

## CAPTURING VALUE: New Funding Strategies for Transport Infrastructure

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**ABSTRACT**

In line with the global demographic shift towards urbanisation, Auckland is bracing itself for a forecast additional 735,000 people by 2043, almost doubling its 2013 population (Statistics NZ 2017). New Zealand's other major urban centres also face significant growth pressures.

Well planned public infrastructure is the foundation of modern society, contributing to productivity, quality of life and economic prosperity. However, it also needs huge amounts of funding. Delivering smart infrastructure investment to address high rates of growth in cities is challenging city leaders and governments across the globe.

This paper will explore the use of 'Value Capture' methods to help close the transport infrastructure funding gap. Value capture is an alternative funding method that allows public agencies to capture and reinvest some portion of the value uplift from those who are directly benefiting from major public infrastructure investments and large scale land re-zoning.

This paper first outlines the growth pressures on our cities, and the resulting 'funding gap' for infrastructure investment. It then explains what value capture is, and what common sources of revenue can be captured. International examples of its implementation in the United Kingdom, Hong Kong, and United States are presented, along with a summary of the opportunities and challenges for implementing value capture in New Zealand.

## INTRODUCTION

In line with the global demographic shift towards urbanisation, Auckland is bracing itself for a forecast additional 735,000 people, a 49% increase by 2043 on the 'Medium' population projection (Statistics NZ 2017). Hamilton City is expected to grow by around 42%, Tauranga City by 44%, and the Canterbury Region (based around greater Christchurch) by about 30%. These Statistics NZ population forecasts will be affected by local and global events up to 2043 and therefore this growth is not certain by any means, but it is clear that our cities are expected to grow significantly.

Well planned public infrastructure is the foundation of modern society, contributing to productivity, quality of life and economic prosperity. However, it also needs huge amounts of funding. Delivering smart infrastructure investment to address these high rates of growth in cities is challenging city leaders and governments across the globe. As a result, increasingly innovative methods of funding infrastructure are being sought.

This paper will explore the use of 'Value Capture' methods to help close the transport infrastructure funding gap. Value capture is an alternative funding method that allows public agencies to capture and reinvest some portion of the value uplift from those who are directly benefiting from major public infrastructure investments and large scale land re-zoning.

## INFRASTRUCTURE FUNDING GAPS

It is estimated that between 2016 and 2030, the world needs to invest about 3.8 per cent of global GDP, or an average of \$3.3 trillion a year, in economic infrastructure just to support expected rates of growth (McKinsey Global Institute 2016). However, current projections indicate that global infrastructure investment will fall short of this need by 11 per cent, or \$350b.

The gap in infrastructure investment is caused by a number of factors, including;

- Population and economic growth;
- Historic under-investment in both capital, maintenance and asset renewal investment;
- Increasing safety, environmental and technical standards; and
- Advances in technology.

Governments have few politically appealing options for meeting rising infrastructure funding gaps. Increasingly, infrastructure agencies are investigating alternative funding streams, such as capturing the value of public infrastructure investments, introducing user charges, selling existing assets and recycling the proceeds from the sale of new infrastructure.

The Ministry of Transport (2016) as part of the Auckland Transport Alignment Project (ATAP) estimated the available funding for transport investment in Auckland for the first decade (2018-28) at \$19.8b. The ATAP indicative investment package for the same period is estimated to be \$23.7b, resulting in a funding gap of around \$4b over 10 years, or around \$400m per year.

Our cities need to keep pace with global infrastructure investment trends in order to preserve New Zealand's international competitiveness and to maintain the high quality of life enjoyed by its citizens. Investment in transport infrastructure is one of government's largest capital expenditures and has the potential to generate the most widespread community benefits of any infrastructure class if done well. Increasingly, governments are examining the link between transport investment and value capture funding methods to help close infrastructure funding gaps.

## VALUE CAPTURE

Well-conceived and implemented public projects can increase land values by up to 50 per cent (McIntosh et al. 2014). The extent of the uplift depends on a number of factors; the nature of the infrastructure, the proximity of the property in question, accessibility and urban design amenities. For example, recent improvements to Sydney’s suburban rail network around Epping station nearly tripled the value of nearby single dwelling properties from an average of AUD\$1.2m to over AUD\$3m each (Collier 2014).

The beneficiaries of public investment in infrastructure, such as property owners located close to a new train station, receive a substantial unearned and untaxed financial windfall, which is effectively subsidised by the public. If some portion of this funding was ‘captured’, it could help to repay loans or infrastructure bonds to fund the project.

Value capture funding methods identify and collect an equitable portion of the public’s investment in infrastructure from the beneficiaries of the investment. These methods identify direct and indirect beneficiaries and use a variety of measures to fairly and transparently collect some portion of the value created by the public’s investment. In practice, this means that some portion of public tax revenues and property values that increase as a result of the public’s investment in, say a new transport interchange, are pledged (“hypothecated”) to help fund that interchange.

The principal that beneficiaries of public investments contribute an equitable share of the value they receive is an important characteristic of value capture methods. This allows policy makers to balance funding sources between direct and indirect beneficiaries on the one hand, and the other stakeholders and users serviced by the investment on the other.

In its most direct application, value capture methods do not introduce a new tax, although they are frequently combined with traditional taxes to balance charges among users, beneficiaries and the wider community served by the investment. They capture some part of the uplift in tax revenues or land values above ‘business as usual’ revenues which result from public projects. A portion of this incremental revenue is then hypothecated into dedicated accounts to help pay for the project.

### Value Capture Model

Figure 1 illustrates a conceptual value capture funding model.

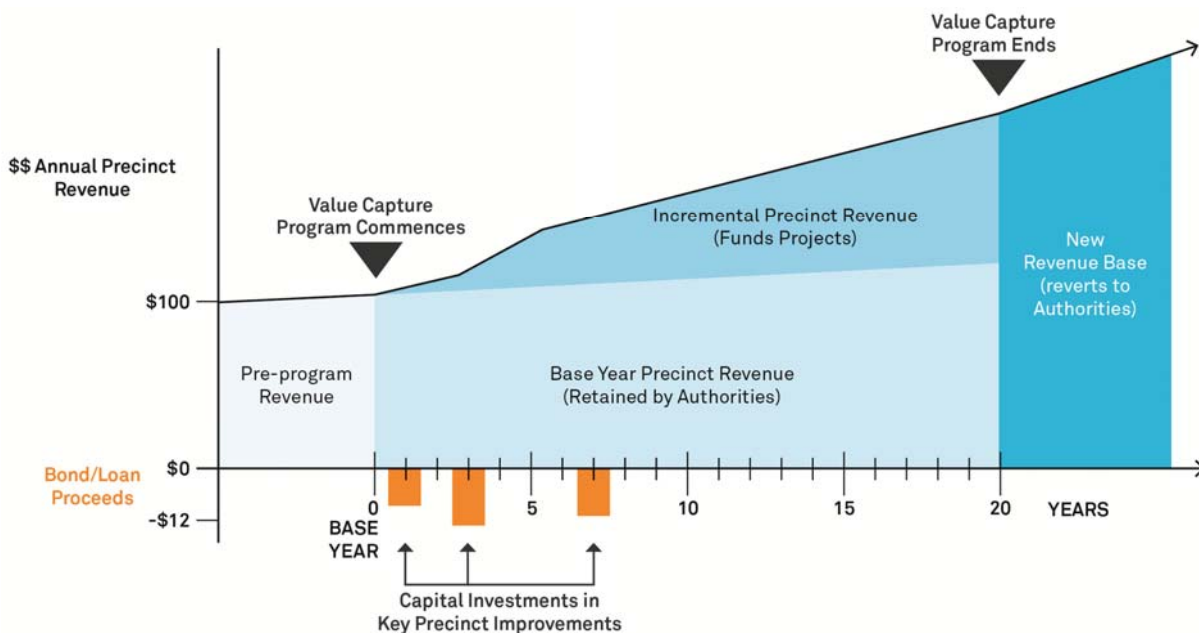


Figure 1: Value Capture Conceptual Model

Source: AECOM

The value capture model involves the following process:

- Revenues are determined for the 'Base Case' (without investment) scenario;
- A programme of value-creating capital investments are planned and implemented in clearly defined improvement precincts;
- Incremental revenues are calculated above the Base Case scenario and hypothecated into dedicated accounts to fund the investment;
- The value capture programme ends after the planned investments are fully funded; and
- The new revenue (Base Case plus Incremental Precinct Revenue) reverts to taxing authorities.

Value capture is not just a funding mechanism. It's also a decision-making tool that can be used by government to promote long-term, sustainable economic growth. When properly applied, value capture funding provides a holistic approach to infrastructure investment and economic development that recognises that well-planned and delivered public investment, particularly in transport infrastructure, generates increases in tax revenues and property values that can be used to help close emerging infrastructure funding gaps.

## VALUE CAPTURE IN THE NEW ZEALAND CONTEXT

In New Zealand, public sector capital and maintenance costs for infrastructure are typically funded from three sources:

- Government consolidated revenue;
- User charges; and
- Charges to landowners or developers, including development contributions, financial contributions and targeted rates.

Although they are not currently used as a funding source in New Zealand, value capture methods would fall into the third category, because they are concentrated on capturing the increased value that is created to surrounding land by transport investments (Kemp, Mollard and I Wallis Associates 2012). This added value is gained as a result of increased accessibility arising from:

- Improvements from development to the land;
- Improvements in the surrounding community and public domain; and
- Improvements in accessibility of the land.

Transport appraisal methods used overseas recognise a wide range of benefits arising from transport and urban development projects, including:

- Increased tax revenues accruing to public taxing authorities, such as council rates and land taxes;
- Traditional economic benefits, such as travel time and travel cost savings; and
- Wider Economic Benefits (WEBs), which refer to transport benefits that are not included in conventional cost-benefit analyses, such as agglomeration, labour market expansion and increased competition (KPMG Advisory 2015).

The first of the benefits listed above, increases in public tax revenues, is an appropriate additional revenue source to consider for growth areas. International experience demonstrates that the most effective value capture programmes require proactive effort and supportive policies by government planning and transport agencies. By combining the right mix of land uses, transport modes and patronage capacities, government agencies can leverage transport investments to increase tax revenues generated by an investment. It therefore follows that capturing some portion of tax increases resulting from these efforts should be returned to those agencies to help fund the investment.

For example, public tax revenues over 30 years from the Mandurah rail project in Perth increased by \$AUD506m in the pedestrian catchment surrounding the rail station compared to the non-transit base case (McIntosh et al. 2015). This represented 30 per cent of capital expenditure for the Mandurah line. However, tax revenues would have increased to over \$AUD1.7b over the same period with active urban intensification around the station. This would have represented 132 per cent of the capital cost of the Mandurah Line. This link between proactive, integrated planning and value uplift is now widely accepted by contemporary practitioners.

Value capture funding arrangements for growth areas in New Zealand should therefore consider the following sources of funding:

- Improvements from development to the land;
- Improvements in the surrounding community and public domain;
- Improvements in accessibility of the land; and
- Increased revenues accruing to public authorities, such as council rates and land taxes.

Whatever revenue sources are eventually selected, the nexus between the infrastructure investment and funding sources should be clearly established and communicated to all stakeholders through a well-planned community consultation programme. This is an important principal in identifying beneficiaries, setting the proportion of value captured and demonstrating the equity of this funding arrangement to stakeholders.

### **Better Urban Planning**

In August 2016, the Productivity Commission released a report examining New Zealand's existing urban planning system and what it could look like in the future. The Better Urban Planning Draft Report (SGS Economics and Planning 2016) recommends that new value capture mechanisms should be considered. Methods such as the sale of development rights, hypothecating incremental tax revenues and introducing more effective land tax measures will compensate Council and central government for infrastructure provision that cannot be met by existing funding streams.

The report states that new development generates additional marginal revenue in the following areas:

- Roads;
- Public transport;
- Water supply;
- Wastewater; and
- Solid waste / refuse.

Value capture funding programmes in New Zealand should focus on applying methods to help fund these infrastructure assets, which are directly associated with both land value uplift and marginal increases in public tax revenue.

## **INTERNATIONAL EXAMPLES**

A number of cities have successfully integrated land use and transport planning to create more sustainable, liveable, and productive urban environments. This section presents international examples of successful value capture initiatives.

### **Crossrail, London, United Kingdom**

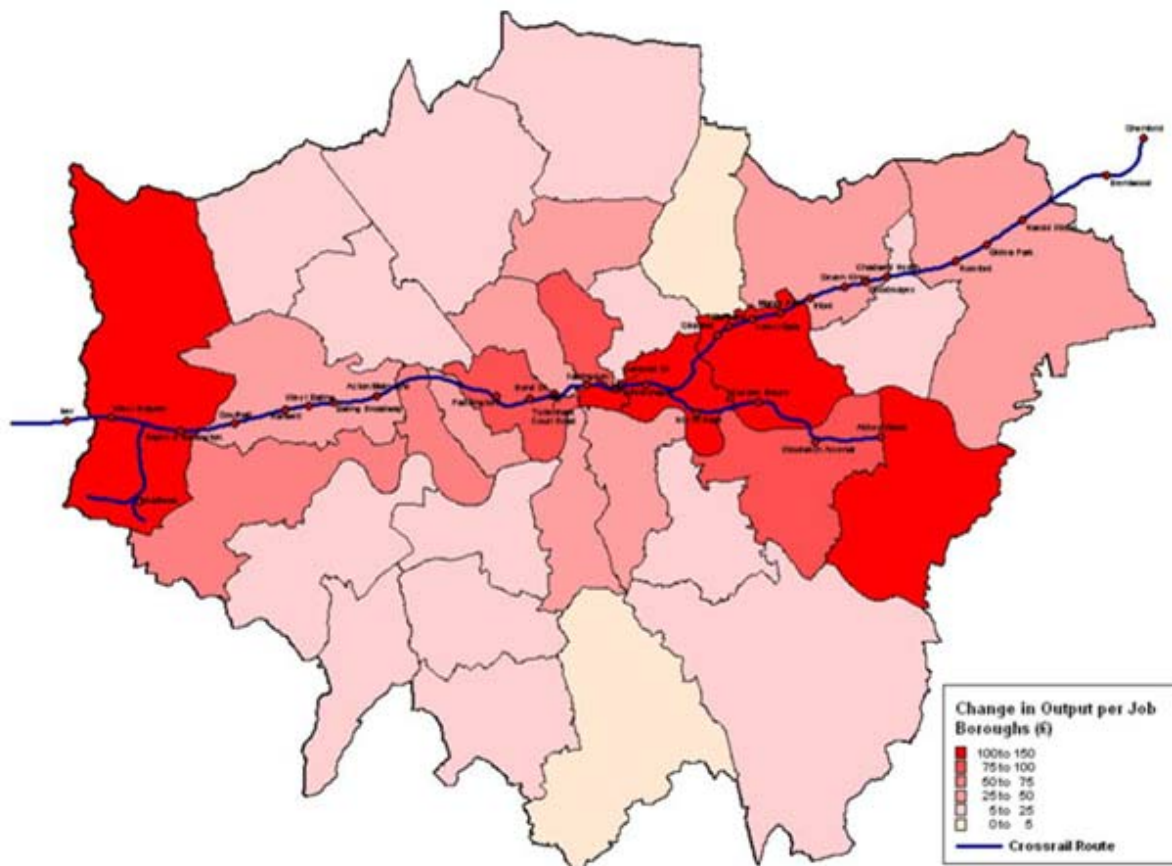
The City of London and transport agencies are investing in Crossrail to support the country's sustained economic growth by improving access to jobs. Crossrail is Europe's largest construction project costing £14.8b, and includes ten stations, 118km of new and upgraded line and 42km of new rail tunnels (Australian Government 2016). The first services through central London will start in late 2018, eventually serving 200 million annual passengers (Department for Transport 2010).

Crossrail will increase London’s transport capacity by 10%. It will bring an additional 1.5 million people to within 45 minutes of central London and link London’s key employment, leisure and business districts – Heathrow, West End, the City, and Docklands. This will allow more workers to find jobs and companies to deliver more specialised, higher value services.

The business case for Crossrail is being underwritten by capturing increased property values in locations served by the project and by transport benefits generated for business and commuters, including:

- Faster journeys;
- Less congested trains and stations;
- Reduced need to interchange; and
- Improved quality of services.

London’s transport benefits arise from the pure agglomeration effects of Crossrail, which captures the increase in productivity workers will experience from improved accessibility to jobs and housing. These benefits are measured as ‘Gross Value Added’ - the additional value of output generated by organisations resulting from employees’ increased productivity. The London boroughs that are projected to experience the most significant changes in accessibility to jobs will have the highest change in output per job, indicated by darker shades in Figure 2.



**Figure 2: Crossrail Impact on Output per Job (£)**

Source: Crossrail

Approximately 26% of Crossrail is being funded by a Business Rate Supplement, a 2% levy on commercial property within the Crossrail catchment which will yield £4.1b (Australian Government 2016). The sale of surplus land will contribute around £500m, and voluntary contributions from developers exceed £230m. Overall this contributes around 35% of total funding, with a further 30% to be raised from user fares.

### **Denver Union Station, Colorado, United States of America**

Denver Union Station in the US state of Colorado is an integrated urban renewal project transforming an abandoned passenger train station into a vibrant urban precinct on the edge of the central business district. Increases in property tax revenues and profits from land sales captured within the 16 hectare precinct contributed around 30% of the project's \$US550m cost (Langley 2013).

### **Mass Transit Rail, Hong Kong**

A long term value capture programme is the Hong Kong's Mass Transit Rail (MTR) transit system, which is 100% fully funded by a combination of fares, commercial station retail rents and joint property development gains (Australian Government 2016). MRT acquires land, improves the land with infrastructure including transit stations, and sells development rights around and over rail stations, as well as partnering with developers in joint developments. Development sites around the station are leased at the new values with the infrastructure in place (The Transport Politic 2010), ensuring that the MTR reaps the value uplift which it can re-invest in the next station.

### **Transbay Transit Centre, San Francisco, United States of America**

The Transbay Transit Centre is a good example of how the scope of a project can be influenced by the available funding and funding mechanisms. Originally a transport project, a culmination a new neighbourhood was created with homes, offices, shops, a 326m tower and a 5.4 acre park on the roof of the Transit Centre.

Phase 1 is \$US1.6b, which has been part funded by development opportunities including \$US429m in land sales, and a \$US171m US federal loan to be funded from future property taxes (Australian Government 2016). Approximately \$US430m in net property tax is anticipated over the life of the plan, with \$US178m hypothecated to pay for the cost of the Transit Centre. An additional \$US100m from local sales taxes and \$US200m from the Bay Area toll bridge revenue are also contributing as beneficiaries of the project.

### **Paris Metro, France**

In Paris, the metro system is undergoing a major 200km extension costing €30b. The vast majority of funding will be from a regional tax on commercial buildings allocated directly to the project (Australian Government 2016).

## **CHALLENGES AND OPPORTUNITIES**

The Australian Government (2016) notes a number of challenges and opportunities to consider with implementing value capture mechanisms for transport infrastructure investments:

- The property industry may see value capture as 'just another tax' on property developers;
- To get community buy-in there needs to be clear line of sight between the payment being made and the benefit being received;
- Comprehensively identifying who will benefit, directly or indirectly, from the investment;
- Why would beneficiaries pay if the project will be built by others anyway?
- Proving that beneficiaries will receive benefits, and will value that benefit they receive;
- Optimum value uplift does not come from transport infrastructure alone;
- If value capture tries to harvest all of the value uplift for the prime investor, then land owners may not have incentive to develop their properties;
- The time delay between the capital being needed and when the benefits arise; and
- Developing appropriate market processes for value capture projects.



## SUMMARY

New Zealand's major urban areas are facing significant growth pressures to 2040 and beyond. Well planned public infrastructure is needed to address this growth, in order to preserve New Zealand's international competitiveness and to maintain the high quality of life enjoyed by its citizens. This infrastructure requires huge amounts of public funding, particularly in transport investment, which is beyond the ability of our existing funding mechanisms to provide.

Investment in transport infrastructure is one of government's largest capital expenditures and has the potential to generate the most widespread community and economic benefits of any infrastructure class if done well. The beneficiaries of public investment in infrastructure, such as property owners located close to a new train station, receive a substantial unearned and untaxed financial windfall, which is effectively subsidised by the public.

Value capture is a funding mechanism which seeks to identify and collect an equitable portion of the public's investment in infrastructure from the beneficiaries of the investment. These methods identify direct and indirect beneficiaries and use a variety of measures to fairly and transparently collect some portion of the value created by the public's investment. This revenue can then be used to help repay loans or infrastructure bonds that have been used to fund and build the project.

Value capture is not a modern concept, and there are a number of successful international examples demonstrating how it can work in practice, one of the best examples being Crossrail in London. But it is not a 'silver bullet'. Is unlikely to fully fund a project, but it can contribute a substantial portion of the costs. There are still a number of challenges and opportunities to be fully considered before it can be implemented in New Zealand.

The New Zealand Productivity Commission encourages consideration of value capture for roads, public transport, water supply, wastewater and solid waste / refuse infrastructure projects. Embracing Value Capture, as part of a range of innovative financing mechanisms, will enable New Zealand to continue to deliver the necessary infrastructure that will make living, working and doing business easier.

## ACKNOWLEDGEMENTS

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