) at local government level. Council can seek money from a developer, in accordance with its s94 Plan, for non-recurrent infrastructure needs that are identified. Council will need to prove certain legal matters before levying s94 contributions, including that there is a sufficiently close nexus between a new development and the required infrastructure. The question of 'reasonableness' is also important though this has no fixed definition and may be the subject of local politics. Similar charges exist in other countries, such as Section 106 agreements in the U.K., and these have been used for a wider range of activities. However, Section 94 is not an appropriate source of large scale funding for significant transport projects.

Parking levies

The Parking Levy in Sydney is a State Government tax on business within the Sydney City area, defined as incorporating the CBD and surrounding areas. It relates to parking spaces provided by employers. There may be scope for this tax to be increased and the proceeds directly hypothecated to specific transport projects. Consideration should also be given to extending this system across different employment concentrations within the city, at locations already served by good transport links, with further hypothecation as appropriate. Local government in NSW has control of on-street parking levies and this is used as a primary source of revenue by councils. It is nevertheless arguable whether these taxes would raise the necessary funds for construction of infrastructure and further studies by State government may be necessary.

Congestion charges

Different mechanisms of road pricing are sometimes viewed as desirable in the urban context. As noted above a congestion charge has been effectively introduced in London, and this has resulted in revenues of £130m. However there are significant differences between the urban form in London and in Sydney. Of particular relevance is London's much more comprehensive public transport system. The reality of Sydney's car-contingent development would raise substantial problems of equity should such a solution be implemented here.

⁵³ Fred Harrison, Centre for Land Policy Studies, "Radical options for generating income for transport infrastructure: impact fees and other forms of taxation," *Using Land Value Gains to Finance Transport Infrastructure* Waterfront Conference, London, 12 March 2002

Business rate supplement

Reform of tax rates applied to business may be another answer. The notion of equity, discussed elsewhere in this paper, requires that those who benefit from a project contribute towards its construction. As transport proposals are a high priority for business, and the issue of access for workers, customers and suppliers is critical, consideration may be given towards a supplement on business rates.⁵⁴ In the NSW context, close attention would need to be applied in refining this method to adequately target the subject businesses. There also needs to be direct hypothecation of the resulting revenues toward transport infrastructure improvements.

One alternative, available to both State and Federal governments, is reform of the payroll tax along the lines of France's 'versement de transport', discussed above.

Transport providers and operating concessions

In the case of the Metrolink in Manchester, alternative funding was central to the project. Developer contributions in specific areas were forthcoming. However, the key to the project was the lucrative sale of the operating concession that funded nearly half the original capital outlay in Stages 1 and 3.⁵⁵ The sale of potentially lucrative operating concessions to private transport providers may also be a lucrative source of transport funding in NSW. Ensuring competition in the tender process will require close attention from the New South Wales Government.

Federal funding

The management of urban public transport affects a range of issues extending beyond transport – it is critical to the environmental, social and economic future of our nation. Our cities are important national entities worthy of Commonwealth consideration and intervention. Most state governments in Australia have developed citywide urban planning strategies; what is missing is reliable funding. Use of the mechanisms outlined above will go some way towards redressing this. Nevertheless the responsibility of the Commonwealth to direct adequate funds towards the states for urban transport remains. A new framework for Federal transport investment, known as AUSLINK, has been developed by the Commonwealth Dept of Transport and Regional Services. However, the AUSLINK white paper is “very light on urban public transport.”⁵⁶

In the United States over 20 percent of Federal land transport funds are applied to urban public transport under the Intermodal Surface Transportation Efficiency Act (ISTEA). Under the ISTEA, the Mass Transit Program (MTP) gives substantial autonomy to state and local government regarding the choice of public transport. This federal legislation has led to a ‘systems approach’ to road funding and “a significant shift in federal monies available for public transit” in the USA.⁵⁷ Transportation policy in the US has, as a consequence of these changes, “changed from one that was engineering-driven, top-down, secretive, fiscally irresponsible, and almost entirely focussed on highways, to one that is more planning-based,

⁵⁴ Irving Yass, “The business perspective on funding transport projects,” *Self-financing Transport Projects Through Land Value Gains: Too Good to be True?* Conference, London, 20 May 2003

⁵⁵ Bill Tyson, GMPTE, “Example of the potential of a tram system to be part financed by land use gains: Manchester Metrolink,” *Using Land Value Gains to Finance Transport Infrastructure*, Waterfront Conference, London, 12 March 2002

⁵⁶ Phillip Laird, “Finally, money to smooth the railway curves,” *Sydney Morning Herald*, 11 June 2004.

⁵⁷ Scheurer, Newman, Kenworthy, *supra* note 15, ch3

locally controlled, open, fiscally constrained and intermodal.”⁵⁸ The ISTEA recognises that different states and regions have different needs and is appropriately flexible. It is suggested that a similar approach needs to be adopted in the AUSLINK legislation.

⁵⁸ Don Chen as quoted in Newman, *supra* note 3, p3

OPPORTUNITIES AND CONSTRAINTS

4.1 Politics and Equity

An important part of introducing new taxes or charges must be to set out to the public what the impact of not introducing them will be. Related to this is the need to explicitly relate the hypothecation of these charges. It may be that an additional tax that is justified by reason of a particular form of investment such as transport infrastructure for urban New South Wales can be more easily argued than a replacement tax. To the extent that the proposals contained herein do impact on the present taxation system, public acceptance may depend on what relief is given from existing taxes and how effectively the related infrastructure objectives are presented.⁵⁹

Landowners in New South Wales face a complex array of property taxes. State 'land taxes' do not represent a land value charge for the occupation and use of the community's land resources and have become merely an arbitrarily assessed wealth tax levied on landowners. Stamp duty, local government and utility rates, goods and services tax, capital gains taxes and other charges do not relate easily to each other and their rationales are not clear in terms of overall objectives. A tax on land ownership, of which the levies discussed above are examples, that is (explicitly) hypothecated to discrete infrastructure improvements hence may be more easily justified.

As a matter of political pragmatism a balance between taxation on assets, income and expenditure may be inescapable. Examination of the entire system of taxation is beyond the scope of this paper yet a reworking of the balance is necessary. Allied to this may be other advantages such as the elimination of payroll tax (a charge on employment), the above modifications to the Capital Gains Tax and the introduction of carbon taxes and carbon trading (environmentally desirable). In the end, the acceptability of reform to landowners and the community may depend on what relief is given from existing taxes.

A problem may arise in some of the schemes for value capture proposed in this paper in terms of unforeseen and inequitable consequences. Betterment taxes, levies and modified local ratings schemes are all forms of land value taxation and may, despite careful design, impact upon harshly upon those least able to pay. An example is the case of the older person who is asset rich but cash poor; in such a case, the payments due annually as part of his/her property charges may cause hardship. One solution may be to amortise the payments that are due

⁵⁹ Political discontent with property taxes has wider policy implications. The feasibility of taxing non-liquid assets is a particularly significant issue in an era of decreasing reliance on progressive taxation and increasing reliance on regressive consumption taxes and fees. Asset taxation, whether through a recurrent ad valorem tax or in another form, such as an estate tax, can mitigate the increasing concentration of wealth that accompanies a regressive tax structure. The history of property taxes as large-scale functioning asset levies bear on the feasibility and acceptability of any form of wealth taxation. The virtue of visibility, or "transparency," in taxation has served to increase public discontent with property taxes relative to less apparent consumption taxes, payroll taxes or income taxes withheld at the source.⁵⁹

annually and to take these monies from his/her estate upon his/her death.⁶⁰ Such a scheme would necessitate careful design.

4.2 Legal

Implementation of different forms of value capture funding, including impact fees, developer levies and one-off contributions, raise a number of legal issues. The legislative implications, including the form of statute necessary to authorise different funding schemes, needs close examination. The geographical scope of any liability to pay the charge or tax needs to be carefully delineated. So too the calculation of the charge/tax, how it would be determined, by whom, and what is to be the provision for dispute resolution concerning property valuation. How a mechanism can deal with unrelated occurrences that affect a site's value is relevant and needs to be provided for in legislation. The timing of the charge/tax and when it is payable is very important. What the sanctions are for non-payment of the charge/tax also needs to be set out.⁶¹

The constitutional relationship in raising tax needs to be borne in mind when assessing the limitations of these proposals. The division of taxation powers in the Commonwealth Constitution is heavily weighted in favour of the Commonwealth. If public debt is to continue to play a significant role in funding public transport infrastructure then a more clearly defined taxation relationship, including a minimum degree of hypothecation for specific purposes, may need to be developed.

⁶⁰ Peter Gibb, "Using land value gains to finance transport projects versus land value taxation," *Self-financing Transport Projects Through Land Value Gains: Too Good to be True?* Conference, London, 20 May 2003

⁶¹ R. Owen, "Using land value gains to finance transport infrastructure projects: a legal perspective," *Self-financing Transport Projects Through Land Value Gains: Too Good to be True?* Conference, London, 20 May 2003

4 CONCLUSIONS

The advantages of transit location to commuters, consumers and business are clear. After due regard to the particular context, including the planning strategy adopted in particular locations, a clear link can be seen between the transport priorities of a city, the related question of accessibility and resulting land values.

Value capture funding is a vital tool available to government for the funding of public transport infrastructure. Some of the complexities involved in a workable funding system have been discussed above and more have to be worked through by government prior to implementation. A mixture of direct levies on all landowners and taxes upon landowners in identified corridors is recommended. This may be implemented through, firstly, the general property tax and, secondly, the ratings system (through 'Special Assessment Districts' as used in Los Angeles). Value Increment Financing is a flexible policy tool with many applications including its use in designated areas, and has great potential for use in NSW. Other funding sources such as joint development mechanisms are also available. Consideration of further alternatives, such as supplements on business tax rates with hypothecation toward construction of transport infrastructure, needs to be undertaken.

The ultimate aim of urban transport systems in NSW must be to maintain and improve the quality of life in our cities and their importance in the global economy. The importance of getting the right transport infrastructure for Sydney cannot be over-stated. Failure in this respect will seriously impact on Sydney's status as an international city. The first step toward providing this infrastructure is to identify adequate funding proposals. This paper provides a starting point on this matter and needs to be followed through by a detailed State Government study.

In the words of Dr Tom Parry, former head of the NSW Independent Pricing and Regulatory Tribunal, "there are income streams there. The trick is going to be how government structures those. There's not just one technique ... we want to be innovative." **A mixture of different funding mechanisms, used to different degrees in different situations and as appropriate to local circumstances, is the best course advisable. This is an argument for project-by-project funding; the world of transport financing should be a matter of horses for courses.**

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