

Financial incentives for local development

Final report

New Zealand Productivity Commission
July 2016



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years of insight.



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TABLE OF CONTENTS

1	EXECUTIVE SUMMARY	2
2	ECONOMIC AND POLICY CONTEXT	3
2.1	Economic impacts of local development	3
2.2	Regulatory context in New Zealand	4
	Expenditure requirements	4
	Revenue sources	5
2.3	Financial implications of new development for local councils	7
	Costs	7
	Revenue	9
	Discounted cash flow analysis	11
2.4	Financial implications of new development for Central Government	13
3	ADEQUACY OF POLICY RECOMMENDATIONS	15
3.1	Policy context	15
3.2	Methodology	16
3.3	Assessment of potential barriers	16
	The coverage of policy recommendations and findings	16
3.4	Practicality or costs of funding mechanisms	22
3.5	Summary findings	22
4	ADDITIONAL RISKS AND BARRIERS	23
4.1	Financial risks	23
4.2	Additional risks and barriers	24
4.3	Summary findings	25
5	A FUNDING TOOLKIT	26
5.1	Economic criteria and function	26
	Development contributions	27
	Sale of development rights	31
	Tax Incremental Financing	34
	Targeted rates	36
	User charges	38
	Land value capture	40
	Central government funding	43
6	CONCLUSION	45
7	APPENDIX	48
7.1	Literature review	48

1 EXECUTIVE SUMMARY

In July 2015 Local Government New Zealand (LGNZ) published the report *Local Government Funding Review: 10 point plan: incentivising economic growth and strong local communities*. The report argued that the funding arrangements of local governments meant that it could be less than welcoming of economic opportunities including facilitating new housing.¹

The New Zealand Productivity Commission made findings and recommendations in its recent report *Using land for housing (2015)* that were aimed at improving the financial incentives on councils to develop more land and invest in infrastructure in order to accommodate the demands for growth in their areas. These suggested remedies included reforms to and/or greater use of:

- targeted rates,
- debt funding,
- rating Crown property,
- congestion charges,
- infrastructure user charges,
- development contributions that fully recover costs, and
- rates based on increases in property values.

This report assesses the extent to which these recommendations and findings have the potential to adequately incentivise councils to actively accommodate growth pressures, or whether alternative funding mechanisms are required.

We find that the policy findings and recommendations above are sufficient in scope to cover all the funding requirements of local councils, and are inexpensive to implement relative to the revenues generated. However, they don't adequately account for the various risks that councils typically face in funding infrastructure. These include risks associated with changing infrastructure standards and changes in demand for residential and commercial development.

Our analysis of alternative policy options suggested the following:

- Where possible, development contributions plans (DCPs) with full cost recovery and targeted rates should be used to recover capital costs of infrastructure provision,
 - o In the case of infill development, sales of development rights may be a more practical measure
- User charges should be used where possible to ensure the efficient use of infrastructure, with targeted rates used where necessary to recover the remainder of operational and administrative costs,
- Funding tools such as value capture, development rights, and central government funding should be used to compensate councils for the financial risks taken in providing infrastructure and/or providing councils with a financial surplus.
- These tools could also be used if DCPs and/or targeted rates are not sufficient for full cost recovery.

Where funding tools are used to compensate councils for the risks faced, it is necessary to ensure that prudent steps have been taken by councils to reduce such risks. These may include for example a 'just in time' delivery approach. The question of whether funding tools should be used to provide councils with a financial surplus will in practice be a political one. What can be concluded from his report is that from a purely practical point of view, some financial incentives may be required to offset the political barriers faced by councils.

¹ Local Government New Zealand, *Local Funding Review: 10 point plan: incentivising economic growth and strong communities*, p.7

2 ECONOMIC AND POLICY CONTEXT

Local development² is associated with a large range of economic and financial impacts on local residents, councils and surrounding municipalities. In thinking of innovative policy options in the current context, it is important to map out these impacts in order to assess the extent to which they can be better leveraged by local councils. For example, sophisticated value capture mechanisms require an understanding of how local development impacts property prices, while potential funding from the Central Government could be justified if there are sufficient spill over benefits of development to the wider New Zealand community.

2.1 Economic impacts of local development

Using a general equilibrium framework to analyse the impacts of local development suggests that there are a range of potential impacts on both the local municipality in question (direct) and surrounding catchments (indirect). Table 1 below outlines some of the most significant impacts.

TABLE 1 ECONOMIC IMPACTS OF LOCAL DEVELOPMENT

	Primary	Secondary
Direct	<ul style="list-style-type: none"> – The jobs, wages, profits and taxes generated by the development, construction, sale, and maintenance of structures and infrastructure within the municipalities. 	<ul style="list-style-type: none"> – The wages and profits for local area residents earned during the construction period are spent on other locally produced goods and services. – Local jobs, income, taxes, and further development (e.g. retail) are generated as a result of additional structures being occupied. – Property prices adjust due to the additional supply of housing and commercial space. – There are user benefits associated with new infrastructure as well as potential human capital and productivity benefits. – On the other hand, greater levels of congestion and disruption are likely.
Indirect	<ul style="list-style-type: none"> – The jobs, wages, and taxes generated outside the municipalities by the actual development, construction and sale of structures and infrastructure. 	<ul style="list-style-type: none"> – Jobs, income, and taxes generated in other municipalities as a result of higher levels of density. – Potential human capital and productivity benefits.

Source: SGS Economics and Planning

² For the purposes of this chapter, the term 'local development' is used to describe the development of additional residential, commercial or industrial spaces within a municipality as well as the associated infrastructure requirements.

For a given municipality, development will help to promote jobs, wages, profits and taxes generated by the development, construction, sale, and maintenance of structures and infrastructure.

The wages and profits for local area residents earned during the construction period will be spent on other locally produced goods and services. Local jobs, income, taxes, and further development are likely to be generated as a result of additional structures being occupied. In addition, property prices are likely to adjust due to the additional supply of housing and commercial space, while the new local infrastructure will be associated with user benefits as well as potential human capital and productivity benefits.

New development also impacts neighbouring communities. In particular, jobs, wages, and taxes will be generated outside the municipalities by the actual development, construction and sale of structures and infrastructure. While more difficult to quantify, there may also be benefits stemming from potential productivity and human capital benefits from greater density and connectivity between precincts.

This analysis suggests that local councils have the opportunity to capture significant shares of new revenue streams and wealth accretions that stem from infrastructure provision. Technically, however, it is important to note that the net benefits stemming from new development and infrastructure provision are more accurately measured or conceptualised as the incremental impacts relative to what would have occurred if resources were used for alternative purposes e.g. construction activities associated with tourism or manufacturing.

2.2 Regulatory context in New Zealand

Expenditure requirements

In New Zealand, local councils fund their own regulatory activities and many of the infrastructure needs of their jurisdictions. Table 2 below outlines the full list of local council responsibilities. In the case of new development, councils may be required to provide essential infrastructure such as roads, water supply, and waste water. New development may also necessitate growth in social infrastructure such as parks and libraries over time as existing infrastructure reaches capacity.

TABLE 2 RESPONSIBILITIES OF LOCAL COUNCILS

Category	Activity
Roads	– Local roads and bridges
Transportation	– Planning – Passenger – Parking
Water supply	– Potable supply – Potable water treatment – Non-potable
Wastewater	– Sewage network – Sewage treatment – Storm water
Solid waste/refuse	– Collection and disposal – Recycling collection and recovery
Emergency management	– Emergency and disaster management
Planning and regulation	– Building control – Resource planning and consents – Animal control – Marine safety

Culture	<ul style="list-style-type: none"> – Libraries – Museums and galleries – Festival and events – Community arts
Recreation and sport	<ul style="list-style-type: none"> – Aquatic facilities – Sports facilities – Local parks
Community and development	<ul style="list-style-type: none"> – Community safety
Economic development	<ul style="list-style-type: none"> – Business and tourism promotion
Property	<ul style="list-style-type: none"> – Social housing – Councils and community property – Public conveniences
Governance	<ul style="list-style-type: none"> – Council, committees, community & local boards – Citizenship ceremonies
Support services	<ul style="list-style-type: none"> – Overheads, council support services, etc.
Other	

Source: Local Government Funding Review, A Discussion Paper, 2015.

Revenue sources

General

Table 3 below outlines the current funding sources available and the current composition of funding across district councils, regional councils, and unitary authorities. Rates are clearly the largest revenue source, representing between 50 per cent to 65 per cent of overall funding. User fees and charges & grants are the next most significant funding sources. A brief overview of a selected number of these funding sources is provided below.

TABLE 3 CURRENT FUNDING SOURCES

	District Councils	Regional Councils	Unitary Authorities
Rates	53%	51%	63%
Sales and other operating income	15%	18%	11%
Capital grants, subsidies, and donations income	10%	1%	1%
Vested assets	6%	0%	4%
Regulatory income and petrol tax	5%	5%	7%
Current grants, subsidies, and donations income	4%	15%	3%
Interest and Dividends	3%	9%	8%
Development and financial contributions	3%	0%	4%

Notes: The "Sales and other operating income" category includes user fees and charges.

Source: New Zealand Productivity Commission

Rates

General rates are levied on property owners based on the value of property and are used for services that benefit the local community.

User fees and charges

User fees and charges are levied at the users of the infrastructure to recoup some of the capital costs of provision. Currently, user fees and charges can cover a wider range charges including:

- for the amount of water used by a household via the installation of water meters,
- entry fees to public swimming pools or other sporting infrastructure, and
- fees for waste collection.

Grants

Grants are provided to councils as a contribution to the costs of infrastructure provision. For example the New Zealand road network consists of both 'national roads', which are funded by the central government, and 'local roads' which are funded jointly by local government and the national government via the NZ transport agency.

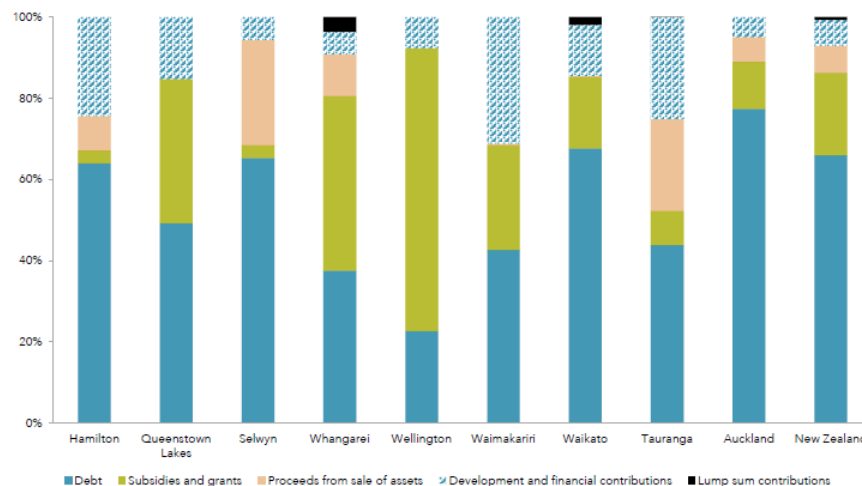
Development contributions

Development contributions are paid by developers to councils as a condition of a consent to develop. Development contributions shift a portion of the infrastructure costs of development onto the developer, allowing councils to recoup some of the capital costs of the new and expanding infrastructure that is required to meet the demands of the new development. Development contributions vary across local council regions, though in high-growth areas they are often between \$20 000 and \$30 000 for each dwelling (NZPC, 2015). The incidence of development contributions has been found to fall on the final purchaser to varying degrees.

Capital funding requirements

In terms of capital expenditure and infrastructure provision, most councils are required in some part to use debt financing instruments to cover a share of the costs. There is, however, a significant amount of variation in debt financing across councils, with the proportion of debt financing ranging from 20 to 80 per cent (Figure 1).

FIGURE 1 CAPITAL FUNDING OF INFRASTRUCTURE



Source: Using Land for Housing, Final Report, New Zealand Productivity Commission, 2015

Reviews of councils have not identified any issues or concerns with the use of debt financing for infrastructure in high growth councils. Many councils are reported to be well within prudent debt benchmarks and they generally have a conservative approach to taking on debt, mainly as reflection of prevailing community attitudes. A small number of high-growth councils are however approaching the debt-servicing threshold established in the *Financial Reporting and Prudence* regulations (NZPC, 2015).

2.3 Financial implications of new development for local councils

When considering the financial incentives facing local councils, it is useful to think of a council in terms of a business, with local development representing a business opportunity. To the extent that the net present value of the flow of benefits over time outweigh the costs, councils may be more encouraged to invest in infrastructure. Table 4 below provides a representative profit and loss statement for local councils with the expenditure and income streams impacted by local development marked by an 'X'. This is a stylised example and in reality, the expenditure and income required is likely to vary on a case by case basis.

Providing infrastructure for new development can have significant risk and cost elements for councils. For example, councils that provide new infrastructure for development that doesn't match housing demand can find themselves facing high borrowing and depreciation costs on an underutilised asset, that also isn't bringing in sufficient revenue via rates. This can often force councils to be conservative with infrastructure roll-outs constraining the supply of 'shovel ready' land.

SGS has attempted below to estimate the marginal costs and revenue (e.g. revenue and costs associated with an additional household) associated with new development for a representative council. These estimates were based in part on data from the Auckland City Council.

TABLE 4 REPRESENTATIVE PROFIT AND LOSS STATEMENT, NEW DEVELOPMENT

Revenue	New development	Expenditure	New development
Rates	X	Roads*	X
User fees and charges	X	Transportation	X
Current grants		Water supply	X
Capital grants*	X	Wastewater	X
Vested assets		Solid waste/refuse	X
Regulatory income, petrol taxes	X	Environmental protection	
Interest & dividends		Emergency management	
Development contributions	X	Planning and regulation	
		Culture	
		Recreation and sport**	
		Community and development	
		Economic development	
		Property	
		Governance	
		Support services	
		Other	

Source: Local Government Funding Review, A Discussion Paper, 2015.

* Councils may get some funding for new local roads to a new development as part of their package of funding from NZTA.

** Culture and recreation and sport facilities may also be required.

Costs

Previous research into infrastructure costs faced by local councils from new developments has found that cost can vary significantly depending on a range of factors including:

- the type of dwellings/structures,
- site typology,
- its proximity to existing infrastructure, and
- density.

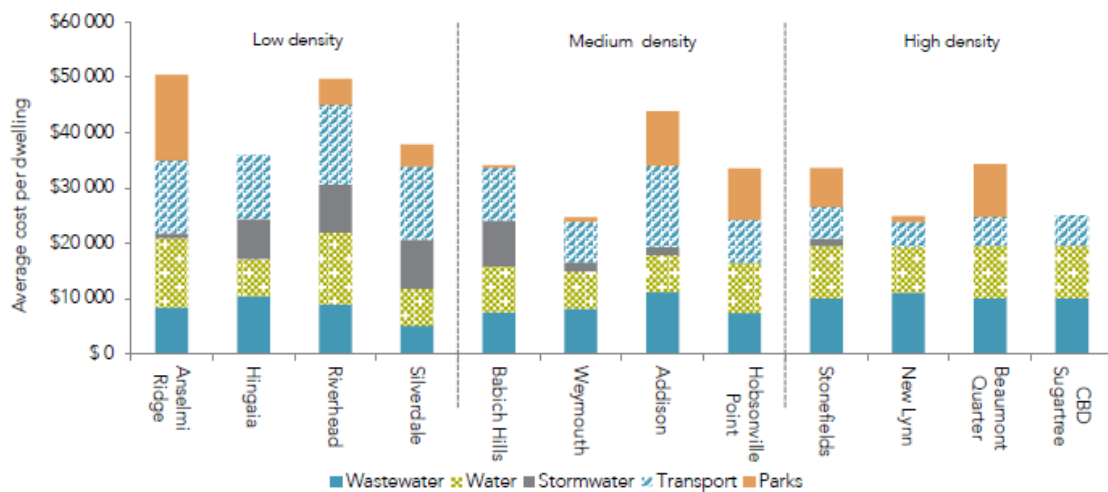
For example, the Urban Taskforce (2009, p. 8) examined the relationship between urban form and infrastructure costs and concluded that “higher levels of urban density, in general, leads to cities that are cheaper to build and run”.

However, they also note that costs are very site-specific and depend on the nature of existing infrastructure and whether a development requires a small additional investment in that infrastructure, or a complete overhaul. This conclusion was supported by recently published research into the cost of infrastructure in Auckland (Centre for International Economics, 2015) which showed that, on average, higher density developments incur lower servicing costs.

Figure 2 below illustrates the cost estimates provided by the CIE. The results suggested that in net present value terms, the marginal cost of housing falling on Auckland Council from an infrastructure perspective:

- for high density or infill areas, is close to \$30,000.
- for low density or greenfield areas, is close to \$45,000.³

FIGURE 2 INFRASTRUCTURE COSTS IN AUCKLAND BY DEVELOPMENT DENSITY



Source: Centre of International Economics, 2015

In its report, the CIE noted a number of limitations including:

- *These costs are a mix of historical and future costs attributable to each development covering water, wastewater, stormwater, parklands and transport infrastructure. After reviewing the information available on the cost of providing community services – halls, schools, hospitals and libraries – it was decided not to include cost estimates for these facilities.*
- *However, a lack of available data meant that only opex data relating to road maintenance and public transport operating costs could be estimated.*
- *There were similar issues when it came to projecting future servicing costs, as it was not always known whether a new development would precipitate the need for further capacity building that had not yet been factored into forward work programs.*

And concluded that:

³ The CIE noted that ‘In the context of this study, transport infrastructure consists of fixed installations (including roads, railways, pedestrian paths, cycleways and terminals such as railway stations, bus stations/stops and ferry terminals) and the public transport vehicles traveling on these networks (including buses, trains, and ferries).’

The costs per dwelling cannot be said to provide a precise estimate of the cost of servicing an area; rather, they provide relative indicative cost estimates of servicing the different case study developments.⁴

As a result, these figures are considered by SGS as lower-bound estimates of the costs faced by councils.

SGS is unaware of any research conducted in New Zealand that could be used to robustly amend the estimates produced by the CIE, while there are also difficulties associated with transferring results of international studies due to the different roles and responsibilities of local councils and service standards across countries. Similarly, robust indicative assumptions regarding the proportion of debt required, the interest rate available and a typical repayment period are difficult to make without further significant investigation. This uncertainty is addressed through the use of threshold analysis below.

Revenue

Less detailed research has been conducted on the marginal revenue associated with new development. From a local councils perspective new residential and commercial residents will potentially be associated with additional:

- Rates income,
- User fees and charges,
- Regulatory income and petrol taxes, and
- Development contributions.

Taking Auckland as an illustrative example, 2015/16 rates are comprised of four components (Table 5):

TABLE 5 AUCKLAND COUNCIL RATES

Component of rates	Description
Uniform Annual General Charge	A fixed rate applied to every rateable property. In 2015/2016 the Uniform Annual General Charge is \$385.
General rate	Based on the capital value of the property. There are nine ways of calculating the general rate, depending on the type of property
Interim transport levy	Charged for each separate residence or business. In 2015/2016, it is \$113.85 for non-business and \$182.85 for business.
Targeted rates (where applicable)	For specific services or projects for certain areas or properties. This could include refuse, recycling and inorganic collections or repayment of financial assistance (e.g. the Retro-fit your home scheme).

Source: Auckland Council

Consultation with the Auckland Council indicated that:

- the average development contribution charge is \$19,055 (excluding GST), though varies geographically,
- the infrastructure growth charge from Watercare Services Limited (the council's wholly owned water and wastewater provider) is \$10,765 (excluding GST), and
- the average residential rates for Auckland Council, excluding the solid waste targeted rate (rubbish and recycling services) and including the interim transport levy (a three year rate contributing to some additional transport investments) is around \$2,400, and
- rates do not cover the costs of water and wastewater. These are funded on a user pays basis, volume of water consumed, by the Council's wholly owned subsidiary Watercare Services Limited.

⁴ The CIE, Cost of Residential Servicing, January 2015.

Households

Greenfield development

Each additional household is expected to be associated with revenue for the Auckland Council in the form of development contributions and infrastructure growth charges of close to \$35 000 and ongoing annual revenue of \$3 500 per annum. This reflects:

- The information provided by Auckland Council outlined above, and an estimate of the above-average development contributions expected for a greenfield site.
- SGS estimates that targeted rates may conceivably, on average, represent close to \$300 for each new household, while it is estimated the user fees and charges per household in 2013/14 were between \$700 to \$800 per annum.⁵

Development is likely to result in an increase in rates revenue received by councils for a particular site due to greater density as opposed to a new source of rates i.e. the land used for development is likely to be privately owned and liable for rates. The scale of the increase will vary significantly on a case by case basis, but has been incorporated in the discounted cash flow analysis below by subtracting 5 per cent from the corresponding estimates of the annual marginal revenue for greenfield development. This assumption (relative to an assumption of 10 per cent for infill development) in part reflects the fact that in Auckland, the general rate for no road access properties is one-quarter of the urban residential rate.⁶

Infill development

Each additional household is expected to be associated with revenue for the Auckland Council in the form of development contributions and infrastructure growth charges of close \$25 000 and ongoing annual revenue of \$3 500 per annum. This reflects:

- The information provided by Auckland Council outlined above, and an estimate of the below-average development contributions expected from an infill site.
- SGS estimates that targeted rates may conceivably, on average, represent close to \$300 for each new household, while it is estimated the user fees and charges per household in 2013/14 were between \$700 to \$800 per annum.⁷

Similar to above, infill development is likely to result in an increase in rates revenue due to greater density as opposed to a new source of rates i.e. the land used for development is likely to be privately owned and liable for rates. The scale of the increase will vary on a case by case basis, but has been incorporated in the discounted cash flow analysis below by subtracting 10 per cent from the corresponding estimates of marginal annual revenue for infill development.

Businesses

Each additional business is expected to be associated with similar upfront revenue from infrastructure and development charges, though the ongoing annual revenue for the Auckland Council is estimated to be closer to \$5 000. This relatively high level of rates reflect:

⁵ This was estimated by dividing the user fees and charges recorded by Auckland in its financial statement by the number of occupied and unoccupied dwellings. Regulatory income and petrol taxes have not been considered.

⁶ For more information, please see:

<http://www.aucklandcouncil.govt.nz/en/ratesbuildingproperty/ratesvaluations/yourrates/pages/rateschangesfromjuly2014.aspx>

⁷ This was estimated by dividing the user fees and charges recorded by Auckland in its financial statement by the number of occupied and unoccupied dwellings. Regulatory income and petrol taxes have not been considered.

- For businesses, the general rate is 2.76 * the urban residential rate.⁸

It is important to note that the general rate revenue received by council will include a number of components in addition to that available for financing new infrastructure, including:

- o A component for broader service provision,
- o A component for maintenance and asset renewal for historical infrastructure investment,
- o Any other costs required to be levied on new residents for councils to meet the overall operating costs across the municipality.

Discounted cash flow analysis

SGS performed discounted cash flow analysis to gauge the extent to which the revenue generated from new development is likely to pay for the infrastructure requirements of councils given the current set of tools available.

This required assumptions to be made regarding the timing of new development - as housing development can follow infrastructure provision with a lag. SGS assumed that the marginal property appears two years after the infrastructure starts to be rolled out.

Based on this assumption, and those outlined above, Table 6 below provides a discounted cash flow analysis of the marginal revenue and costs for a representative council associated with local development. The results suggest initially that councils have a surplus of funds to finance infrastructure requirements. However, this in part reflects the limitations of the CIE cost estimates and the fact that all the rates income has been implicitly assumed to be available to finance infrastructure spending. In practice, this is not likely to be the case.

Given the inherent uncertainties involved, threshold analysis has been used to gauge the extent to which the revenue generated from new development is likely to pay for the infrastructure requirements of councils.

Table 7 below shows that with the following assumptions, the revenue generated from new development should help pay for infrastructure over a 30 year period in net present value terms:

- infrastructure costs for greenfield areas are \$53 000,
- infrastructure costs for infill development are \$44 000,⁹ and
- 60 per cent of the general rate revenue from new residents is available to finance debt associated with infrastructure provision.

Conclusions from this analysis are difficult to draw, with the inherent uncertainties involved. However, given the estimates produced by the CIE and the acknowledged limitations, the assumptions below in Table 7 appear plausible.

As a result, it appears probable that councils are currently in the position to generate sufficient revenue from infrastructure provision to be compensated for the costs involved over the long-term (in net present value terms). However, there is obviously a large degree of uncertainty and findings may vary from council to council.

⁸ For more information, please see:

<http://www.aucklandcouncil.govt.nz/EN/ratesbuildingproperty/ratesvaluations/yourrates/Pages/home.aspx>

⁹ The figures for greenfield and infill areas were selected to ensure that the NPV of costs equalled the NPV of the estimated flow of income over 30 years.

TABLE 6 DISCOUNTED CASH FLOW ANALYSIS, AUCKLAND, AVERAGE PER NEW UNIT, NPV IN \$000, SCENARIO 1

Years	Greenfield		Infill	
	Infrastructure expenditure	Revenue	Infrastructure expenditure	Revenue
1	45	3.1	30	2.9
2		2.9		2.8
3		31.3		23.0
4		2.5		2.4
5		2.4		2.2
6		2.2		2.1
7		2.1		2.0
8		1.9		1.8
9		1.8		1.7
10		1.7		1.6
11		1.6		1.5
12		1.5		1.4
13		1.4		1.3
14		1.3		1.2
15		1.2		1.1
16		1.1		1.1
17		1.1		1.0
18		1.0		0.9
19		0.9		0.9
20		0.9		0.8
21		0.8		0.8
22		0.8		0.7
23		0.7		0.7
24		0.7		0.6
25		0.6		0.6
26		0.6		0.5
27		0.5		0.5
28		0.5		0.5
29		0.5		0.4
30		0.4		0.4
Total	45	70	30	59

Notes: Infrastructure costs are obtained from CIE Report 2015 and were expressed as net present value terms. As a result, it has simply been allocated to the first year. It is assumed that council rates don't rise with inflation. A discount rate of 7 per cent was used.

Source: SGS Economics and Planning

TABLE 7 DISCOUNTED CASH FLOW ANALYSIS, AUCKLAND, AVERAGE PER NEW UNIT, NPV IN \$000, SCENARIO 2

Years	Greenfield		Infill	
	Infrastructure expenditure	Revenue	Infrastructure expenditure	Revenue
1	53	1.9	44	1.8
2		1.7		1.6
3		30.2		21.9
4		1.5		1.4
5		1.4		1.3
6		1.3		1.3
7		1.2		1.2
8		1.2		1.1
9		1.1		1.0
10		1.0		1.0
11		0.9		0.9
12		0.9		0.8
13		0.8		0.8
14		0.8		0.7
15		0.7		0.7
16		0.7		0.6
17		0.6		0.6
18		0.6		0.5
19		0.6		0.5
20		0.5		0.5
21		0.5		0.4
22		0.5		0.4
23		0.4		0.4
24		0.4		0.4
25		0.4		0.3
26		0.3		0.3
27		0.3		0.3
28		0.3		0.3
29		0.3		0.3
30		0.3		0.2
Total	53	53	44	44

Notes: Infrastructure costs are obtained from CIE Report 2015 and were expressed as net present value terms. As a result, it has simply been allocated to the first year. It is assumed that council rates don't rise with inflation. A discount rate of 7 per cent was used.

Source: SGS Economics and Planning

2.4 Financial implications of new development for Central Government

Central Governments also have expenditure requirements and revenue flows associated with new local development. It is important to map these flows so that any potential transfers between Central Government and local councils can be considered. Table 8 below provides a representative profit and loss statement of the Central Government.

A comparison of the representative balance sheets of local and central governments suggests that the flow of revenue and costs faced by local councils and the central government are quite distinct. Taxes on economic activity – income, sales and profit taxes – usually flow to the central government, while the costs with increasing this economic activity are borne by local councils. It is this disconnect that has been reported to have led to central government being pro-development, and often local government being an obstacle to this growth (LGNZ, 2015).

TABLE 8 REPRESENTATIVE PROFIT AND LOSS STATEMENT OF CENTRAL GOVERNMENT

Revenue	New development	Expenditure	New development
Direct taxation:		Social security and welfare	
Direct individual	X	Government superannuation fund	
Direct corporate	X	Health	X
Direct other		Education	X
Indirect taxation:	X	Core services	
Indirect GST	X	Law and order	X
Indirect other	X	Defence	
Other sovereign revenue		Transport and communications	X
Sales of goods and services		Economic and industrial services	
Interest revenues and dividends		Primary services	
Other revenue		Heritage, culture, and recreation	
Total crown revenue		Housing and community	
		Other	
		Finance costs	

Source: Local Government Funding Review, A Discussion Paper, 2015.

3 ADEQUACY OF POLICY RECOMMENDATIONS

3.1 Policy context

In July 2015 Local Government New Zealand (LGNZ) published the report *Local Government Funding Review: 10 point plan: incentivising economic growth and strong local communities*. The report argued that the **funding arrangements** of local governments meant that it could be less than welcoming of economic opportunities including facilitating new housing.¹⁰

The New Zealand Productivity Commission made findings and recommendations in its recent report *Using land for housing* (2015) that were aimed at improving the financial incentives on councils to develop more land and invest in infrastructure in order to accommodate the demands for growth in their areas. These suggested remedies included reforms to and/or greater use of:

- targeted rates,
- debt funding,
- rating Crown property,
- congestion charges,
- infrastructure user charges,
- development contributions that fully recover costs, and
- rates based on increases in property values.

In this chapter we analyse the extent to which these recommendations and findings have the potential to adequately incentivise councils to actively accommodate growth pressures. SGS was requested to assess the adequacy of these options based on the following key criterion:

Whether the measures raise at least enough revenue from growth to cover its costs - so that growth can happen without any significant additional burden on existing residents.

Table 9 below provides definitions for key terms incorporated in the criterion above.

TABLE 9 DEFINITIONS OF KEY CRITERION OF SUCCESS

Terms	Definition
Burden	For the purpose of this report, the term 'burden' is interpreted largely in financial terms as opposed to an interpretation based on a broader welfare concept.
Existing residents	Includes both households, businesses and government 'residents'.
Costs	Includes capital, operating, policy preparation and administration costs.

Source: SGS Economics and Planning

¹⁰ Local Government New Zealand, *Local Funding Review: 10 point plan: incentivising economic growth and strong communities*, p.7

3.2 Methodology

To provide infrastructure to facilitate growth, local councils will generally require access to finance and adequate funding mechanisms that enable costs to be recouped. This section examines the potential adequacy of funding mechanisms with an implicit assumption that finance is accessible (this is identified as a potential barrier in the next chapter).

SGS has adopted a two-step process in its analysis:

1. Identify any potential barriers that may still exist were the recommendations and findings above adopted that would limit councils' ability to fund infrastructure without placing significant additional burden on existing rate payers, and
2. Assess the probability or likelihood that these barriers will exist.

Based on SGS's previous analysis of the Australian planning system and consultation with local New Zealand councils, two potential barriers were identified:

1. The scope of the policies recommended (and other existing policy options) or legislative constraints do not allow councils to cover the full set of cost items that they face,
2. New residents cannot be adequately levied or the implementation cost of funding mechanisms is too high relative to the revenue raised.

3.3 Assessment of potential barriers

The coverage of policy recommendations and findings

Local council costs

Table 10 below outlines the various funding costs that councils face as a result of supplying infrastructure for new development. For the majority of councils, costs will encompass capital and operational costs associated with new infrastructure that they are responsible for providing, as well as policy preparation and administration costs. For some councils, costs may also include those required to attract new residents to the municipality either through marketing channels or financial incentives.

TABLE 10 MARGINAL COSTS OF DEVELOPMENT FACED BY COUNCILS

Infrastructure type	Costs faced by local councils		
	Capital cost	Operational costs	Policy preparation and admin costs
Water treatment plants and storage facilities	X	X	X
Sewage treat plants	X	X	X
Drainage and flood protection works	X	X	X
Trunk sewer and water mains, pumping stations etc.	X	X	X
Public transport facilities	X	X	X
Some local roads and main roads, footpaths, cycleways, traffic signals and lighting	X	X ¹¹	X
Local roads, footpaths, cycleways and lighting within new subdivisions or developments		X	X
Sewer and water pipes within new subdivisions or developments		X	X
Neighbourhood parks		X	X
Sports grounds	X	X	X
Community Halls	X	X	X
Libraries	X	X	X
Recreation centres	X	X	X
Electricity lines, transformers and substations			
Gas lines and infrastructure			
Telecommunication lines, cables, exchanges, towers, connections and transmitters			
State schools and tertiary institutions			
Hospitals			
State highways			

Source: SGS Economics and Planning

Capital and operational costs

Local councils generally supply major infrastructure services up to the boundary of the new subdivision or development. This infrastructure usually takes the form of trunk mains for water and sewage to carry water and wastewater from treatment plants (and may involve the building or expansion of the plants themselves), major roads and community reserves and facilities. In particular:

- Sewage treat plants
- Drainage and flood protection works
- Trunk sewer and water mains, pumping stations etc.
- Public transport facilities
- Some local roads and main roads, footpaths, cycleways, traffic signals and lighting
- Sports grounds

¹¹ Sometimes this will be in conjunction with the New Zealand Transport Authority (NZTA), or with funding assistance from NZTA

- Community Halls
- Libraries
- Recreational centres

Generally, developers and private utility companies provide basic services to each lot in a new subdivision. On completion all services except utility services are usually vested in the local territorial authority which takes over ownership and responsibility for the infrastructure. This includes ongoing liability for its safe operation, maintenance and renewal. The cost of providing this infrastructure is included in the section price.¹²

Councils may also be required to upgrade existing infrastructure in order to accommodate local development.

Policy and administrative costs

Local councils also face policy and administrative costs associated with new development. Limited research is available regarding the scale of these costs across jurisdictions. As indicated above, the Development Contributions Review Discussion Paper (2013) reported that development contribution plans can be in the range of 2 to 4 per cent of the revenue collected (Table 5).

Coverage of policy recommendations

Development contributions that fully recover costs

Development contributions allow councils to recoup the *capital costs* of building new infrastructure, or expanding existing infrastructure to service a new development. Development levies and contributions of various types have been in existence for several decades. The current system was introduced in 2002, and was more recently amended. The legislation set out the infrastructure on which development contributions can be charged:

- reserves;
- network infrastructure (water, wastewater, stormwater, roads and other transport); and
- community infrastructure such as neighbourhood halls, playgrounds, and public toilets.

Recent amendments have restricted the use of Development Contribution Plans (DCP) for other forms of community infrastructure such as libraries, swimming pools, and cemeteries. In addition, DCPs cannot be used to fund:

- operating costs of infrastructure provided by council, and
- operating costs of infrastructure provided by developers and transferred to councils.

While development contributions are levied on developers, the incidence of the levy may fall on the developer or its shareholders (in the form of lower profits), the developer's staff (through lower wages), be passed back to land owners, or be passed forward to final property purchasers.

In theory, the incidence of development contributions will depend on the relative elasticities of the supply and demand for new residential and corporate space and prevailing market conditions. This is largely an empirical question which is likely to vary across councils and vary over time.

In local government areas where there is strong competition among developers, the incidence would be expected to fall on the final purchaser to some extent.

Greater use of targeted rates as a funding mechanism

The Local Government Act 2002 allows councils to set targeted rates to fund activities that benefit identifiable tax payers. The Christchurch City Council, for example, has targeted rates for properties near new cycleway projects.¹³ Targeted rates are a viable option for funding community infrastructure and the

¹² Development Contributions Review Discussion Paper - Department of Internal Affairs, 2013

¹³ The New Zealand Productivity Commission, Using Land for Housing, Final Report, 2015.

operational and administrative costs of infrastructure that are not covered by DCPs. As the name suggest, the incidence of the targeted rates will fall:

- on the new residents and/or
- in the case where new residents are businesses, potentially the local community more broadly in the form of higher prices.

In theory, the incidence of levies placed on businesses will depend on the relative elasticities of the supply and demand for the products being sold and prevailing market conditions. This is largely an empirical question which is likely to vary across councils and vary over time.

In local communities where a number of businesses have been levied with targeted rates, households may have little substitutes or alternative options within a geographical catchment. As a result, the incidence of a targeted rates may be expected to fall on households to some extent.

Greater use of user charges

The findings and recommendations of the Productivity Commission included greater use of user charges by local councils and amendments to the LTMA that enabled councils to adopt user charges for existing roads where this was supported by a formal business case.

With the exception of roads, most types of infrastructure face few legislative barriers to introducing user charges.¹⁴ User charges where practical and financially viable (i) provide councils with an additional funding mechanism that sources revenue from the actual users of infrastructure; and (ii) encourage more efficient use of infrastructure which may reduce the rate of depreciation and maintenance costs.

Value capture mechanism

The purpose of value capture mechanisms are to capture any rise in land values that result from the provision of infrastructure. This could be in the form of a betterment tax or a more formal rule-based system that transfers a specific proportion of any estimated land price uplift.

¹⁴ Ibid.

TABLE 11 SCOPE OF POLICY RECOMMENDATIONS AND FINDINGS TO RECOUP COSTS

Infrastructure type	Costs faced by local councils		
	Capital cost	Operational costs	Policy preparation and admin costs
Water treatment plants and storage facilities	DCP / Targeted rate	Targeted rate / user charges	Targeted rates
Sewage treat plants	DCP / Targeted rate	Targeted rate	
Drainage and flood protection works	DCP / Targeted rate	Targeted rate	
Trunk sewer and water mains, pumping stations etc.	DCP / Targeted rate	Targeted rate / user charges	
Public transport facilities	DCP / Targeted rate / Value capture	Targeted rate / user charges	
Some local roads and main roads, footpaths, cycleways, traffic signals and lighting	DCP / Targeted rate	Targeted rate ¹⁵	
Local roads, footpaths, cycleways and lighting within new subdivisions or developments		Targeted rate	
Sewer and water pipes within new subdivisions or developments		Targeted rate	
Neighbourhood parks		Targeted rate	
Sports grounds	DCP / Targeted rate	Targeted rate	
Community Halls	DCP / Targeted rate	Targeted rate	
Libraries	Targeted rate	Targeted rate / user charges	
Recreation centres	Targeted rate	Targeted rate / user charges	

¹⁵ Sometimes this will be in conjunction with the New Zealand Transport Authority (NZTA), or with funding assistance from NZTA

TABLE 12 INCIDENCE OF POLICY RECOMMENDATIONS AND FINDINGS

Infrastructure type	Incidence of costs		
	Capital cost	Operational costs	Policy preparation and admin costs
Water treatment plants and storage facilities	New communities / users / developers	New communities / users	
Sewage treat plants			
Drainage and flood protection works			
Trunk sewer and water mains, pumping stations etc.			
Public transport facilities	New communities / users / existing residents receiving economic rents*		
Some local roads and main roads, footpaths, cycleways, traffic signals and lighting	New communities / users / developers	New communities ¹⁶	
Local roads, footpaths, cycleways and lighting within new subdivisions or developments			
Sewer and water pipes within new subdivisions or developments			
Neighbourhood parks			
Sports grounds	New communities / existing residents that may benefit from access		
Community Halls			
Libraries	New communities / existing residents that may benefit from access	Users and new communities / existing residents that may benefit from access	New communities / existing residents that may benefit from access
Recreation centres			

- Through the use of a value capture mechanism

¹⁶ Sometimes this will be in conjunction with the New Zealand Transport Authority (NZTA), or with funding assistance from NZTA

3.4 Practicality or costs of funding mechanisms

Limited published estimates are available regarding the administration, compliance and policy costs per revenue dollar for different funding mechanisms. The data that is available from New Zealand and internationally (please see tables below) suggests however that administration and compliance costs are not of a sufficient scale to significantly influence the financial incentives of councils.

In relation to development contributions, the Development Contributions Review Discussion Paper (2013) reported that the administrative and planning costs associated with DCPs can be in the range of 2 to 4 per cent of the revenue collected (Table 13), while international evidence regarding administration, compliance and debt recovery costs in Australia suggest that costs for rates and other land taxes are likely to be less than 1 per cent of revenue collected (Table 14).

TABLE 13 IMPLEMENTATION COSTS – DEVELOPMENT CONTRIBUTIONS

Council	DCP revenue 2013	Policy preparation costs	Policy preparation costs (per cent of revenue)	Implementation Costs	Implementation costs (per cent of revenue)
Central Otago District Council	\$1.33 million	\$33,000	2.54%	\$10,000	0.75%
Auckland Council	\$88.24 million	\$550,000	0.62%	\$600,000	0.68%

Source: Department of Internal Affairs, Development Contributions Review Discussion Paper, 2013

TABLE 14 ACT GOVERNMENT ADMINISTRATION AND COMPLIANCE (% OF INCOME)

	Administration	Compliance	Debt Recovery	Total
Land tax	0.45	0.27	0.10	0.82
Rates	0.38	0.0	0.09	0.47
Payroll tax	0.09	0.21	0.02	0.32
Conveyance	0.25	0.02	0.00	0.28
Insurance duty	0.03	0.05	0.00	0.08

Source: ACT Treasury

3.5 Summary findings

Table 11 and Table 12 above map how these policy options, and others, could potentially be used to fund the costs associated with infrastructure provision, and indicate the likely incidence of these policy options. The tables illustrate that these policy recommendations and findings are in principle sufficient in scope to provide local councils with the potential to fund infrastructure spending in a way that does not significantly burden existing residents. In considering whether the policy options are likely to change the behaviour of councils in practice, however, it is important to consider the full range of financial and/or other risks faced. This is the focus of the next chapter.

4 ADDITIONAL RISKS AND BARRIERS

The previous chapter illustrated that the policy recommendations and options prescribed by the Productivity Commission are *potentially* sufficient for councils to recover the *expected costs* associated with new infrastructure provision while not placing significant additional burden on existing residents. If significant financial and/or other risks exist, however, the suggested policy options may not be sufficient to encourage local councils to actively invest in new infrastructure. The purpose of this chapter is (i) to examine the potential financial and non-financial risks faced by councils when providing infrastructure for new development and (ii) other barriers to infrastructure investment that may exist. While most of the barriers identified are technically outside the scope of the report, they are listed in order to provide a sense of whether changes to financial incentives *alone* are in practice likely to lead to a change in the investment patterns of councils.

4.1 Financial risks

SGS experience with the Australian planning system and consultation with local New Zealand councils suggests that even full cost apportioned contribution rates in a DCP have proven inadequate in funding infrastructure. This has reflected:

- 'Reasonable' provision standards and engineering specifications can change markedly over the lifetime of a DCP due to changing community expectations and regulated requirements. This is particularly so in relation to community facilities but can also affect road, water cycle management and other basic infrastructure,
- Moreover, councils face significant risk on the revenue side of the DCP equation. The rates of growth factored into the Plans are by no means certain. Meanwhile, the lumpy nature of urban infrastructure extension may lock councils into investment in particular facilities regardless of a diminished revenue stream to fund the works in question.
- Risks associated with the fragmented and un-sequenced nature of development in most growth areas. This fragmentation adds to roll out costs compared to the calculations underpinning DCPs which often implicitly assume that land subdivision and development happens in a logical sequence in line with the logical extension of infrastructure networks. Councils are currently authorised to seek additional contributions from developers in the event of fragmented development. However, to the extent the legislation does not adequately compensate for the full range of risks related to fragmented and un-sequenced development, this may represent an additional source of risk for local councils.

Similar risks are present in the use of targeted rates to fund debt in the sense that the actual as opposed to the expected sequence of income generated by new development may not align with the sequence of required repayments.

These risks were highlighted in a number of the recent submissions to the Productivity Commissions recent Land for Housing Inquiry. For example:

It should be acknowledged that Council's take on huge financial risks to manage and facilitate urban and population growth. In most cases where people and organisations take on risk it is because of the expectation of reward. TCC's view is that this risk/reward framework is missing and is the fundamental key to addressing issues like land supply and housing affordability (Tauranga City Council, p.18).

In particular is the cost of that debt (interest) and how to fund it, particularly when actual growth is lower than the planned growth, as happened with the recent GFC (Western Bay of Plenty District, p.6).

Despite this council has decided to mitigate the risk that the growth assumptions do not transpire by setting aside a portion of general rate to ensure that if required costs can be covered where infrastructure has already been provided (Waikato District Council, p.21).

The contractual, 'user pays' nature of DCP levies obliges Councils to deliver the infrastructure. Faced with such uncertainty, any other investor in infrastructure funded by a user pays stream would require a significant risk premium to be built into their tariffs or tolls.

4.2 Additional risks and barriers

In addition to the financial risks outlined above, SGS's consultation with New Zealand local councils and its experience with the Australian planning system suggests there are a number of other risks and barriers that councils can face in providing infrastructure. These risks are summarised in Box 1 below.

BOX 1 ADDITIONAL RISKS AND BARRIERS

Political risks

There are at least three sources of political risk associated with facilitating new development:

- Residents may have an attitude towards new development that is often expressed as NIMBY or Not In My Back Yard. This reflects some of the potential externalities involved in new development such as congestion and changes in property market dynamics,
- Residents may have reservations regarding the level of debt that is required to finance the infrastructure required to facilitate new development, and
- Lastly, Councils have a short-term political cycle which is somewhat at odds with the longer-term time horizon of infrastructure spending. This has been, in other contexts, part of the motivation for the establishment of separate government bodies to oversee infrastructure planning (For example, Infrastructure Victoria).

Tauranga City Council submitted to the land for housing inquiry that:

[m]uch of the NIMBY attitude seems to stem from a fear of change and often a perception that development may adversely affect property values. Given that the 'family home' is generally a household's most significant and often only asset of any note these attitudes are understandable and rational on an individual basis, but probably are not in the national interest. (sub. 47, p. 12)

Other financial barriers

In order to provide infrastructure to facilitate growth, local councils will generally require (i) access to finance; and (ii) adequate funding mechanisms that enable the repayment of any debt.

Councils have at least four stakeholders that can potentially place constraints of some form on their willingness and/or ability to access finance:

- The Central Government through established benchmarks,
- Residents through attitudes to debt,
- Rating agencies through their assessment of creditworthiness, and
- The New Zealand Local Government Funding Agency.

Capability barriers

Councils may have barriers that relate to their capability to access and implement information and best practice principles regarding planning and the provision of infrastructure. To the extent that these barriers exist, some agglomeration of council resources may be required to ensure that there is a suitable level of critical mass to efficiently manage large scale infrastructure planning and provision.

Operational / process barriers

Existing operational processes can lead to unnecessary constraints or barriers to infrastructure provision. For example, consultation with New Zealand local councils suggested that there is further scope to:

- Explore opportunities for the private sector to provide infrastructure,
- Examine methods to enable councils to make a credible assurance of infrastructure provision as opposed to supplying it in advance of local development,
- Purchase land in advance to ensure that land purchase costs don't become prohibitive,
- Review consent conditions, and
- Improve the competitiveness of tender processes.

For example, the Waikato council noted in its recent submission to the Land for Housing Inquiry that:

Ever increasing standards and consent conditions push costs higher, and tenders are not competitive – why does building a new public toilet cost hundreds of thousands of dollars? (Waikato District Council, p.21).

Discretionary rating annual system

The current rating system may make it difficult for councils to increase general rates without any political backlash. A more formal rule-based rating system that was based on land values or economic activity would be more transparent and easier to implement.

4.3 Summary findings

The policy recommendations and options prescribed by the Productivity Commission are potentially sufficient for councils to recover the *expected costs* associated with new infrastructure provision while not placing additional burden onto existing residents. However, in relation to capital costs, the provisions currently underpinning DCPs and the use of targeted rates are largely focussed on cost recovery only. Councils have also advised SGS that general rates are set to recover where necessary annual capital and operation costs after taking into account the income accrued from alternative mechanisms such as user charges and congestion charges. As a result, the increased use of such tools by councils would simply shift funding sources (which may have some efficiency benefits) within an overall financial cost recovery model. Councils therefore appear to currently have limited scope to recover any form of financial risk premium.

It is important to note that the risks faced by councils could potentially be mitigated through other channels such as regulation and/or the implementation of best practice principles. Given the potential operational and process barriers listed above, any form of risk premium considered should be conditional on the demonstration of prudent and efficient management practices. The additional political risks identified above suggest that there is scope to consider the extent to which councils could be afforded the opportunity to earn a financial surplus when investing in infrastructure. The extent to which this opportunity eventuates in practice is likely to be at least in part a political decision.

5 A FUNDING TOOLKIT

The purpose of this chapter is to identify a set of funding mechanisms that would provide councils with sufficient financial incentive to facilitate growth and more specifically address the current inadequate compensation received for financial risk.

Generally speaking, funding tools involve a range of trade-offs. For example, a broad-based land tax may be one of the most efficient funding sources, though in the current context, it may be considered inequitable and would violate the key criteria for success prescribed by the Productivity Commission as it would fall on existing residents.

In addition, based on the analysis above, a given funding tool may have the following purposes:

- Cost recovery,
- Compensation for financial risks, and/or
- Compensation for other risks or provide a financial surplus.

Funding tools may be more suited to one or more of the purposes outlined above. For example, DCPs may provide some degree of certainty that is appropriate for cost recovery, though the suitability of development contributions to compensate councils for the financial risks faced is less clear (this is discussed further below).

As a result, each of the funding mechanisms below has been assessed against a set of economic criteria (including economic efficiency, equity, sustainability, costs, and practicality) as well as the extent to which it is fit for the purposes outlined above.

5.1 Economic criteria and function

Table 15 below provides the definitions used of each economic criteria. Each criteria should be thought of as representing a spectrum on which that different policy options can be positioned. For example, a policy is not thought of as being efficient or inefficient in absolute terms, but as having degrees of economic efficiency. In addition, each funding tool was also assessed against the three functions outlined above.

TABLE 15 ECONOMIC CRITERIA

Economic criteria	Definition
Economic efficiency	Higher levels of economic efficiency imply that the level of excess burden ¹⁷ for the municipality and the rest of New Zealand is reduced. Levels of excess burden are typically associated with the degree of distortion that results from the implementation of a policy tool.
Equity	Higher levels of equity imply (i) those residents that benefit from government infrastructure or services are required to contribute to their costs; (ii) those residents that have led to or been responsible for the additional requirements contribute to the cost of infrastructure; and/or (iii) costs are commensurate with the ability to pay.

¹⁷ Excess burden is defined as the level of utility or welfare in the community that is reduced as a result of the policy or regulation (compared to the utility and welfare obtained in its absence).

Sustainability	Higher levels of sustainability imply that policy measures are more likely to provide sufficient streams of revenue to cover the required capital and operational costs over the long-term.
Implementation, administration and compliance costs	Higher levels of costs imply that policy options are expected to be associated with greater planning, measurement, implementing, monitoring, administration and compliance costs.
Practicality	Higher levels of practicality imply that policy measures would be easier to implement given the current and future political and economic contexts and more likely to align with other incentives faced by councils. For example, residents and voters may be more sympathetic to some funding tools than others.
Function	Definition
Revenue recovery	Funding tools are assessed to be more suitable for revenue recovery when they provide some certainty for council regarding the amount and timing of revenue received.
Compensation of risk	Funding mechanisms can either (i) compensate councils for the financial risks involved in infrastructure provision through a lump sum for example; (ii) transfer risks; or (iii) provide additional revenue streams that ensure that the risks faced by councils have the potential to be sufficiently rewarded in the event of prudent and sensible investments. Preferred funding mechanisms reward prudent investments, as opposed to simply compensating or transferring risk.
Provide additional financial incentives	Funding mechanisms could either (i) simply provide a lump sum payment; or (ii) provide additional revenue streams that ensure that councils have the potential to be sufficiently rewarded in the event of prudent and sensible investments. Funding mechanisms that reward prudent investments, as opposed to simply providing a bounty, are viewed to provide the most appropriate incentive.

Source: SGS Economics and Planning

The assessment conducted required decisions to be made regarding:

- the scoring range, and
- the extent to which policy options are assessed against the absolute level of economic efficiency or the relative level of efficiency (compared to an agreed base case).

SGS decided to assess the policy options on an absolute basis using a scoring range of 0 to 10.

The tables below summarise our assessment of the various policy options to improve councils' financial incentives.

Development contributions

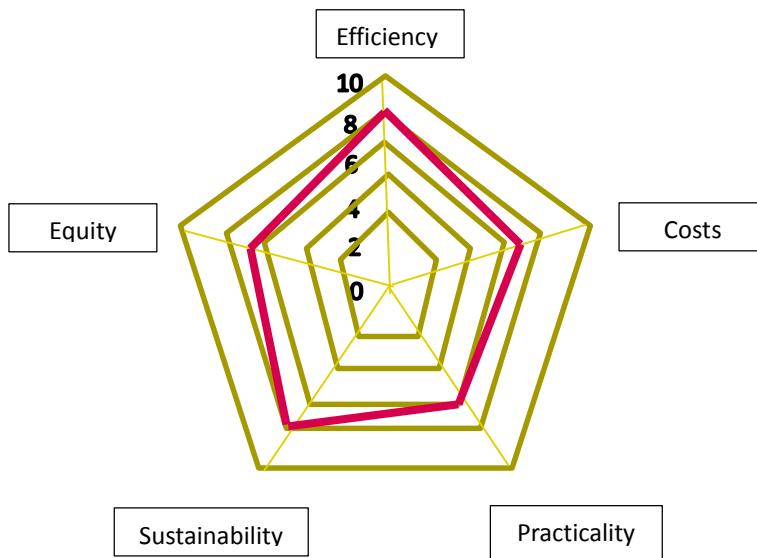
Development contributions usually take one of three forms:

- transfer of land,
- work-in-kind, and
- cash payments.

The analysis below is based on the assumption that development contributions are in the form of either work in kind or cash payments.

The assessment of development contributions against the economic criteria outline above is summarised by the figure below and is described in more detail in the following table.

FIGURE 3 DEVELOPMENT CONTRIBUTIONS – SUMMARY OF ASSESSMENT



Source: SGS Economics and Planning

TABLE 16 DEVELOPMENT CONTRIBUTIONS – ASSESSMENT

Economic criteria	Discussion
Economic efficiency	<p>In principle, efficient provision of infrastructure would be encouraged where its users pay for the construction of infrastructure that would be avoidable (that is, not needed) if the development did not proceed. By levying infrastructure charges that reflect associated infrastructure costs, local councils can provide signals to develop housing in ways and places of greatest value.</p> <p>The cost of infrastructure increases directly with distance from essential headworks and inversely with the density of development. To the extent that a developer can respond to these costs, for example, by choosing to build closer to an existing development or by increasing the density of housing, charging the developer can improve housing supply.¹⁸</p> <p>The efficiency of development contributions may be reduced however to the extent that (i) the future infrastructure costs are uncertain; and (ii) developers can simply transfer the costs onto the final purchaser.</p> <p>Balancing this analysis, development contributions have been given an 8 for efficiency.</p>
Equity	<p>While development contributions are levied on developers, the incidence of the levy may fall on the developer or its shareholders (in the form of lower profits), the developer’s staff (through lower wages), be passed back to land owners, or be passed forward to final property purchasers.</p> <p>In theory, the incidence of development contributions will depend on the relative elasticities of the supply and demand for new residential and corporate space and the prevailing market conditions. This is largely an empirical question which is likely to vary across councils and over time.</p>

¹⁸ Australian Treasury, Australia’s Future Tax System, 2009

	<p>In local government areas where there is strong competition among developers, the incidence would be expected to fall on the final purchaser to some extent.</p> <p>Development contributions can be considered equitable from the perspective that they (i) are levied on those economic agents responsible for the need for new infrastructure requirements and the associated risk; and (ii) may fall on land owners that have received economic rents in the form of higher land values.</p> <p>On the other hand, development contributions <i>with full cost recovery</i> is likely to result in costs falling on developers, land owners and/or home buyers. This may be viewed as somewhat inequitable given that infrastructure is often associated with intra-generational benefits and that new home buyers in particular would have more limited capacity to pay.</p> <p>Balancing this analysis, development contributions have been given a 7 for equity.</p>
<p>Practicality</p>	<p>There appears to be some factors that are limiting council's current use of development contributions to achieve full cost recovery. From a strictly legislative perspective, however, using development contributions to achieve full cost recovery is a feasible option. Given the practical issues currently faced in the use of DCPs, applying development contributions at full cost recovery may exacerbate matters further.</p> <p>For example, development contributions are currently being used by 45 territorial authorities in New Zealand. Eighteen territorial authorities do not charge development contributions (but most of these use financial contributions under the Resource Management Act (RMA)). Regional authorities cannot charge development contributions but can charge financial contributions under the RMA.¹⁹</p> <p>Of the 45 territorial authorities that use development contributions, not all charge for every type of infrastructure. The reasons for this are varied, but can include that some local authorities:</p> <ul style="list-style-type: none"> - use financial contributions under the RMA to help fund parks and reserves; and - want to encourage (or not discourage) development in their areas by charging development contributions in full or in part on every type of asset (this being a policy decision rather than a legal matter).²⁰ <p>Based on this analysis, development contributions used for full cost recovery have been given a 6 for practicality.</p>

¹⁹ Development Contributions Review Discussion Paper - Department of Internal Affairs, 2013

²⁰ Ibid.

Sustainability	<p>By including provisions that enable councils to better align the actual sequence of revenue with the sequence of costs, amended developer contributions that include full cost recovery are a sustainable funding mechanism for councils. Also, development contributions are based on the number of dwellings and structures as opposed to more volatile variables such as land or property prices.</p> <p>Based on this analysis, development contributions have been given an 8 for sustainability.</p>
Implementation, administration and compliance costs	<p>The data available suggests that implementation and administration costs can represent between 1 to 5 per cent of revenue collected (Table 12).</p> <p>Compliance costs are likely to be trivial for developers, though are assumed not to cover more than financial administration. Given that development contributions are already in operation, the marginal cost of moving to a full cost recovery model is assessed to be minimal.</p> <p>As a result, development contributions have been given a 7 for this category.</p>
Function	Discussion
Recovery of costs	<p>DCPs are assessed to be suitable for the purpose of cost recovery as they provide a relative degree of certainty for councils regarding the scale and timing of the costs that will be recovered.</p>
Compensation of risk	<p>Development contributions could include provisions for a 'general allowance' for the financial risks involved in infrastructure provision.</p> <p>Adding a risk premium to DCPs in effect requires the private sector to compensate councils for the risk involved in infrastructure delivery. Given the function and relative size of local councils, and the further distortionary impact this policy may have, it is not clear that the private sector should be required to do this. In addition, development contributions are likely to simply provide a lump sum as opposed to an income stream which is dependent on the success of the infrastructure provision and associated development.</p> <p>For these reasons, development contributions are not assessed to be suitable for the compensation of risk.</p>
Additional financial surplus	<p>DCPs could include provisions for a 'general allowance' to provide councils with an additional financial surplus.</p> <p>Similar to the analysis above, development contributions are likely to simply provide a lump sum as opposed to an income stream which is dependent on the success of the infrastructure provision and associated development.</p> <p>For this reason, development contributions are not assessed to be suitable for providing any additional financial surpluses.</p>

Source: SGS Economics and Planning

Sale of development rights

At the moment, in both Australia and New Zealand there is no market in development rights. Potential development rights are tethered to private property ownership and are ‘realised’ via the gatekeeping role of the town planning approvals system. Theoretically, it is possible for some or all of the development rights created via a planning scheme to be reserved to public ownership as they are, for example, under the Australian Capital Territory’s leasehold land tenure system. As occurs in the ACT, development proponents must purchase the requisite development rights from the Government as well as gaining town planning approval on environmental and design grounds. The proceeds of these development right sales can be used to help fund infrastructure.

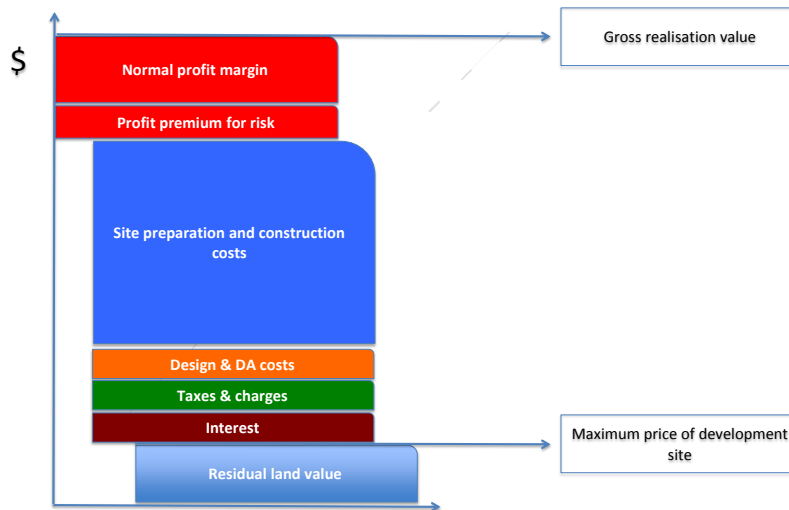
(Figure 4) below details the components of the gross realisation value obtained by property developers (the revenue received upon completion of the project). This includes:

- a required profit margin,
- a required risk premium,
- operational and capital costs, and
- the residual land value.

The residual land value represents the maximum amount that a property developer would be willing to pay for the land, and will depend on the number of storeys that can be constructed.

Development rights that increase height controls, will raise the residual land value. The sale of development rights is aimed at capturing a reasonable proportion of this rise in land value. This mechanism could provide an important incentive for infill Councils, in particular, to take a more positive attitude to growth. Where the revenue raised was not sufficient to meet total capital costs, targeted rates may also be used.

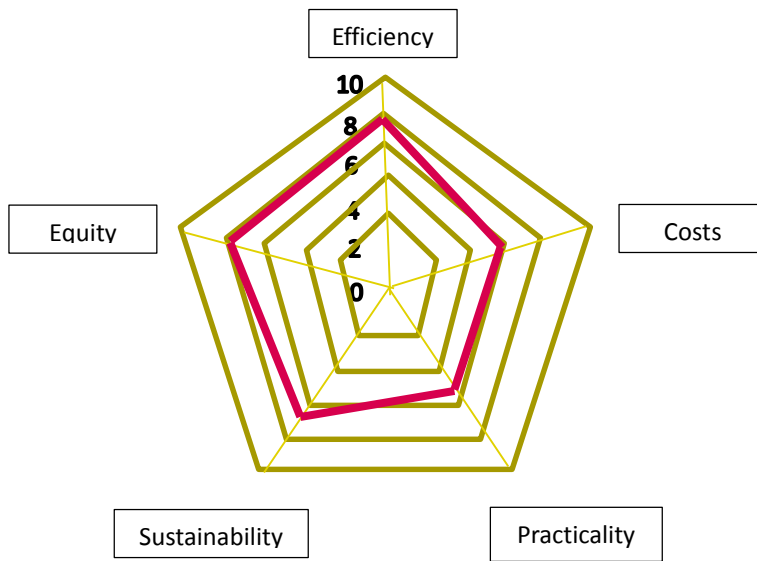
FIGURE 4 RESIDUAL LAND VALUE



Source: SGS Economics & Planning Pty Ltd

The assessment of development rights against the economic criteria outline above is summarised by the figure below and is described in more detail in the following table.

FIGURE 5 DEVELOPMENT RIGHTS – SUMMARY OF ASSESSMENT



Source: SGS Economics and Planning

TABLE 17 DEVELOPMENT RIGHTS ASSESSMENT

Economic criteria	Discussion
Economic efficiency	<p>Development rights can increase allocative efficiency by improving the allocation of <i>developable space</i>. The potential design of the development rights market will influence how efficiency is considered.</p> <p>If a fixed quantity (in terms of space) of development rights is auctioned, then development rights can be seen to be efficient in the sense that they are allocating the rights to those that value them the highest.</p> <p>If a fixed schedule of prices is established for development, then efficiency will be more reliant on whether the price accurately reflects the marginal cost of infrastructure and other potential amenity issues associated with infill development.</p> <p>In addition, revenue generated by development rights is essentially a transfer of an economic rent received by private landowners. This will limit the extent of any change in economic decisions or behaviour.</p> <p>Unlike land value capture mechanisms, the level of revenue from development rights available to councils will not necessary be dependent on the quality or benefits of the infrastructure provided.</p> <p>Balancing this analysis, development rights have been given an 8 for efficiency.</p>

Equity	<p>Similar to development contributions:</p> <p>Development rights can be considered equitable from the perspective that they are levied on those economic agents that (i) benefit from them; and (ii) are responsible for additional infrastructure requirements and possibly other externalities that result. In addition, as outlined above, development rights are essentially a transfer of an economic rent received by private land owners.</p> <p>Balancing this analysis, development rights have been given an 8 for equity.</p>
Practicality	<p>At the moment, there is no market in development rights in New Zealand. Potential development rights are tethered to private property ownership and are 'realised' via councils' gatekeeping role in granting resource consents. New Zealand governments would need to work together to investigate the legislative changes that would be required to enable councils to utilise development rights.</p> <p>Based on this analysis, development rights have been given a 5 for practicality.</p>
Sustainability	<p>By including provisions that better align the actual sequence of revenue with the sequence of costs, development rights are a sustainable funding mechanism for councils. Based on this analysis, development rights have been given a 7 for sustainability.</p>
Implementation, administration and compliance costs	<p>Once implemented, development rights would be expected to have similar costs to those estimated for the ACT governments presented in Table 13 above. The costs involved in establishing the legal and policy framework to support a market for development rights is unknown, but assumed substantial.</p> <p>Based on this analysis, development rights have been given a 6 for this category.</p>
Function	Discussion
Recovery of costs	<p>Unlike development contributions, it is likely to be difficult to (i) predict the scale of development rights; (ii) ensure that development rights align with infrastructure costs. As a result, development rights are not assessed to be suitable as a primary tool for cost recovery. Development rights could, however, be used as a complement other funding measures to ensure cost recovery.</p>
Compensation of risk	<p>Development rights would provide an additional revenue stream that could enable the risks adopted by council to be sufficiently rewarded in the event of prudent investments. In other words, it is a funding mechanisms that does not simply compensate or transfer risk, but rewards the risks faced by councils. For these reasons, the sale of development rights is seen as a suitable funding tool for rewarding risks.</p>
Additional financial incentives	<p>Similar to above, development rights would provide additional revenue streams that would allow the risks adopted by councils to be compensated in the event of prudent investments. Funding mechanisms that don't simply compensate or transfer risk, but those that reward the risk taken on by councils.</p>

Source: SGS Economics and Planning

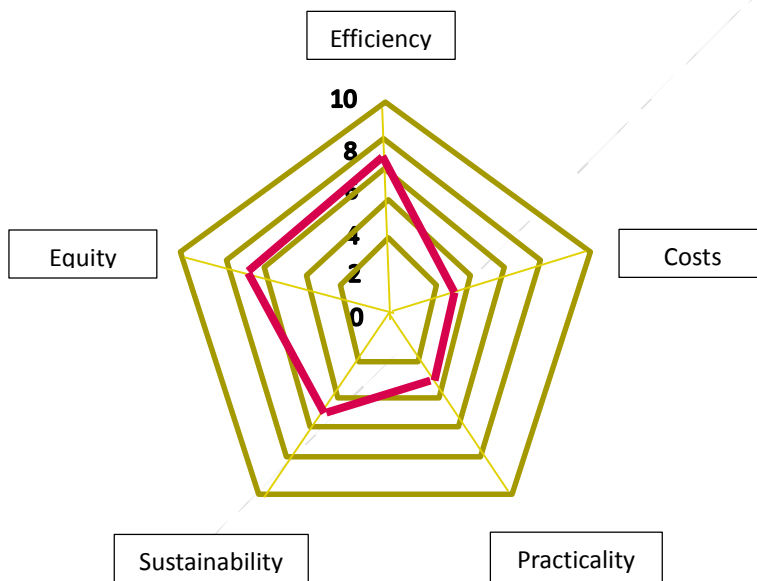
Tax Incremental Financing

Tax Increment Financing²¹ is where councils leverage future rates revenue generated from development to borrow money for the development of the infrastructure in the present. Tax increment financing (“TIF”) are essentially a securitisation of a future taxation revenue base that will flow from the development of infrastructure in an area. The securitised cashflow could also be sourced from some other increase in government revenues, such as land value capture flowing from new development. TIF would allow a transfer of risk to a third party investor. The recent report *Strong foundations for sustainable local infrastructure* recommended that the Australian Government should work with the states and territories to investigate the legislative changes that would be required to enable councils to use tax increment financing. This option could potentially be applied in both greenfield and infill areas. Where the revenue raised was not sufficient to meet total capital costs, targeted rates could be used.

While TIF is technically a financing source as opposed to a funding mechanism, SGS believed it was worth considering given its ability to achieve the stated objective above by transferring risk to the financial sector.

The assessment of TIF against the economic criteria outline above is summarised by the figure below and is described in more detail in the following table.

FIGURE 6 TAX INCREMENTAL FINANCING – SUMMARY OF ASSESSMENT



Source: SGS Economics and Planning

21 While TIF is technically a financing source as opposed to a funding mechanism, SGS believed it was worth considering given its ability to achieve the stated objective above by transferring risk to the financial sector.

TABLE 18 TAX INCREMENT FINANCIING

Economic criteria	Discussion
Economic efficiency	By transferring the risk to the financial sector, TIF may result in the ‘risk premium’ required to facilitate infrastructure investment to be reduced. This may induce councils to provide additional infrastructure. Based on this analysis, TIF has been given a 7 for this category.
Equity	Financed through targeted rates, TIF can be equitable in the sense that it levies new and future users of the infrastructure. Based on this analysis, TIF have been given a 7 for this category.
Practicality	New Zealand governments would need to work together to investigate the legislative changes that would be required to enable councils to use tax increment financing. As noted by the Productivity Commission, the major problem with TIF for growth-related infrastructure in New Zealand is that much of the core infrastructure required for housing (e.g., parks, roads and stormwater infrastructure) does not by itself provide additional revenue to councils. Based on this analysis, TIF have been given a 3 for this category.
Sustainability	Revenue streams will be dependent on the presence of a well-functioning market. In addition, the price premium required by the financial sector may result in upfront revenue not aligning with the sequence of costs. Based on this analysis, TIF has been given a 5 for this category.
Implementation, administration and compliance costs	Significant legal and policy development would be required to establish TIF in New Zealand. Once implemented, TIF would be expected to have similar costs to those estimated for the ACT governments presented in Table 13 above. Based on this analysis, TIF have been given a 3 for this category.
Function	Discussion
Recovery of costs	TIF is assessed to be only a practical option for cost recovery, and hence is not discussed as a possible tool for compensating risk or providing additional financial incentives. As outlined above, there are a number of problems that have been identified with the application of TIF in a New Zealand context. As a result, it is assessed not to be suitable for cost recovery.
Compensation of risk	-
Additional financial incentives	-

Source: SGS Economics and Planning

Targeted rates

Targeted rates could be designed in a number of ways including:

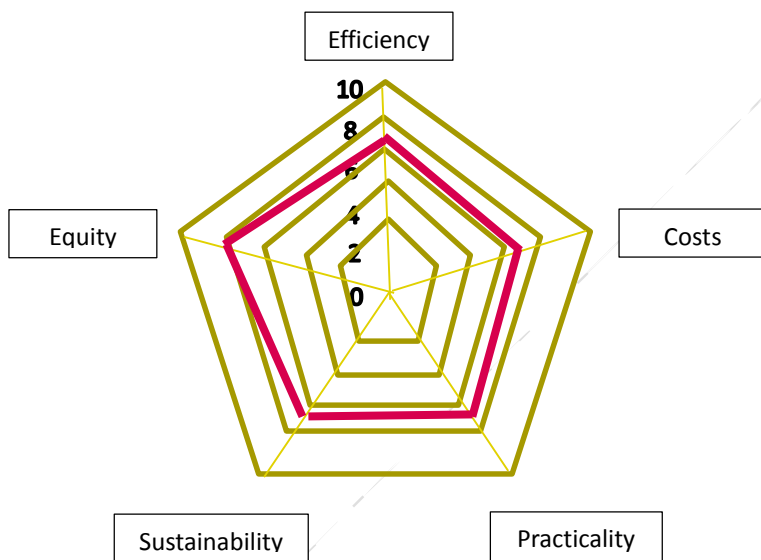
- applying a uniform rate across a defined geographical area, or
- applying a non-uniform rate based on estimates of property price appreciation from infrastructure provision.

Both options would be aimed at cost recovery. Both of these options are assessed below, with a uniform rate across a defined geographical area defined as Option 1. In practice, these options are likely to be associated with a trade-off between economic efficiency & equity and practicality & cost. Without further information to accurately assess these trade-offs, SGS has not made a recommendation regarding which option should be preferred.

Option 1

The assessment of targeted rates against the economic criteria outline above is summarised by the figure below and is described in more detail in the following table.

FIGURE 7 TARGETED RATES – SUMMARY OF ASSESSMENT



Source: SGS Economics and Planning

TABLE 19 TARGETED RATES ASSESSMENT – OPTION 1

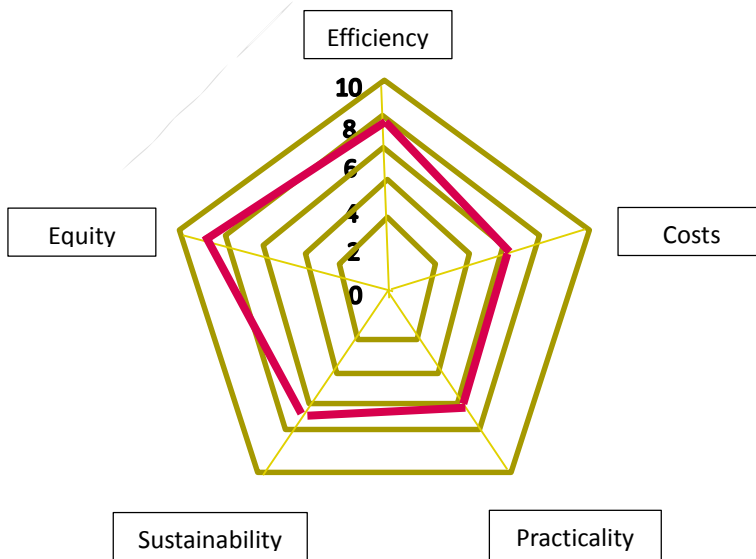
Economic criteria	Discussion
Economic efficiency	Targeted rates may initially be thought of as being economically inefficient given their narrow tax base, however given the scale of potential levies relative to the cost of a new home or relocation, targeted tax rates are seen as unlikely to affect decision making to a large extent. If targeted rates were able to be known in advance, this could provide a form of price signal that may improve the spatial allocation of people and housing development. Based on this analysis, targeted rates have been given a 7 for this category.
Equity	Targeted rates can be equitable in the sense that it levies new and future users of the infrastructure and has been given an 8 for this category.

Practicality	Targeted rates are (i) already in operation; and (ii) provide for funding that doesn't place a financial burden on existing residents. Based on this analysis, targeted rates have been given a 7 for this category.
Sustainability	Where infrastructure capex is financed by a loan and the stream of targeted rates is used to service the loan, this funding mechanism will help to better align the actual sequence of revenue with the sequence of costs. As a result, targeted rates have been given a 7 for this category.
Implementation, administration and compliance costs	Once implemented, targeted rates would be expected to have similar costs to those estimated for the ACT governments presented in Table 13 above. As a result, targeted rates have been given a 7 for this category.
Function	Discussion
Recovery of costs	Targeted rates are assessed to be applicable for the purpose of cost recovery as they can be specified by councils to provide some certainty regarding the scale and timing of costs that will be recovered.
Compensation of risk	Targeted rates could be used to compensate risk. However, similar to DCPs, targeted rates would in effect require the private sector to compensate councils for the risk involved in infrastructure delivery. Given the function and relative size of local councils, and the further distortionary impact this policy may have, it is not clear that the private sector should be required to do this. For this reason, targeted rates are not assessed to be suitable for the compensation of risk.
Additional financial incentives	Similar to above, targeted rates are not assessed to be suitable for potentially providing additional financial incentives for councils.

Option 2

The assessment of targeted rates against the economic criteria outline above is summarised by the figure below and is described in more detail in the following table.

FIGURE 8 TARGETED RATES – SUMMARY OF ASSESSMENT



Source: SGS Economics and Planning

TABLE 20 TARGETED RATES ASSESSMENT – OPTION 2

Economic criteria	Discussion
Economic efficiency	Relative to option 1 above, targeted rates that are based on estimated property price rises have the potential to be marginally more economically efficient as the funding mechanism is more aligned with the transfer of an economic rent received by residents. Based on this analysis, targeted rates have been given a 8 for this category.
Equity	Relative to option 1 above, targeted rates that are based on estimated property price rises have the potential to be more equitable, as the magnitude of the levy is directly related to the scale of benefits received (as measured by the rise in property prices). Based on this analysis, targeted rates have been given a 9 for this category.
Practicality	Targeted rates are (i) already in operation; and (ii) provide for funding that doesn't place a financial burden on existing residents. However, estimating the change in the price of individual properties, or within defined corridors, would be challenging. Based on this analysis, targeted rates have been given a 6 for this category.
Sustainability	Where infrastructure capex is financed by a loan and the stream of targeted rates is used to service the loan, this funding mechanism will help to better align the actual sequence of revenue with the sequence of costs. As a result, targeted rates have been given a 7 for this category.
Implementation, administration and compliance costs	Once implemented, targeted rates would be expected to have similar costs to those estimated for the ACT governments presented in Table 13 above. The costs involved in accurately isolating and estimating property price rises due to infrastructure provision at a detailed geographical level may however be substantial. As a result, targeted rates have been given a 6 for this category.
Function	Discussion
Recovery of costs	Targeted rates are assessed to be applicable for the purpose of cost recovery as they can be specified by councils to provide some certainty regarding the scale and timing of costs that will be recovered.
Compensation of risk	<p>Targeted rates could be used to compensate risk. However, similar to DCPs, targeted rates would in effect require the private sector to compensate councils for the risk involved in infrastructure delivery. Given the function and relative size of local councils, and the further distortionary impact this policy may have, it is not clear that the private sector should be required to do this.</p> <p>For this reason, targeted rates are not assessed to be suitable for the compensation of risk.</p>
Additional financial incentives	Similar to above, targeted rates are not assessed to be suitable for potentially providing additional financial incentives for councils.

User charges

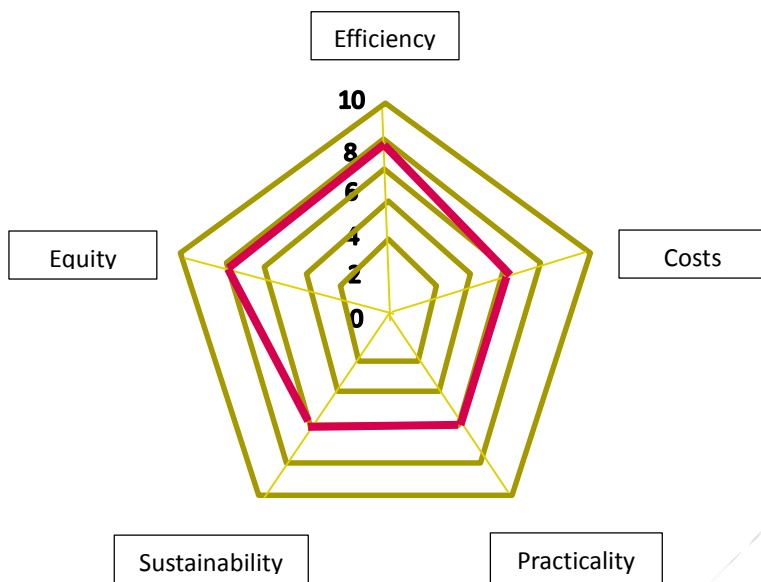
User charges can potentially be used for a variety of purposes including:

- full cost recovery (including capital and operational costs),
- operational cost recovery,

- promoting an efficient use of infrastructure.

It is recommended that user charges be used to promote the efficient use of infrastructure, with any further cost recovery considerations left to targeted rates.

FIGURE 9 USER CHARGES – SUMMARY OF ASSESSMENT



Source: SGS Economics and Planning

Promoting efficient use of infrastructure

The efficiency of user charges for the purpose of promoting an efficient use of infrastructure will depend on the nature of the infrastructure being provided (Table 20). For example, public goods should generally not be charged for, but financed through general taxation, while goods that are closer to private goods or common pool resources are widely accepted to be efficient to provide through user charges. In these cases, efficiency will be gained if local councils are able to reflect the marginal social costs and benefits of the goods and services it is providing when it sets prices.

Importantly, user charging relieves the need for publicly provided private goods to be funded by taxes, which are distortionary. In many instances, government goods are likely to have mixed attributes that make efficient pricing difficult.

TABLE 21 EFFICIENT REVENUE SOURCES FOR VARIOUS INFRASTRUCTURE

	Rival in consumption	Non-rival in consumption
Excludable	Private good e.g. apples [user charge]	Club good e.g. an uncrowded swimming pool [beneficiary taxation]
Non-excludable	Common pool resource e.g. fisheries, forests [user charge]	Public good e.g. national defence [general tax or corrective tax/regulation]

Source: Australian Treasury, Australia’s Future Tax System, 2010

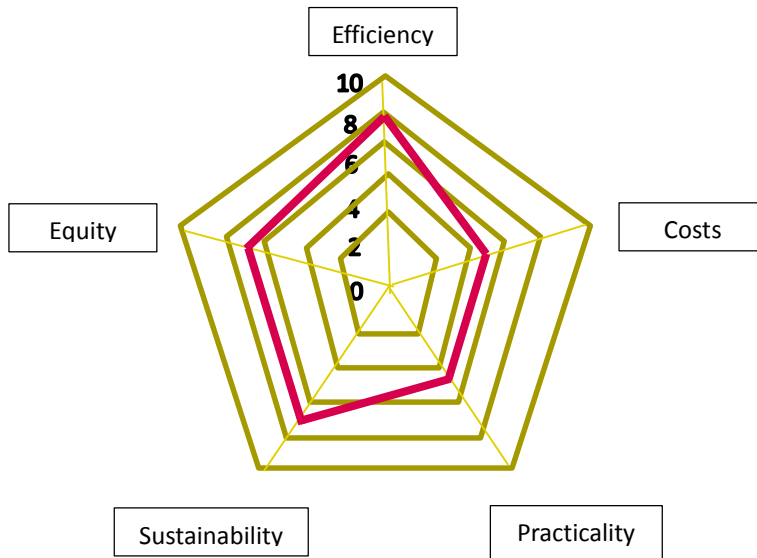
TABLE 22 USER CHARGES ASSESSMENT

Economic criteria	Discussion
Economic efficiency	Based on the discussion above, user charges have been given an 8 for economic efficiency.
Equity	User charges are equitable from the perspective that they both attribute costs to those agents that are consuming government goods and are equitable from an intergenerational perspective. Based on this analysis, user charges have been given an 8 for this category.
Practicality	The ability to appropriately price goods is often limited by transaction costs, such as the costs of pricing technology or other administrative costs. Policy makers need to consider the costs of collecting and enforcing user charges or narrowly based taxes. Also, the marginal social cost of infrastructure may not be obvious and difficult to estimate. Based on this analysis, user charges have been given a 6 for this category.
Sustainability	Tax revenue collected from user charges are obviously linked to the usage or demand for a given government good. This poses some risk to the future revenue stream and the extent these streams can help to recoup operating costs. In practice, where user charges at the marginal social cost are not sufficient to recoup operating and/or capital costs, these costs are likely to be complemented with targeted rates. Based on this analysis, user charges have been given a 6 for this category.
Implementation, administration and compliance costs	Implementation costs reflect both capital outlays and administration and compliance costs. Capital costs are likely to vary widely depending on the context, and may be viewed as prohibitive to the implementation of user charges. In terms of administration, compliance, debt recovery costs, estimates from ACT Treasury suggest that these costs are likely to be in the range of 0 -2 per cent of revenue generated. As a result, user charges have been given a 6 for this category.
Function	Discussion
Recovery of costs	User costs are best utilised to encourage the efficient use of infrastructure or set a price that is equal to the marginal social cost. In situations when this is not sufficient to recovery operating costs, targeted rates could be used in tandem.
Compensation of risk	User charges are best used to encourage the efficient use of infrastructure as opposed to the compensation of risk or financial surpluses.
Additional financial incentives	

Land value capture

Land value capture aims to acquire some proportion of any rise in land values that result from the provision of infrastructure either through a betterment tax or a more formal-rule based system. Conceptually, land value capture is closely related, if not identical to, the role of development rights. The assessment of targeted rates against the economic criteria outline above is summarised by the figure below and is described in more detail in the following table.

FIGURE 10 LAND VALUE CAPTURE – SUMMARY OF ASSESSMENT



Source: SGS Economics and Planning

TABLE 23 LAND VALUE CAPTURE – ASSESSMENT

Economic criteria	Discussion
Economic efficiency	<p>Generally speaking, tax on the unimproved value of land is one of the most efficient taxes as there are no substitutes for land. The efficiency benefits of land value tax depend however on the tax base being broad.</p> <p>In the current context, the introduction or announcement of a land value capture mechanism will alter the expected return for existing land owners. This may lead land owners to change their investment decisions.</p> <p>Land value capture can also improve allocative efficiency if it provides local councils with the incentive to prioritise infrastructure investment based on the scale of benefits reflected in land prices and in turn the betterment taxes that can be captured.</p> <p>Based on this analysis, land value capture has been scored an 8 for efficiency.</p>
Equity	<p>Land value capture can be considered equitable from the perspective that levies are targeted at those agents that passively benefit from public infrastructure investment. On the other hand, land value mechanisms (that are set for full or majority cost recovery) fall directly on existing land owners. This may be viewed as somewhat unequitable given that infrastructure is often associated with intra-generational benefits.</p> <p>Based on this analysis, land value capture has been scored a 7 for equity.</p>

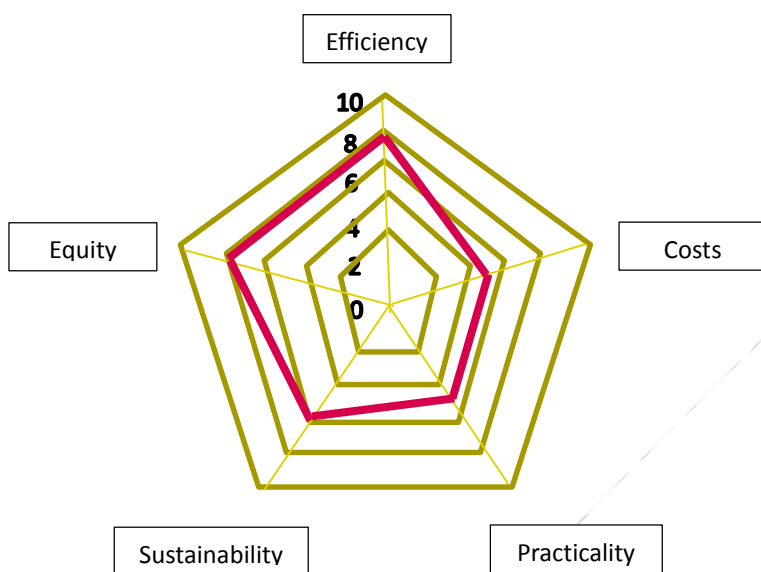
<p>Practicality</p>	<p>To operate effectively, land value capture mechanisms need to isolate the increase in value attributable to the zoning decision or the building of infrastructure from general land price increases at the local level. This is often difficult since the value of land will move in anticipation of a change in re-zoning.</p> <p>Any land value capture mechanism will also require significant oversight and transparency to ensure that only a fair and reasonable proportion of the land price inflation is captured.</p> <p>Based on this analysis, land value capture has been scored a 5 for practicality.</p>
<p>Sustainability</p>	<p>Depending on the design of the funding mechanism, land value capture provides councils with the opportunity to obtain revenue following the delivery of infrastructure, as opposed to the delivery of new dwellings and other structures. This helps to <i>better</i> align the actual sequence of revenue with the sequence of costs. There will, however, inherently be some degree of uncertainty regarding the scale of revenue generated.</p> <p>Based on this analysis, land value capture has been scored a 7 for sustainability.</p>
<p>Implementation, administration and compliance costs</p>	<p>SGS is not aware of any research that has attempted to quantify the policy and implementation costs of land value capture mechanisms.</p> <p>Based on the complexity involved, SGS assumes that it is broadly in line with the costs associated with implementation costs for development contributions (Table 13).</p> <p>The costs associated with establishing the legal and economic framework for a credible value capture mechanism is expected to be substantial.</p> <p>Based on this analysis, land value capture has been scored a 5 for this category.</p>
<p>Function</p>	<p>Discussion</p>
<p>Recovery of costs</p>	<p>Land value capture mechanisms make it difficult to (i) predict the scale of revenue received; and (ii) ensure that the revenue aligns with infrastructure costs. As a result, land value capture mechanisms are unlikely to be a primary source of cost recovery though could be used as a compliment with other funding measures to ensure cost recovery.</p>
<p>Compensation of risk</p>	<p>Land value capture mechanisms would provide additional revenue streams that would provide the opportunity for the risks adopted by councils to be sufficiently rewarded in the event of prudent investments. In addition, the revenue obtained is simply a transfer of unearned economic rents. For these reasons, value capture mechanisms are seen as a suitable funding tool for rewarding risks.</p>
<p>Additional financial incentives</p>	<p>Similar to above, land value capture mechanisms would provide additional revenue streams that would provide the opportunity for the risks adopted by councils to be sufficiently rewarded in the event of prudent investments. For this reason, value capture mechanisms are seen as a suitable funding tool for providing additional financial incentives.</p>

Source: SGS Economics and Planning

Central government funding

Mechanisms could be used to capture a reasonable proportion of the incremental rise in central tax revenue that stem from local development in the form of rising income and/or business taxes. Once again, this funding mechanism would complement the use of DCPs, debt funding and targeted rates, which would have the explicit purpose of recovery the financial costs of infrastructure. Specifying the detailed arrangements of such as a mechanism are outside the scope of this report, though it would be anticipated that the structure of the UK City Deals would be used as a starting point.

FIGURE 8 CENTRAL GOVERNMENTA FUNDING



Source: SGS Economics and Planning

TABLE 24 CENTRAL GOVERNMENT FUNDING – ASSESSMENT

Economic criteria	Discussion
Economic efficiency	<p>Similar to land value capture, re-directing Central government tax revenue to local councils can be seen as economically efficient as:</p> <ul style="list-style-type: none"> - it simply recovers spending on local public goods that benefit the Central Government, - it can also improve allocative efficiency if it provides local councils with the incentive to prioritise infrastructure investment based on the scale of central government funding, and hence economic activity, that is likely to be generated. <p>Based on this analysis, land value capture has been scored an 8 for efficiency.</p>
Equity	<p>Central government funding can be considered equitable from the perspective that levies are targeted at those agents that passively benefit from public infrastructure investment. It is also a funding mechanism that could potentially be allocated across the life of the project as opposed to a levy directed at current land owners or purchasers. This however will depend on the final design of the funding mechanism.</p> <p>Based on this analysis, central government funding has been scored an 8 for equity.</p>

Practicality	In practice, it would be difficult to isolate the tax revenue that has been generated by economic activity within a local catchment and/or any economic spillovers that arguably the central government should pay for and the risk premium that would be appropriate for councils. Based on this analysis, central government funding has been scored a 5 for practicality.
Sustainability	By including provisions that better align the actual sequence of revenue with the sequence of costs, central government funding are a sustainable funding mechanism for councils. Based on this analysis, central government funding has been scored a 6 for practicality.
Implementation, administration and compliance costs	Implementation costs are likely to largely reflect the costs of establishing systems and processes that are able to adequately identify and redirected central tax revenue that has stemmed from a local catchment. SGS is unaware of the scale of costs this would involve or the extent to which existing systems could be leveraged off. Once these systems have been established, costs are expected to be in line with those funding mechanisms discussed above. Based on this analysis, central government funding has been scored a 5 for this category.
Function	Discussion
Recovery of costs	It is difficult to (i) predict the scale of central government funding; (ii) ensure that it aligned with infrastructure costs. As a result, commonwealth funding is unlikely to be a primary source of cost recovery though could be used as a complement with other funding measures to ensure cost recovery.
Compensation of risk	Central government funding would provide additional revenue streams that would provide the opportunity for the risks adopted by councils to be sufficiently rewarded in the event of prudent investments. In addition, the revenue obtained by central government can in some instances be largely generated from the infrastructure investments of local councils (although central government may be required to make investments in the form of education and hospitals etc.). For these reasons, government funding is seen as a suitable funding tool for rewarding risks.
Additional financial incentives	Similar to above, central government funding would provide additional revenue streams that would provide the opportunity for the risks adopted by councils to be sufficiently rewarded in the event of prudent investments. For this reason, government funding is seen as a suitable funding tool for providing additional financial incentives.

Source: SGS Economics and Planning

6 CONCLUSION

Based on the analysis above, we can broadly distinguish between two types of funding tools (i) charges; and (ii) transfers. Table 25 below identifies the funding tools recommended by SGS to ensure that councils have sufficient financial incentive to facilitate growth.

TABLE 25 FUNDING TOOLKIT

Charges	Transfers
Development contributions (full cost recovery)	Land value capture (introduction)
Targeted rates (increased use)	Central government funding (introduction)
User charges (increased use)	Development rights (introduction)

Source: SGS Economics and Planning

Suitable charges such as development contributions and user charges are likely to be effective primary tools for ensuring cost recovery while not placing significant burden on existing residents. This reflects the relative degree of certainty that they provide councils.

Transfers such as value capture or central funding are in turn likely to be more effective in rewarding the risks faced by council in making prudent infrastructure investments and/or complement cost recovery measures were necessary. This reflects the fact that the scale of the income stream will depend on the success of the infrastructure provisions and associated local development.

More specifically, the following guidance can be provided regarding the use of the funding toolkit (Table 26):

1. Where possible, targeted rates and DCPs with full cost recovery should be used to recover capital costs of infrastructure provision,
 - In the case of infill development, sales of development rights may be a suitable measure also
2. User charges should be used where possible to ensure the efficient use of infrastructure, with targeted rates used where necessary to recover any excess or additional operational and administrative costs,
3. Funding tools such as value capture, development rights (particularly in infill areas), and central government funding should be used where possible to compensate councils for the financial risks taken in providing infrastructure and/or providing councils with a financial surplus.
 - These tools could also be used if DCPs and/or targeted rates are not able to be used to ensure full cost recovery.

Where funding tools are used to compensate councils for the risks taken, it will be important to ensure that necessary and prudent steps have been demonstrated to reduce such risks. These may include for example a 'just in time' delivery approach. In addition, any additional funding streams aimed at compensating risk or providing a financial surplus to councils should in principle be broadly in line with the profit and risk premiums received by the private sector in similar circumstances. In practice, the premium could be defined and measured in a number of ways including a profit margin or a higher cost of capital.

Data produced by the New York University suggests that the cost of capital for US businesses in the construction and transportation industries (assuming a long term Treasury bond rate of 5 per cent) is close to 10 per cent.²² As a result, a reasonable risk premium may equate to a higher cost of capital of around 5 per cent.

Lastly, the extent to which funding tools should be used to provide councils with a financial surplus is in some sense outside the scope of this report and will in practice be largely a political decision.

²² For more information:

http://www.google.com.au/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&ved=0ahUKEwiPvdKLsurNAhWIppQKHdI8AkAQFggoMAI&url=http%3A%2F%2Fwww.stern.nyu.edu%2F~adamodar%2Fpc%2Fdatasets%2Fwacc.xls&usg=AFQjCNHqp_roXQ-BwhayYC5c9iapkRK22Q&bvm=bv.126130881,d.dGo

TABLE 26 SUMMARY OF RECOMMENDATIONS

Primary tools for cost recovery	Costs faced by local councils		
	Capital cost	Operational costs	Policy preparation and admin costs
Water treatment plants and storage facilities	DCP / Targeted rate	Targeted rate / user charges	Targeted rates
Sewage treat plants	DCP / Targeted rate	Targeted rate	
Drainage and flood protection works	DCP / Targeted rate	Targeted rate	
Trunk sewer and water mains, pumping stations etc.	DCP / Targeted rate	Targeted rate / user charges	
Public transport facilities	DCP / Targeted rate	Targeted rate / user charges	
Some local roads and main roads, footpaths, cycleways, traffic signals and lighting	DCP / Targeted rate	Targeted rate ²³	
Local roads, footpaths, cycleways and lighting within new subdivisions or developments		Targeted rate	
Sewer and water pipes within new subdivisions or developments		Targeted rate	
Neighbourhood parks		Targeted rate	
Sports grounds	DCP / Targeted rate	Targeted rate	
Community Halls	DCP / Targeted rate	Targeted rate	
Libraries	Targeted rate	Targeted rate / user charges	
Recreation centres	Targeted rate	Targeted rate / user charges	
Ancillary tools	Funding mechanism 1	Funding mechanism 2	
Complement cost recovery tools where required	Value capture	Development rights	Central government funding
Financial risk and/or financial surplus			

²³ Sometimes this will be in conjunction with the New Zealand Transport Authority (NZTA), or with funding assistance from NZTA

7 APPENDIX

7.1 Literature review

The Australian Experience

Significant funding gaps have been identified in Australia in infrastructure provision. This led to the Australian Government commissioning a review in order to look at ways to better address the infrastructure funding gap with specific focus on local government. The report *Strong foundations for sustainable local infrastructure* (2012), was followed by the report *National Financial Authority for Local Government* (2014), which aimed to examine options to improve local governments' access to competitive finance by establishing a national financing authority.

The recommendations contained within *Strong foundations for sustainable local infrastructure* were designed to provide a way forward for the local government sector to make the most of the tools and levers it already has. This was reported to require optimising income from rates and fees and adopting innovative procurement models, coordination at a regional level, alternative ownership structures for network assets and responsible borrowing. Recommendations that were explicitly aimed at providing greater financial incentive for councils to invest in development and infrastructure are outlined below:

- The creation of a National Financing Authority which would aggregate local government borrowing and facilitate the creation of debt products for private investors. The objectives of the authority would include allowing Councils across Australia to access lower-cost debt finance, aggregate risk across many councils, create administrative efficiencies, to provide a conduit between councils and capital lenders and provide financial and legal assistance to councils with limited in-house expertise. By reducing the costs and risks of debt financing local governments will be more willing to invest in infrastructure.
- New Zealand councils have already developed and lead Australia in creating a National Financing Authority, The New Zealand Local Government Funding Agency, which was incorporated in December 2011.
- The Central Government has a role to play in helping the local government sector create sustainable revenue streams that provide a direct link between those who benefit from new investments and those who pay for them. Tax Increment Financing is where councils leverage future rates revenue generated from development to borrow money for the development of the infrastructure in the present. The report recommended that the Australian Government should work with the states and territories to investigate the legislative changes that would be required to enable councils to use tax increment financing. This will enable financing of infrastructure and development, and those who benefit from the development in the future help pay for it.
- Project procurement guidance should be developed and issued to local government to promote awareness of the spectrum of alternative procurement models for infrastructure delivery. The authors argue that traditional delivery models, such as hiring a private sector firm to only build or design the project, have limitations which may not enable local government to achieve the best value for money and project outcomes, a non-traditional delivery model may be better suited. Non-traditional procurement strategies, such as PPPs or development contributions, don't have a common set of features but generally involve the private sector participating in much more than the design and building phase, they can also play roles in ongoing maintenance or operation of the infrastructure asset for example.
- Councils review their infrastructure portfolios to identify and test the rationale for continued ownership. Recycling assets is an effective way to generate income that can be

re-invested into new infrastructure. The assets sold can also benefit from additional investment from the private sector that councils may not have the means to provide.

- The Australian Government should work with the states and territories to develop incentives that can be given to councils to create formal regional structures with responsibility for delivering and financing infrastructure investments relating to specific asset classes, with a particular emphasis on local roads.

The UK experience

Prior to 2012, the funding and delivery of major projects in the UK was based on a system of assessing detailed funding submissions on a project-by-project basis. Project bids – developed by councils and other local authorities – were appraised using the cost benefit analysis (CBA) method. Appraisals would be scrutinised by the Central Government.

While this process for securing funding for infrastructure delivery had its benefits (namely thorough assessment of each project bid), it presented several problems, including:

- Limited long-term planning at the local level caused by lack of certainty for local councils in regards to medium- and long-term funding,
- Limited revenue-raising and decision-making powers at the local level
- Resource inefficiencies associated with project-by-project allocation,
- Lack of transparency with the granting of project funds.²⁴

The City Deal model was developed to address some of these issues. Its key features and relevance to the New Zealand context are presented below.

City Deal model

Introduced in the UK in 2012, the City Deal model was designed to encourage city councils or a group of councils in partnership to establish a growth benchmark or 'local gross domestic product (GDP)', and sign an agreement with the national government to secure funding to implement infrastructure-based strategies to achieve it. If a city or region exceeds its growth benchmark, it receives a financial reward, thus establishing considerable incentives for city or council partners to invest in infrastructure to achieve economic outcomes.

Various case studies have identified a number of features of the City Deal model and its approach to the funding and incentivisation of the provision of local infrastructure:

- A City Deal acts as a contract between an economic region and the central government. Governance structures, key metrics, and funding parameters are key features established at an early stage.
- A Deal can cover transport, housing and/or urban regeneration infrastructure.
- The approach does not use the CBA method for selecting infrastructure investment priorities, but instead assesses contribution to growth in jobs and economic productivity/gross value added (GVA).
- The model attempts to provide funding security while incentivising economic growth in the following ways:
 - Partners in a City Deal are able to 'earn back' a share of the additional taxation dividend generated by faster economic development – this can be used to more quickly amortise existing debt obligations, or finance new priority infrastructure projects
 - Baseline funding is provided to partners to ensure long-term certainty around core revenue streams

²⁴ Low, P. and Thakur, P. (2015). UK City Deals – adapting new thinking to Australia's growth and funding challenges. Paper presented at Australasian Transport Research Forum.

- Collaboration with the private sector is encouraged (including public-private partnerships, local asset backed vehicles and tax increment financing). ‘Economic investment funds’ allow councils to invest in local infrastructure through pooled funding streams with private sector capital.
- The program is part of a ministerial portfolio, and a central unit provides support to City Deal partners in assessing infrastructure priorities and setting benchmarks.^{25,26,27}

Lessons for New Zealand

The City Deal model has allowed for a substantial increase in investment at the local level in the UK, and has had positive infrastructure delivery outcomes. Learnings from its success certainly have relevance to New Zealand.

The model provides local and regional governments with the resources and incentives to realise infrastructure outcomes within their purview, without unnecessary central government oversight, and further promotes development of financial skills and ‘know-how’ at the local scale. City Deals also promote local leadership, partnerships and capacity-building, which not only encourages a more strategic approach to growth and self-reliance, but also fosters the growth of social capital.

With its focus on investing in options that maximise economic growth, the City Deal model is further argued to ‘cut through’ political discourse and refine competing priorities to an easily communicated set of goals to provide better direction and certainty in infrastructure planning. It also assists in moving away from ‘budget silos’ towards the development of an integrated budget.²⁸

The model’s rigid focus on economic growth, however, has the potential to lead to unsustainable social and economic outcomes. While some Deals include ‘program minima’ to address this imbalance (such as objectives to achieve a net reduction in CO₂ or to improve outcomes in lower socio-economic and disadvantaged communities), given these secondary metrics are not an integral part of the wider model, this presents a key flaw in the UK approach. The model’s singular focus on increasing productivity is further problematic as it limits the infrastructure able to be delivered under a City Deal to only three types: transport, housing and urban regeneration.

Moreover, while the ‘earn-back’ incentive is perceived by some to promote innovation in strategic policy-making, others have argued that some cities have used the program to simply “respond to the next pressure point with incremental conventional infrastructure”, rather than directing capital spending to ‘transformational’ infrastructure and smart technologies.²⁹

Despite this, the earn-back feature of the City Deal model is a key feature of the scheme, as it provides incentive for local and regional governments to achieve economic benchmarks established in their contract. While a focus on productivity-increasing infrastructure may not align with the scope of infrastructure delivery sought in the New Zealand context, there is significant potential in the adoption of the City Deal earn-back scheme.

²⁵ KPMG (2014). *Introducing UK City Deals: A smart approach to supercharging economic growth and productivity*. Report for the Property Council of Australia.

²⁶ KPMG (2016). *UK City Deals and options for Queensland*. Presentation.

²⁷ Property Council of Australia. *Finding \$50B: New Ways to fund and finance infrastructure*.

²⁸ KPMG (2014). *Introducing UK City Deals: A smart approach to supercharging economic growth and productivity*. Report for the Property Council of Australia.

²⁹ Fraser, D. (2016). City Deal or no deal? *BBC News*. Retrieved from <<http://www.bbc.com/news/uk-scotland-scotland-business-35456000>>.

The Canada experience

With competing priorities at the end of the post-war economic boom, government spending on public infrastructure declined significantly in Canada in the 1970s and 1980s, resulting in the steady ageing of stock in the following decades. By the 2000s, concerns surrounding the funding of local infrastructure became prevalent, with municipalities receiving only eight cents of every tax dollar paid throughout the country, despite being responsible for the building and maintenance of more than half of the country's core infrastructure. Local governments were forced to raise property taxes, cut important services and delay the renewal of key infrastructure. Moreover, funding provided by federal and provincial governments were typically delivered through short-term, ad hoc programs, which limited local government capacity for long-term planning.

As a response, the role of the federal government in the financing and/or provision of infrastructure has increased. This has occurred largely through transfers and regulation rather than direct ownership or investment, with local governments owning nearly 60 per cent of the country's public infrastructure. Since 2002, the federal government has implemented a series of programs to relieve the deficit, including the New Building Canada Fund, which is described below.^{30,31,32,33}

New Building Canada Fund

The New Building Canada Fund (NBCF) provides stable funding for a 10-year period from 2014, with a focus on supporting projects that enhance economic growth, job creation and productivity. There are several schemes that fall under the NBCF. Two are described below.

Gas Tax Fund

The federal Gas Tax Fund (GTF) has a focus on infrastructure for 'community improvement'. The GTF was created in 2004 through the federal New Deal for Cities with the purpose of increasing funding certainty for municipal infrastructure projects. Comprised of a portion of government revenue collected through the Federal Gas Tax, since its establishment the Fund has doubled, from \$1 to \$2 billion annually. The GTF became a key part of the Building Canada Fund in 2007, and then the NBCF in 2014, at which time the GTF was indexed at 2 per cent per year and became a permanent source of federal funding. At 2014, \$13 billion had been invested in municipalities through the GTF.^{34,35}

Funding is provided biennially to provinces and territories on a per capita basis. Provinces and territories then allocate transfers to municipalities through federal-provincial-territorial GTF agreements, though the method by which the level of funding is calculated varies between regions. Municipalities with fewer than 100,000 people have the opportunity to supplement the GTF by accessing the Small Communities Fund (SCF), a component of the NBCF created to ensure that less populated parts of Canada are provided with sufficient funds to maintain adequate infrastructure delivery. Projects funded through the SCF must contribute to objectives of economic growth, a clean environment and stronger communities.

Infrastructure project types covered by the GTF include: public transit, drinking water, waste management, energy systems, local roads, bridges and highways, capacity building, airports, short-sea shipping, disaster mitigation, broadband and connectivity, brownfield redevelopment, culture, tourism,

³⁰ Canadian Infrastructure Report Card (2012)

³¹ Canadian Infrastructure Report Card (2016)

³² Dahlby, B. and Jackson, E. (2015). STRIKING THE RIGHT BALANCE: FEDERAL INFRASTRUCTURE TRANSFER PROGRAMS, 2002–2015. *SPP Research Papers*, 8(36), 1-22.

³³ Altus Clayton (2008). *The Urban Infrastructure Challenge in Canada: Perceptions and Realities*. Report prepared for the Canadian Home Builders' Association.

³⁴ Canadian Infrastructure Report Card (2016)

³⁵ Infrastructure Canada website. Available at <<http://www.infrastructure.gc.ca/>>.

and sport and recreation, among others. The eligible categories are broader today than when the fund was originally established, giving local governments greater choice in infrastructure prioritisation.³⁶

Cost-sharing

‘Cost-sharing’ refers to the leveraging of funding (in addition to federal funding) from other sources, including provinces/territories, municipalities and the private sector. Its purpose is to not only increase the number of federally funded projects, but also to optimise the cost-effectiveness of federal funding.³⁷

For projects located in the provinces, the maximum federal contribution from all programs/schemes is up to one-third of the total eligible costs of a project, with the following exceptions:

- For projects in the highways and roads and disaster mitigation categories where the asset is provincially-owned, the maximum federal contribution from all sources will be up to 50 per cent of the total eligible costs.
- For projects in the public transit category, the maximum federal contribution from all sources will be up to 50 per cent of the total eligible costs.
- For projects where the recipient is from the for-profit private sector, the maximum federal contribution from all sources will be up to 25 per cent of the total eligible costs.

In territories, the maximum federal contribution is up to three-quarters of total eligible costs, with the exception of projects where the recipient is from the for-profit sector, whereby the maximum federal contribution is up to 25 per cent.³⁸

The table below shows the outcome of the literature review conducted by SGS of possible policy options.

³⁶ Infrastructure Canada website. Available at <<http://www.infrastructure.gc.ca/>>.

³⁷ Infrastructure Canada website. Available at <<http://www.infrastructure.gc.ca/>>.

³⁸ Infrastructure Canada website. Available at <<http://www.infrastructure.gc.ca/>>.

Alternative ideas considered	Description
Taxes, rates and Central/Federal grants	Traditional method
Stamp duty and other sector specific taxes	Traditional method
Borrowings by a government treasury department or an associated trading entity	Traditional method
Direct user charges (such as water charges and toll road charges)	Traditional method
Indirect user charges (such as fuel and registration taxes)	Traditional method
Specific (or special) purpose levies (such as the Fire Services Levy and the Melbourne congestion levy on off-street parking)	Traditional method
Developer contributions / impact fees (such as the Growth Areas Infrastructure Contribution)	Traditional method
Private sector concessions with user charges such as BOOTs and BOTs (CityLink and EastLink)	Traditional method
PPPs, with availability payments made by the government or a government-related entity (for example the Peninsula Link and proposed for East West Link)	Traditional method
PPPs, partially funded by development rights associated with the "core" PPP (including the Melbourne Convention Centre)	Traditional method
Special purpose borrowings	Alternative method - Special purpose borrowings are debt raised by a government or government-related-entity for a specific investment, rather than as part of general core borrowing. Reports indicate that Infrastructure Bonds are currently being considered by the Federal government to help fund major infrastructure projects. Ordinarily, these bonds would be issued to fund economic infrastructure, with cash flows generated by the project used to repay the debt, although they could be repaid through general taxes
Capital recycling	Alternative method -selling existing publicly owned assets to create funds for new developments
Special incentives or financial instruments	Alternative method -tax relief, and other preferential treatment to investors in certain assets; these measures can be attractive as they can be directly targeted at influencing a particular investment or behaviour, but can sometimes be criticised as enabling the government to "pick winners."
Minimum revenue guarantees	Alternative method - guaranteeing the project will achieve a minimum revenue amount for a predetermined period of time. Has resulted in wide-spread failures in Australia (rd tolls in Qld and NSW). Instead of making straight availability payments, other jurisdictions have elected a model to award concessions to build new toll roads with varying levels of minimum revenue guarantees. These are usually of a cap-and-collar nature, whereby while taking some of the risk that traffic

	does not meet expectations, the state would share the upside benefit of increased revenue flows
Toll equity loan agreement (“TELA”)	<p>Alternative method</p> <p>-similar to a minimum revenue guarantee, but structured as a loan rather than a straight payment, and therefore recoverable by government. A TELA is similar to a minimum revenue guarantee, but only has a floor, not a cap / revenue sharing concept to benefit government. It is also structured as a loan, rather than a guarantee. The TELA does require repayment in theory, as a form of low priority debt. Under a TELA, a government entity agrees to pay the project the funds required to meet its costs (potentially including capital costs and debt servicing costs) if toll revenues are insufficient in any year. Repayments on the TELA loan are generally subordinated to project senior debt. The government entity’s obligations to make advances under the TELA can correspondingly be subordinated to any other debts it has, or subject to other government requirements.</p>
Tax increment financing / Growth area bonds	<p>Alternative method</p> <p>-receiving an upfront payment through securitising the increased property rates that will flow following infrastructure development. Tax increment financing (“TIF”) or growth area bonds (“GABs”) are essentially a securitisation of a future taxation revenue base that will flow from the development of infrastructure in an area. If new infrastructure is developed, it would usually increase the value of properties in an area and/or promote new developments, as has been seen with property along the EastLink corridor in Melbourne (and prior to that along the Western Ring Road), and these increases in value would drive increases in property rates. At a State level, the securitised cashflow could also be sourced from some other increase in government revenues, such as increased mining royalties flowing from a port or utility development</p>
Special assessment districts / special levies and charges districts / business improvement districts / targeted rates	<p>Alternative method</p> <p>– increased levies on property owners or property rates in a local area to pay for new infrastructure directly related to that locality (also referred to as business improvement district or local improvement district)</p>
Certificates of participation	<p>Alternative method</p> <p>– Certificates of participation (“COPs”) are similar to a special purpose borrowing, except that instead of receiving a return from the project itself, the investor receives a share of a lease payment from the government (usually a municipality). COPs are structured so that the ownership of the building, equipment or land being financed is vested in a third-party entity that then leases the project back to the public agency conducting the financing, giving that agency the use or occupancy of the project in return for lease payments. The third-party entity assigns the lease payments to a trustee, who then remits the lease payments to investors in the COPs. As the investor is effectively leasing land or buildings to the government, they can commence earning a return immediately, rather than when the facility is complete (subject to the terms of each agreement)</p>
Joint development company / local asset backed vehicle	<p>Alternative method</p> <p>– Under a Joint Development Company (“JDC”), the government enters into a joint development agreement with a private sector developer to develop the whole or a part of the project. Through its direct or “quasi” ownership interest in the JDC, the government can pursue certain public policy aims while still creating an essential asset. The government would usually be able to retain an interest in the JDC without contributing further funds, with its investment in the JDC taking the form of a contribution of land or “in kind” contribution, with the private sector developer contributing capital. The government’s share of profits from the JDC can then be used to</p>

	fund nearby or related infrastructure requirements, to the extent they are not funded directly by the JDC.
Commercial developments, including air rights	<p>Alternative method</p> <p>– Similar to JDCs, <i>profits</i> from commercial developments (as opposed to a fixed levy in the case of development rights) can be used to pay for other infrastructure. However in this mechanism, the government does not have a direct ownership interest in the commercial developments, instead granting the private sector developer land rights (whether freehold or leasehold) in return for the private developer investing in public infrastructure directly, or providing funds for the public sector to pay for the infrastructure development. This also differs from PPPs with attaching development rights, as the private sector would have no ongoing involvement in the public infrastructure after construction completion, rather than operating it for a concession term as it would in a PPP. This mechanism has been most frequently used around or above railway stations. Air rights developments in highly congested urban environments, starved of developable land, and with inherent excellent transportation links are obvious candidates.</p>
Funding through social impact bonds	<p>Alternative method</p> <p>– The return on the bond is based on the achievement of a specified social objective rather than a payment of interest on the funds advanced. The investors in the bond fund the delivery of a service aimed at satisfying the targeted social objective. The level of return on the bond varies depending on the level of achievement of the social objective. In theory, achievement of the objective should reduce the need for the government to expend funds in other areas, with the cost reductions achieved through this being used to fund investor returns on the social impact bonds. Social impact bonds should allow organisations to trial innovative new methods of addressing social problems, by tapping private rather than government capital until results are proven. Social impact bonds are currently being trialled in criminal justice, housing, family relationships and healthcare.</p>
Funding through alternative user charge models	<p>Alternative method</p> <p>– used for the provision of infrastructure in sectors such as water and sewage, roads, schools and public transport. These are a mixture of fixed and variable charges, although, apart from the case of toll-roads, provision of the infrastructure itself is usually funded by a fixed fee, with ongoing service delivery funded by a variable charge. Alternative models could involve charging users at different levels depending on the time of use (analogous to time-of-use metering with electricity) and location of use (e.g. the London congestion charge)..</p>
Funding through Not for Profit sector	<p>Alternative method</p> <p>– A large number of NFPs currently participate in managing and operating infrastructure originally developed by various levels of government, such as childcare centres, pre-schools, community leisure facilities and community health services. Involvement in developing new infrastructure has, however, been more limited</p>
Asset value capture mechanisms (“AVC”)	<p>Alternative method</p> <p>– assessors are able to identify the area affected and calculate the increase in capital value arising from the addition of the new infrastructure. This increase in value is then captured through a tax, levy or charge</p>
Transportation Infrastructure Finance and Innovation Act (“TIFIA”) debt	<p>Alternative method</p> <p>- TIFIA program provides US Federal credit assistance (a loan or guarantee from central government) to nationally or regionally significant transportation projects. The program is designed to fill market gaps and leverage private co-investment by providing</p>

	<p>projects with supplemental or subordinated debt. This is a method enhancing the attractiveness of an investment to the private sector by tranching the risk and by government supporting the high risk end of the spectrum.</p>
<p>Private activity bonds (“PABs”)</p>	<p>Alternative method</p> <ul style="list-style-type: none"> - A US scheme for tax-exempt bonds where a local government entity issues to raise funds for a private company to build specific infrastructure, such as the Pocahontas project in Richmond, Virginia. Investors in the bonds have tax exemption if a public benefit can be illustrated and the bonds are repaid by the project, usually without any government guarantee

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