



INQUIRY INTO TRANSPORT CONNECTIVITY

**Value capture funding
for transport infrastructure.**

AECOM

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Client

House of Representatives Standing Committee on Infrastructure,
Transport and Cities
ABN: 12345

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ABOUT AECOM

AECOM is a leading global, fully-integrated infrastructure firm with a long and proud history of working locally with clients in Australia and New Zealand.

A Fortune 500 company, we serve clients in more than 150 countries. In Australia and New Zealand, we are around 3000 specialists spread across 20 offices in major capital cities and regional centres.

We leverage our capabilities across a range of technical, engineering and design disciplines to deliver solutions that connect our cities, positively impact lives, transform communities and make the world a better place.

We believe value capture has an important role to play in assisting Australia build greater communities and remain globally competitive. This belief is built on the work we have undertaken in understanding the potential for the funding model in the form of research papers such as the Value Capture Roadmap (published jointly with Consult Australia) and Funding Australia's Future (published jointly with the University of Sydney's US Studies Centre). These documents have become widely-referenced guidelines and case studies on this funding model in the Australian context.

Further, our AECOM team members have practically applied this understanding on projects in Australia, including:

- Value Capture Case Study - High Speed Rail Phase 2 Study for the Commonwealth Department of Infrastructure and Regional Development in 2013.
- Preparation of a value capture study for the Western Sydney Light Rail project for Parramatta City Council in September 2015, which proved that these methods could help that project close its infrastructure funding gap.
- Our Sydney Transport Planning team is preparing a value capture guideline for Transport for NSW's Light Rail Staging Plan, which examines long-term transport network improvements across metropolitan Sydney.

Given the potential for this funding model to assist in improving our country and making it a better place to live work and play, we are pleased to put forward the following submission which we hope will be a useful reference for the Inquiry.

EXECUTIVE SUMMARY

1.1

IDENTIFYING THE LIKELY IMPACT ON PROPERTY VALUES AND PROPERTY-RELATED TAX REVENUES AS A RESULT OF TRANSPORT CONNECTIVITY

Research shows that property value uplift as a result of transit investment can be as high as 40 per cent, but varies widely depending on the extent of integrated land use – transport planning, distance and transport mode. The differences in the impact on property value are also shown to be highly dependent on supportive actions by transit delivery agencies and other public and private stakeholders. Proactive management of integrated land use – transport planning alongside transport investment is proven to have a positive impact on property values in funding and property-related tax revenues, evidenced by London's Crossrail project capturing \$7.6 billion, roughly 26 per cent of the project's capital cost

1.2**EXAMINING OPTIONS FOR THE APPLICATION OF VALUE-CAPTURE MECHANISMS TO SUSTAINABLY FUND TRANSPORT INFRASTRUCTURE**

Research in Australia and overseas strongly supports the potential for value capture funding of transport infrastructure in this country. A key benefit of value capture mechanisms over traditional funding methods is that they provide a more predictable and sustainable revenue stream for funding transport infrastructure. Common value capture mechanisms focus on property values and increased tax revenues resulting from well-planned public transit. Different funding sources will require varying levels of legislative change to implement, but some methods are already being used with success in this country.

An Australian value capture program should combine proven methods to meet the objectives of a given funding program. Further success can be derived by adopting the success factors witnessed in other value capture programs, such as comprehensive, long term planning and funding strategies, stakeholder engagement, transparent governance frameworks and stronger urban renewal powers for local governments and renewal agencies.

1.3**CONSIDERING MEANS, INCLUDING LEGISLATIVE AND ADMINISTRATIVE ACTIONS, BY WHICH GOVERNMENT AND THE PRIVATE SECTOR CAN BEST UTILISE VALUE-CAPTURE FUNDING MECHANISMS**

Federal and state governance arrangements in Australia would require legislative and administrative actions to take full advantage of value capture funding methods. The level of action required will depend on value capture method being adopted. The redefining of special rates set by local authorities to be dedicated to public transport-related improvements would involve relatively minor change. Replacing stamp duty with land tax has been advocated by a number of government inquires and public policy groups, yet would require a much higher degree of legislative change.

1.4**CONSIDERING THE APPROPRIATE ROLES OF EACH OF THE THREE LEVELS OF GOVERNMENT IN ESTABLISHMENT SUSTAINABLE VALUE-CAPTURE FUNDING MECHANISMS FOR PLANNING AND INFRASTRUCTURE CONSTRUCTION**

Australia's present governance and funding arrangements for transport infrastructure require significant improvement across all levels of government. A recent Productivity Commission report identified Australia's public infrastructure governance arrangements as deficient and a major contributor to unsatisfactory outcomes. The widespread application of value capture in Australia requires similar action and improvement. The three levels of government each have a responsibility relating to delivery, leadership, input and implementation for the individual value capture funding mechanisms if they are to succeed as part of the Australian infrastructure model.

1.5

EXAMINING ANY INTERNATIONAL EXPERIENCES OF THE DELIVERY OF HIGH SPEED RAIL PROJECTS BY VALUE-CAPTURE METHODS AND THE IMPACT OF HIGH SPEED RAIL ON CITY AND REGIONAL DEVELOPMENT

While the use of value capture is more common alongside conventional rail systems, the Japanese have used it to fund parts of their high speed rail (HSR) network. The levels of tax uplift created through the rise in land prices and business activity in large cities as a result of the HSR enabled the Japanese Government to secure loans to pay for the rail infrastructure. A HSR case study at Sydney's Central Station demonstrated that value capture programs could capture \$2.8 billion (\$2012) of increased tax revenue within the area.

Regions serviced by the HSR in Japan generally have higher rates of population and economic growth (22 per cent) than regions that do not have a direct service (7 per cent). The Chinese HSR network has shown similar results in the areas of economic and real estate value growth. Research shows a direct correlation between connecting cities with HSR and property price rises.

International examples show the introduction of HSR contributes to city and regional development, but this is not guaranteed. Regions with knowledge-based economies are more likely to benefit from HSR than those with a mining, manufacturing or agricultural base. Another key success factor of HSR in regional areas from overseas examples has been the presence of supporting land use and economic development policies and programs.

HSR has also been shown to have a highly positive effect on tourism-based economies. Both Japan and China have experienced significant growth in tourist oriented areas serviced by HSR. Figures from China show provinces with HSR service have 20 per cent higher numbers of foreign arrivals and 25 percent higher tourism revenues than areas with no service.

1.6

EXAMINING METHODS OF IMPLEMENTING VALUE-CAPTURE IN BOTH GREENFIELD AND BROWNFIELD DEVELOPMENTS

Methods for implementing value capture in greenfield and brownfield locations are essentially the same, particularly when combined with integrated land use – transport planning. Brownfield value capture programs typically experience a greater relative change in land value and tax revenues because of their proximity to population centres, jobs and economic activity. A key factor in both settings is for state and local planning agencies to have comprehensive long term land use development controls in place in advance of the planned infrastructure. The use of long term strategic planning is critical for mitigating future land costs of infrastructure.

1.7

EXAMINING WAYS TO CAPTURE FUTURE VALUE OPPORTUNITY WHEN RESERVING TRANSPORT CORRIDORS

Protecting transport corridors well in advance of need is good for long term planning and can significantly reduce land acquisition costs when projects are eventually developed.

One method of protecting future corridors from development is overlay zoning. This planning tool helps limit conflicting development within the corridor reducing the future land acquisition costs.

The ability to capture future value from properties along transport corridors depends on the nature of the transport mode and the potential for commercial and other connections between the infrastructure and adjoining activity centres. Western Australia has one of the best examples of a corridor protection programs in Australia. The Metropolitan Region Improvement Tax is an annual land tax on commercial properties that is hypothecated into a dedicated account to acquire essential sites for transport corridors.



INTRODUCTION

Australians enjoy a high standard of living as a result of a wealth of natural resources, an educated population, and proven legal and governance systems inherited from the British and improved over the past 115 years. For most of this time, our standard of living and quality of life has improved on a steady basis due in large part to a continual process of investment in infrastructure in our cities and regional areas.

Recently, however, evidence is emerging that our future prosperity and quality of life are under threat as changes in the global economy ripple through our national economy. For example, the 2015 Intergenerational Report found that Australia's average annual growth in real Gross Domestic Product (GDP) will shrink from 3.1 per cent to 2.8 per cent, and our productivity will drop from 2.2 per cent growth per year to 1.5 per cent over the next 40 years.

According to Infrastructure Australia (IA), Australia must increase investment in its core infrastructure, particularly transport infrastructure, just to maintain these levels of growth. Australia's four key economic infrastructure sectors represent 13 per cent of Gross Domestic Product (GDP), or around \$187 billion. Transport infrastructure comprises \$135.9 billion (73 per cent), followed by energy (20 per cent), communications (11 per cent) and water (6 per cent). Urban transport infrastructure, made up of urban roads, urban passenger rail, buses, ferries and light rail, represents nearly \$79.9 billion (60 per cent) of total transport infrastructure and 43 per cent of the national core infrastructure (Infrastructure Australia 2015).

Despite the significant contribution to our national economy that is delivered by transport infrastructure, the investment required to build, maintain and renew this vital asset is failing to keep up with our needs. The cost of congestion in our capital cities was estimated by IA to be \$13.7 billion in 2011, and is expected to increase to \$53.3 billion (290 per cent) by 2031 if greater investment isn't made. The funding available from traditional sources is inadequate to meet this need (Infrastructure Australia 2015).

The House Standing Committee's inquiry into transport connectivity is therefore coming at a critical time. As the economy's rate of growth slows and the gap in funding core infrastructure widens, we need to implement more innovative ways to sustain our quality of life and ensure a prosperous future for our children. Fortunately, there are funding methods that can not only help bridge the funding gap, but can also make our tax system more equitable and efficient, improve the quality of life in our cities, and provide opportunities for growth in our regions. This submission describes these methods.

VALUE CAPTURE DEFINED

Value capture funding methods identify and collect an equitable portion of the value released through new zoning and other public improvements so the communities that create this value share in the wealth it generates.

There are a number of proven approaches that help reach the goal of sharing outcomes equitably with the public, investors and developers. The funds thus collected are deposited into dedicated accounts for a set time period and are used to contribute to both the cost of projects and to other public improvements to the civic realm.

Value capture allocates the uplift in benefits from public investments in ways that do not affect current or future tax rates. The “beneficiaries pay” principle lies at the heart of successful value capture programs. Importantly, these programs capture revenues that would not otherwise exist without public investment, and can permanently increase the levels of revenue to taxing authorities.

Figure 1 illustrates how tax revenues increase over time as well-planned capital investments are developed within a value capture precinct. As capital investments are made within the precinct, tax revenues increase above Base Year revenues as existing businesses expand and new businesses and residents are attracted into the precinct. The increases in revenue above the Base Year are collected for a set time period, say 20 – 25 years, and used to repay loans or infrastructure bonds which pay upfront for site improvements and infrastructure. At the end of the program, the full tax revenue stream is returned to the taxing authorities.

The New Revenue Base shown in Figure 1 combines Base Year Precinct Revenue plus Incremental Precinct Revenue generated by the infrastructure. The Incremental Revenue is directly attributable to the infrastructure it funds, and would not have been generated or collected without the infrastructure investment combined with a value capture program.

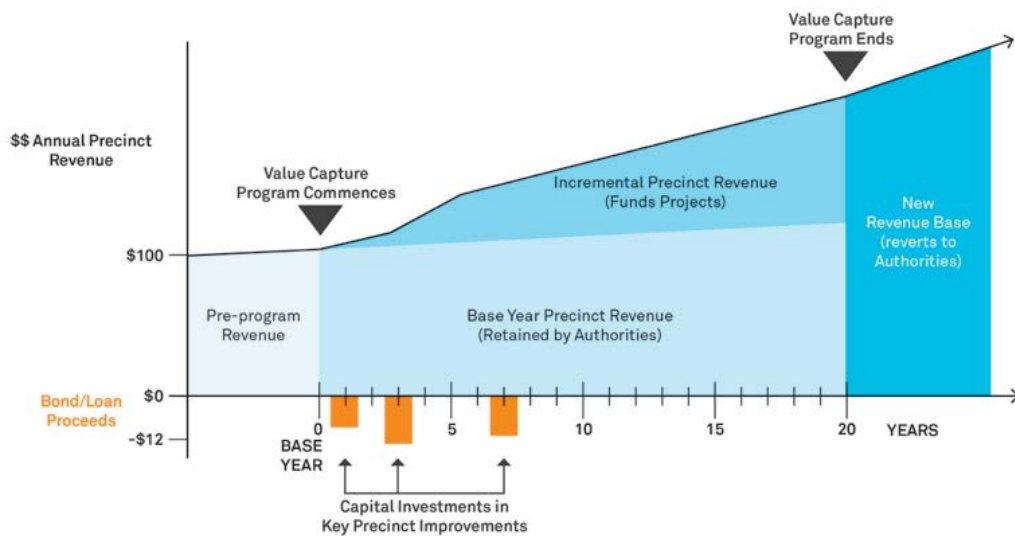
In addition to being used for transport infrastructure investments, value capture revenues have been used to pay for a variety of costs associated with unlocking the development potential of urban renewal sites, including:

- Environmental remediation of contaminated sites
- Property acquisition and site consolidation
- Demolition and site preparation
- Rehabilitation and renovation of historic structures
- Construction of new or improvements to existing civil infrastructure
- On-going maintenance to the infrastructure for a set period

Although new revenues from a public investment might extend beyond its immediate location, such as the wider community benefits of light rail or road improvements, value capture programs are carefully limited to high impact locations. This simplifies the process of identifying beneficiaries and equitably capturing project-related revenues. Spreading taxable activities over too wide an area reduces the overall efficiency and effectiveness of the program. More remote locations might not realise the required benefits to make the value capture exercise feasible.

Value capture programs have the potential to make significant contributions to transport and urban renewal programs. To cite two prominent international examples, approximately 27 per cent of London's Crossrail project and over 30 per cent of Denver's Union Station redevelopment are being funded with these methods. Other examples presented later in this report indicate that even higher levels of funding can be achieved under the right circumstances.

FIGURE 1 VALUE CAPTURE FUNDING MODEL



THE LIKELY IMPACT ON PROPERTY VALUES AND PROPERTY-RELATED TAX REVENUES AS A RESULT OF TRANSPORT CONNECTIVITY

Well-planned investment in transport infrastructure increases property values and tax revenues, and can stimulate changes in surrounding land uses. With respect to public transport, these increases are the result of a number of benefits, some of which are direct and can be monetised, and others which are indirect and are difficult to quantify and capture. Table 2 provides a list of typical benefits from well-planned public transport (Fogerty et al 2008).

TABLE 1 BENEFITS OF PUBLIC TRANSIT

BENEFITS	DESCRIPTION
Environmental	<ul style="list-style-type: none"> - Reduced traffic congestion - Reduced fuel consumption - Better air quality - Reduced sprawl - Conservation of open space
Fiscal	<ul style="list-style-type: none"> - Reduced road and parking facility costs - Economic development benefits through agglomeration efficiencies and increased productivity - Increased property values - Increased property tax revenues
Social	<ul style="list-style-type: none"> - Improved social cohesion through positive interactions among people in a community - Improved family relationships as less time is devoted to travelling - Improved fitness and health as a result of increased walking and biking - Reduced traffic accidents and potentially lower motor vehicle insurance premiums - Improved mobility options, particularly for non-drivers - Reduced consumer transportation costs - Expanded labour market shed for employers. Improved access to job opportunities for workers (and increased labour market shed for employers) - Neighbourhood revitalization

1. Exceptions to this general rule can occur in the immediate vicinity of the infrastructure where the amenity of an area is decreased. These impacts can be managed through an environmental approval process.

The extent of increase in property value and tax revenues varies depending upon a number of factors. AECOM has examined transport projects from the standpoint of their impacts on value enhancement, and has identified a number of characteristics that positively influence property value and tax receipts, including:

Zoning and development controls in place before and after the transport investment is made.

A change in zoning from single dwellings to multiple dwellings, or from industrial to commercial use, will significantly increase property values. However appropriate measures need to be in place well in advance of project delivery.

Supportive public policy. The property value premium that transit generates cannot be fully realised unless there are supportive public policies in place that are targeted toward leveraging transit's added value. These measures include density bonuses, reduced parking requirements and incentives for transit oriented development (TOD) (Fogerty et al 2008).

The type of transport infrastructure introduced and its capacity to support higher demand for services. Transit that has the capacity to support high demand will provide a greater increase in property values and subsequent tax revenues. For example, Hong Kong's Mass Transit Rail (MTR) transit system carries 4.71 million passengers each day, equivalent to 66 percent of Hong Kong's total population (Hong Kong SARG 2015). MTR's capacity to support such high demands has been an important factor in its ability to practice its 'property+rail' development model, which capitalises on the increased land values around its transit stations and enables MTR to recover the costs of its rail infrastructure investment (Zhao et al 2012).

The degree of integration between the transport improvement and surrounding land uses, often referred to as "integrated land use – transport planning". Transport and development are not separate issues, but two facets of the same issue. Addressing one without the other will miss the advantages and opportunities presented by both. Integrated land use transport planning supports linked investment decisions, increased accessibility to transit, reduced private vehicle travel, better use of infrastructure and urban land, and improvements to quality of life (Transport Infrastructure Council 2003).

Connectivity, meaning the extent that the improvement increases connections with other centres of activity and transport networks. Transport improvements that connect well with other networks and surrounding centres of activity provides a greater uplift in property values than less integrated, isolated systems (Mathur 2014).

The distance of a given property from the transport improvement. Evidence shows that property values increase in relation to its proximity to public transport. The level of increase is dependent upon property type, density and distance (Mathur 2014). See table 2 below.

One of the best examples of the application of these characteristics is Crossrail in London. Crossrail is an eight station, 21 km addition to the metropolitan area's underground commuter rail network currently under construction. Working with UK transport agencies and local businesses, the City of London introduced innovative funding methods to capture its benefits to help pay for the project, a Business Rate Supplement (BRS). The BRS collects two per cent of the value of non-domestic properties in the project's catchment having a rateable value of over \$102,950. These funds will be collected over 30 years and used to fund \$7.6 billion (26%) of the \$29.6 billion project.

Property values and public tax revenues also depend on the public transport mode. The Commonwealth Bureau of Transport, Infrastructure and Regional Economics (BITRE) examined over 60 transport papers from overseas and concluded that public transport projects created an average uplift in property value of between 6.9 per cent and 9.7 per cent, depending on the transport mode, as shown in Table 3 (BITRE 2015). While the average value uplift from transport investment is positive for each mode, there is a wide range of values reported by BITRE across modes.

TABLE 2 VALUE UPLIFT BY TRANSIVT MODE

Mode	Average property value uplift (%)	Range (%)	Number of observations
Heavy rail	6.9	-42 to +40	18
Light rail	9.5	-19 to +30	32
Bus rapid transit	9.7	-5 to +32	14

Source: BITRE 2015, Information Sheet 69, Transport infrastructure and land value uplift

Evidence also shows that property value increases are dependent upon the distance between the property and the transit station (Fogarty). A 2008 study of US cities, summarised in Table 3, shows the effect of distance from various transit modes and property types on property value.

The differences in these examples arise in large part from the nature and extent of actions taken by delivery agencies and other public and private sector stakeholders. Evidence from international and Australian examples point to the need for proactive economic development programs and supportive land use plans to leverage the transport investment and corresponding property values and public revenues. Examples include integrated land use / transport planning, targeted economic development programs that support local industries, and affordable housing programs that encourage a diverse range of housing.

TABLE 3 TRANSIT INVESTMENT IMPACT ON PROPERTY VALUES

Land Use	Range of Property Value Premium	Type of transport
Single Family Residential	<30 m from station: +32%	San Diego Trolley, 1992
	<60 m from station: +2%	St. Louis MetroLink Light Rail, 2004
Condominium	<800 m from station: +2% to +18%	San Diego Trolley, 2001
Apartment	<400 m from station: +45	San Diego Trolley, 2001
	<800 m from station: +0% to 4%	VTA Light Rail, 2004
Office	<90 m from station: +9%	Washington Metrorail, 1981;
	<400 m from station: +120%	VTA Light Rail, 2004
Retail	<150 m from station: +1%	BART, 1978
	<60 m from station: +167%	San Diego Trolley, 2004

Source: BITRE 2015, Information Sheet 69, Transport infrastructure and land value uplift

APPLICATION OF VALUE-CAPTURE MECHANISMS TO SUSTAINABLY FUND TRANSPORT INFRASTRUCTURE

Rapid transit systems offer considerable opportunities for transport investments to be paired with land use changes and urban development to spur a city's growth. Areas that integrate rapid transit with well-designed urban spaces become highly attractive places for people to live, work and play. These environments enhance a city's economic competitiveness, reduce sprawl and congestion, and raise the value of property surrounding transit stations (Suzuki et al 2013).

A recent study concluded that increases in land values between 2001 and 2031 within 400 metres of the Mandurah commuter rail stations in Perth translate into increases of \$506 million, or roughly 30 per cent of the project's capital expenditure, from:

- Commonwealth (capital gains and GST)
- Western Australian state taxes (land tax, Regional Metropolitan Infrastructure Tax, stamp duty)
- Local government rates.

This figure would jump to \$1.7 billion if integrated land use and transport planning would have been fully applied to the levels of density found within 400 metres of the Subiaco station (McIntosh et al 2015).

International studies of High Speed Rail (HSR), rapid transit, and urban and regional development uniformly confirm that integrated land use – transport planning provides a positive return on investment and releases unearned benefits into the economy. This is confirmed by government studies of transit projects in Australia. For example, a recent BITRE study estimated that public investment in 128 road and rail projects in Australia returned \$2.65 for every \$1 invested and had a present value of net benefits of \$62 billion (BITRE 2015).

Research in Australia and overseas therefore clearly supports the potential for value capture funding of transport infrastructure in this country. Funds come from a variety of sources in overseas value capture programs as shown in Table 4, some of which are currently in use in various forms in state and local government funding programs in Australia. However, the application of these funding mechanisms is ad hoc and uneven across states and metropolitan areas. An Australia value-capture program would need to be guided by the success factors described in Table 5, and should combine a mixture of the best methods to meet the objectives of a given funding program.

A key benefit of value capture mechanisms is that they provide a more predictable, sustained funding stream than traditional methods. Stamp duty, which currently provides 24 per cent of state and territory revenue in Australia, fluctuates with the home sales activity and distorts property markets. On the other hand, land tax, which is an annual charge based on property value, is a more stable and efficient tax mechanism, yet accounts for only nine per cent of state and territory tax revenue. The Commonwealth Treasury reported that replacing stamp duty with a broad-based land tax could generate long-run gains to economic activity of about 1.3 per cent (Treasury 2015). Replacing up-front, lump sum taxes, such as stamp duty, with annual tax payments, like land tax, would provide a more sustainable and equitable funding source for infrastructure.

Reform of the present tax system is therefore an important precondition to sustainable transport infrastructure funding.

Not all of the funding sources listed in Table 4 would be appropriate, nor supported, in an Australian context, but are listed for completeness. Some examples would require legislative changes or new legislation to introduce them to Australia. Still others, such as stamp duty, should be replaced by more efficient and equitable taxes, such as land tax. These considerations are discussed in later sections.

LEGISLATIVE AND ADMINISTRATIVE ACTIONS BY WHICH GOVERNMENT AND THE PRIVATE SECTOR CAN BEST UTILISE VALUE-CAPTURE FUNDING MECHANISMS

Federal and state governance arrangements in Australia would require legislative and administrative actions to take full advantage of value-capture funding methods. Some of these actions would involve relatively minor changes to state and local legislation, while others would require new legislation and could take many years to implement. For example, local government acts in several states allow local authorities to set special rates within a defined area to fund certain kinds of civil infrastructure, typically water and drainage works. These acts could be redefined to allow local authorities to dedicate special rates for public transport-related improvements based upon property value uplift.

The replacement of stamp duty with land tax is an example of a much needed but difficult legislative reform. A switch to land tax has been advocated by a number of government inquiries and public policy groups, and is being pursued in the ACT. The Grattan Institute estimates that abolishing stamp duties in all the states and replacing them with a broad-based land tax could add \$9 billion a year to Australia's GDP (Daley and Coats 2015). Changes of this magnitude would require extensive community consultation, careful financial modelling and strong political support. However, the long-term benefits to the economy would be very positive.

Table 4 lists the most common value capture and other infrastructure funding sources for transport infrastructure and Table 5 describes the key success factors of value capture programs.

TABLE 4 VALUE CAPTURE METHODS

Funding method	Description
Retail sales taxes	Modest increases or partitioning of retail sales taxes, similar to GST, are frequently used in overseas value capture programs at the local government level for a variety of public purposes, including for light rail projects and general revenue. These often require voter approval via a public referendum.
Transfer (stamp) duties	Stamp duty is applied to all property transfers and some other transactions in all Australian states and territories. Changes in legislation would be required to use this source in a value capture program.
Payroll taxes	Payroll taxes can generate significant revenue for state governments. For example, in 2014-15 in NSW, payroll tax generated \$7.8 billion, the equivalent of 30 percent of total tax revenue.
Property taxes	Property taxes are the most commonly used source of value capture programs in North America and are typically based upon the combined value of land and improvements on a given parcel of land. Land tax is presently used in Australia. Legislative changes would be required to use land tax as a value capture mechanism.
Council rates	Council rates generally apply uniformly throughout a local government area (LGA), as opposed to a specific benefitted area within the LGA, which is a characteristic of value capture programs overseas. Council rates are set in accordance with property value assessments and strictly controlled by the state governments. Local councils have little control over this revenue source as annual rate increases are capped in some cases and any increase requires state government approval.
Development contributions	Most local government councils have the ability to levy developers for contributions towards local infrastructure. Development contributions plans typically identify specific public improvements and their costs, and the funds collected are held in a separate account and applied to those public improvements.
Voluntary planning agreements	Voluntary agreements are used as an alternative to development contributions. Under this arrangement, an agreement is entered into by council and a developer during council's consideration of a rezoning application (planning proposal) or development application. Contributions can either be in lieu of or in addition to a development contribution payment
Special rates	Some state governments permit local councils to apply special rates in certain circumstances, such as to extend water supply networks and drainage systems. This finding source could be used in value capture programs with minor legislation change.

Funding method	Description
Sale of bonus gross floor area (GFA)	Under this arrangement, additional development rights above existing zoning are sold to developers and the proceeds used to fund community infrastructure. The sale of GFA is a common funding mechanism overseas and is a logical source of additional infrastructure funds where transport and other infrastructure capacities are provided to support the additional demand for services.
Sale and / or lease of air rights	Government agencies frequently sell or lease air rights above publicly-owned land, such as for development over road reservations and railway corridors. This method is widely used in Hong Kong, Japan, the US, France and the UK to fund metropolitan transport systems.
Sale or lease of surplus development sites	The sale or lease of surplus public land has been frequently recommended as a source of revenue for infrastructure and desirable policy reform by the Productivity Commission and Infrastructure Australia. However, Government agencies and community groups often resist the sale of government assets, delaying or preventing projects from proceeding.
Parking levies	Parking levies are used by councils as a revenue source and as means of controlling congestion. For example, in Perth, parking levies are used to fund free public transport in the city centre.
Hotel taxes	Some city and state governments in North American impose hotel occupancy taxes that are hypothecated to value capture funds. These examples are common in large cities that have significant convention and tourist trade.
Capital Gains Tax (CGT)	Under current provisions, owner-occupiers of residential properties do not pay CGT upon the sale of their properties. A proposal has been put forward at the Federal level to introduce CGT on owner-occupied properties experiencing a sharp increase in value as a result of a public infrastructure investment. The CGT would only apply to "super" profits from property sales attributed to the public infrastructure investment.
Property development.	State and local government land holdings frequently include surplus or under-utilised land that can be either sold or developed to provide a source of revenue, and can be incorporated into an infrastructure or urban renewal project.

Source: Value Capture Roadmap

TABLE 5 VALUE CAPTURE SUCCESS FACTORS

Key success factors	Guiding principles
Comprehensive, longer term planning and funding strategies	<p>Infrastructure and urban renewal projects and programs supported by value capture methods should be based upon a minimum time horizon of 20 years to allow for funding sources to realise their full potential.</p> <p>Projects and programs should be fully costed, conservatively underwritten and include detailed financial modelling. Funding sources should be locked in for the life of the program to provide stable and secure revenue sources.</p>
Genuine and robust stakeholder engagement	A genuine and robust public consultation program, developed and implemented by specialists in that field, is an integral part of successful value capture programs. Business and community participation and membership at various levels in consultative committees and boards and in the decision-making process should be encouraged.
Precinct-based planning and funding	Value capture programs should be carefully ring-fenced within a defined precinct. The precinct should encompass complementary community activities and assets that would benefit from the infrastructure investment and that could be leveraged to generate wider economic benefits. Typically, these precincts are contained within a kilometre radius of the transport improvements.
Transparent and balanced governance frameworks	Local government in NSW should become a key partner in precinct-based infrastructure and urban renewal planning, decision-making, funding and delivery. A general transfer in responsibilities and powers from state agencies to a larger, stronger and better resourced local government for planning, decision-making, funding and delivery of urban infrastructure should be pursued as a mid to long-term policy objective.
Understand and balance risks and reward	NSW Government should reinvigorate infrastructure reforms as recommended by the Productivity Commission and Infrastructure Australia, and seek genuine partnerships with the private sector based upon an equitable balancing of risks and rewards.
Use incentives to attract private investment and better design	Successful value capture programs use financial and other incentives to attract private investment and engage businesses and residents in related programs that improve property values, neighbourhood amenity and economic activity. In this way, value capture programs can generate broad-based community benefits and become self-funding.

Key success factors	Guiding principles
Stronger urban renewal powers	<p>Local government and urban renewal agencies need stronger powers if they are going to make meaningful improvements in housing approvals and affordability, infrastructure investment, and broad scale regeneration of industrial precincts, commercial centres and neighbourhoods. This will require;</p> <ul style="list-style-type: none"> - concerted public education and engagement effort to bring the voting public along with necessary changes - changes to existing planning and local government legislation to strengthen urban renewal powers - new legislation to expand funding and financing options for local government and urban renewal agencies.
Recognise and incorporate wider economic benefits	<p>It is recommended that Commonwealth and state governments collaborate to develop a common framework and commission pilot projects to assess the wider economic benefits of infrastructure and urban renewal projects. Pilot projects should be undertaken in partnership with state and local government agencies, professional associations, research institutions and the private sector to develop the legislative and financial arrangements needed to harness these benefits.</p>
Focus on value rather than cost	<p>Commonwealth, state and local agencies with the responsibilities for funding, developing, evaluating and delivering infrastructure and urban renewal should incorporate value for money guidelines in project appraisals as proposed by Infrastructure Australia and Infrastructure NSW.</p>
Secure consistent and coordinated leadership	<p>Consistent and coordinated leadership is non-partisan, evidence-based and in the long-term public interest. The leadership model for a given project must be tailor-made and established before the project is introduced. By definition, the leadership team must be small, but have a broad mandate and be composed of high calibre and proven experts.</p>

Source: Value Capture Roadmap

ROLES OF THREE LEVELS OF GOVERNMENT IN ESTABLISHMENT OF SUSTAINABLE VALUE-CAPTURE MECHANISMS FOR PLANNING AND INFRASTRUCTURE CONSTRUCTION

Australia's present governance and funding arrangements for transport infrastructure require significant improvement, according to recent reports by the Productivity Commission, IA and other reviews. According to the Productivity Commission, "institutional and governance arrangements for the provision of much of Australia's public infrastructure are deficient and are a major contributor to unsatisfactory outcomes" (Productivity Commission 2014).

The widespread application of value capture mechanisms in Australia faces similar hurdles, requiring coordinated and long term legislative and administrative action to reach their full potential. The implementation of the reforms called for by the Productivity Commission and Infrastructure Australia would provide the foundation necessary for introducing many of the value capture mechanisms identified in Table 4.

The Council of Australian Governments (COAG) provides leadership at the Federal level in implementing reform in the infrastructure and transport sectors across the states and territories. The creation of a Ministry for Cities and the Built Environment in 2015 and the Federal government's renewed push to achieve meaningful tax reform in 2016 provide fertile ground for introducing sustainable value capture mechanisms at state and local levels.

Together, COAG and the Ministry for Cities and Built Environment can provide leadership in this effort by formulating model value capture enabling legislation, standards and guidelines for consideration by state and local governments. Federal funding for value capture research, pilot schemes and demonstration projects meeting these standards and guidelines would provide strong incentives for the states to establish consistent and effective state-based value capture programs.

The City Deal model currently being rolled out in the UK provides an excellent template for rebalancing the roles of government at the state and local in Australia and for using infrastructure investment to deliver productivity improvement and jobs growth in our cities and regions (KPMG and Property Council of Australia 2015). Value capture and revenue sharing mechanisms are an integral part of the City Deal model.

Table 6 describes a number of key legislative and administrative actions that could be taken by each level of government to establish value capture mechanisms in Australia.

TABLE 6 LEGISLATIVE AND ADMINISTRATION ACTIONS

Value-capture method	Recommended legislative and administrative actions	Level of government and responsibility		
		Federal	State	Local
Retail sales taxes	<p>Introduce at selected local precinct levels, subject to public referendum, to help fund on-going public domain investment, maintenance and renewal.</p> <p>Applications: stadia, entertainment and cultural precincts</p> <p>Introduce at metropolitan levels, subject to public referendum and for minimum terms (20 – 25 years), to help fund major transport investment, maintenance and renewal programs, similar to those in Los Angeles, Dallas and Phoenix (Blakely and Langley 2015).</p> <p>Applications: long term metropolitan transport plans</p>	A	A, B, D	C, D
Transfer (stamp) duties	<p>Develop long term strategy to phase out and replace with more efficient and equitable methods, such as land tax (Australian Treasury 2015)</p> <p>Examples: programs in the ACT and Adelaide.</p>	NA	A, B, D	NA
Payroll taxes	Hypothecate payroll tax increases attributed to an infrastructure improvement in a transport precinct for a fixed term (say, 20 – 25 years) to contribute to the capital cost of the transport investment.	A	A, B, D	C, D
Property taxes	<p>Phase in land tax over 20 years as a replacement for council rates.</p> <p>Develop a infrastructure bond market in Australian (PwC 2008)</p> <p>Allow local councils to access infrastructure bond market for essential infrastructure subject to local referendum.</p>	A	A, B, D	C, D
Council rates	Phase out over 20 years and replace with land tax.	A	A, B, D	C, D
Development contributions	Limit to a funding source for essential local infrastructure only.	A	A, B, D	C, D
Voluntary planning agreements	Phase out	NA	A, B, D	C, D
Special rates	<p>Amend current legislation to allow application in designated local improvement precincts for a fixed period (say 20 -25 years) for local contribution to major transport and civil infrastructure.</p> <p>Allow local councils to access municipal bond market to finance infrastructure, subject to local referendum.</p>	A	A, B, D	C, D

Value-capture method	Recommended legislative and administrative actions	Level of government and responsibility		
Sale of bonus gross floor area (GFA)	<p>Currently in use on a limited scale by some local government authorities, but lacks a consistent and uniform approach.</p> <p>Develop national and state standards, guidelines and model local government enabling legislation.</p> <p>Example: Carrying out bonus development in the public interest, Burwood Council (NSW)</p>	A	A, B, C	C, D
Sale and / or lease of air rights	Develop national and state standards, guidelines and model local government enabling legislation.	A	A, B, C	C, D
Sale or lease of surplus development sites	Develop national and state standards, guidelines and model local government enabling legislation.	A	A, B, C	C, D
Parking levies	Currently in use. Maintain and enhance to support public transport.	NA	NA	NA
Hotel taxes	<p>Introduce at selected local precinct levels to help fund on-going public domain investment, maintenance and renewal.</p> <p>Applications: Central business districts, stadia, entertainment and cultural precincts</p>	A	A, B, C	C, D
Capital Gains Tax (CGT)	Hypothecate an equitable share of capital gains "super profit" from property value uplift caused by a public infrastructure investment. Use this as a funding source for the infrastructure.	A, B, C	N/A	N/A
Property development.	Provide urban renewal and transport authorities with stronger powers to acquire property for critical infrastructure, add value through zoning and infrastructure improvements, and on-sell it for a profit, with the profit used to fund the infrastructure.	A	A, B, C	C

KEY:

- A – Develop national / state legislation, standards and guidelines
- B – Lead
- C – Provide input and support
- D – Implement and administer
- NA – Non-applicable

INTERNATIONAL EXPERIENCES

INTERNATIONAL HIGH SPEED RAIL PROJECTS JAPANESE HIGH SPEED RAIL

The Shinkansen is Japan's HSR network which links the majority of major cities in Japan. It was the first HSR network in the world, opening in 1964. It is currently 2,397km in length, with new HSR and MagLev lines either in construction or planning stages. Trains on the Shinkansen have an average daily delay of 0.6 minutes per train, and in the more than 5 decades of operation, there have been no injuries or fatalities to any passengers (JR Central 2016).

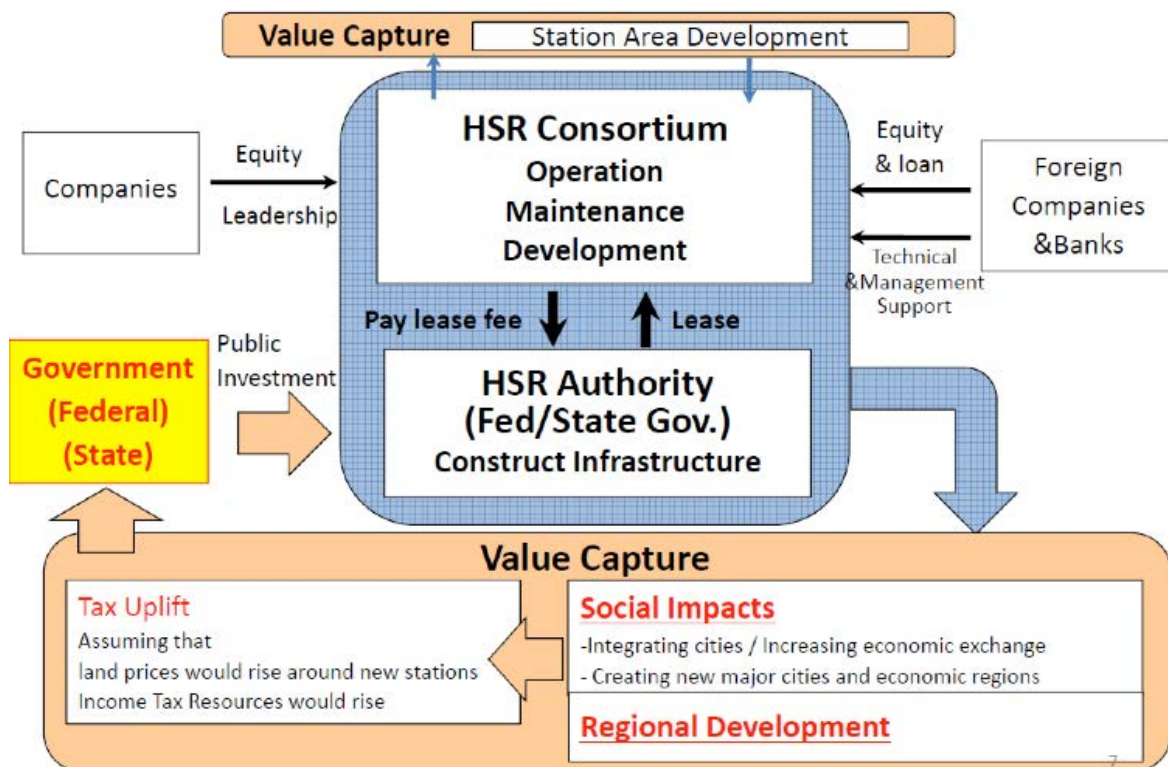
Regions served by the Shinkansen generally have higher economic and population growth rates than regions that are not directly serviced by the Shinkansen. These differences are largest in the areas of knowledge economies, with employment growth rates at 22% in cities with Shinkansen and expressway service compared to 7% in cities with only expressway service (Huang and Sussman 2011).

Land values around Shinkansen stations have increased as a function of the travel times they offered to Tokyo and other large city areas. Stations in Tokyo and other large cities have also increased in value, in part thanks to large scale urban regeneration projects that turned them into attractive commercial and residential precincts. Joint-development projects created high-rise office towers, expansive shopping malls, high-quality public green plazas and attractive pedestrian zones, drawing in firms and workers. Much of this commercial redevelopment was done not only to increase ridership of the network, but also to promote land value capture around the Shinkansen stations (Murakami and Cervero 2012). The tax uplift created through the rise in land prices and business activity as a result of the Shinkansen stations enabled the Japanese Government to secure loans for the construction of the HSR lines. The ongoing revenue created through station area developments is also captured to assist in the ongoing operation and maintenance of the Shinkansen, as seen in Figure 2 (JR Central 2015).

Japan's Shinkansen network has served to promote job growth and increase land values around its stations. The successful use of value capture programs as part of the Shinkansen networks has provided a strong return on public investment (JR Central 2015). The Shinkansen stations in the larger cities have become hubs for business and leisure as a result of the combination of HSR passenger access and joint development between the rail operators and private developers to provide space for business, retail, leisure and culture. When developed to their optimal potential in combination with value capture methods, HSR stations have the capacity to contribute to the underwriting of train operations (AECOM 2013).

International experiences of the delivery of high speed rail projects by value capture methods and the impact of high speed rail on city and regional development

FIG 2 JAPANESE ASR FUNDING MODEL



Source: JR Central 2015

CHINESE HIGH SPEED RAIL

China's HSR network is one of the newest systems in the world, with construction starting in 1999. It is also the largest network in the world, with around 17,000km of HSR track with an average speed of 200km/h. China is planning to expand this network to 30,000km by 2020 through investments of US\$300 billion, with the intention of creating the largest, fastest and most technologically advanced HSR system in the world. It is also the most heavily used network in the world, with a daily ridership of 2.49 million passengers.

China has experienced significant gains in labour productivity, jobs, industrial growth and regional development due to investment in HSR (The World Bank 2014). China's HSR network is economically sustainable in terms of operating and interest costs. In addition, the HSR network is generating substantial new passenger flows and increasing land and property prices. This is increasing revenue for local governments, at an estimate of US\$304million per year for every 1000km of track (Morgan Stanley 2015).

Studies into the effect on real estate prices of HSR in China note a direct correlation between connecting cities with HSR and a rise in property prices. Estimates show a 4.3% increase in real estate prices per billion passenger-kilometres annually. These results were most evident when HSR was used to connect regions that were already growing (Zheng and Kahn 2013).

In addition to conventional transport benefits, China is also realising agglomeration-induced productivity effects as a result of the HSR, with second and third-tier cities seeing substantial increase in GDP. This is attributed to the productivity effects that arise from the expansion of markets, better matching between producers and consumers, and improved dissemination of knowledge through face-to-face communications (The World Bank 2014).

While China's unique political and market structures are not replicable or directly transferable to Australia, the benefits of its HSR network are clearly evident. Rising property prices, new passenger flows, increased productivity, job growth and the broader effects of agglomeration are being realised from China's investment in high speed rail.

PROPOSED INTERNATIONAL PROJECTS

Dallas to Houston, Texas, United States. Texas Central Railway, a private company, is progressing with plans to construct a 320km/h 386km high speed rail between Dallas and Houston. One of the company's backers is JR Central, and the line will be based on Japanese HSR technology. The estimated US\$10 billion will be entirely funded through private investment, with Texas Central Railway expecting to return a health profit (Crawford 2014).

Miami to Orlando, Florida, United States. All Aboard Florida (AAF) will link Miami, Fort Lauderdale, West Palm Beach and Orlando by 380km of high speed rail track. The privately funded project is expecting to turn a profit through high passenger numbers generated from Orlando, the most visited city in the US, and revenue created from developing over 390,000 square metres of real estate on the land AAF owns around the station sites. The feasibility of this project is essentially being made through the private application of value capture principles (Grabar 2014).



HIGH SPEED RAIL IN AUSTRALIA

The Commonwealth government undertook extensive investigations into the introduction of high speed rail (HSR) to Australia between 2012 and 2014 (AECOM 2013). The High Speed Rail Phase 2 report examined existing and proposed HSR networks throughout the world, focusing primarily on networks in countries with compatible institutional and governance arrangements.

Case studies were drawn from the following examples:

- Taiwan – Taiwan High Speed Rail (THSR)
- Japan – Shinkansen
- Spain – AVE
- The Netherlands – Amsterdam to the Belgian Border High Speed Rail Link (HSL–South or HSL–Zuid)
- United Kingdom – High Speed 1 (HS1)
- United Kingdom – High Speed 2 (HS2)
- France – TGV
- Portugal – RAVE
- United States – California High Speed Rail Project.

REGIONAL DEVELOPMENT

International examples show that the introduction of HSR contributes to regional development, but this is not a guaranteed outcome. One key success factor is the nature of the economic activity in the region. Cities with knowledge economies that support high-end services were more likely to benefit than those with a mining, manufacturing or agricultural base. Intermediate locations equivalent to the larger regional centres along the east coast of Australia tended to attract population from surrounding communities, resulting in some cases in declining populations and economic activity in cities that did not have a HSR station.

Another key success factor of HSR in regional areas overseas is the presence of supporting land use and economic development policies and programs. HSR represents a step change in transport accessibility and investment. Local communities frequently don't have the resources or knowledge to be able to take full advantage of the opportunities created by HSR. Proactive support by the HSR delivery agency and state / provincial government are important factors in leveraging HSR's contribution to regional development.

VALUE CAPTURE CASE STUDY

The Phase 2 report also examined the potential contribution that value capture mechanisms could make to the \$114 billion cost of the HSR project. Sydney's Central Station was selected as the case study location. The case study estimated the revenue that could be generated and captured under an urban renewal program around Central Station. The 30 year program was designed to transform the railway yards from a physical barrier and visual eyesore into a new iconic civic and commercial precinct south of the CBD.

The Central Station redevelopment concept estimated that around 3 million square metres of additional commercial and residential floor area could be produced within an 800 metre precinct of the station over 30 years. This added 16,500 dwellings to of the over the "business as usual" base case of 31,500 dwellings.

Uplift in property values and public tax revenues from six revenue sources were calculated under high, medium and low growth scenarios. Under the medium growth scenario, it was estimated that \$2.8 billion (\$2012 - NPV of Net Cash Flow) of increased tax revenue would flow from the redevelopment program into NSW and City of Sydney accounts.

FIG 3 CENTRAL STATION HSR REDEVELOPMENT PRECINCT



Source: AECOM

TOURISM

The Phase 2 report also considered the impact of improved regional accessibility on tourism. Tourism in Australia contributes billions of dollars each year to the country's gross domestic product. While the whole nation benefits from this, it is especially important for regional economic development, with tourists spending 46 cents out of every dollar in regional areas (Tourism Australia 2011).

Research suggests that HSR can enhance the economic advantages of tourist-oriented areas. Japan's ancient capital city, Kyoto, has experienced significant gains in regional businesses, local services and educational institutions within 5km of the station, making it one of Japan's most popular cultural and leisure destinations. This growth was assisted through the provision high-speed services between Kyoto and Tokyo (Murakami and Cervero 2012).

China has experienced a similar pattern with the introduction of its HSR to its regional areas. Tourist trips have increased rapidly to major attractions along the HSR, such as Qufu, an attractive city in the Shandong province. Qufu has seen a net increase in the number of visitors, which is in part attributable to reduced travel times and costs made possible by HSR (The World Bank 2014). Provinces with HSR services have approximately 20% higher foreign arrivals and 25% higher tourism revenues than provinces without HSR service (Chen and Haynes 2012).

IMPLEMENTING VALUE-CAPTURE IN GREENFIELD AND BROWNFIELD DEVELOPMENT

Contemporary value capture programs were developed in the United States during the 1960s as a means of rebuilding California's urban centres wracked by segregation, job losses, falling tax revenues, and economic development challenges. Since that time, value capture programs have evolved from being used purely in urban renewal programs to also funding greenfield infrastructure in new developments. Some commentators have criticised this trend because it can be used to rob economic activity and population growth from one community to another.

Increasingly, major transport projects have combined this funding tool with other sources to fill the growing worldwide gap in infrastructure funding, such as previously cited examples in the UK, the US and Japan. As outlined in Tables 4 and 5, integrated land use – transport planning provides the best opportunities for implementing value capture methods because of the synergistic effects each element has on the other. Improved transport connections and supportive land use plans create agglomeration opportunities for businesses, lifting the demand for and value of land, and generating economic activity that multiplies tax revenue.

Methods for implementing value capture in greenfield and brownfield locations are essentially the same, particularly when the principles listed in Table 5 are applied. Typically, however, brownfield value capture programs experience a greater relative change in land value and tax revenues because they tend to be located closer to existing centres of population, jobs and economic activity.

An important factor in both settings is for state and local planning agencies to have comprehensive, long-term land use plans and development controls in place in well advance of funding and delivering infrastructure. The benefits of long term, strategic planning include the ability to avoid costly compulsory acquisition programs which occur when sites and corridors for critical infrastructure are taken for incompatible uses. This is discussed in more detail below.

CAPTURING FUTURE VALUE OPPORTUNITIES WHEN RESERVING TRANSPORT CORRIDORS

Major infrastructure requires appropriately aligned and adequately sized land corridors to ensure its cost effective delivery and maintenance of infrastructure assets. Protecting transport corridors well in advance of need is not only good long term planning, it can significantly reduce land acquisition costs when projects are eventually developed. Corridor protection is particularly important for major transport corridors due to their sometimes unique technical specifications and limitations. For example, high speed rail corridors require minimum 30 metre wide corridors stretching thousands of kilometres to accommodate two dedicated tracks for their exclusive use. In addition, HSR trains travel in excess of 350 km/hr, requiring a much wider turning radius than conventional suburban or intercity rails (AECOM 2011).

Corridor preservation requires the acquisition of parts or the whole of private and public properties, typically done in three ways:

1. Consultation with land owners, agreement of sale price and purchase by the acquisition authority
2. Compulsory acquisition of properties using state or Commonwealth legislation
3. Open market purchase as properties come onto the market (AECOM 2011)

Mitigating future costs of acquiring critical infrastructure corridors requires long term strategic land use planning (AECOM 2011). The early identification and preservation of corridors can deliver significant material benefits to both the public and private sector by providing greater certainty in planning, investment and development to both the land owner and infrastructure delivery agencies. It can also be cheaper and fairer when done voluntarily with the owner, serving to reduce the overall cost of the project and avoiding delays and negative publicity (WAPC 2007).

Overlay zoning provides one method of reserving land for a proposed corridor by reducing the risk of significant development occurring within the corridor. Overlay zoning allows existing uses to continue while notifying land holders and the public of its future public need. Regulations are attached to the overlay zone to help guide development in the corridor, such as avoiding major construction projects (CLUE 2005). While these zones can help preserve corridors and reduce acquisition costs, infrastructure delivery agencies may be required to purchase land ahead of need if landowners are financially disadvantaged by the overlay zoning. Upfront funding of these programs is therefore frequently required.

One of the best examples of an effective corridor protection program is found in Western Australia. The Metropolitan Region Improvement Tax (MRIT) is an annual tax of 0.14 per cent on land valued over \$300,000 in the metropolitan region surrounding Perth. The tax is hypothecated into a dedicated account and used to progressively acquire essential sites and corridors for transport infrastructure. Examples include the purchase of land for the Graham Farmer freeway and sections of the Mandurah railway line that were not already reserved. The value of land purchased for transit corridors and infrastructure in these cases was \$1.5 billion (\$2005) (WAPC 2007). The MRIT is linked to the WA Planning and Development Act, and the zoning provisions under the Metropolitan Region Scheme for Perth (a metropolitan-wide zoning plan) which reserves the infrastructure corridors (and regional open space).

Other examples include the Miami-Dade Metropolitan Planning Organisation's plan to implement a 0.5 per cent sales tax increase and an increase on Real Property Tax of an additional \$0.25 per \$1000 of taxable property value. These measures will generate \$57 million and \$280 million per year in additional revenue, respectively, for corridor acquisition (MDMPO 2015).

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