



**BUSINESS SCHOOL**

## **Economic Policy Centre**

The University of Auckland Business School

# **How we supply infrastructure makes housing unaffordable: Introducing a new approach to funding and financing our cities**

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# How we supply infrastructure makes housing unaffordable

Introducing a new approach to funding and financing our cities



November 2021

## Context

In March 2021, Cabinet (CAB-21-MIN-0045) confirmed three overarching policy objectives for the housing market, one of which is to “create a housing and urban land market that credibly responds to population growth and changing housing preferences, that is competitive and affordable for renters and homeowners, and is well-planned and well-regulated”.

Comprehensive resource management reform is intended to help. The Ministerial Oversight Group (MOG) of resource management reform agrees reform should deliver significant improvement in housing supply. This provides affordability – lower overall housing prices – and choice, such that a range of housing needs by type, size, location and price are provided, all within biophysical limits.

The MOG agrees that creating well-planned and well-regulated competitive urban land markets is the means to achieving housing supply that responds to demand.

This paper considers whether the scope of work of the resource management reform is sufficient to realise the benefits the resource management reform intends, and if not, how the reforms need to be supported to succeed. This gives effect to the group’s purpose statement in its terms of reference.

This is the second paper in a two-part series that examines how to give effect to these objectives. The first paper – *A new approach to urban planning* – focused on the planning system and proposed how resource management reform could be used to make key changes to deliver good housing outcomes as well as good long-run environmental outcomes.

### About the group

Associate Minister for the Environment Hon Phil Twyford with the authorisation of Environment Minister David Parker convened the Urban Land Markets Group of subject matter experts to provide independent advice to the Minister in the context of the resource management system reforms. The group’s terms of reference are in Annex 5. Group members are providing advice for the public good and are not necessarily reflecting the views of their respective organisations. The advice is a collaborative effort, so individuals do not necessarily endorse every element in the advice. For any queries, please contact the Minister’s office.

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## Key points

### **Infrastructure funding and financing critical to improving housing affordability**

- The cost of housing has pushed ever higher over the past decade – both local and central government are finding it difficult to provide affordable housing.
- Supplying sufficient infrastructure-ready land would reduce cost pressures by improving choice over development opportunities that provides competition in the market.
- Other factors are at play, including the cost of infrastructure and constructing new homes, but local and central government can make choices on the institutional settings and rules of engagement on funding and financing that can help support responsive housing supply.

### **Current state: infrastructure gap driven by institutional barriers to growth**

- There is broad consensus that New Zealand is facing a severe infrastructure gap that challenges the quality of the built environment.
- Institutional barriers mean infrastructure supply has not responded to growth:
  - Current settings incentivise institutions to restrict costs rather than create value.
  - There is little opportunity for councils to take costs of key infrastructure projects off their general balance sheet to fund and finance closing the infrastructure gap and support new development.
  - Incentives are misaligned – councils' funding base through ratings revenue is not aligned with the wider group of people that benefit from new growth. Central government's general tax revenue and inability to tax locally is not aligned with the people that benefit from local public goods it provides.
  - Capability – too often, local and central government do not have the full suite of tools to enable growth and confidence to use them. Funding and financing constraints can manifest in land use regulations.
- Today, the cost of borrowing is not high, but institutional barriers prevent councils investing in infrastructure needed to provide many more development opportunities that underpin competitive land markets.

### **Resource management reform is at risk without new models of funding and finance**

- Funding and financing of public infrastructure is the key constraint in unlocking supply. On its own, reform of the resource management system will not provide housing affordability.
- Without reform that addresses funding and financing, urban land markets will continue to reflect a bad outcome: a lack of choice in land markets that makes houses more expensive than they need to be.
- But it is uglier than this. When funding and financing stops much needed infrastructure being put in place, landowners delay development, pushing prices and costs even higher.
- When conditions are ugly, a significant portion of the price people pay for homes does not reflect the real economic value of the benefits (local public goods) they can access by living in cities. Rather, a significant portion of the price reflects the power of landowners to extract wealth and incomes from others, because land and development opportunities are scarce.
- A new approach supported by alternative funding and financing models needs to work in tandem with the resource management reform agenda. A step change is needed or institutions will remain incentivised to produce status quo outcomes.

## **It need not be like this: the future can be responsive infrastructure supply**

- A future infrastructure provision model could use alternative funding and financing tools to readily provide infrastructure that responds on time and in advance of development needs.
- Such a shift would help infrastructure investment unlock amenity and value creation that would lift urban land prices for all the right reasons.
- A new approach can create virtuous cycles of investment: while delivery of infrastructure and public services improve the value of our cities and increase land values for positive reasons, alternative funding and finance models can harness these positive increases in value to offset costs and pay for delivery of infrastructure and services.
- More abundant supply would increase choice in land and housing markets, and in so doing, contest away the power landowners have to extract wealth and income from others.
- Our history shows that alternative funding and financing models have been used to provide infrastructure through direct methods – tolling the Auckland Harbour Bridge and a historical plethora of special-purpose local governments – or indirectly, with betterment taxes or value capture to fund the rail system of Christchurch’s past.
- The primary objective of funding and financing policy reform should be that whenever investments are economically viable — benefits exceed costs — then funding and financing is generally not a reason they fail to proceed.

## **Moving to a new model requires a step change**

- There are two main options supporting competitive land markets:
  - raise more revenue (to be able to raise more debt) and help incentives, or
  - raise the debt ceiling and raise debt elsewhere.
- Either option is necessary to enable competitive land markets, but they are not mutually exclusive: these options can strongly complement each other.
- If institutional arrangements continue to gate access to finance, you must shift incentives by fundamentally revising the revenue-raising system of local government. This would increase ability to raise debt by increased revenue and align incentives with outcomes.
- Alternatively, introducing new institutional arrangements could improve incentives and debt-raising capability. This would add choice in urban markets and require enabling new collaborative governance structures. This too requires more fundamental reform.
- Enabling responsible infrastructure supply to support competitive land markets is most likely realised by a step change across three features of infrastructure provision.

## **Step shift 1: Improve institutional incentives**

- Currently access to finance is gated and incentives for local government to drive development are poor. Turning round these incentives within the existing institutional landscape requires adoption of alternative revenue-raising systems for local government.
- Alternative systems exist that can incentivise councils to seek growth for revenue rather than the current state of constraining costs by inhibiting growth. Other jurisdictions, such as Portland, clearly show the benefits of better models of providing infrastructure.
- Since the current local government revenue-raising system is not easily compatible with alternative approaches, such as tax-increment financing, more fundamental reform is needed
- A better local government funding and financing model could be adopted. It would enable councils to raise more debt by increasing their revenue base and linking this revenue to wider outcomes (improving housing affordability and raising economic performance).

## **Step shift 2: Broaden the set of institutions and better match them to the types of infrastructure needed**

- Special purpose governance structures are the missing leg that enables the private and general public sectors bring into play communities of interest to collectively unleash investment in local public goods.
- Collaborative structures that are very straightforward to establish can assist. These structures can help discover value and bypass status quo institutions that favour minimising costs over creating value.
- Smaller or more narrowly scoped institutions can deliver structural and follower infrastructure, including social and community infrastructure. General purpose entities become paralysed by complexity regardless of whether they are public or private, whereas single purpose entities can flourish.
- Infrastructure supports communities in three ways:
  - Shaping our cities with key transport infrastructure that can have powerful national and regional benefits for agglomeration, productivity, and amenity, and drive down land prices.
  - Structural or 'trunk' infrastructure that provides benefits by connecting individual sites to the urban network.
  - Follower infrastructure that includes both small urban roads, pathways and lighting but also parks and other local community facilities.
- Expect best-practice settings for infrastructure funding and financing to vary across the different infrastructure types. Focus on matching funding and financing settings required for each type of infrastructure to who benefits.
- Broaden the set of institutions available by enabling unblocked formation of collaborative governance structures at different scales that can deliver different types of infrastructures. Ensure they can access public powers and make them safe. Together, this would induce competition in infrastructure supply.
- Economic regulation could add a valuable layer of checks and balances to investment decision making and drive cost efficiencies.
- Right now, city-shaping infrastructure for metropolitan areas struggles because costs and benefits are not well aligned to existing local political boundaries. Central government also crowds out local government in providing local public services without a local tax base.
- National government needs to fund or co-fund the development of regional spatial strategies and the required land acquisition, since open-ended planning frameworks improve choice, housing affordability and productivity – these are national level benefits.

## **Step shift 3: Remove barriers to implementing new funding and finance tools**

- Finance in the form of debt is key to enabling urban development. It is critical for actors in the system to have access to it and enough of it to responsibly deliver infrastructure.
- Minimise barriers to entry for special purpose governance structures and enable them to independently raise debt from general purpose governments (current central and local government bodies) so they can get around existing finance constraints.
- Take-up of alternative funding and financing tools will remain poor so long as councils remain constrained by debt funding and cannot move new infrastructure projects off their balance-sheets with special-purpose vehicles. This chokes off new growth – removing this barrier is critical to progressing responsive infrastructure supply

- Remove the conflicts of interest (wants and means) that make councils unable to keep their promises not to bail out defaulting debts of projects. Doing so enables debt to be raised elsewhere, outside of councils and deconsolidated from their balance sheets.
- There is a need to review reinstating key aspects of legislative architecture that has worked across a number of historic statutes, including the local bodies loans legislation, which enable independent finance to be raised for special projects, and for these legislative provisions to complement existing methods of raising debt.
- Additional funding tools could be brought on, such as a range of value capture tools, to enable developers and infrastructure providers to capture some if not all of the value (benefits) delivered by investments in infrastructure and public goods, which can be harnessed to offset costs of delivery and enable more investment.
- Costs of providing infrastructure continue to escalate. If these costs are too high, best practices of implementing user-pays charging systems will become unfeasible as costs would be too high for users to bear. One key flow-on effect is that the ability of collaborative government structures to progress infrastructure projects would be hindered.
- Take a closer look at decision making processes that govern investment in infrastructure at both central and local government levels to avoid unnecessary cost burdens, and to remove potential affordability barriers to directly charging beneficiaries for using infrastructure.

### **A much different world is possible: we have done this before**

- The OECD considers traditional approaches to infrastructure investment have been financed with public funds. Governments have been the main actor, but this has led to governments reducing the overall level of public funds allocated to infrastructure and improving the value of cities.
- International solutions to this challenge exist, but New Zealand's own history also reveals successes in applying different models to fund and finance infrastructure and public services. We have a strong record pre-1989 of enabling collaborative governance structures for special purposes as well as enabling the local government system to raise independent finance for special projects, which are linked with dedicated revenue streams that pay off the debt.
- It appears that New Zealand's approach to local democracy historically swung from being largely *direct* (relying only on voter approval for special taxes and special loan issuance for specific projects) between 1876 and 1995 to being singularly *representative* from 1995 onwards (relying only on councillors to approve taxes and debts). This could be improved by enabling the two approaches to operate in parallel and to enable not just one but two types of local government finance to be accessible in tandem, thereby allowing the supply system to be more agile and unlock more abundant finance to deliver infrastructure and public goods.
- Overall, New Zealand has a rich history of creating virtuous investment cycles; in different ways, we have harnessed the benefits to create the resources infrastructure projects need – to effectively fund themselves. We present some examples to demonstrate this is not new for us, because we have done it before, successfully.

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# 1 Introduction

## 1.1 The current system is failing – reform is needed to improve housing affordability

Over the past decade, house prices have continued to push higher. The Department of the Prime Minister and Cabinet (DPMC) started an investigation into New Zealand's house price increases in August 2007. Since then, New Zealand's average house price has increased by \$500,000 to \$850,000 – an increase of almost 150%.

It's no longer just a housing affordability problem. Housing is widening the gap between the rich and poor and widening the gap between older generations with access to housing and younger New Zealanders left without hope of owning a home.<sup>1</sup>

New Zealanders are faced with increasingly costly trade-offs – partnering up to afford finance for a deposit, working harder and longer to make mortgage payments and forgoing living near family to find a place to live.

There are also economic impacts. The cost of housing pushes workers and families away from jobs and productivity that urban centres often provide, reducing the match between workers and opportunity in the economy. Housing costs are often cheapest far from the city centre, incentivising congested cities for people that can buy. And for those who cannot buy a house, don't expect bank loans for New Zealand's latest generation of entrepreneurs – banks won't lend without the capital in the form of an overpriced home.

## 1.2 Better land use regulation can help, but who pays and how we pay for infrastructure is getting in the way

It's not that local and central government don't want change, but the current system leaves local and central government unable to deliver housing affordability.

One cause is tight land use regulation that results in too few development opportunities, limiting choice and driving the price of urban land higher than it needs to be. It is increasing land prices, not changes in the cost of house construction, that have made housing unaffordable for so many.

But infrastructure also matters. The funding (*who pays*) and financing (*how we pay*) are creating perverse disinvestment incentives with two key impacts. Councils cannot finance:

- the infrastructure for either brownfield or greenfield development that would unlock competition and drive down land and house prices
- local infrastructure projects such as open space, parks, rail, cycleways and better roads that would increase the value and amenity of our most important urban areas.

So the investment system is getting in the way of opportunity to increase the value of our cities and getting in the way of resolving housing affordability by allowing more choice in our urban areas.

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<sup>1</sup> After this paper was delivered to the Minister, Treasury completed work demonstrating that rising house prices can exacerbate inequality between those with houses and those without houses, but rising house prices generally reduce Gini measures of wealth inequality. The paper here referred to inequality between those who own and who do not own homes.

### 1.3 The good, the bad and the ugly of our urban land markets

#### **The good: higher prices reflect access to amenities and public goods provided by infrastructure**

When land markets are competitive, urban land prices are higher than rural land prices for good reason. Higher prices reflect real economic value added relative to rural land. This includes benefits provided by infrastructure such as access to networks, access to jobs, access to amenity and local public goods.

Public goods are those things people benefit from regardless of others — they are *non-rival* (people benefit regardless of who else does) and *non-excludable* (people benefit regardless of whether they pay). Local public goods are more area specific: one cannot benefit from them without living or travelling in the city. Local public goods also have the unique characteristic that the benefits they provide increase land prices *locally*.<sup>2</sup> These benefits can vary by location across the city and are priced into (or ‘capitalised’ in) land prices.

Often land values are highest close to the CBD, but other patterns reflecting employment hubs or amenity can change land prices across the city. The price patterns are mirrored in the differing ‘rents’ payable on the land when it is made available for urban use.

#### Box A: Natural land rents always exist, even when land markets are competitive

##### **Natural land rents are ‘good’ because they reflect real value and cannot be contested**

Increased land rents are payable when land is made available for urban use. ‘Rent’ is the portion of the price that people pay for the land that is over and above what it costs to make the land available for the urban use. It is a surplus over the cost: a premium that is transferred from buyer to seller.

The cost to make land available for urban use includes paying out the previous landowner for the land valued at its previous use (the next best alternative, which could be farming) plus investment needed for infrastructure to transfer the land from a rural to an urban use.<sup>3</sup>

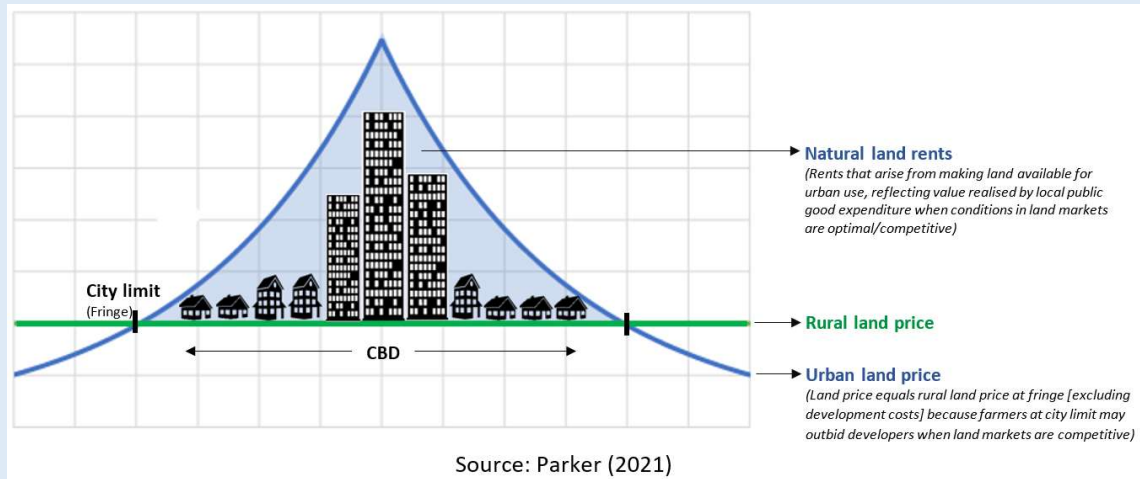
The ‘surpluses’ or ‘rents’ paid are premiums that reflect value, and this value increases the closer land is located to the inner city. Urban land has value because people want to live there: they outbid each other until what they pay equals the value of the benefits they get from just living in the urban area.

Figure 1 illustrates how urban land prices may look under optimal conditions. The blue curve is the price of urban land that increases in value (it differs across space) as it gets closer to the centre. It then declines from the centre until the city limits are reached.

<sup>2</sup> Land price increases that are locally contained and happen as a result of providing local public goods are commonly referred to as ‘land value uplifts’.

<sup>3</sup> The difference between the price paid and the opportunity cost to supply something is called ‘rent’. The opportunity cost is the value of the next best opportunity sacrificed, which is shown in Figure 1 as the green rural land price line.

Figure 1: Natural land rents in competitive urban land markets



Urban land rent is the vertical difference between the price of urban land (blue line) and the price of rural land (green line). The total value of land rents payable on land available for urban use is the blue area. If we added up the value of all the rent owed to land in the city, it would equal the total value of all benefits accessed by living in the city. These benefits are generally available to everyone in the city and are known as ‘local public goods’.<sup>4</sup>

We refer to the difference in value between urban and rural land, and the difference in value between variously located land within the urban area, as ‘natural land rents’.<sup>5</sup> They are ‘natural’ because they reflect real economic value added to rural land; they equal the value of local public goods (such as access to labour markets and amenities), and they always exist. Natural land rents cannot be reduced by competition across landowners in the city. These ‘good’ type of land rents not only persist when land markets are competitive, but competitive land markets maximise them.<sup>6</sup> Land taxes cannot eliminate them either, but land taxes can transfer them to governments to be redistributed.

<sup>4</sup> This principle holds as long as the city size is optimal, where people freely migrate in or out, being part of larger economies with many cities, and where individuals do not vary much in their tastes and preferences for urban amenities. This is relevant to New Zealand because it appears part of a common Australasian housing market (Greenaway-McGrevy, Grimes and Homes, 2016). For a more in-depth treatment of natural land rents see Arnott and Stiglitz, 1979.

<sup>5</sup> The economic profession calls this “differential land rents”. This paper uses the term “natural” instead of “differential” for rhetorical and heuristic reasons, mainly for simplicity. An alternative might be ‘locational land rents’.

<sup>6</sup> In practice land markets have many imperfections or ‘frictions’ (Arnott, 1987). A friction could be that housing is relatively fixed in space. Once built, housing also tends to remain in place for a while due to its value compared to what it would cost to replace it. Another friction is transaction costs between buyers and sellers. These frictions introduce costs and constraints to using land. Competitive urban land markets maximise natural land rents given these frictions: factoring in housing durability, spatial fixity and transaction costs, they enable more investment, create more value and reduce costs of accessing urban benefits. More people would migrate and bid up land prices, reflecting value. These are natural land rents; they would be larger if there was less friction because housing costs would be even lower. Population would further increase, and land prices bid up higher. Thus good regulatory systems that reduce frictions – costs and constraints – increase natural land rents.

### **‘Competition’ is about how the entire system of cities in New Zealand operates**

Land markets are competitive when developers can compete with other land users in order to satisfy demand for housing. At the outer limits of cities, this means that developers must be able to compete with farmers for the use of greenfield land. Within cities, it means that developers must be able to redevelop brownfield sites into housing and redevelop existing residential parcels into more intensive housing. Both locations of competition – at city boundaries and within city boundaries – are necessary for land markets to be competitive.

Competition enables land rents to be contestable in a sustained way so that prices of rural land (green line) and prices of urban land (when not yet serviced with infrastructure) can be bid down to equal each other at the fringe (blue and green lines cross).<sup>7</sup> Urban land prices are in this way pinned down by the value of rural land. For urban land prices to be grounded in rural land with real economic value added, enough land within and outside of cities needs to be developable to meet all demand.<sup>8</sup>

So ‘competition’ is about the entire system of cities that have a common market and the extent there is free entry into this market. Planning rules may constrain entry. ‘Competition’ is not just about the behaviours of individual developers who may still act competitively when the market as a whole is constrained by restrictive planning rules or inability to invest to support land use change.

### **The bad: when development opportunities are too few, higher prices reflect landowners’ power**

Urban planning policies that reduce competition between landowners within city limits, beyond urban limits and across cities not only make urban land scarce and more highly priced, but disallow entry into development and housing markets that could otherwise contest land rents.

Buyers have to bid up the price of scarce urban land to get access to limited opportunities. Outcomes are poor because insufficient competition across the entire system drives a wedge between urban land prices and rural land prices that is not related to the value. The result? A large proportion of urban land prices – and thus house prices – do not reflect real value of urban benefits and local public goods. Instead, they reflect the power of landowners to extract wealth and incomes from others because land is scarce.

Studies show the wedge between rural prices and urban prices is material.<sup>9</sup> As a simple cross-check, the capital return on land is increasing at a time when the yield or return on holding other investments, such as deposits, is falling. This suggests land prices are being pushed higher by too few development opportunities. New Zealand’s urban land markets are far from competitive.

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<sup>7</sup> The prices are equal when the land at the city’s limit no longer benefits from public goods and so excludes any development costs that would be required to transform rural land to urban land. This would involve investment in relevant infrastructure.

<sup>8</sup> ‘Bertrand price competition’ requires all market demand can be served by new entrants at a price equal to the marginal opportunity cost of supplying it, and there is no collusion. The price of a plot of urban land within any city would equal the sum of: i) the value of neighbouring rural land; plus ii) development opportunity costs (infrastructure and services); plus iii) its natural land rent (reflecting benefits that have real economic value, such as proximity to labour markets). In practice point ii) means there should actually be a discontinuity between rural and urban prices equal to the cost to develop on the fringe.

<sup>9</sup> Grimes & Yiang, 2008; Lees, 2019; Greenaway-McGrevy, Pacheco & Sorensen, 2021; Nunns, 2021.

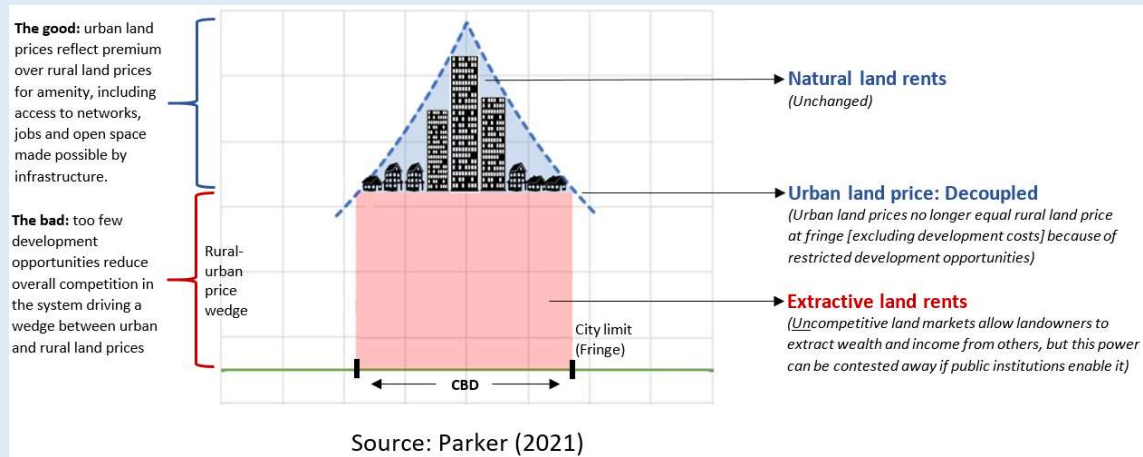
## Box B: Extractive land rents do not reflect value added but the power to exploit

### Extractive rents are 'bad' because they are excessive, create inequality and hold the economy back

When land markets are uncompetitive, the price of land decouples from its real economic value in next best use, which could be farming at the city fringe. The price of land also decouples from the cost of investment needed – the price we pay – to put land to a preferred urban use.

Figure 2 shows urban land prices (blue line) sell at a premium that comprises the value of rural land prices (green line), the natural land rents that equal the value of local public goods enabled by infrastructure (blue triangle: the 'good'), and the wedge created by uncompetitive land markets that allows urban landowners to extract excessive profit (red rectangle, the 'bad').

Figure 2: Uncompetitive land markets drive up urban land prices for all the wrong reasons



Urban and rural land prices no longer match at the urban fringe. As a result, urban land prices are no longer pinned down by rural land prices through competition at the fringe. Rather, the entire level of urban land prices (blue curve) is higher. This level shift is not associated with any value provided, but is the leverage landowners have over prices when there are too few development opportunities.

The proportion of the price that does not reflect the value of local public goods (red rectangle) is purely 'extractive land rent'. Extractive rent transfers wealth and income from renters and later generations (who look to become homeowners for the first time) to established landowners. This creates extraordinary wealth inequality, reduces living standards and holds the economy back.

### Natural land rents remain but are propped up by overall higher prices that are extractive

The pattern of natural land rents remains largely unchanged (the blue triangular area) in uncompetitive urban land markets.<sup>10</sup> The insight that benefits created by investment in infrastructure are priced into local land prices still holds. But the differing values of land (the 'good') within the urban area are now propped up by overall higher prices (the 'bad'), enabled by an uncompetitive land market in which land rents are not freely contestable.

Extractive land rents are exclusive because people get *priced out* of beneficial locations. They must pay a significant premium over and above what it would cost to produce the benefits in the location of their choice. On the other hand, natural land rents are inclusive. People get *priced in* because they can choose their location of residence within or across different urban areas on the basis that they only pay what it costs to produce the benefits in the location of their choice.

<sup>10</sup> Parker, 2021b.

### **Extractive land rents can and should be contested away**

Uncompetitive land markets transfer wealth and income from renters and later generations of landowners to established landowners without returning any additional value. Because natural land rents reflect value grounded in access to tangible urban benefits, they cannot be contested. But extractive land rents can be contested. If market entry was possible, extractive rents would be contested away through lower prices until these rents disappeared.

The goal of competitive land markets is to harness the value of natural land rents (the 'good') to provide for the infrastructure and public services necessary to contest away the extractive land rents (the 'bad'). This enables land rents to be contestable across the entire system, resulting in natural land rents (the 'good') remaining and extractive land rents (the 'bad') being stripped out.

### **The ugly: a vicious cycle emerges, pushing prices ever higher as developers delay development**

When land markets are uncompetitive and prices rise, things get worse. To reduce costs, often urban planning policies further restrict development opportunities. Urban land prices escalate.<sup>11</sup> But as land prices escalate, developers delay bringing homes to market in order to reap greater profits later. A fear of missing out from escalating capital in turn increases demand, creating a brutal dynamic from which only landowners profit.

This vicious cycle is particularly resilient to change, because increasing land prices also increase the costs to supply public infrastructure. These escalating costs stress the willingness and ability of local and central governments to financially support the planning system, fostering cost saving over value creation.

### **There is a way out: a funding and financing system could establish virtuous cycles of investment**

The tenacity of this vicious cycle suggests a step change is required to promote a funding and financing system that instead establishes virtuous cycles of investment. Virtuous cycles discover value, create it and harness it to enable further investment.

The value created from investment in infrastructure and public goods can be harnessed. Real economic value added to rural land increases urban land values (the 'good') from which revenue streams can be derived ([Chapter 4](#) explains how this can be done). These revenue streams can in turn service more abundant investment, delivering significantly more development options.

In this way a funding and finance system can promote virtuous cycles that harness value (the 'good') and contest away the power of landowners to extract wealth and income from others (the 'bad').

This requires a funding and financing system that:

- **Enables creation of value** by investment in local infrastructure
- **Provides more choice** in urban land markets to reduce land prices to improve housing affordability.

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<sup>11</sup> After this paper was delivered to the Minister, an informed Council official reminded us that land prices may incorporate expectations that infrastructure will be delivered to that land, with costs borne by council generally rather than beneficiaries of the infrastructure, making ex-post charging of those landowners difficult. This reinforces the case for better funding and financing mechanisms, described below.

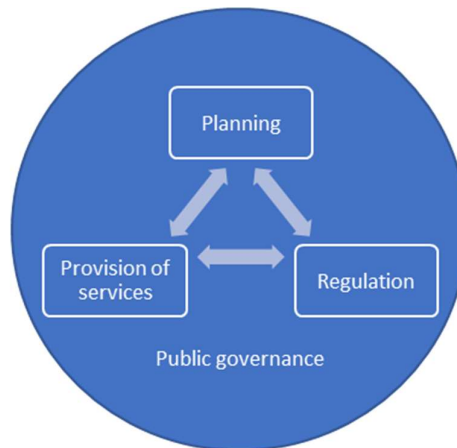


## 1.4 More choice lowers land prices, but this requires responsive infrastructure supply

Simultaneously bringing multiple development sites to market, whether they are brownfield opportunities or greenfield developments, would lower land prices and house prices. A competitive land market where there are many choices for development requires four core dimensions to work in tandem (see Figure 3):

- **Effective planning** – to enable cost-effective future development and investment through protecting, acquiring and managing the use of public space well in advance of needs
- **Best-practice regulation** – to encourage the best use of land (through permissive zoning) by maximally allowing activities performed on that land as long as entailed effects are within biophysical limits and internalised (can be workably managed)
- **Provision of infrastructure services** – to unlock development opportunities and incentivise uptake by providing the public infrastructure needed to service the land for housing as well as supplying public services critical to community wellbeing and business activity. This requires public finance that is abundant and accessible.
- **Public governance** – to provide the transparency and accountability needed for the necessary trust and permission to execute functions and activity (such as urban development) relevant to communities of interest (individuals, communities and the region).

Figure 3: Relevant dimensions of competitive land markets



If any one of the core dimensions is restrictive or cannot perform well due to compromised governance arrangements, one or more of the other dimensions will tend to become restrictive.

This matters since infrastructure funding and financing is holding up provision of development opportunities. Improvements to land use regulation and resource management reform hold the promise of improving housing affordability over time, but without improvements to how we fund and finance infrastructure, infrastructure will continue to prove a bottleneck to progress.

Right now, the funding and financing environment compels planners not to plan in order to manage costs. This is limiting the future development of development opportunities.

Similarly, infrastructure investment challenges may compel regulators to require and withhold planning permission for land use change. When infrastructure investment cannot deliver standards required to workably manage the impact of the highest and best use of the land on either the environment or the surrounding area, infrastructure investment can be withheld.

In both cases, managing costs and achieving standards are locking in a lack of long-term growth planning and restrictive land use regulation that would otherwise bring on more development opportunities.

### 1.5 What is special about supply of infrastructure?

Infrastructure provides a service, but it is distinctive:

- It is generally a means to an end, not an end itself, and so it is typically *networked* with other similar assets and the rest of the economy.
- It involves sinking relatively *large, fixed costs* upfront relative to the ongoing costs to operate and maintain.<sup>12</sup>

In this context, infrastructure includes transport, water, energy, telecommunications and social and community assets such as schools, parks, pools, libraries etc.

### 1.6 Does it matter if public or private money finances infrastructure?

It is unhelpful to define public goods and services as those only provided by governments when considering which services should be provided by governments.

As mentioned in [Section 1.3](#), public goods benefit everyone regardless of whether they pay (they are *non-excludable*) and regardless of who else benefits (they are *non-rival*). They are anything people benefit from regardless of others. Market or government provision may undersupply when providers capture too little benefit.

In practice, infrastructure often has aspects of these two features, which makes its natural provision by governments or markets ambiguous. Government-supplied infrastructures are often excludable:

- People can be excluded from roads if they do not have licences or registrations or haven't paid road user charges (if diesel powered) or tolls
- Water can be turned off at the meter just like power
- Entrance fees can be levied to use pools and libraries.

Government-supplied infrastructure is rival when it suffers congestion, overflows, waiting lists and shortages.

Market-provided infrastructure has public good aspects too:

- Non-rival when networks have excess capacity and do not congest
- Non-excludable when developers build connecting transport links to developments that anyone can use, especially walkers and cyclists.

### 1.7 How does infrastructure supply affect housing affordability?

The three core dimensions of planning, regulation and infrastructure supply need to be enabled for urban land markets to operate competitively. However, urban policy strategies under current arrangements restrict them (see

[Figure 4](#)). Infrastructure supply is particularly affected by this. Constraints in infrastructure supply hold other dimensions hostage – especially planning. On the upside, the urban environment modifies the value of land changes when it benefits from public infrastructure.

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<sup>12</sup> For further description of these characteristics, see New Zealand Productivity Commission, 2017, Chapter 10.

Figure 4: Urban policy strategies need to change across three core dimensions

| Dimension                              | Restricted<br>(current state)                                | Enabled<br>(future state)                    |
|--|--|--|
| <b>Planning</b><br>(prior preparation) | Targeted and directed  | Expansive and enabling                       |
| <b>Regulation</b><br>(of land use)     | Growth contained and sequenced                               | Growth permitted if served by infrastructure |
| <b>Infrastructure</b>                  | Finance limited and focussed on efficiency by reducing costs | Finance abundant and accessible              |

Urban planning policies that restrict the urban system cause urban land prices to escalate. As land prices escalate, developers delay supplying houses in order to make greater profits later. Investors intentionally increase the demand for land and houses to escalate capital gains. Both increasing demand and escalating capital gains push up land prices faster and create a vicious cycle from which landowners profit.

This cycle fosters perverse incentives and holds the entire system hostage, resulting in the system becoming increasingly restricted over time.

When land prices escalate, people crowd into smaller homes with lower living standards. Paradoxically, central government's attempts to soften the blow make things worse. Ever greater income subsidies intended to function as a social safety net push up rents and house prices further, and even though central government insists on incremental relief to restrictive zoning, the benefits created are captured by wealthy landowners, ironically worsening wealth inequality.

### 1.8 How we fund and finance requires a step change

In our context, *funding* is about obtaining enough funds to pay for infrastructure. This is all about *who* should pay.

*Financing* is about *how* payment should be made. This includes bringing forwards and backwards in time the necessary cash payments through borrowing and saving.<sup>13</sup>

Funding and financing are critical because the presenting problem is that supply of public infrastructure services is being withheld despite people who benefit from those investments being willing to pay all funding requirements.

Economically viable infrastructure is stopped by limited access to finance despite today's strong financial markets. Governments are either unwilling or unable to raise enough debt finance. As a result, projects that add value to society do not progress and the planning system is held hostage, unable to provide much-needed development opportunities.

<sup>13</sup> The need for debt finance is clear, because most public infrastructure comprises long-life assets with large fixed costs and long-term benefits. Savings finance is relevant too, such as when providers charge users depreciation to save in advance for renewals of assets, and for more costly equity finance of risky urban development.

## 2 Current arrangements for funding and financing urban development are not working

Our current funding and financing arrangements provide decision makers with:

- **little motivation** to provide access to finance to drive investment
- **constrained public funds** that focus investment decision making on the short term
- **limited means to transfer and ring-fence development risk** that makes it difficult for decision makers to have confidence in project risk not having recourse to council revenues
- **too few alternative funding tools** that can effectively bypass limited local government finance to fund infrastructure.

### 2.1 Who plays which role in delivering infrastructure?

#### Who is involved?

New Zealand's constitutional and institutional arrangements confer discretion and autonomy to councils in all relevant domains: planning, regulation and the provision of urban services and infrastructure.<sup>14</sup> This is markedly different to many developed countries.

Discretion is conferred to councils through:

- the Resource Management Act 1991 in relation to planning and regulatory powers
- the Local Government Act 2002 in relation to financial planning obligations for public services and infrastructure.

The absence of central government involvement in planning and funding of services that are of national relevance augments local government's autonomy.

It is a myth that public services are solely provided by public entities. The private sector plays a critical role. In practice, it is the entirety of central government, local and regional councils and the private sector (including developers and commercial and utility companies) that provide services and infrastructure for urban development.

#### The type of infrastructure should drive who is involved

It is widely accepted that a combination of urban services and types of infrastructure play different roles in the planning hierarchy but jointly contribute to the delivery of developable land and housing.

It's not just about infrastructure in the sense of fixed, long-lived structures that facilitate services below ground (three waters) or above ground (transport). It's also about abstract types of services that impact how the overall system operates.

For example, take strips of vacant land and open spaces that can be made available for services yet to be identified. These services may be gradually supplied over time to match community needs, which evolve as dynamic development of the urban area becomes more certain.

The types of infrastructure needed to support communities are broad, but [Figure 5](#) shows gaps exist in just who is responsible for funding and delivering infrastructure across some domains.

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<sup>14</sup> New Zealand Productivity Commission, 2015; Vammalle & Bambalaite, 2021.

Figure 5: Local and central government and the private sector fund and deliver infrastructure

| Domain                              | Services and infrastructure assets   | Responsibility for delivery and funding  |
|-------------------------------------|--|--|
| Transport                           | <ul style="list-style-type: none"> <li>Corridors to preserve future transport routes</li> </ul>  | <ul style="list-style-type: none"> <li>No current arrangement or institutional structure</li> <li>No current practice, no legal mandate, no funding mechanism or financial tools</li> </ul>  |
|                                     | <ul style="list-style-type: none"> <li>Paper roads – unformed roads that are legally recognised as roads that are yet to be built</li> </ul>                                     | <ul style="list-style-type: none"> <li>No current arrangement or institutional structure</li> <li>No current practice, no legal mandate, no funding mechanism or financial tools</li> </ul>  |
|                                     | <ul style="list-style-type: none"> <li>State highways, public transport (metro rail)</li> </ul>  | <ul style="list-style-type: none"> <li>Local and regional councils and central government</li> <li>National Land Transport Fund (NLTF), (53% for roads) and Crown grants</li> </ul>  |
|                                     | <ul style="list-style-type: none"> <li>Ports</li> <li>Airports</li> </ul>  | <ul style="list-style-type: none"> <li>Local councils and private commercial companies</li> </ul>  |
|                                     | <ul style="list-style-type: none"> <li>Outside subdivision or off-site local and high-capacity roads, footpaths, cycleways</li> </ul>  | <ul style="list-style-type: none"> <li>Local councils or private developer (by agreement with council) with funding support by central government (NLTF)</li> </ul>  |
|                                     | <ul style="list-style-type: none"> <li>Subdivision streets and paths that connect neighbourhood to the wider network</li> </ul>  | <ul style="list-style-type: none"> <li>Private developer</li> </ul>  |
| Water                               | <ul style="list-style-type: none"> <li>Paper pipes<sup>15</sup> – underground designations that are legally recognised for future use in a changing urban environment</li> </ul> | <ul style="list-style-type: none"> <li>No current arrangement or institutional structure</li> <li>No current practice, no legal mandate, no funding mechanism or financial tools</li> </ul>  |
|                                     | <ul style="list-style-type: none"> <li>Drinking water (supply)</li> <li>Wastewater (collection)</li> <li>Wastewater (treatment)</li> <li>Stormwater (removal)</li> </ul>         | <ul style="list-style-type: none"> <li>Council, or developer by agreement with council (off site) and developer (on site), or private provision by agreement with council (eg Veolia in Papakura)</li> <li>Reform proposes water services delivery by 4 large corporatised public entities<sup>16</sup></li> </ul> |
| Energy                              | <ul style="list-style-type: none"> <li>Electricity</li> <li>Gas</li> </ul>   | <ul style="list-style-type: none"> <li>Private utility company, including state-owned enterprises</li> </ul>   |
| Telecoms                            | <ul style="list-style-type: none"> <li>Fixed line</li> <li>Mobile</li> <li>Internet</li> </ul>   | <ul style="list-style-type: none"> <li>Private utility company, including state owned enterprises</li> </ul>   |
| Social and community infrastructure | <ul style="list-style-type: none"> <li>Open spaces including public space, parks and reserves</li> <li>Libraries, schools, hospitals</li> </ul>                                  | <ul style="list-style-type: none"> <li>Central government (eg health and education, national parks), council (public spaces, parks, libraries) or private developers in agreement with council</li> </ul>  |

We can assign the types of infrastructure needed to support communities into three main categories based on the role they play in the urban system and planning hierarchy:<sup>17</sup>

<sup>15</sup> Infrastructure Australia, 2017.

<sup>16</sup> Department of Internal Affairs, 2021.

<sup>17</sup> New Zealand Productivity Commission, 2017; SGS Economics & Planning, 2014; Waka Kotahi NZ Transport Agency, 2021.

### **1) Lead infrastructure and services**

This includes land acquired to make room for city-shaping infrastructure by preserving future transport corridors and open spaces. This land can have powerful regional and national benefits that drive land and house prices down and promote future agglomeration and productivity spillovers.

It is acquiring the right to develop land that matters. Purchasing the option to develop is sufficient, and land acquired ahead of development can always be leased in the short term.

Tangible assets include city-shaping infrastructure that are mainly transport-related (arterial roads and major public transport) at a city-wide, regional and/or inter-regional scale. These assets integrate the labour markets by connecting districts and regionally significant facilities such as ports and airports, increasing mobility of people and resources across urban areas.

### **2) Structural infrastructure and services**

This includes paper roads and paper pipes – land or corridors with existing development options.

Tangible higher-order trunk facilities and networks that provide the skeletal framework of an urban area are also included. The primary purpose of trunk facilities is to service and connect catchment areas rather than individuals or specific sites.

Trunk infrastructure comprises physical infrastructure (high-capacity roads, below-ground three waters infrastructure) and social infrastructure (hospitals, university campuses) that ensure urban mobility and drive urban and economic development.

Key defining features of structural infrastructure and services are not so much the physical size or monetary cost but the extent of natural monopoly (are there high sunk fixed costs and very low marginal cost versus sunk fixed costs?) and the extent of spillovers.

### **3) Follower infrastructure and services**

Follower infrastructure covers primarily tangible infrastructure assets that provide services into a suburb or neighbourhood relevant to community wellbeing and business activity, such as urban streets and lighting. Parks and other community facilities are also included.

## **2.2 Essential infrastructure faces critical barriers that are preventing development**

### **Financial and funding barriers may present as land use regulation**

These different types of services and infrastructure are essential for growth but face many barriers.

Some barriers, rather than reflecting policy objectives of councils, may reflect barriers to acquiring the financing needed to support infrastructure development. Urban growth boundaries put in place by councils through land use plans under the Resource Management Act appear a likely example.

By comparison, services supplied by the private sector, such as energy and telecommunications, typically do not hold up urban development. Barriers to development appear to originate in our public institutions responsible for delivering lead, structural and follower infrastructure.

These institutions comprise both local government (including councils via the Local Government Act 2002) and central government (primarily Waka Kotahi NZ Transport Agency), governed by the Land Transport Management Act 2003. In 2015, Local Government New Zealand noted:

The availability/future provision of infrastructure is a de facto urban limit ... ultimately, the land is not “shovel ready” until main trunk infrastructure has been extended to a point at which it becomes economical for a developer to meet the cost of connecting.<sup>18</sup>

### Financing challenges required staging Auckland’s Unitary Plan

Auckland Council addressed this issue head on by publicly explaining how it would manage financial constraints through urban planning policies.

The Unitary Plan enabled significantly more development capacity, but Auckland Council could not simultaneously release all development options to the market. Supply constraints of the needed services and infrastructure cramped growth, so the Auckland Plan 2050 sequenced release of development capacity, including the land for growth and development the Unitary Plan enabled.

Auckland Council also signalled the staged release to the market and the timing when specific areas would become development ready through its Future Urban Land Supply Strategy.<sup>19 20</sup>

Auckland Council explained it had to ration the supply of land into distinct phases:

Not all the areas identified for intensification or urban expansion can be developed immediately. Many require significant investment in supporting infrastructure ... before development can commence.<sup>21</sup>

### The financial challenge can be large

If we look at the costs of the infrastructure needed, we can better appreciate the challenge. [Figure 6](#) shows estimates of the cost in Auckland. Costs range from \$95,000 to \$190,000 per dwelling depending on the wider public and social infrastructure included.

Figure 6: Estimates of infrastructure investment costs per dwelling in Auckland City

| Source                         | Approximate scope of services   | Value                   |
|--------------------------------|---|-------------------------|
| Auckland Council <sup>22</sup> | Costs include public infrastructure (excluding Waka Kotahi’s share of transport)  | \$135,000               |
| MBIE and MfE <sup>23</sup>     | Costs include public infrastructure as well as private installation costs of on-site development to connect site with the wider network   | \$100,000–<br>\$133,000 |
| Treasury <sup>24</sup>         | Costs include: <ul style="list-style-type: none"> <li>• public infrastructure (share of \$95,000) including three waters</li> <li>• transport (including regional arterial transport and major transport network expansion such as motorways and mass transit, excluding Waka Kotahi’s share of transport)</li> <li>• schools, as well as a 15% contingency for cost escalation, but excludes healthcare facilities.</li> </ul> <p>Costs also cover private on-site development (share of \$95,000) including three waters, local roads, energy, telecommunications, pocket parks and professional services fees)</p> | \$95,000–<br>\$190,000  |

<sup>18</sup> New Zealand Productivity Commission, 2015, p. 166.

<sup>19</sup> Auckland Council, 2017.

<sup>20</sup> After this paper was delivered to the Minister, an official noted that Auckland Council has expressed concern at the number of private plan changes being accepted by commissioners absent funding and financing plans for infrastructure required to address cumulative impacts. We again note the importance of strengthened funding and financing mechanisms.

<sup>21</sup> Auckland Council, 2019.

<sup>22</sup> The Treasury derived this figure from the Auckland Plan. See Auckland Council, 2018.

<sup>23</sup> MBIE & MfE, 2017.

<sup>24</sup> The Treasury, 2019a.

While infrastructure plays a key role in unlocking abundant land for development, the services delivered by private and public suppliers also make up a sizeable portion of the cost of new dwellings.

The services and infrastructure costs are escalating. Costs of constructing public infrastructure have risen substantially in recent years. International benchmarks show that the costs for constructing certain types of infrastructure, such as rail tunnels, could be 75% cheaper in New Zealand.<sup>25</sup>

To advance housing affordability, any funding and financing arrangements for the provision of services and infrastructure for urban development must enable two outcomes in tandem:

- **Friction-free and responsive supply of public and private services.** This enables abundant simultaneous development-ready options, which introduce competitive tension in land and housing markets. Competitive tension removes extractive land rents on land from the total price of homes. When interpreted broadly, these extractive rents have been estimated to exceed the infrastructure costs per dwelling shown in [Figure 6](#) by up to a multiple of 5.<sup>26</sup>
- **Avoid unnecessary costs being loaded onto the total price of homes from many sources.** Costs from a variety of sources include cost escalations that result from poor governance and poor management. Poor investment decisions and project management also do not control risk well and so make housing more expensive.<sup>27</sup> Efficient use of existing resources as well as fit-for-purpose, cost-effective supply of new services should be employed.

New Zealand is an expensive country to build houses and infrastructures:

- The level of cost to deliver rail tunnel infrastructure in New Zealand exceeds that of other most cost-efficient countries by a factor of up to 9 (ie, 900%).<sup>28</sup>
- International comparisons of rail tunnel costs show that some countries manage to build rail tunnels at a fraction of the cost compared to others. Countries like Spain, Italy, Switzerland, Sweden and Chile can build at a cost of \$90–200 million per kilometre. In contrast, New Zealand builds within a band of \$800–900 million per kilometre.
- Improvements in managing down the costs of infrastructure provision, ensuring better use of existing assets, and proper pricing help maximise the benefits of a resource management reform. These measures are also needed to close the infrastructure investment deficit over time. The investment deficit for three waters infrastructure alone has been estimated by the Water Industry Commission of Scotland (WICS) to be \$120 to \$185 billion.<sup>29</sup>

## 2.3 Current arrangements do not enable competitive urban land markets

### Competitive land markets are needed

The key challenge facing council financial planning for services and infrastructure provision is maintaining competitive tension in the market.<sup>30</sup> At the same time, institutional settings require councils to avoid overcapitalising.

The New Zealand Productivity Commission canvassed these issues at length and concluded councils need to financially plan in ways that work counter to creating competitive tension. Councils manage the challenge of costly lump-sum investments and perceived high risks of development uptake through a

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<sup>25</sup> Nunns, 2020.

<sup>26</sup> Lees, 2019.

<sup>27</sup> Nunns, 2020.

<sup>28</sup> Pedestrian Observations, 2019.

<sup>29</sup> For a discussion of the investment deficit, see Department of Internal Affairs (2021) and New Zealand Infrastructure Commission (2021).

<sup>30</sup> New Zealand Productivity Commission, 2015.



cautious approach, carefully rolling out new services and infrastructure in limited areas and only just in time. This approach becomes a “bottleneck in the supply of land”.<sup>31</sup>

The Commission argued that current arrangements for the supply of services and infrastructure are insufficiently responsive to keep pace with demand, resulting in rapidly rising urban land prices,<sup>32</sup> and discussed several options to improve responsiveness of supply. These include far-reaching institutional changes necessary to enable competitive urban land markets.

The institutional arrangements the Commission envisaged would “inject competition into the market for infrastructure”<sup>33</sup> by giving developers more freedom and autonomy to construct infrastructure at their own initiative. This relieves the burden on councils to fund such services.<sup>34</sup>

### **The right tools are available...but not for our growing cities**

The Productivity Commission’s more recent inquiry into local government funding and financing concluded that councils have a wide range of funding and financing tools. The main funding tools (including targeted rates, development contributions and debt) were assessed to “measure up well against the principles of a good revenue-raising system, including simplicity, efficiency and revenue stability”.<sup>35</sup>

The Commission was not asked if the current funding tools and revenue-raising system would enable competitive supply of services and infrastructure to enable competitive urban land markets. In this respect, the Commission said the funding system has been adequate in the past but the current system was failing when demand for infrastructure needs to be met under non-static conditions.

In sum, the Commission concluded that our current funding and financing arrangements function well (are simple, efficient and stable) so long as the status quo *does not change*, but current arrangements fail as soon as urban areas dynamically change, grow and create pressure to invest. This affirms that current funding and financing arrangements do not enable the lift in responsiveness that policy seeks to achieve to improve housing affordability.

## 2.4 Institutional features are getting in the way

The core challenge to responsive supply of urban services and infrastructure lies within the set-up of current institutional arrangements. A range of barriers across both local government (councils) and central government result in public bodies functioning as spatial monopolies over the supply of services and consequently developable land.<sup>36</sup> This limits the total amount of resources that can be marshalled for investment and constrains access to funding and financing. Two key institutional features – cost-focussed institutions and lack of *time consistency*<sup>37</sup> – are particularly problematic.

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<sup>31</sup> New Zealand Productivity Commission, 2015, p. 164.

<sup>32</sup> New Zealand Productivity Commission, 2017, p. 283.

<sup>33</sup> New Zealand Productivity Commission, 2015, p. 203.

<sup>34</sup> New Zealand Productivity Commission, 2017, pp. 350–351.

<sup>35</sup> New Zealand Productivity Commission, 2019, p. 6.

<sup>36</sup> The New Zealand Productivity Commission (2015) noted the absence of competition in the provision of infrastructure, leaving supply in the hands of public bodies that are effectively monopolies with substantial spatial extent. So it can be argued that such public bodies should be themselves monitored and regulated.

<sup>37</sup> Decision makers are time consistent when each step taken on a path over time is consistent with the total path chosen at the outset. It is the ability to stay the course throughout time and a sequence of actions as originally intended. This is also called ‘sequential rationality’. For examples see Kydland and Prescott, 1977; Elster, 1984; and Tucker, 2018.

## **Institutions incentivised to reduce costs limits opportunities to create value**

Decision makers who govern investment decisions can choose to avoid costs by not taking up opportunities. This includes limiting access to finance needed to enable investment in services and infrastructure for urban development.

The issue is trade-offs, which provide little motivation to take up opportunities and realise benefits. Restricting supply may be a prudent attempt to avoid overcapitalisation when decision makers cannot avoid associated risks or transfer those risks to third parties. Blocking opportunities may also occur when decision makers are unwilling or unable to raise the revenue needed to service associated debt. Even though the benefits are overall net positive and worthwhile investing in, incentives are such that other considerations are weighted more heavily – and infrastructure and services miss out.

## **Councils need to be freed from bearing all the risk of service delivery on infrastructure projects**

Ideally, public bodies – including councils and the Crown – should be able to keep their promises when making investment decisions. Governments should be able to credibly commit to not taking on risks associated with financing and constructing infrastructure projects.

However, our institutional settings make local public bodies the principal bearers of risk associated with service delivery and infrastructure projects. Councils have not been able to shift these projects off their balance sheets. This prevents alternative ways of funding and financing delivery that could remove financial and risk burdens from councils, freeing up financial headroom for expenditures.

Decision makers should have their eye on the long term, making sustainable investment in long-life infrastructure assets. However, current institutional settings encourage decision makers to maximise the return on capital or performance in the short term.

It need not be like this. [Box C](#) lays out a different approach in the US to funding local infrastructure, and [Annex 3](#) shows similarities to how New Zealand local bodies did it from 1876 until 1989.

### **Box C: Leveraging the unique US approach to finance and funding**

#### **The United States model uses incrementing tax revenues**

Tax-increment financing is often used to back revenue bonds to support provision of public infrastructure in the United States.

Bonds are instruments of debt issued by governments for a specific purpose. This enables governments to raise debt to invest in infrastructure upfront. The bond issuers, usually governments, promise lenders that their principal will be repaid with interest.

Tax-increment financing is then used to repay the debt raised by capturing and diverting a portion of the local tax revenues that are anticipated to increase in the future as a result of the project adding value, which will be reflected in increased land prices in the surrounding area.

In urban development it works like this: A local urban area is regenerated and creates additional property tax revenue. If the regeneration relies on public infrastructure investment, the property tax revenues can be incremented (a portion of the taxes is diverted) and pledged (hypothecated) to repaying a revenue bond issued by the local authority to finance the infrastructure. A *revenue bond* is not backed in any way by the general taxes of the local authority but linked to the pledged revenue, and so it is separately credit rated, and does not affect the debt headroom of the local authority.

This relies on the argument that the local area would not have received the additional tax revenues without the publicly financed infrastructure. This is clearer in the USA's case because local governments

generally tax at a fixed percentage rate of the property value ascribed by the tax assessor (these are assessed property values for tax purposes, which are now decoupled from present day market values), so more housing units means more total tax revenues. Whereas in New Zealand (and historically across the USA) more property value for given council expenditures reduces the percentage tax rate on property.

Tax-increment financing does have critics. Some of the investments may not be clear cut, and assessing revenue in the absence of the infrastructure is not straightforward. In the US context, some argue funds needed for schools are diverted to infrastructure,<sup>38</sup> but the tool is proving popular as a means of supporting urban renewal projects.

### **Limiting municipal property taxes**

Tax-increment financing needs to be viewed alongside a second common feature of US legislation. State constitutions limit the municipal property tax rate, which is set as a percentage of a property's assessed value for tax purposes. The assessed value is set limited to historical values plus inflation.

This means local governments cannot use general property taxes alone to optimally fund local public services. Instead, alternative funding and financing arrangements must be used based on specific taxes that are linked to – and pledged (hypothecated) for – specific purposes, and in this way limited to a specified set of activities.

Under this world, new urban development creates new net revenues to the local government and not lower tax rates to all taxpayers, so local government faces razor sharp fiscal incentives to enable urban growth and development rather than resist growth to limit exposure to infrastructure costs.

### **An applied example: revitalising Portland's South Waterfront area**

In Portland, Oregon, the property tax system was like New Zealand's local government rating system. Oregon had a pure levy-based property tax system. Governments set levies, then assessed value at market values before setting tax rates as the total levy divided by the total market value in the district. Levies were constitutionally limited to an annual growth rate of 6% without voter approval. New growth could then distribute levies across greater value of real estate, leading to a potential fall in tax rate for some properties but not an increase in total levies to governments.

This system was radically altered in the early 1990s. In 1990, Measure 5 introduced a limit of \$10 per \$1,000 of assessed value for property taxes. In 1997, Measure 50 changed the valuation method from market value to a formula – the 1995/96 assessed value plus 3% each year.

These limits bind. This means new growth no longer offsets tax rates to existing property, so new growth leads to new additional revenue to governments – about US\$3,000–5,000 for a house of average value (about US\$350,000). Under this funding and financing model, the city of Portland took on several large, connected urban renewal projects over the following 25 years:

- South Waterfront high-rise district – built on a brownfield site, the intensification project is one of the largest redevelopment projects in the United States and includes Oregon Health and Science University (one of the largest employers in the state)
- Portland Aerial Tram – an aerial commuter tramway that connects the South Waterfront district and Oregon Health and Science University
- South Waterfront Greenway – situated on the west bank of the Willamette River
- Gibbs Street Pedestrian Bridge – takes only pedestrians, cyclists and public transit vehicles between the South Waterfront and the suburb of Hosford-Abernethy

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<sup>38</sup> O'Toole, 2011.

- Zidell Yards – waterfront revitalisation of a former industrial scrap-metal and ship-breaking site.

These projects used tax-increment financing, which Prosper Portland describes as “a state-authorized, redevelopment and finance program designed to help communities improve and redevelop areas that are physically deteriorated, suffering economic stagnation, unsafe or poorly planned”.<sup>39</sup>

Funding sources also include:

- federal funding contribution channelled through the Metropolitan Planning Organisation for the light rail project and funding from public transport fares
- a revenue-bond financed contribution from the existing Business Improvement District funded by a targeted rate on business property
- a revenue-bond financed contribution from the existing tax-increment financing district funded by incrementing (pledging) the additional general municipal property taxes from the improved capital stock
- a capital contribution from the neighbouring university.

### **A New Zealand application? Revenue bonds for infrastructure**

A variant of tax-increment financing could be used in New Zealand to fund and finance a large range of infrastructure investments. Mechanism design needs to be unique to New Zealand, but include four key attributes:

- The ability to use revenue bond finance
- A dedicated revenue stream that the market is willing to buy
- The ability to increment general property taxes to that bond
- Consent of the local tax-paying community.

Development of basic models of revenue bond financing are first required, but such a model could alleviate reliance on highly constrained council debt that is linked to general taxes of the local authority, and exacerbated by increasing demands for growth and levels of service of infrastructure networks, renewal and resilience.

If a self-supporting council infrastructure provider (of local or regional scope) could borrow against user charges only (with a revenue bond) with no significant guarantee – meaning that the project will not be backed by the local authority’s general taxes – as judged by ratings agencies, they could qualify for an alternative credit rating criterion, such as Standard and Poor’s criteria.<sup>40</sup>

Such criteria do not use debt to revenue ratios. Instead, a debt service cover ratio is used to assess if expenditures are consistent with the debt obligations. This mechanism could allow local infrastructure providers to borrow to fund much-needed investment.

These suppliers could be the same size as existing council suppliers (including council-owned providers), or smaller (eg special purpose vehicles created under the Infrastructure Funding and Financing Act 2020), or joint action agencies (ie, collaborative ventures), but all of these would need to be better enabled by further institutional reform to ensure there is no recourse to the general taxes of either local governments (councils) or central government (the Crown). Some types of infrastructure bonds can have better credit ratings than debts issued by governments that are backed by their general taxes, even junior (ie, less secure) debts.

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<sup>39</sup> Prosper Portland, 2021.

<sup>40</sup> S&P Global Ratings, 2016.

### 3 Barriers are preventing investment in infrastructure

There are many barriers that can limit willingness or ability of public bodies to responsively supply services. Some affect both central and local government. They can be broadly grouped into three categories: **incentives**, **finance** (including risk) and **tools**.

- Current *incentives* do not motivate decision makers to proactively drive development.
- *Finance* is limited to public debt because risk cannot be transferred to third parties and public debt is constrained.
- Even if decision makers are motivated, their *tools* are limited by their link to public debt.

#### 3.1 Three key barriers prevent investment in services and infrastructure

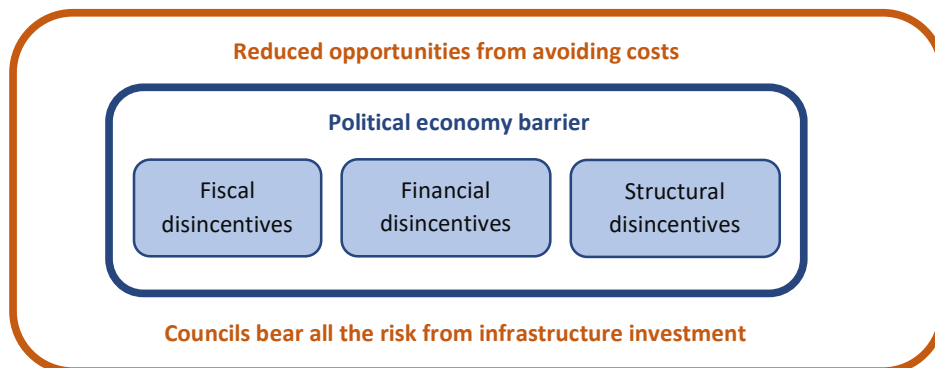
##### **Current incentives are misaligned, driving a broader political economy barrier**

Incentives determine the degree to which political and economic institutions – most importantly public bodies, both central and local – are motivated to supply services or are discouraged from doing so. The motivation of decision makers is influenced by how they are aligned with the benefits and the costs of investment.

Most voters are ratepayers who stand to benefit from regulation that increases the value of their home. People who stand to benefit from policies do not vote in local council elections and tend to come from outside the local area. Unsurprisingly, local councils are incentivised to minimise costs to ratepayers rather than seek new growth opportunities.

These barriers jointly contribute to a fourth broader political economy barrier from which existing incumbents benefit (see [Figure 7](#)). This dynamic underpins and reinforces problematic institutional features – a focus on cost efficiency rather than value creation and inability to unlock infrastructure investment by moving infrastructure projects off the balance sheet.

Figure 7: Incentive barriers within institutional arrangements



##### **Fiscal disincentives: hard budget constraints mean decision makers can't offload risk**

Central and local government are required to manage down costs within hard budget constraints. Hard budget constraints are systems and processes that minimise flexibility to change revenues, expenditures, assets, and liabilities. This hardwires priorities into the system and reduces flexibility and responsiveness to local demand. Hard budget constraints have an upside under good conditions: they drive prioritisation and cost efficiency, and they push resources towards alternative channels if those channels exist.

However, in absence of either competition between suppliers to serve demand or clear and strongly enforced service quality and coverage mandates, hard budget constraints can go wrong. If incentives to supply are lacking, hard budget constraints incite counterproductive behaviours; instead of trying to find better ways to supply to demand (ie, lower costs for same level of supply, or increase supply at the same cost), infrastructure providers avoid costs altogether.

Decision makers at central and local levels of government also have strong mandates to deliver short-term budgets at the expense of investing in long-term outcomes. This makes it difficult for decision makers to be time-consistent and focus on sustainable investment.

In local government, the Auditor-General has highlighted that, even though councils are forecasting substantially more expenditure to respond to growth pressures, long-term plans tend to result in councils underspending in their capital budgets. Councils also report their performance based on measures with a short-term focus.<sup>41</sup>

Central government capital investment is similarly disincentivised, because services (including social infrastructure such as schools) are provided by public bodies within hard budget constraints set by government. Delivery within budget constraints often takes precedence over quantity and quality.<sup>42</sup>

Key lessons from three waters reform in New Zealand and overseas demonstrate that providing services within hard budget constraints leads to two main outcomes:<sup>43</sup>

- Maximising the return on capital or performance in the short term through decision makers choosing the option requiring the least upfront capital investment rather than the lowest whole-of-life cost alternative
- Defining in advance a list of projects that hardwires priorities into the system and makes the funding system inflexible to changes in demand over time. This funding model does not work well with investing in and managing long-life infrastructure assets, which can be unpredictable and quickly exhaust available funds through several flagship projects.

### **Financial disincentives: costs and benefits of investment don't square up for councils**

Councils' main source of revenue is decoupled from the economic performance of their areas. Instead, councils' primary revenue stream comes from property rates not linked to the economic performance of their jurisdictions. If land markets were competitive, then property values and property taxes would be linked to the benefits of being located near centres of urban economic performance. However, they are unlinked because much of what comprises the value of land is instead extractive land rents underpinned by the human necessity to have a home in the presence of a supply constrained system.

New Zealand's local government property taxes apply to land values (reflective of both extractive and natural rents), which makes the funding and financing framework comparatively stable and reliable, but it also means that council decision makers are less affected by the impacts of poor urban performance. Since council decision makers derive little direct benefit from nationwide spillover benefits generated from local public goods, they are less motivated to contribute to improvement. This is reflected in reduced urban productivity.<sup>44</sup>

It would in principle make more sense for local government tax to apply to the 'good' element of land rents (natural land rents) rather than the 'bad' element (extractive land rents) to align their incentives with the public good.

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<sup>41</sup> Controller and Auditor-General, 2019.

<sup>42</sup> Infrastructure New Zealand, 2019.

<sup>43</sup> Water Industry Commission for Scotland, 2021.

<sup>44</sup> Infrastructure New Zealand, 2019.

Central government financially benefits from many investments in long-life assets that councils are responsible for, especially services and infrastructure for new urban development. At the same time, national-type benefits (e.g. overall economic performance) generated by local investments are too abstract to motivate local decision makers when their revenue is not directly linked to those benefits.

Local ratepayers primarily bear the cost of public goods investments with national spillovers while central government captures the benefits of growth, particularly population change, through higher incomes and corporate and sales taxes. On the other hand, central government suffers costs of growth through supplying local public services, such as schools and hospitals, which are also congesting. Here central government, too, suffers disconnect between the local value uplift from school enhancements funded from general taxes, and which are financed from Crown debt.

Since central government captures nationwide benefits from local investment while local government does not, interests between tiers of government may not be aligned. Local interests are more important for council decision makers when they have little incentive to balance these with regional prosperity. This means financial incentives in current arrangements put central and local government at odds.

### **Structural disincentives: decision makers' incentives are influenced by who benefits**

Decision makers are influenced by whether the costs and benefits of outcomes are contained within the boundaries of their jurisdiction. In an ideal world, decision makers would be motivated to realise benefits and minimise unavoidable costs as they would represent the area or group that both benefits from the decision and is affected by the costs the outcome imposes. Decision makers would fully internalise both the costs and benefits of their decisions.

Currently, benefits and costs often do not fall neatly within the boundaries of decision makers' jurisdictions. This leads to structurally misaligned incentives:

- If decision makers stand to fully benefit from outcomes but the area they represent are only partially affected by the costs, they will be motivated to realise and maximise benefits while also passing on costs to those outside the boundary of their jurisdiction.
- If decision makers are fully exposed to the costs of an outcome but the area or group they represent only partially benefits because only a small subgroup within its jurisdiction stands to gain from the outcome, decision makers will be motivated to block opportunities for the smaller area or minority group.

New Zealand local governance structures lack mechanisms to contain the impacts to the level where the decisions are made – for example, through pricing wider adverse effects or financially rewarding decisions made at a local level when the benefits of those decisions have regional or national effects.

Further, in relation to urban services and infrastructure (including social infrastructure), New Zealand operates a mismatched governance structure in which:

- public bodies at national level (central government departments and delivery agencies) provide services with local impacts (social infrastructure)
- public bodies at the local level (councils) undertake strategic planning activities and provide large-scale network services with regional and national impacts.<sup>45</sup>

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<sup>45</sup> Infrastructure New Zealand, 2019.

## 3.2 Politics drives funding and financing

Since the benefits of accommodating urban growth through infrastructure investment accrue nationally (new residents) rather than locally (existing residents), it is difficult for councils to balance competing interests.<sup>46</sup> Ratepayers perceive higher debt needed to finance development as higher future repayment obligations, rates increases and tangible costs from development.

The diffuse benefits and upfront costs of urban development mean councils face opposition from property owners to both higher rates and higher debt.<sup>47</sup> A democratic deficit at the local level exacerbates the influence of homeowners on local elections.<sup>48</sup> Local elections have low voter turnout, and those who do not own property are disengaged.

This makes councils reluctant to open the doors to the full amount of finance needed to simultaneously release abundant development capacity. Even when councils are motivated to go ahead with full financing, the inability to transfer or manage risk and requirements to hold down costs within hard budget constraints binds their hands.

### **Councils primarily use general obligation finance to enable development ...**

Debt is the primary source of finance for long-life assets, especially in high-growth areas. This is an appropriate and intergenerationally equitable way of paying for infrastructure because it enables the large and lumpy upfront costs to be spread across time and the economic life of the assets.<sup>49</sup>

*General obligation* finance is debt raised by public bodies with repayments guaranteed by the total revenue generated by the relevant government entity. In the case of councils, the bulk of this revenue is generated through general (property) rates. There is a strong link between debt and rates.

### **... but this type of finance is difficult because councils must bear the risk if development projects fail**

General obligation finance is exposed to development risk, which affects the cost of debt and decision makers' willingness to provide it because debt holders have recourse to councils in relation to the debt raised (as it is guaranteed by council revenue). When councils either fully or partially fund delivery of services and infrastructure, this leaves them the principal bearers of general residual risk and results in a conservative approach to development.

### **New projects deliver most value, are riskier and so are more costly to finance**

Growth-inducing infrastructure projects have a life cycle that moves from starting a new development to becoming an established development.

Figure 8 shows the transition of a project over time from new to established (demarcation is the red vertical line). At the outset, a new development is very risky, and raising capital for investment is expensive. However, the value delivered by the project is at its highest.

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<sup>46</sup> Read, 2018.

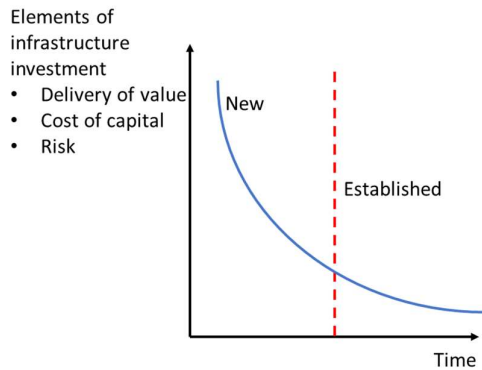
<sup>47</sup> New Zealand Productivity Commission, 2017, pp. 312–313.

<sup>48</sup> New Zealand Productivity Commission, 2020, p. 16.

<sup>49</sup> New Zealand Productivity Commission, 2017, pp. 312–313.



Figure 8: The life cycle of development projects exacerbates the upfront risk burden



**As projects mature, development risk declines and the cost of capital is lower**

As risk to a project reduces, so does the cost of capital. Since initial entry into a project is very risky, developers and investors demand high returns on the equity they inject to compensate for the risk (hence the declining slope over time). Once the critical line is reached where a new development transitions to an established one, the risk is much lower. Developers and investors then exit and get paid out a high return for injecting equity. The project is then refinanced with a stronger focus on debt finance rather than equity because risk is lower and therefore also cost of debt.

3.3 Councils’ risk appetite would change if risk could be transferred to third parties

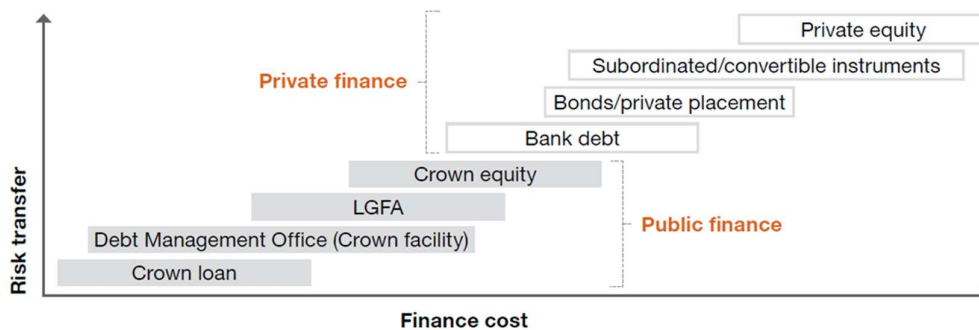
**Councils could play a much different role**

If public bodies are primarily responsible for delivery during stages associated with high risk, this hampers investment because public bodies are risk averse. Risk aversion originates in recourse to council revenues and limited ability of councils to prudently manage risks, especially when multiple risks exist on multiple fronts.

Transferring risk to third parties enables councils to take a proactive facilitator role on infrastructure. If they are confident they can be time consistent, they do not have to take financial responsibility when risks eventuate.

Finance costs are directly related to the amount of risk associated with a project. Groups of investors who are more risk tolerant, such as private developers, are more suited to hold risk without losing appetite and so drive the early stages of a project (see Figure 9). They tend to be more risk tolerant because they are better suited to managing the risk and discover new opportunities for value creation.

Figure 9: Risk appetite drives who holds the risks at each project stage



Source: PwC & Department of Internal Affairs, 2020b.

When developers wish to develop where local authorities have not or do not plan to serve with trunk infrastructure, responsive supply is promoted by private developers being able to do so themselves at their own cost and risk. However, this would require institutional settings that enable the development sector to raise independent debt and hold development risk.<sup>50</sup>

### Standard finance mechanisms are constrained by regulations and commitments ...

General obligation finance is not only exposed to risk and political economy pressures but also constrained by conservative local government financial benchmarks enshrined in the Local Government (Financial Reporting and Prudence) Regulations 2014. For example, councils are required to keep debt servicing at or below 10% of revenue (15% for high-growth councils). Debt should also be kept less than or equal to the forecasted debt in long-term plans.<sup>51</sup> Both are significant constraints.<sup>52</sup>

To be able to beat the cost of borrowing from commercial banks, the Local Government Funding Agency (LGFA) needs to maintain very high credit ratings.<sup>53</sup> This burden is passed on to councils by way of financial commitments (covenants) that councils freely and collectively accept (they are not fiscal constraints imposed by central government). Councils desire LGFA’s constraints on borrowing to members because the constraints limit their own exposure to the risk taken on by other councils.

The covenants impose limits to councils’ debt ceilings in the form of net debt to revenue ratios that must be below 250% (\$2.50 of debt per \$1 of revenue).<sup>54</sup> High growth councils most affected by growth pressures are also the ones nearing their debt ceilings. Since debt is the main source of finance, it is critical for actors in the system to have access to it and enough of it to responsively deliver services and infrastructure for urban development.

The most important funding tools in relation to growth infrastructure are development contributions, targeted rates and value capture mechanisms that we outline in Figure 10. [Figure 10: Many current tools for funding and financing infrastructure face challenges](#)

| Tool                             | What it is/does  | Problems/challenges  |
|----------------------------------|--|--|
| <b>Development contributions</b> | <ul style="list-style-type: none"> <li>Charges (impact fees) imposed on developers to recover the costs of the growth portion of developments; includes infrastructure needed to connect sites to the wider network including trunk infrastructure and community infrastructure.</li> <li>Developers recoup the charge from capitalising it into the sales price of new</li> </ul> | <ul style="list-style-type: none"> <li>Development contributions require upfront investment from councils, which means councils must raise upfront debt and take on the development risk.</li> <li>Development contributions close general obligations debt headroom because they do not count as revenue</li> </ul> |

<sup>50</sup> For responsive supply of services, risk needs to sit with whoever can best manage the risk of supplying them.

<sup>51</sup> Local Government (Financial Reporting and Prudence) Regulations 2014, ss 18–22.

<sup>52</sup> Local government financial prudence benchmarks are further discussed in New Zealand Productivity Commission (2015), The Treasury (2019a) and Vammalle and Bambalaite (2021).

<sup>53</sup> The LGFA is a Joint Action Agency whose value proposition is by having a large group of participating members that step-up when others default.

<sup>54</sup> In June 2020, the shareholders of the LGFA temporarily amended the net debt to total revenue ceilings for the 2021/22 financial year with corresponding declining ceilings until 280% is reached. This new ceiling applies from 30 June 2026. See <https://www.lgfa.co.nz/about-lgfa/news-and-market-announcements/proposed-change-lgfa-foundation-policy-covenant>. Note a 250%+ limit is extremely high compared to worldwide practice. The global benchmark for an AA rating, all else equal, is only 60% (S&P, 2014). These are higher in New Zealand for various reasons, including that three waters are currently provided by councils; and because the receivers of a councils’ defaulting debts have the power to set taxes and sell all ratepayer property under s115 of the Local Government Act 2002, and can do so within 18 months (Asia Pacific Risk Management Ltd, APMR, and Cameron Partners Ltd).

| Tool                  | What it is/does   | Problems/challenges  |
|-----------------------|---|--|
|                       | homes. This makes new residents the end payers of the charge. <sup>55</sup>   | <p>that can be borrowed against by credit rating agencies.<sup>56</sup></p> <ul style="list-style-type: none"> <li>• Since council and developer incentives are not aligned, councils face developer opposition to charges, strengthening perceptions that “growth does not pay for itself”.<sup>57</sup></li> </ul>   |
| <b>Targeted rates</b> | <ul style="list-style-type: none"> <li>• An alternative charge to development contributions, upfront costs are recouped by spreading the charge over time. This avoids large upfront payments and should result in lower mortgages but regular future payments.</li> <li>• Targeted rates may also be applied to a broader community of ratepayers that benefit from investment in public goods.</li> </ul> | <ul style="list-style-type: none"> <li>• The challenge with targeted rates is that this mechanism is very susceptible to a range of issues discussed in relation to general obligation finance. Targeted rates burden the balance sheets of councils over extended periods of time.</li> <li>• Targeted rates can only be struck at 3-yearly increments, which means they are not currently suitable for funding long-term project bonds.<sup>58</sup> They would require striking for some 20+ years to match the bond term. New Zealand history until 1995 (see Annex 3) and overseas examples of such commitment devices always require a local democratic vote to authorise such commitments.</li> </ul> |

<sup>55</sup> After this paper was delivered to the Minister, correspondence reminded us the extent to which new residents are the end payers depends on the extent to which infrastructure is expected to be funded through development contributions rather than the general city ratings base.

<sup>56</sup> Entities overseas that can revenue bond finance do consider development contributions as revenues for their credit rating purposes. See, for example, S&P, 2016

<sup>57</sup> New Zealand Productivity Commission, 2017, pp. 313, 327–329.

<sup>58</sup> Mafic presentation to the Treasury 29 September 2021

|   |  |   |
|---|--|---|
| <p><b>Value capture or betterment taxes</b></p> | <ul style="list-style-type: none"> <li>• A mechanism that seeks to recover some of the value public infrastructure can provide for landowners.</li> <li>• Value capture methods can often work where direct tolling of infrastructure is not possible. Typically, value is assessed relative to land values in the absence of the additional infrastructure.</li> <li>• Betterment taxes have been a powerful tool in New Zealand’s history for governments looking to raise revenue to finance transport infrastructure.</li> </ul> | <ul style="list-style-type: none"> <li>• Councils can use targeted rates to indirectly capture benefits of public investment. These can be levied on a fixed-charge basis or calculated in reference to relevant factors.</li> <li>• These mechanisms are not commonly/no longer used in New Zealand (unless the UDA 2020 is relied upon) because legislation excludes uplifts in land values to be harnessed through direct taxes (and so capture the windfall gains to private owners).<sup>59</sup></li> </ul> |
|---|--|---|

**... but new tools have limited effectiveness due to reliance on general obligation finance**

Councils do have a range of funding tools at their disposal that can be applied to different types of infrastructure assets and groups of beneficiaries. However, the shared feature across all these tools is that they rely on general obligation finance raised by public bodies that neither have the incentive to provide abundant access to debt nor the ability to do so if they were sufficiently motivated.

**Something new: the infrastructure levy model helps ...**

The infrastructure levy is an alternative financing model enabled by the recent Infrastructure Funding and Financing Act 2020. The Act enables the setting of a multi-year levy to be paid by beneficiaries of infrastructure projects. A key feature of this model is that the levy is collected by a special-purpose vehicle that is responsible for raising finance for all or part of a project.

The Act attempts to get around the general obligation finance constraint. It enables the use of new instruments but fails in the objectives of the Act because wider institutional arrangements, councils that are incentivised to pursue cost-efficiency over creating value and an inability to get infrastructure funding off balance sheets are restricting the use of tools made possible by the Act.

**... but infrastructure levies do not solve the critical issues**

The purpose of the infrastructure levy is to free investment in urban services and infrastructure from council financial constraints and decision making, as discussed above.<sup>60</sup> However, the design of the infrastructure levy does not fully overcome existing finance and funding barriers:

- Permission to use the model and strike a levy is granted by Cabinet in consultation with councils that consider whether a levy is affordable to the community. This reintroduces political economy pressures that ration access to finance.
- A development incurs a large portion of the costs upfront (around 30%) before applying to use the infrastructure levy for the purpose of raising the needed finance to pay for the project. Councils may need to raise upfront debt and take on development risk to enable this, introducing similar disincentives to development contributions.

<sup>59</sup> New Zealand Productivity Commission, 2017, p. 333. However, the Urban Development Act 2020 has a hypothecated betterment payment provision for public transport infrastructure (see Section 239 and 240). These provisions are based on, and enhance, the betterment provisions in Section 326 of the Local Government Act 1974 – triggered by the creation or widening of a road. Policy should consider enabling this mechanism more broadly. See also Annex 3 that describes how NZ was once able to strike a special tax for up to 50 years subject to consent.

<sup>60</sup> The Treasury, 2019b.

- The high establishment and administration costs of the special-purpose vehicle only make this tool economically feasible for projects at or above \$50 million.
- The levy cannot be readily applied to brownfield projects because the authorising environment for the use of the levy is not the community that benefits. The model does not have a mechanism built into it that enables beneficiaries to legitimise the levy and safeguard from the misuse of the power to strike the levy.
- Only a portion of developments (the growth aspect) can be funded through the levy, resulting in substantial funding required from council general rates, which burdens debt headroom. Greenfield projects do not completely get around this issue.

### **Financing is constraining investment even though interest rates are at all-time lows**

Debt is the main source of finance to fund public goods. Debt in New Zealand's local government funding and financing context is all general obligation finance, which is subject to soft political economy pressures and hard financial prudence limits and is also exposed to development risk. This makes councils necessarily reluctant to open the doors to the full amount of finance needed to simultaneously release abundant development capacity. Even when councils are motivated to go ahead with full financing, the inability to transfer or manage risk binds their hands.

General obligation finance is further constrained by voluntary agreements entered into by councils in relation to collective borrowing arrangements that enable the local government sector to borrow debt at a very low cost (see [Box D: The financing environment](#)).

### **Under current settings, local councils are struggling to access the quantity of finance needed**

Combined with the debt caps imposed by the LGFA, this means that, under current financing arrangements, low borrowing costs are paradoxically exacerbating the impacts of supply constraints rather than releasing much-needed funds for infrastructure.

One feature of credit markets is that households can separate finances into different tranches with different collateral (that pledges different assets as security). For instance, households can have senior line debts such as mortgages and junior or subordinated debt such as car loans and credit cards with different lenders.

Following the cascades of debt defaults that caused a financial system crash in 2008, credit rating agencies adapted their processes to more stringently assess whether debts pass onto other parties in the event of default and thereby cause system problems. They appropriately assess that councils will bail out defaulting debt of junior loan arrangements, and this is because central government has designed councils to do that. Effectively, rating agencies treat all kinds of debts as a charge on and payable out of the revenues of the council equally and rateably with all other general borrowing obligations of the council.

The problem is not the cost of debt. LGFA can provide expertise to access debt, and the cost of debt is low. Instead, the problem is that supply of public infrastructure services are being withheld despite landowners and users being willing to pay all funding requirements. Governments cannot raise enough debt finance. Infrastructure projects with net positive economic benefits are being prevented.

## Box D: The financing environment

### The Local Government Funding Agency (LGFA) enables council borrowing at competitive rates ...

The LGFA helps councils raise debt on international markets making longer-term borrowing available and providing more competitive loans than if councils raised debt.<sup>61</sup> The LGFA is a Council Controlled Organisation owned 80% by councils and 20% by the Crown.<sup>62</sup>

### ... but also imposes fiscal discipline through debt ceilings

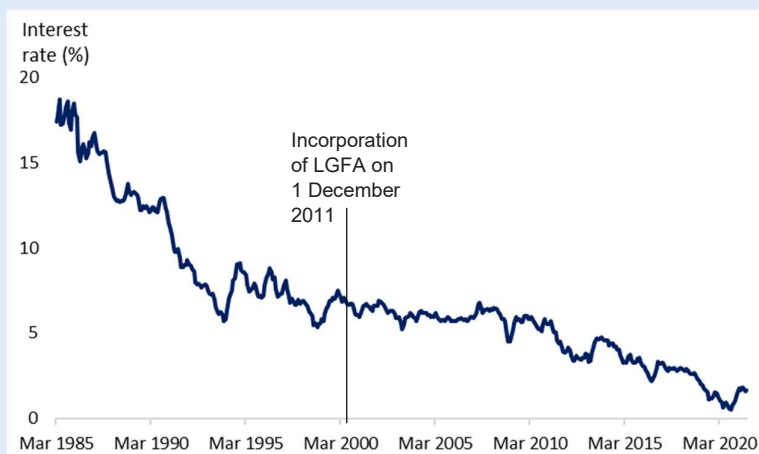
The LGFA requires fiscal discipline in relation to debt in order to maintain very high credit ratings needed to access funds at a discount. This burden is passed on to councils by way of financial commitments (covenants), which councils freely and collectively accept (they are not fiscal constraints imposed by central government).

The covenants impose limits on councils' debt ceilings in the form of net debt to revenue ratios that typically must be below 250% (\$2.50 of debt per \$1 of revenue).<sup>63</sup> The councils experiencing the strongest growth rates and most in need of infrastructure tend to be nearing their debt ceilings.

### The cost of borrowing is falling ...

Not only can the LGFA help local councils fund borrowing more cheaply, the underlying cost of credit has fallen due to overall macroeconomic trends. Figure 11 shows borrowing costs that have declined substantially over the past 25 years.

Figure 11: The cost of borrowing for local councils is much lower today – 90-day interest rate



Source: RBNZ statistic B2 [www.rbnz.govt.nz/statistics](http://www.rbnz.govt.nz/statistics)

Even after adjusting for inflation, borrowing is much lower for New Zealand's local councils in recent years than any time in history. At the most recent tender (8 September 2021, \$25 million), the interest rate councils faced was 0.505%.

<sup>61</sup> Vammalle & Bambalaite, 2021.

<sup>62</sup> [www.lgfa.co.nz/about-lgfa](http://www.lgfa.co.nz/about-lgfa)

<sup>63</sup> The infrastructure funding and financing implementation pilots covering the Hamilton to Auckland Corridor and Eastern Bay of Plenty demonstrate how funding sources for infrastructure projects are pooled and packaged into bespoke tools for public and private delivery models (PwC & Department of Internal Affairs, 2020a, 2020b).

### **... but lower borrowing costs are benefiting the demand side but not supply of infrastructure**

Lower financing costs have lifted mortgage serviceability for many. Since supply is inflexible, the benefit of lower finance costs have not accrued to first-home buyers. Instead, existing homeowners have reaped the return – house prices have increased 34.8% in the past 18 months.<sup>64</sup>

## 3.4 We can envision a first-best or near-best funding and financing system, but there are challenges

### **Diverse funding tools are needed to meet diverse project characteristics**

Funding is about who pays for a project. The end payer services the debt that has been raised to deliver services and infrastructure. Existing legislative provisions give councils several ways to recover the upfront costs from those who benefit. The tool best suited depends on what types of benefits are involved (service levels, renewals, growth or resilience; refer to [Section 4.3](#) for more explanation) and how these benefits are distributed across different parties. Every infrastructure and urban development project is in some way unique and requires different funding arrangements and public or private delivery models.

The tools available to councils to recover cost are (i) prices and user charges, (ii) development contributions and agreements, (iii) targeted rates and (iv) general rates.

[Figure 12](#) provides a high-level decision framework for employing these tools to fund urban services and infrastructure.

A major challenge to funding and financing is to coordinate all relevant actors and incentivise them to pool funding sources for a project, use the most appropriate funding tool, and pay for their share of benefits derived from the project.

### **Common intuitions may resist first-best approaches to matching funding tools with projects**

While technical experts and people without professional or specialized knowledge in funding and financing agree that public goods need public funding, a more general audience may consider a ‘public good’ to be ‘something good that is provided by the government’. A lot of confusion can follow from this.

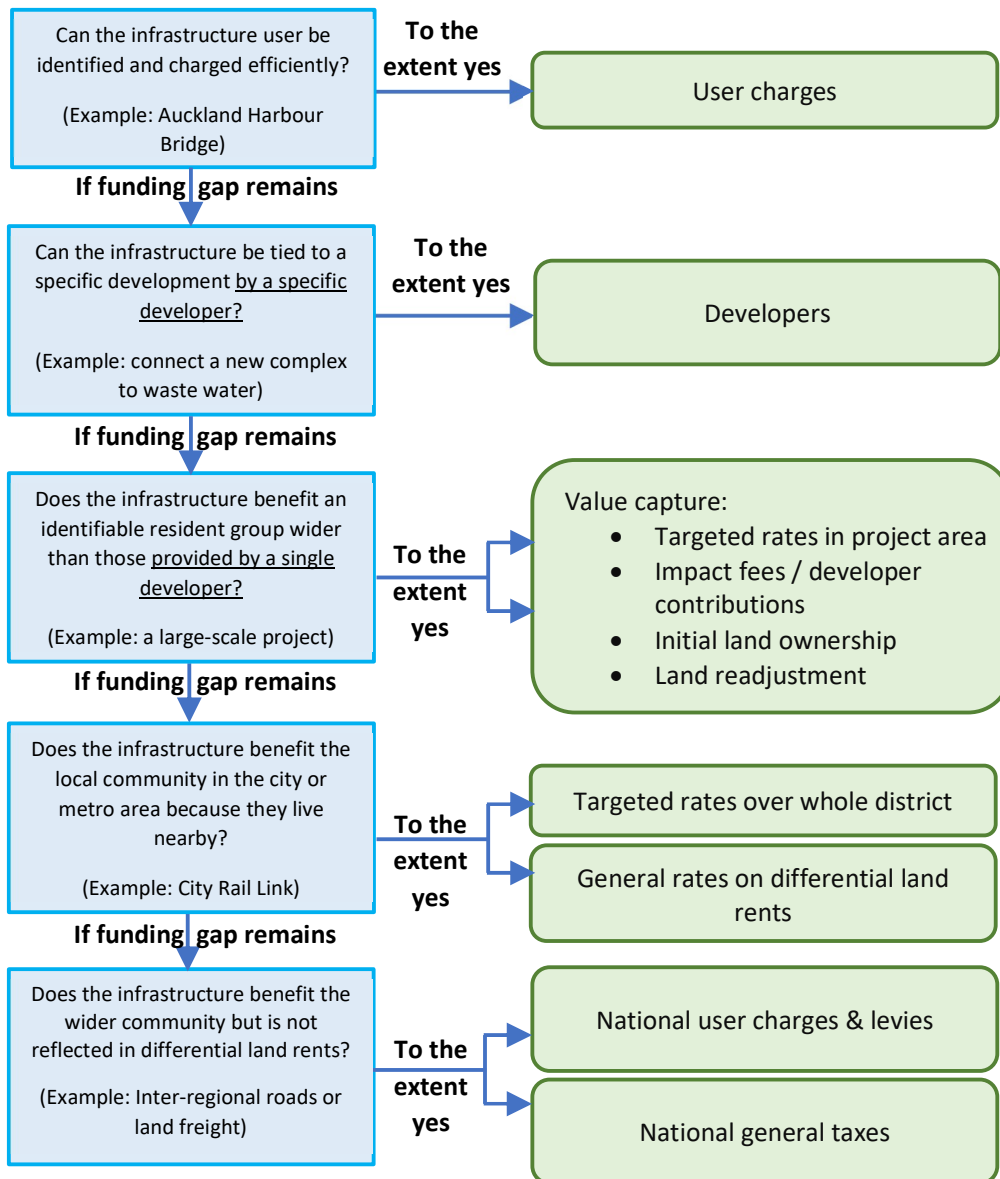
A technical view of funding and financing would focus on getting close to a first-best system that can responsively supply infrastructure by directly charging for it. This approach would start with the principle that beneficiaries of infrastructure should pay and consequently institutional arrangements are needed that enable an optimal system to operate. This contrasts with some intuitions of general audiences that are much more tolerant of subsidies and cross-subsidies, and that may prefer a highly subsidised system. The challenge with such an approach is that it muddles incentives, makes the system less agile and it becomes difficult to drive efficiencies to reduce costs throughout the system.

A first-best or near-best system, on the other hand, can help readily and cost-efficiently supply infrastructure where and as demanded. Beneficiaries who directly pay for the infrastructure they use, even though this might seem unappealing, benefit from doing so because they get improved infrastructure quality, performance and supply in return.

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<sup>64</sup> REINZ New Zealand House Price Index, February 2020 to July 2021.

Figure 12: Funding tools need to meet the characteristics of each project



Source: Adapted from New Zealand Productivity Commission, 2017, p. 324.<sup>65</sup>

Our electricity sector is one example where the funding and financing system puts many first-best principles into practice, and the outcomes show how beneficial this can be (see [Box E](#)).

<sup>65</sup> These tools can and are used in combination. This footnote was added after this report was delivered to the Minister.



### Box E: Electricity is close to a first-best system where infrastructure just shows up

Lack of supply of water and transport infrastructure can prevent development from happening at all. But when new developments go ahead, the electricity to service them just shows up. It shows up when it is needed and so does not block new developments from happening.

Since electricity seems to just work, it may teach us something important about how to provide other types of critically important infrastructure.

#### **Regulation creates incentive to supply: line companies must invest in more supply to earn more**

Local lines companies are regulated as local monopolies. Lines companies that are not owned by their customers are subject to Commerce Commission price regulation, which sets default price-quality paths. These paths set minimum service quality standards, maximum prices and maximum annual price increases over a specified time period. This determines a limit to how much revenue any regulated entity can generate in a period. Price resets may occur every five years.

If a lines company needs to make greater capacity investments than its allowable revenue would enable, it can apply for a customised price path that provides for greater revenues.

This means that if a lines company wants to earn more money, it must also invest in more supply to increase capacity. In return for investing in capacity, line companies get direct funding (through fees paid by developers for providing the capacity) and indirect funding (through a customised price path that allows an increase to their revenue).

The result? Electricity is not a barrier to development.

#### **Developers report projects present unique challenges but electricity is never a sustainable barrier**

Consultation with developers paints an indicative picture. No developer consulted could identify any case in which electricity proved a substantial barrier to development. Projects are nevertheless uniquely challenging, as illustrated by the following high-level examples:

##### *Developer 1*

One developer has large and varied developments across the country. This developer said that, in developing property, the developer would lay out conduit for electricity, and the lines company just shows up with transformers and cabling. The developer viewed pricing as non-transparent and non-negotiable.

##### *Developer 2*

Another developer is focused on large urban commercial developments. This one said that the local lines company would take every opportunity to try to have the developer fund the entirety of capacity upgrades that would also serve other developments. This developer viewed pricing as opaque, but charges could typically be negotiated down. Electricity is still not an unsolvable barrier.

##### *Developer 3*

A final example is a developer who pointed to lines companies attempting to fund overall capacity increases on the back of first-mover new developments, but noted that competition in the provision of electricity services is also possible. At least in principle, a developer could establish itself as a network operator and provide its own full suite of electricity services and might choose to do so if the local lines company's pricing is a barrier. While electricity is still accessible, this option creates productive tension in negotiations.

### What lessons can we draw?

Linking investment in supply of infrastructure and services to revenues creates incentives to come to the table, because infrastructure suppliers need to invest more to earn more. The promise of increased revenues drives proactive behaviour of infrastructure suppliers to come to the table and invest in what is needed.

It is possible that, instead of CPI-linked price-quality paths, a different approach to price regulation that focuses on a sharper rate-of-return could more strongly incentivise infrastructure suppliers to more abundantly invest in capacity upgrades. This could encourage overcapitalisation (gold plating infrastructure assets), but this may be desirable in areas that need a significant increase in capacity. A commercial regulator could guard against gold-plating on the quality margin, to encourage stronger incentives for capacity increases.

In some ways, *too many* pipes and *too much* pipe capacity could be desirable when a country is faced with the problem that too few sites can bear greater density or new subdivisions. A commercial regulator set over the top of any reformed three waters services could take up this opportunity.

### Proper pricing and charging unlock benefits that help us meet our infrastructure challenges

Charging users of infrastructure unlocks benefits, but this requires proper pricing:

- *Service-based* – pricing of infrastructure needs to reflect the types and quality of services. The electricity and telecommunications sectors already do this. People pay variable prices depending on the services they sign up for.
- *Cost-reflective* – pricing needs to reflect what it costs to provide the infrastructure and services. This includes costs that are fixed (to pay for establishment costs, like connection charges) and costs that vary, depending on how much of the service is used.

With proper pricing, beneficiaries of infrastructure and services can be appropriately and directly charged for what they use, which:

- encourages people to consider when and how much they use services;
- gives providers relevant information of how many people, and when, they use services, improving planning of supply and managing high demand periods;
- incentivises innovation and alternatives, especially when the costs of services increase but people are not willing to pay more.

These benefits help conserve resources, create financial headroom for important investments, and find new cost-effective ways to deliver infrastructure and services, which can be supplied as and when people need them.

### Excessive costs to supply infrastructure can be a barrier to first-best or near-best approaches

While a first-best or near-best system would as much as possible directly charge beneficiaries for the provision of infrastructure, high costs make user-funded or developer-funded infrastructure challenging to stack up. Excessive costs can even make user-pays funding of infrastructure non-viable.

Earlier, [Figure 6](#) showed just how much the average cost of infrastructure and services per new dwelling can be. In the last few years there has also been rapid cost escalation in some horizontal infrastructure sectors, which means that infrastructure costs per dwelling have risen to sometimes absurd levels.

To help address the infrastructure challenge and enable a shift that brings us closer to a first-best or near-best funding and financing system, the costs of delivering infrastructure need to be addressed and

disciplined. This means the cost-effectiveness of spending needs to be maximised rather than costs avoided, which requires both incentives to supply and independent checks and balances on costs.

### **Economic regulation can support directly charging users of infrastructure by disciplining costs**

Competition between infrastructure suppliers creates strong incentives to invest while also delivering quality services at a reasonable cost. However, there are many cases across infrastructure sectors where suppliers are monopolies. This includes electricity, gas and telecommunications, as well as three waters and land transport.

When competition in markets is absent, economic regulation can help balance the interests of providers and users. As shown in the example on electricity above (see [Box E](#)), independent, incentive-based economic regulation can create incentives for monopoly providers to invest in appropriate services while driving cost efficiencies. This has also been shown to work in a number of other infrastructure sectors, such as gas and fixed-line telecommunications.

Economic regulation also complements approaches that aim to create competition in markets and so enable more flexible infrastructure supply. Even less strict economic regulation may offer smaller benefits from setting up, for example, independent ombudsmen or customer panels to investigate complaints, because these mechanisms provide checks and balances on infrastructure suppliers.

New Zealand's infrastructure sectors are either marked by natural monopoly characteristics or they are competitive markets. Sectors like electricity, gas and fixed-line telecoms have natural monopoly characteristics, but are subject to economic regulation. In contrast, three waters and land transport sectors are not competitive markets— they have natural monopoly characteristics and the regulator function is not structurally separated from the supplier. Under such conditions, flexible infrastructure supply at reasonable cost is not an expected outcome.

## 4 Imagining a world of flexible infrastructure supply

A well-performing, responsive infrastructure supply system can help enable competitive urban land markets deliver housing affordability. This requires an infrastructure funding and financing system that creates a different dynamic to the status quo. New Zealand has a rich history of doing this: harnessing benefits created by investment to, in turn, pay for the public goods and infrastructure that deliver value, thereby establishing virtuous investment cycles that:

- harness benefits differently across the spatial hierarchy and align actors with the benefits
- utilise collaborative governance structures to facilitate collective action
- establish these collaborative governance structures in ways that open access to abundant finance, because they effectively bypass general obligation finance to fund infrastructure
- give developers and project communities the tools and powers needed in accessible, powerful, safe, and effective ways to ensure projects proceed and succeed.

### 4.1 The size of the prize

In principle, the size of the prize is large, from three elements:

- **Unlocking the ‘good’** – enabling governments to add the amenity value to our cities infrastructure could provide.
- **Removing the ‘bad’** – by introducing enough choice and competition that returns the unimproved value<sup>66</sup> of urban land to farmland available at the city fringe.
- **Putting an end to the ‘ugly’** – by promoting a virtuous cycle that enables infrastructure growth and destabilises a vicious cycle when developers delay bringing land to market.

Gains from unlocking the good are substantial. Literature that studies the benefits of road transport improvements have shown variable high benefit-cost ratios when population growth and land use change are allowed for.<sup>67</sup> Rail improvements show material increases in housing value from proximity to rail stations.<sup>68</sup> Infrastructure investment can drive up urban values in a positive way.

Removing the bad can significantly improve affordability by removing land use regulation that stymies choices and competition in markets.

Our thesis is that reforming land use regulation and long-term regional planning cannot succeed without also changing how infrastructure is funded and financed. These benefits could be large. Several studies size the benefits of unlocking housing supply:

- Lees (2019) uses a variety of methods that show estimates that unlocking land use regulation could reduce the price of a house in 2016 by 15% in Palmerston North to 56% in Auckland. (Prices have boomed since 2016, so these results are likely conservative.)
- Nunns (2021) suggests removing the constraints to housing supply could be equivalent to potential economic benefits of up to 8.4% of GDP, with more modest interventions suggesting GDP increases of 1% to 5%.
- Cooper and Namit (2021) show removing the viewshaft across the Auckland CBD alone could be worth \$1.366 billion.

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<sup>66</sup> The unimproved value of urban land is the land price less the value of natural land rents, and less the cost of developing the land.

<sup>67</sup> Grimes & Liang (2010) found the benefit cost ratio of at least 6.3 for the Auckland’s 1991 northern motorway extensions.

<sup>68</sup> Grimes and Young (2013) find increases in home values of between 2% and 10% depending on proximity to a station with an upgrade north of Auckland. The resulting benefit cost ratio is about one.

But land use regulation is not the whole story. Removing the ugly story that can develop when land-banking is possible and developers exercise an option to delay also matters.<sup>69</sup>

How can these benefits be unlocked? We discuss key principles of a future infrastructure system that is responsive and can both unlock and harness these benefits to drive investment and development.

## 4.2 Principles to guide a future world of flexible infrastructure supply

### Principles for a sound infrastructure supply system

There are four overarching principles that guide the design of an infrastructure supply system:

- **Accessibility** – developers and infrastructure investors can straightforwardly access the required arrangements without being blocked. Market entry to providing services is always unconstrained in the aggregate. Inclusive political institutions (which make the rules for economic institutions) require a pluralism of separate entities that contest each other's powers.<sup>70</sup>
- **Powerful** – the tools (powers and rights) necessary to realise value are available and fit for purpose. The trinity of public powers are taxing, taking and policing (regulating) powers. Rights can be through public and private law, including contracts and property rights.
- **Safety** – the powers available must not be ugly/unsafe. There should be respect for property rights. Inclusive political institutions need checks and balances and the safeguards provided by democratic mechanisms that both legitimise and limit their use.<sup>71</sup>
- **Effectiveness** – powers must be applied to good effect to realise the potential value proposition.

### The whole is more than the sum of the parts – a different dynamic is needed

The sum of the key elements – strategic planning, permissive land use regulation and the responsive supply of public services – has the power to introduce a different dynamic in land and development markets marked by competitive tension to supply and demand (competitive land markets).

The combination of threat of entry of competitors reaping the development payoffs by meeting demand alongside certainty of provision of follower infrastructure, which fleshes out the skeletal structure, provides developers with incentive and sufficient certainty to harvest development opportunities before others can pre-empt meeting demand by developing first.

Developer trust comes from institutional arrangements and structures that give confidence that public services can and will be supplied if development proceeds. This requires clear rules and decision-making processes that do not allow for institutional gated discretion to trigger provision. Developer incentive comes from competitive tension created by abundance of simultaneous, practically realisable development options.<sup>72</sup>

## 4.3 A much different world is possible

### Virtuous cycles align actors with benefits

New Zealand has a rich history of harnessing benefits to deliver services and infrastructure by capturing land value uplift and utilising localised governance vehicles for special purposes. [Box F](#) (on page 47 below) provides an example – the special-purpose vehicle used to fund the Auckland Harbour Bridge.

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<sup>69</sup> Guthrie, 2010; Murray, 2020.

<sup>70</sup> Acemoglu & Robinson, 2013.

<sup>71</sup> Acemoglu & Robinson, 2013.

<sup>72</sup> Guthrie 2010, 2019.

But this is not unique to pre-1989 New Zealand.

There are international examples that enable responsive urban supply systems through virtuous cycles. They too harness the different benefits across the spatial hierarchy and utilise collaborative governance structures to enable urban development, including more-complex projects. To do this, they ensure that all actors are aligned with the benefits relevant to their level in the spatial hierarchy, and so are motivated to pool sources of funding to pay for their share of urban infrastructure.

### **Virtuous cycles align actors with benefits**

Virtuous cycles empower parties who benefit from realising opportunities to do so safely. Institutional arrangements align actors with benefits so that parties are motivated to pool the needed sources of funding, raise finance (equity and debt) and create revenue streams (from value created) to deliver public services and infrastructure across the urban spatial hierarchy (see [Figure 13](#)).

[Figure 13: Virtuous cycle of a fully enabled and responsive urban supply system](#)



### **Virtuous cycles harness benefits differently across the spatial hierarchy**

The benefits of investing in services and infrastructure manifest in different ways. Virtuous cycles rely on different mechanisms to capture that value.

Infrastructure benefits are generally a mix of four direct categories:

1. **Service levels** – preference of communities to enhance the quality of services, which can be expressed for network users and the natural environment (e.g. water quality).
2. **Renewal** – necessary upgrades to maintain otherwise depreciating assets, such as three waters and roads.
3. **Growth** – upfront bulk capital investments to construct new infrastructure to service land for housing (greenfield development out) or upgrade infrastructure to service higher population densities in already established urban areas (brownfield development up). An example would be installing larger pipes in the upstream infrastructure network to service marginal network expansions or service more demand in a more densely populated area.
4. **Resilience** – investment in protection strategies to adapt to climate change (such as erecting stop banks and seawalls) and avoid the impacts of shocks (such as storms, earthquakes and accidents).

The infrastructure benefits manifest in different ways as they ripple through the economy. [Figure 14](#) shows how they can manifest from most local to most national levels, and how they may be captured.

Figure 14: Manifestations of value by level of spatial hierarchy

| Level of spatial hierarchy                        | Types of services  | Value manifestation and capture  |
|---|--|--|
| <b>Development</b>                                | <ul style="list-style-type: none"> <li>Mixtures of private and public infrastructures. These projects have initially high risks, high cost of capital and high value potential until they are successfully delivered and mature to a low-risk, low-cost, low-return profile.</li> </ul>                        | <ul style="list-style-type: none"> <li>Benefits are extensively captured in <u>local land value uplift</u>.</li> <li>Private supply can be optimal when landownership is fully integrated with infrastructure supply.<sup>73</sup></li> </ul>  |
| <b>Network</b>                                    | <ul style="list-style-type: none"> <li>Utility benefits across all four categories (described above) taking overall area growth and customer demands as given.</li> <li>When aspects of upgrades are non-rival, (e.g. surplus capacity), wellbeing is maximised when use is maximised.<sup>74</sup></li> </ul> | <ul style="list-style-type: none"> <li>When service is excludable, benefits can be captured through <u>user charges</u> to fund the network upgrades.</li> <li>When non-rival and to the extent services provide public goods to people living only within the network area, they generate <u>taxable natural land rents</u>.</li> </ul> |
| <b>Metropolitan area</b>                          | <ul style="list-style-type: none"> <li>Aggregate benefits from infrastructure lead to increases in the attraction of people to the area from higher wages, productivity and amenity and by lower repellents from less congestion and lower-priced housing.</li> </ul>  | <ul style="list-style-type: none"> <li>Benefits are reflected in <u>natural land rents</u>.</li> </ul>   |
| <b>Cross-regional, national and international</b> | <ul style="list-style-type: none"> <li>Provide benefits regardless of where people live. People benefit from the state highway and national rail network by being able to travel to, across and beyond other cities throughout the country. These are non-locational benefits.</li> </ul>                      | <ul style="list-style-type: none"> <li>If not captured by fixed and variable user charges, they are national public goods and not reflected in natural land rents.</li> <li>They should be funded from <u>general taxation</u> if not <u>national user charges</u>.</li> </ul>   |

### Virtuous cycles utilise collaborative governance structures to facilitate collective action

There is a great variety of direct infrastructure benefits, how they affect economies and how they span across the private sector, local government and central government. Communities of interest also vary and may have competing interests.

Virtuous cycles utilise a variety of collaborative governance structures to deal with the complexity and to harness the value for each interested party, especially when projects span across a range of communities of interest. They specialise in revealing the preferences of communities and ensure that the provision of public services and infrastructure is adequately funded by those who benefit.

New Zealand has a strong history of doing this through enabling localised governance structures for special purposes. Auckland Harbour Bridge was financed by such a special-purpose vehicle (see [Box F](#)). Collective action vehicles delivered numerous public services and infrastructure throughout New Zealand's history until the local government reform in 1989 curtailed use (see [Annex 2](#)).

<sup>73</sup> Peter Newman's entrepreneurial rail model is a useful example. See Newman, Jones and Davis-Slate, 2016; Davis-Slate, Sharma and Newman, 2017; and Sharma and Newman, 2020.

<sup>74</sup> When non-rival, efficient use of existing assets may dictate minimum prices.

Box F: Using a special-purpose vehicle to finance building the Auckland Harbour Bridge

**History shows what is possible when special-purpose vehicles fund new infrastructure**

Prior to the reform of local government in 1989, New Zealand had many special-purpose authorities that were typically tasked with a single economic function ranging from possum control to local harbour authorities and retail distribution of electricity.

The Auckland Harbour Bridge Authority was created in 1950 to build, maintain and control the Harbour Bridge with the power to issue debt to finance construction of the bridge and toll the bridge to pay off the debt and fund maintenance. Bonds were backed by a government guarantee.<sup>75</sup> The scheme was successful, and the bridge was built ahead of schedule. Figure 15 shows how the bonds were pitched to investors with bonds that ranged in maturity from 9 to 40 years.

Figure 15: Special-purpose authorities used bonds to finance the upfront cost of Auckland Harbour Bridge

<sup>75</sup> Note we do not recommend Crown general obligation guarantees in general. However, some targeted support from some higher tier government may be required to underwrite the revenues of projects that are in the 'new' phase illustrated in Figure 8 on page 312 until they mature to 'established'.



### ... but today, councils face constraints

Today, councils experience growth as a cost to existing ratepayers, not a benefit. When many councils from New Zealand's fastest-growing metropolitan areas are at or near debt limits, funding much-needed infrastructure is challenging. Add to the mix infrastructure projects where costs and benefits span multiple councils, such as the greater Wellington region, and funding infrastructure becomes a big problem.

Take a council on the edge of a 250% debt to revenue ratio. A new infrastructure project must return sufficient revenue to the council to maintain a debt to revenue ratio within the allowable limit. Then think about an infrastructure project enabling new apartment towers to be constructed. If the debt required to finance the infrastructure is \$100 million, that project must immediately generate rates revenue of about \$40 million per year. If not, the increase in council debt will be more than 2.5 times the increase in annual council revenue, and the debt limit will be breached. This requirement to recoup revenue from any debt-financed infrastructure effectively means a 30-month payback period on infrastructure.

### Change is possible

It is not that council debt limits are too low, but without special-purpose vehicles, any debt associated with new infrastructure projects gets loaded on to the general balance sheet. There is no fencing off both the debt and revenue stream from the new infrastructure project just at a time when interest rates are very low and private sector investors seek investments that return regular income streams associated with infrastructure assets. Real investors have the incentive to test that the infrastructure attracts enough users to make upfront assessment viable rather than relying on implausible cost-benefit analyses.

Usefully, the Infrastructure Funding and Financing Act 2020 (the Act) enables councils and other parties to set up special-purpose vehicles to provide new infrastructure for housing and urban development, just like the special-purpose vehicle that funded the Auckland Harbour Bridge. Special-purpose vehicles have also helped create value by supporting urban development in New Zealand's past (see [Box F](#) above).

To date, few councils have used the powers in the Act to set up special-purpose vehicles. The Act is largely based on the infrastructure funding model that helped support the development of Milldale, north of Auckland.

While the Act removes the costs to councils of funding new infrastructure projects, councils' incentives are not aligned to growth and development. Although the costs have been removed, local councils are not incentivised to provide infrastructure. Deeper infrastructure funding and financing reform may be necessary to promote the use of special-purpose vehicles to fund infrastructure projects, just like New Zealand has done in the past (see [Box G](#)).

## 4.4 Collective action vehicles open access to abundant finance

Another problem relating to uncertainty over time is when institutions fail to stay the course and keep their promises. This is called time inconsistency. It is particularly relevant for being able to have genuinely separate financing by the same groups for different projects or for the same projects by different groups.

If one arrangement is inclined to bail out another when push comes to shove, the liabilities of both arrangements are treated as one and the same by credit rating agencies when they do a 'look through'. To maintain unconstrained access to finance requires addressing the wants and means of more senior

parties so they do not bail out more junior arrangements. This concept is central to the financing challenges of urban development.

The conditions required to ensure such separation are not documented in the infrastructure funding and financial literature. Our own studies of revenue bond systems suggest this requires limiting the 'residual control rights' of councils and central government to use their discretion and initiative for projects, and minimising:

- chance of default, by having good checks beforehand
- risks to citizens, in event of default, by providing protections to users and property owners that essential services and their property will not be held hostage by lenders
- political & legal liability to local and central governments, by clarifying in law there is no legal liability, and by minimising the role of governments in championing the projects, and
- fiscal flexibility to local and central governments to bail out, by imposing hard budget constraints to make it hard to raise new revenues, debts, and repurpose spending to fund bail outs.

### Box G: Betterment taxes can create transport infrastructure opportunities

#### **Betterment taxes can help finance infrastructure**

Betterment taxes target the uplift in land values that can occur following public infrastructure investments. The tax is generally applied to land on an ongoing basis.

Betterment taxes provide a useful tool and can enable special-purpose vehicles to finance infrastructure when the benefits from infrastructure accrue more broadly than to direct users of the infrastructure, such as a bridge or road that can be directly tolled.

There are many options for implementation including additional charges when properties are located within special assessment districts likely to benefit from the new infrastructure. Other methods assess value uplift using econometric methods, useful for targeting local effects while acknowledging the uncertainty associated with estimates of the value created.

#### **New Zealand's history of transport infrastructure provision suggests hits and missed opportunities**

By the 1930s, Christchurch had developed an extensive network of trams, initially run by private companies and later municipalities. These tram services were partly funded by rates but partly through land value capture mechanisms (see [Figure 16](#)).<sup>76</sup>

Electrification of the rail system required large upfront costs, and Parliament decided not to electrify the Christchurch system since patronage was estimated to be too small to justify the costs, even though this assessment ignored the wider benefits of the network. Ultimately, the network faded away. As each piece of the network reached the end of its economic life, it was not replaced.

But just out of the capital city, a different approach to funding was taking place. First, central government funded electrification and double-tracking of the Tawa Flat deviation, which reduced travel times between Wellington and Porirua by 15 minutes – a material network improvement.

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<sup>76</sup> This box is adapted from Harre's (2021) work on the spatial development of Christchurch, <https://medium.com/land-buildings-identity-and-values/draft-christchurch-the-chicago-of-new-zealand-5c5e5da1e637>

Figure 16: Local government funded tramline electrification with land value capture mechanisms



The difference in outcomes is stark. Novel funding and financing streams helped promote infrastructure investment in place a century ago. Traditional government funding alone could not support networks that withered and died.

**From the Lyttleton tunnel to funding the road network today**

In 1857, Canterbury funded the construction of the 2.6 kilometre tunnel linking Christchurch to the port at Lyttleton. The project was financed by a provincial loan backed by land sales as the most obvious instrument to repay the debt. Adding the infrastructure brought material amenity to land, raising its commercial value sufficiently to repay the debt. The financing mechanism internalised changing land use.

Today’s road network is funded equally from local and central government, which collect user charges to fund the network, but, Harre argues, the “cost-benefit tools that government transport agencies use to prioritise new transport projects do not consider land use effects despite repeated recommendations by experts that they should”.

Consequently, funding can be disconnected from local land use changes, prioritising projects without due consideration of impacts of local funding. Doing more to make widespread use of special-purpose vehicles that utilise betterment taxes could alleviate these effects.<sup>77</sup>

<sup>77</sup> See Coleman and Grimes (200) for details on how betterment taxes could be applied.

## 5 Incremental change is not enough

Better housing outcomes from resource management reform is put at risk without change to current infrastructure funding and financing settings. It would be nice to think the system can just be tweaked, but the poor performance of the past 30 years and scale of other reforms currently underway signal expectations in funding and financing that require a step shift.

Three shifts are key:

- Improve institutional incentives from cost avoidance to reaping return from creating value.
- Broaden the set of institutions that provide infrastructure. For example, central government should do much more to secure transport corridors and open space, and tiny local groups are best placed to decide the follower infrastructure that supports local communities.
- Remove barriers to infrastructure by moving the costs of infrastructure off councils' general obligations. Help groups to help themselves by voting to use special project taxes and revenue bonds and enabling them to set up special-purpose vehicles to remove logjams.

### 5.1 New approaches to planning and funding and financing need to work in tandem

Current approaches to infrastructure funding and financing are simply not working, nor are status quo settings a good match to the resource management reform programme that could unlock improvements to housing affordability.

But resource management reform needs support. Without enabling infrastructure and financing settings, reform could falter and fail to bring about the abundance of choice of development opportunities needed to introduce competitive tension into land and development markets to drive prices lower.

The scope of resource management reform is limited to only two of the three core dimensions – planning and regulation – leaving unaddressed the supply of public infrastructure and public services.

While more forward-looking, expansive and permissive planning and land use regulation – as discussed in *A new approach to urban planning* – are necessary, urban development will not happen at the pace and scale needed to deliver intended outcomes if developers cannot access sufficient finance to unlock in-principle enabled development opportunities through investment in infrastructure.

Although current planning practices have significant costs for housing affordability, the hidden determinant of these planning and regulatory practices is that local authorities responsible for urban planning are also responsible for funding and financing the infrastructure and public services needed for urban development.<sup>78</sup> However, our funding and financing arrangements create pressure on the planning and regulatory systems to constrain, ration and sequence development to manage scarce public funds and abundant development risk.

### 5.2 More of the same will not be enough

A meaningful solution requires a significant step change – more of the same or even a much-improved version of the status quo will not be sufficient to realise the intended benefits of resource management

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<sup>78</sup> Refer to New Zealand Productivity Commission (2017) pp. 305–320 (roughly) and the basic conclusion of the inquiry into local government funding and financing that our local public finance system works under static conditions but is otherwise non-responsive and therefore does not support the sought-for underpinning outcome of competitive land markets.

reform.<sup>79</sup> A step change requires deeper reform of how we provide public services and fund and finance infrastructure for urban development. [Annex 4](#) provides a more detailed delineation and explanation of the infrastructure components needed to support competitive urban land markets.

### **Towards a solution**

There are two options supporting competitive urban land markets: (i) raise revenue (to be able to raise more debt) and help incentives or (ii) raise the debt ceiling or raise debt elsewhere (through collaborative governance structures that serve specific purposes). Either option is necessary to enable competitive land markets but they are not mutually exclusive: these options can strongly complement each other:

- If institutional arrangements continue to gate access to finance, you must shift incentives and fundamentally revise the revenue-raising system of local government. This would also increase ability to raise debt by increased revenue and align incentives with outcomes.
- Alternatively, introducing new institutional arrangements improves incentives and debt-raising capability. This would add choice in urban markets and require enabling new collaborative structures.

At a high level, the proposal is for three key shifts in tandem. Each shift solves for activities in a different domain: public finance (revenue and debt raising), planning (strategic) and provision of public services (mainly lead/structural infrastructure and urban development).

### **5.3 Step shift 1: Improve institutional incentives**

The first option to drive responsive supply of services and infrastructure and, in so doing, enable competitive urban land markets, is enabling councils to raise more debt by increasing their revenue base and linking the revenue to the intended outcomes. This option requires more fundamental institutional reform.

The OECD have taken notice:

Infrastructure funding pressures faced by local governments hinder development. They could be relieved through sharing in a tax base linked to local economic activity, more user charging for roads and water, and removing barriers to use of targeted local taxes on property value increases from changes in land use regulation or from infrastructure investment.<sup>80</sup>

#### **Key shifts in funding and financing arrangements to enable responsive supply of public services for urban development**

If institutional arrangements continue to gate access to finance, the incentives must be shifted by aligning financial benefits with wider outcomes (for example, economic performance and housing affordability in the aggregate). This would require a more fundamental revision of the local government revenue-raising system, because the current framework is not easily compatible with alternative approaches such as tax-increment financing.<sup>81</sup>

But there are successful examples of alternative models that show how things could be done differently:

- other jurisdictions, such as the cases of Portland and Phoenix in the US, clearly show the benefits of better models of providing infrastructure

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<sup>79</sup> New Zealand Infrastructure Commission, 2021.

<sup>80</sup> OECD, 2019.

<sup>81</sup> New Zealand Productivity Commission, 2015, p. 10.

- alternative funding models in these institutions incentivise councils to seek growth for revenue rather than the current state of constraining costs by inhibiting growth.

### Suggested next steps

The following figure summarises implications for next steps to improve incentives through the public finance system of local government.

Figure 17: Suggested next steps to improve incentives

| Incentives |   |  |           |
|------------|---|--|-----------|
| #          | Suggested next step   | Description  | Priority  |
| 1          | Improve institutional incentives by adopting a better local government funding and financing model<br><br><i>Potential vehicle:<br/>Local Government Review</i> | Policy should consider other revenue-raising systems for local government. A number of actions listed below are not easily compatible with our current local government rating-based model, and it provides very poor incentives. Policy should: <ul style="list-style-type: none"> <li>• critically revisit the Productivity Commission’s recommendation to maintain the status quo revenue-raising system in the context of the objective to create a funding and financing system that responsively supplies infrastructure and public services, and thereby enables competitive urban land markets</li> <li>• examine and appraise methods of targeting council rating bases on natural land rents, excluding capital improvements or extractive land rents, to better align local governments’ fiscal incentives with their core value proposition of providing local public goods and maximising their benefits through enabling growth.<sup>82</sup></li> </ul> | Very High |

## 5.4 Step shift 2: Broaden the set of institutions and better match them to supply of different infrastructure types

### Costs and benefits of city-shaping infrastructure fall outside most local council boundaries

The costs of spatial planning are the costs of conducting spatial planning activities, including consultation and increased capability across all partners and the costs of land acquisition. There are “poor incentives for councils to join forces to coordinate, provide for and fund infrastructure in order to efficiently respond to growth and change”.<sup>83</sup>

While non-trivial, the costs of conducting spatial planning activities are an order of magnitude lower than the costs of land acquisition. Since the benefits of spatial planning accrue to both local and national interests (environmental outcomes have national benefits and accommodating urban growth has spillover benefits), and extractive land rents have national causes and effects, there is a case for funding spatial strategies from both national and local government balance sheets. We therefore

<sup>82</sup> Local government officials advise they would require more guidance on how councils could do this. More detail will appear in a forthcoming paper entitled “Efficiency of urban land markets and urban economies” to be presented by Chris Parker at Treasury to the NZ Association of Economists 2023 conference. This footnote was added for clarification after this paper was delivered to the Minister.

<sup>83</sup> Resource Management Review Panel, 2020, p. 117.

disagree with current resource management reform proposals that “the joint committee and the secretariat supporting it should be funded by the constituent local authorities”.<sup>84 85</sup>

Land acquisition costs are likely to be lumpy and vary by region. There are two approaches: funding land acquisition on a case-by-case basis, slowing down and reducing the benefits of spatial strategies, or funding land acquisition from a central fund. The second approach would have benefits of reducing the time between recognising the need for land purchase and land acquisition.

Most likely, funding should be determined by whose balance sheet the asset sits on. Funding costs could also be recouped by a charge for using the land for future infrastructure development. Holding costs can be partially offset by renting back to the current user.

Regardless, agreeing a straightforward approach to funding acquisition is critical. One complaint levelled at the current state is the rationing of available land to manage local council infrastructure costs.

It is essential that substantially increased funding and resources be provided by both central and local government if the objectives of the new system are to be realised.<sup>86</sup>

### **Funding the costs of infrastructure**

Funding the costs of infrastructure should be fully separated from spatial strategies. Separation ensures spatial strategies are not constrained by funding so spatial strategies can instead focus on what needs environmental protections and increasing choice of land for development at long horizons that are multiples of levels of demand.

Instead, regional spatial strategies are advanced through resource management reform and will complement new funding and financing models established under the Infrastructure Funding and Financing Act. These tools help break the link between what gets funded and councils’ debt constraints, allowing more land development opportunities to be realised more quickly.<sup>87</sup>

These tools support broader Urban Growth Agenda objectives for housing affordability by developing more through well-regulated, well-planned competitive urban land markets. Two elements of the tools are key: minimising capital and operating costs of supplying public infrastructure and increasing supply responsiveness. This aligns with the objective of increasing housing supply and minimising externalities from urban growth.

### **Who should fund infrastructure?**

How the infrastructure is funded should be determined by who receives the benefits of the infrastructure. One argument is that the benefit of infrastructure that helps improve housing affordability accrue not just locally but nationally so there is a strong case for funding infrastructure that supports urban growth at a national level.

When housing becomes more affordable, local property owners can lose some of the economic rents they enjoy, so local landowners and the councils their rates support have a disincentive to support infrastructure that supports greater choice for development opportunities.

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<sup>84</sup> Resource Management Review Panel, 2020, p. 257.

<sup>85</sup> A mix of these funding streams is possible, reflecting relative shares of benefits. Benefitting landowners could also contribute directly, including through betterment levies that could be updated from s326 of the Local Government Act 1974. This clarification footnote was added after the paper was delivered to the Minister.

<sup>86</sup> Resource Management Review Panel, 2020, p. 6.

<sup>87</sup> Other models are possible. We note that Infrastructure New Zealand proposes a large fund for investing in spatial planning partnerships.

National-level funding (taxpayer) of strategic planning activities (protecting options and purchasing land to provide skeletal structure for future development) is focused on benefits associated with reducing excessive land rents (the overall level of the land price profile, which is artificially inflated under supply-constrained conditions).

We need collaborative structures that are very straightforward to establish to contest away extractive land rents. They need to discover value propositions, be matched to the nature of benefits (for example, higher natural land rents or national wellbeing), harness benefits to fund projects, be executed by the parties best able to deliver and be armed with the right powers and rights with suitable safeguards to protect against abuse.

For instance, to recoup national benefits, central government should fund activities that have national benefit, that is, those activities that do not ultimately manifest as higher urban land prices. For example, the strategic planning activities solve coordination problems and cost of acquiring development rights over future public space and transport corridors that enable efficient development.

Local public goods increase local natural land rents and development is high risk and so are more suited to forms of local government and market provision.

We need to take a closer look at much smaller institutions for delivery of follower infrastructure that includes social and community infrastructure.

#### **Suggested next steps**

The following figure summarises implications for next steps to broaden the set of institutions to deliver infrastructure and better match institutions to supply of different types of infrastructure.



Figure 18: Suggested next steps to broaden and better match institutions with infrastructure supply

| Institutions |   |   |           |
|--------------|---|---|-----------|
| #            | Suggested next step   | Description   | Priority  |
| 2            | <p>Broaden the set of institutions that provide infrastructure</p> <p><i>Potential vehicle: Local Government Review</i></p> <p><i>Potential adjacent vehicles: Amendment to IFF Act 2020 and/or Amendment to Urban Development Act 2020</i></p> | <p>It should be made easy to establish a diverse range and number of democratically legitimised collaborative governance structures so that infrastructure suppliers that are revenue funded (not general tax) can match different customer groups that benefit. This should create the capacity to borrow based on the merits of what is supplied. Governance structures may span the full spectrum from large scale joint action for shaping infrastructure to small scale and/or highly specialised organisations for follower infrastructure. Additionally Policy should:</p> <ul style="list-style-type: none"> <li>• ensure collaborative governance structures enable time consistent institutions</li> <li>• re-evaluate the 1989 reforms that removed the ability to create governance structures for special purposes, and the role these play in enabling societies to contest away absurd levels of extractive land rents</li> <li>• consider reinstating special purpose governments as the missing glue that binds together the private and general government sectors to provide local public goods and urban development, and so maximise the value of our urban areas. They are relevant because they can use strong public powers to tax, take, and regulate relatively safely and swiftly, and they are scalable. These can vary across city-shaping, structural, and follower infrastructures.</li> </ul> | Very High |
| 3            | <p>Enable collaborative governance structures to access public powers and make them safe</p> <p><i>Potential vehicle: Local Government Review</i></p> <p><i>Potential adjacent vehicle: Amendment to IFF Act 2020</i></p>                       | <p>To maximise uptake, collaborative governance structures should have ready access to strong enough and effective public powers (to tax, take and regulate). At the same time, checks and balances are needed to build trust and social licence. Policy should:</p> <ul style="list-style-type: none"> <li>• develop ways for collaborative governance structures to straightforwardly access the required arrangements without being blocked</li> <li>• identify and enable the appropriate democratic mechanisms to legitimise and limit the use of the powers</li> <li>• consider enhanced market-based systems that rely on lenders and credit rating agencies to monitor local debt to ensure quality of the projects that are debt financed, and that the arrangements are fiscally sustainable.</li> </ul>  | Very High |

|   |  |   |        |
|---|--|---|--------|
| 4 | <p>Central government to co-fund city-shaping corridor planning and infrastructure</p> <p><i>Potential vehicle:<br/>Resource<br/>Management reform</i></p> | <p>Increasing urban land market competition increases nationwide benefits (eg housing affordability and productivity) and reduces extractive land rents. This is in the national interest. Central government should take on a large role in funding planning activity that prepares cities for open-ended orderly urban expansion and urban intensification as well as the delivery of city shaping infrastructure that improves competition in land markets. Policy should:</p> <ul style="list-style-type: none"> <li>• ensure that funding capital expenditures of infrastructure supply is fully separated from spatial strategies and spatial planning activities focused on preparing cities for open-ended and orderly expansion, and more intensive use of existing urban areas</li> <li>• enable infrastructure to be funded by who receives benefits, and credibly ensure central government comes to the table and pays for the share of nationally relevant benefits, including funds or co-funds spatial planning activity as well as land acquisitions needed for spatial strategies.</li> </ul> | High   |
| 5 | <p>Consider merits of economic regulation</p> <p><i>Vehicle for policy work likely separate from current work programmes or reforms underway</i></p>       | <p>Where infrastructure sectors are characterised by monopoly infrastructure providers, economic regulation can incentivise investment and cost efficiencies. When collaborative governance structures introduce competition, regulation can still provide independent checks and incentivise cost-efficiencies.</p> <p>Currently the land transport sector has no independent checks on activities (taking into account central government self-regulation). When there is no oversight, decision making processes can be compromised. Policy should:</p> <ul style="list-style-type: none"> <li>• consider the merits of economic regulation for sectors that remain without independent checks and balances on infrastructure providers</li> <li>• investigate how economic regulation may complement an alternative world in which collaborative governance structures may freely enter the infrastructure market to supply services and so induce competition.</li> </ul>  | Medium |

### 5.5 Step shift 3: Remove barriers to implementing new funding and finance tools

Two main options have been discussed to drive responsive supply of services and infrastructure and, in so doing, enable competitive urban land markets:

- a) **The first option** is improving local government’s revenue-raising system to improve incentives and increase how much debt can be raised. This option would require more fundamental reform.
- b) **The second option** is enabling new collaborative structures that cannot be blocked from being established and raising independent debt to deliver infrastructure.

If new institutional arrangements are enabled that induce competition in supply, collaborative structures need to be designed to get around the existing constraints and decision-making bodies. This

would amount to enabling new localised governance structures for specific purposes sufficiently independent from current public decision-making bodies to not require their approval to initiate projects and so raise debt elsewhere. This too would require more fundamental institutional reform.

Introducing new institutional arrangements that add choice in urban markets requires enabling new collaborative structures that are:

- sufficiently independent and do not require local government approval to be initiated<sup>88</sup>
- are democratically legitimised, protecting against political economy pressures that skew decisions in favour of narrow interest groups<sup>89</sup>
- can create time-consistent institutions for local government and central government by moving the costs of infrastructure projects off balance sheets.

This can all look daunting. But [Box H](#) shows an alternative structure – business improvement districts – that could be used to develop local models for residential infrastructure development.<sup>90</sup>

### Box H: Consent for change

#### **There are opportunities to create value for residents ...**

Think about a neighbourhood where every property doubles in value if land could be put to a more intensive use and infrastructure to support intensification costs only a fraction of that value uplift. Existing owners would see a substantial increase in value while the cost of housing for new residents would decline as more homes and apartments would sit on the same land area.

It seems like a simple problem to solve. But urban intensification is too easily stymied by difficulties in apportioning infrastructure costs.

#### **... but intensifying urban areas can be politically challenging**

If a few existing owners have no interest in redeveloping their properties and cannot bear their share of the infrastructure cost, those owners have a compelling case. They need simply argue that they did not need the new infrastructure, have no interest in it and will be forced to sell their family home because of the charges covering those costs.

Fear of that outcome has meant councils seek to take on infrastructure cost as part of the general rates bill rather than pushing costs back onto the beneficiaries of the infrastructure. That, in part, builds more general opposition to councils enabling growth. Ratepayers take it as a cost rather than a benefit because the costs are spread broadly across many who enjoy no benefit at all.

A simple principle of public economics – the benefit principle of taxation – holds that it is best when those who benefit from an amenity fund that amenity. Without a way of ensuring the consent of those levied to cover costs, it is difficult to tell if the amenity is valued. It is difficult to demonstrate the democratic legitimacy for a rates imposition that comes without that kind of consent, making projects politically vulnerable.

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<sup>88</sup> New Zealand Productivity Commission, 2015, p. 230.

<sup>89</sup> New Zealand Productivity Commission, 2015, p. 312.

<sup>90</sup> This box is adapted from Crampton, 2021.

### **Thankfully, business improvement districts show a path forward**

But there is a simple solution, already operating in New Zealand. Our business improvement districts show how to cover the cost of infrastructure upgrades and ensure the consent of those footing the bill.

Brownfield intensification, through mechanisms supported by the Infrastructure Funding and Financing Act, has been considered too politically difficult.

When business owners in a village centre wish to undertake works to improve local amenities, they can set a targeted levy on themselves to cover the cost. Local business owners develop the proposal. If more than 25% of affected businesses support the proposal, a formal process begins.

#### **How might it work in practice?**

Wellington Council's process provides an excellent example.

On securing the indicative support of at least a quarter of affected businesses, the proposers formalise the proposed business improvement district – setting boundaries and developing the business plan outlining the proposed activity, the costs and the targeted rate that would be needed. They can set a flat rate, a rate that varies with property value or a hybrid rate combining the two.

Ultimately, the proposal is put to a vote of existing owners with a double-majority requirement. At least 25% of eligible business owners must vote. If a majority of eligible voters support establishing the district and that majority also represents most of the rating valuation of those voting, the district is established.

#### **The double-majority guards against exploitation**

The double-majority requirement offers a unique kind of protection. In a village centre, there can often be a lot of small shops and one or two larger anchor businesses like supermarkets. A majority by capital value would let the local supermarket dictate terms, but a majority by number would let a lot of small shops effectively expropriate the local supermarket. A double-majority prevents both types of exploitation – a small number of large owners cannot exploit a larger number of smaller owners, and a large group of small owners cannot exploit a large owner.

Figure 19: Happy firms signal use of the business improvement district model for residential areas



Source: Wellington City Council, Business Improvement District Policy.

### **Business improvement districts could easily be adapted to deliver residential infrastructure**

This kind of mechanism could readily be adapted for consenting to new levies to fund residential infrastructure improvements. If a neighbourhood or street recognised the value that could be unlocked by infrastructure improvements, they could decide to levy their own properties to fund the works. The consent of those so levied would be assured by majority vote.

If a majority of affected properties by number, which also constituted a majority of the affected properties by value, agreed to levy themselves, they could do so. If the proposed levy was relatively high, the support and assent of 60% of properties by number, constituting 60% of properties by value, could be required.

Democratic legitimisation through this kind of double-majority voting system, and especially where proposals come from the affected communities themselves, could make it far easier to fund necessary infrastructure improvements through targeted rates.

### **Tools and powers to overcome imperfections**

Public policy can use the trinity of coercive public powers to tax, take and police (or regulate) or can provide more facilitative help such as information and coordination.

Our guidance suggests the following:

- The share of urban infrastructure that is rival (congestible) and excludable should be user charged to that extent (fares, tolls, meters, access charges etc.) to get best use of assets and to minimise the need for fixed revenues or taxes that may not match those that benefit as well.
- The share of urban infrastructures that are local public goods (not rival or not excludable to those living nearby) are best funded through the uplift in natural land rents. This can be done through either ownership or taxation. Either the supplier of public goods owns the land beforehand, or the supplier readjusts plot configurations and ownership beforehand either voluntarily (through contract) or compulsorily (through land readjustment powers).

Alternatively, the infrastructure supplier could receive monetary contributions, either through the supplier of the public goods owning the land beforehand or the infrastructure supplier receiving monetary contributions from landowners either voluntarily (revenues) or compulsorily (taxes).

- The share of urban infrastructures that provide national public goods should be funded to that extent by national sources, from either general taxation or national user charges.
- There will be great variability in projects and benefits and funding sources. The different shares of benefits for different parties should be administered through collective action vehicles to minimise transaction costs. These collective action vehicles should:
  - have minimal barriers to entry to maximise the contest of economic and political power to ensure inclusive economic and political institutions (Acemoglu & Robinson 2013)
  - be enduring and have decision-making rights to the extent that issues cannot be anticipated adequately in advance (that is, incomplete contracts)<sup>91</sup>
  - be standardised with a view to establishing a track record of trust or reputation, which will take time (information problems)
  - be time consistent so they do not want to or are not prompted to, required to or able to bail out or be bailed out in general when debt repayments are not met in order to be able to borrow unconstrained against their revenues
  - have the taxing, takings and regulatory powers necessary to overcome hold-out, hold-up and transaction cost problems when it is allocatively efficient.

### **Vision for making powers and tools safe to maximise uptake**

Inclusive political institutions are pluralistic through public powers being distributed broadly and subjected to constraints.<sup>92</sup> If public powers are created without sufficient consent and constraint by those subjected to those powers, the risk of exploitation is great. There is risk the political institutions become extractive. This would lead to inclusive political institutions being unwilling to allow these powers to be made freely available and utilised to their full extent.

For example, this issue could limit the widespread application of the powers under the Infrastructure Funding and Financing Act 2020, unless operational practices ensure sufficient consent and constraint by those subjected to the localised taxing powers. For example, [Annex 3](#) shows that voter approval for special project taxes and debts was always required throughout New Zealand's history until 1995.

Taxing land is a cost-effective way to overcome the transaction costs involved in democratically legitimising the use of public powers, requiring a trade-off between compulsion and consent.

The democratic principle of congruence between those that benefit, pay and vote on a tax is key to protecting against abuse of the coercive taxing power and legitimising the taxing power.<sup>93</sup> In this context, that principle necessitates such authority to be administered by a local tax authority when all relevant landowners are not willing commercial parties.

A local government can apply a tax to a geographical area that matches the land that increases in value. If the level of government that authorises a very local tax is too high and so mismatched with the scale of the project, then the democratic principle of congruence is challenged and may result in either too much or too little use of tax powers.

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<sup>91</sup> Evans, 2012.

<sup>92</sup> Acemoglu & Robinson, 2013.

<sup>93</sup> Schön, 2018.

## Suggested next steps

The following figure summarises implications for next steps to enable relevant funding and financing tools to harness the benefits of investment infrastructure and public services, and to remove barriers to the use of alternative financing arrangements by collaborative governance structures. A broader set of institutional arrangements should be able to raise their own debt.

Figure 20: Suggested next steps to remove barriers to implementing new funding and financing tools

| Funding and financing tools |   |  |           |
|-----------------------------|---|--|-----------|
| #                           | Suggested next step   | Description  | Priority  |
| 6                           | <p><b>Finance:</b> Enable the local government system to issue two different types of debt</p> <p><i>Potential vehicle: Local Government Review</i></p>   | <p>Finance in the form of debt is key to enabling urban development. Local government finance should be expanded to enable more responsive investment in infrastructure. ‘General obligations’ debt that is backed by the tax revenue (rates) of local authorities (GO finance) should not be the only available form of finance. It is easily gated and limited.</p> <p>Infrastructure services should be allowed to issue their own debt (known as ‘revenue bonds’) on the basis of the revenues that can be generated from the projects. This could be achieved by preventing councils from being able to bail out the debts of infrastructure services:</p> <ul style="list-style-type: none"> <li>• reduce incentive to, need to and ability of councils to bail out non-GO debts (revenue bonds) from their own general revenues (rates) and resources</li> <li>• review reinstating key aspects of historic local bodies loans legislation developed to enable revenue bonds (refer to <a href="#">Annex 3</a>) and to complement existing legislation enabling local governments to issue general obligations debts. This would enable a mixed model of direct and representative local democracy.</li> </ul> <p><a href="#">Annex 1</a> offers further steps to support modelling and analysis in policy.</p> | Very High |
| 7                           | <p><b>Funding:</b> Establish a suite of value capture tools, supported by enabling legislation</p> <p><i>Potential vehicles: Resource Management reform; the Urban Growth Agenda’ funding and finance workstream; Future of Local Government Inquiry; MoT’s future revenue system for land transport advice</i></p> | <p>A viable arsenal of value capture mechanisms is important to enable virtuous cycles of investment. Developers and infrastructure providers should have at their disposal a variety of options that can be matched to different situations. The tools should allow them to capture some if not all of the value (benefits) delivered by investments in infrastructure and public goods, which is to be harnessed to offset costs of delivery and enable more investment. The range of options should include (but need not be limited to):</p> <ul style="list-style-type: none"> <li>• land value tax / targeted rates capture increased natural land rents due to local investments</li> <li>• land re-adjustment schemes</li> <li>• tax-incremental financing</li> <li>• special purpose or business improvement districts.</li> </ul>  | High      |

|   |  |  |        |
|---|--|--|--------|
| 8 | <p>Review governance and infrastructure decision making processes to reduce costs and appraise benefits</p> <p><i>Vehicle for (a): policy work on costs likely separate from current work programmes or reforms underway</i></p> <p><i>Vehicle for (b): Waka Kotahi's (NZTA's) research programme to improve economic evaluation procedures for benefit appraisal appraisal, and Kāinga Ora's appraisal methodologies for urban development</i></p> <p><i>Vehicle for (c) is not yet established</i></p> | <p>Costs to construct infrastructure are too high and are escalating quickly; methods to appraise the benefits of local public good investments that induce land use change are currently inadequate; identifying benefits to inform co-investment approaches is inadequate. Improvements to institutional processes and practices are required.</p> <p>a) If construction costs are too high and exceed benefits, projects cannot proceed even with improvements to funding and financing and beneficiaries pay approaches. Policy should undertake a review of governance arrangements across central and local government of investment approval processes, to avoid unnecessary costs arising from project selection, or escalations from procurement.</p> <p>b) Urban mega projects induce land use change but those benefits are unable to be assessed because techniques have not yet been developed. Waka Kotahi (NZTA) has a research programme to address this, but it requires more support.</p> <p>c) Since large-scale projects also create benefits that cascade throughout many levels of the economy, revenue bond (non-GO) financed projects will likely still rely to some degree on funding contributions from various tiers of government that link back to GO finance. Co-investment approaches are needed that have good investment scrutiny, predictability, and credibility.</p> | Medium |
|---|--|--|--------|

## 5.6 We have done this before

It is common in New Zealand's history for urban infrastructure to harness the benefits to create the resources they need – to effectively fund themselves. For private suppliers of private goods and services, this is through user charges to pay for operating and capital costs. For private suppliers of public goods, it is usually through owning the land that increases in value.

For example, in the past, areas of New Zealand used a mechanism called betterment taxes to help finance and fund delivery of public services. Betterment taxes target the uplift in land values that can occur following public infrastructure investments. The tax is applied to land on an ongoing basis.

Betterment taxes can be a useful tool and enable special-purpose vehicles to finance infrastructure when the benefits from infrastructure accrue more broadly rather than to direct users of the infrastructure, such as a bridge or a road, which can be directly tolled.



There are many ways to implement such a tax, including through additional charges on properties located in an area likely to benefit from the new infrastructure. Other methods may assess value uplift using econometric methods that can target local effects.<sup>94</sup>

New Zealand's history reveals successes and missed opportunities in this area. The development of the Christchurch tram network is an example of successfully harnessing value to deliver valuable transport services while also missing the opportunity to maintain valuable public transport for the metropolitan area over time.

New Zealand also has a strong history of enabling collaborative governance structures for special purposes and enabling the local government system to issue more than one type of debt (see [Annex 3](#)). However, the local government reform of 1989 prevented collaborative governance structures from being formed as well as revenue bonds from being issued, even though these mechanisms delivered a lot of infrastructure throughout New Zealand's history (see [Annex 2](#)).

### **Mapping infrastructure funding and financing requirements to types of development can help**

The OECD has observed that these issues are not New Zealand's alone:

Traditionally, infrastructure investments have been financed with public funds. Governments were the main actor in this field, given the inherent public good nature of infrastructure and the positive externalities often generated by such facilities. However, public deficits, increased public debt to GDP ratios and, at times, the inability of the public sector to deliver efficient investment spending, have in many economies led to a reduction in the level of public funds allocated to infrastructure.<sup>95</sup>

Debt is the main source of finance. It is critical for actors in the system to have access to it and enough of it to responsibly deliver services and infrastructure for urban development.

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<sup>94</sup> These methods can also acknowledge any uncertainty associated with the estimates of created value.

<sup>95</sup> OECD, 2015. p. 7.

## Annex 1 – Suggested next steps: modelling and analysis

The following figure provides next steps for policy officials to consider the merits of alternative models in New Zealand and to test the assumption that suitable projects are not proceeding due to lack of finance, but would under an alternative funding and financing system.

Figure 21: Suggested next steps to consider merit of an alternative funding and financing system

| Modelling and Analysis |  |   |          |
|------------------------|--|---|----------|
| #                      | Suggested next step  | Description   | Priority |
| 9                      | Model impacts of alternative scenarios   | <p>Best practice for public policy development centres on working up a list of possibilities and then evaluating the options. This paper distinguishes between two types of funding and finance systems for the supply of infrastructure and public services:</p> <ul style="list-style-type: none"> <li>• status quo, which relies heavily on GO finance (council debt backed by rates); and</li> <li>• an alternative system that takes advantage of non-GO finance (revenue bonds) either independently from or in combination with GO finance.</li> </ul> <p>We suggest modelling what balance sheets in an alternative system may look like, given the suite of funding tools, and how this would play out. The impact of this alternative world could be roughly estimated.</p> | Medium   |
| 10                     | Test assumptions that significant net-beneficial projects could be realised in an alternative system | <p>This paper assumes that projects in New Zealand exist that are of sufficient value to be financed through advantage of non-GO finance, and would proceed if they could take advantage of this option. A profitable project would be one that:</p> <ul style="list-style-type: none"> <li>(i) has a benefit-cost ratio above 1 (is net-positive) and</li> <li>(ii) is able to generate revenues earned from beneficiaries of the project that exceeds the cost of capital (borrowing costs).</li> </ul> <p>Analysis could test the assumption that there are such projects in New Zealand that are not proceeding due to lack of finance.</p>   | Medium   |

## Annex 2 – New Zealand’s history extensively used special purpose local governance structures

New Zealand’s history is characterised by a plethora of localised governance structures for special purposes that could fund, finance and regulate any collective action requirement. In 1988 there were 453 governance vehicles of this kind, before they were all abolished in the 1989 reforms. These vehicles are of the same kind that credit rating agencies today consider effective for enabling alternative funding and financing mechanisms elsewhere in the world (eg revenue bonds).

### **Central government officials disestablished governance vehicles for collective action in 1989**

Central government’s *Officials Coordinating Committee* (the Committee) comprised of Treasury and DIA officials disestablished these governance vehicles that enabled collective action.

### **The Committee acknowledged governance vehicles for special purposes were critical infrastructure supply**

At the same time, the Committee acknowledged that these vehicles were key to the historical supply of New Zealand’s infrastructure. They were also prolific because they were effective, relatively easy to establish and people kept using them, especially when incumbent “territorial authorities had neither the resources nor the inclination to tackle the development of the major infrastructural needs of New Zealand in the developing years”.<sup>96</sup>

### **The Committee thought it inappropriate for communities to formally organise collective action and that local public finance in the form of debt should be constrained**

The Officials Committee saw an enormous variety of functions, structures, funding arrangements and saw no coherent pattern.<sup>97</sup> They said this could lead to operational inefficiencies and confusion in the public mind about accountability.<sup>98</sup> They thought it inappropriate that communities could through their own initiative establish localised governance structures for special purposes, and that only central government should do that. The officials did not explain why.<sup>99</sup> The Committee’s only comment on local public finance was that debt finance was deferred tax, and that both should be constrained.<sup>100</sup>

Figure 18 below lists the structure of the local government landscape pre-1989. It also reveals that a plethora of collaborative governance structures (blue area) for special purposes existed to organise collective action. These governance vehicles financed, funded and delivered a lot of public services and infrastructure – see “special purpose authorities”.

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<sup>96</sup> The Officials Co-ordinating Committee on Local Government (1988), *Reform of Local and Regional Governmet: Discussion Document*, pp.7-8.

<sup>97</sup> *Ibid.*, pp.28-29.

<sup>98</sup> *Ibid.*, p.34.

<sup>99</sup> *Ibid.*, p.30.

<sup>100</sup> *Ibid.*, p.40.

Figure 22: Landscape of LG plus collaborative governance structures in New Zealand pre-1989

| <i>Territorial Authorities</i>  | <b>Number of Authorities</b>        |
|---|-------------------------------------|
| City Councils   | 27                                  |
| Borough Council   | 89                                  |
| County Councils   | 80                                  |
| Town Councils   | 1                                   |
| District Councils   | 20                                  |
|   | <b>Total 217</b>                    |
| <i>Community Councils</i>   |                                     |
| Community Councils  | 121                                 |
| District Community Councils   | 15                                  |
|   | <b>Total 136</b>                    |
| <i>Regional Authorities</i>   |                                     |
| Auckland Regional Authority   |                                     |
| Regional Councils   | 2                                   |
| United Councils   | 20                                  |
|   | <b>Total 22</b>                     |
|   | <b>Subtotal 375</b>                 |
| <b>Special Purpose Authorities</b>  |                                     |
| Airport Authorities   | 34                                  |
| Catchment Authorities (includes 13 Catchment Boards, 3 Catchment Commissions and the Waikato Valley Authority)  | 17                                  |
| District Roads Councils   | 22                                  |
| Education Boards  | 10                                  |
| Electric Power Boards   | 58                                  |
| Harbour Boards  | 15                                  |
| Hospital Boards (25) and Area Health Boards(4)  | 29                                  |
| Land Drainage Boards and River Boards   | 27                                  |
| Land Trusts   | 2                                   |
| Licensing Trusts  | 28                                  |
| Maritime Planning Authorities   | 4                                   |
| Museum Trust Boards   | 3                                   |
| Nasella Tussock Boards  | 2                                   |
| Noxious Plants Authorities  | 92                                  |
| Pest Destruction Boards   | 61                                  |
| Regional Development Councils   | 15                                  |
| Regional Employment and Access Councils   | 21                                  |
| Urban Drainage Boards   | 3                                   |
| Miscellaneous<br>(Aotea Centre Board of Management, Christchurch Town Hall Board of Management, Christchurch Transport Board, Dunedin Ocean Beach Domain Board, Hawkes Bay Crematorium Board, Marlborough Forestry Corporation, Ohai Railway Board, Selwyn Plantation Board, South Canterbury Wallaby Board, Waimakariri-Ashley Water Supply Board) | 10                                  |
|   | <b>Total 453</b>                    |
|   | <b>Total of all authorities 828</b> |

## Annex 3 – Was New Zealand historically characterised by revenue bonds?

A cursory review indicates that New Zealand local government throughout its history was revenue bond financed until the reforms following 1989. The key historic legislative architecture that enabled this included:

1. *The Municipal Incorporations Act 1876* – enabled direct democracy through voting
2. *The Local Bodies Loan Act 1913* – enabled issuance of bonds linked to special taxes

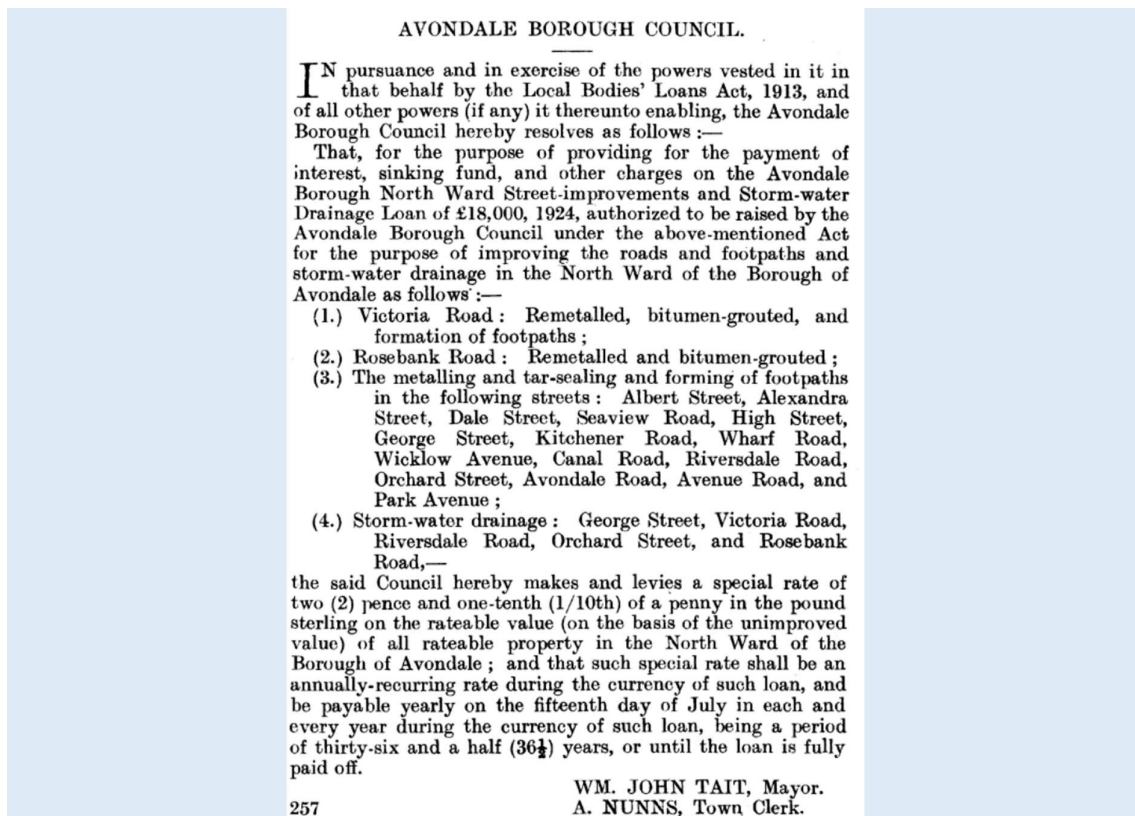
Historically local bodies issued loans for special purposes that required majority voter approval. The approval covered both the issue of a debenture (a bond or debt instrument) and a special tax to repay the bond over the full life of the bond (up to 50 years). Local bodies could generally not pay the loan out of their general funds if the arrangement covered only a portion of their district. In the event of default, a receiver could collect the special rates, but they could not increase the rate or sell property except upon order by a Judge of the Supreme Court.

Figure 23 presents a historical example published in *The New Zealand Gazette* in 1925 of how the local government system could issue a different type of debt (project bonds) on the basis of a special rate on land, which enabled investment in infrastructure, such as roads, footpaths and stormwater.<sup>101</sup>

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<sup>101</sup> *The New Zealand Gazette*, Wellington, Thursday March 5, 1925, [www.nzlii.org/nz/other/nz\\_gazette/1925/16.pdf](http://www.nzlii.org/nz/other/nz_gazette/1925/16.pdf)

Figure 23: Avondale Borough Council (NZ) raises revenue bonds in 1924 to pay for infrastructure



After the local government amalgamations of 1989 and subsequent legislative amendments (particularly the *Local Government Amendment (No 5) Act 1995*) the local government system appeared to shift away from direct approach to local democracy towards a representative approach to local democracy:

- Local authorities have since been unable to issue revenue bonds and can only issue general obligations loans.
- Local authorities can no longer strike a targeted rate that lasts for the duration of a long-term project debt.
- Today no voter approval is required to issue a debt or to levy a targeted rate.
- Today local authorities are free to repay any loan out of its general revenue.
- Receivers are now free to raise rates and sell ratepayer property in the event of default by a local authority without approval by a Court.

Figure 24 below shows traditional arrangements appear to have enabled revenue bonds. In the event of default, local authorities were unlikely incentivised to, required to, or able to bail out the defaulting loans. A cursory review indicates that it is likely that all loans were revenue bonds. No loans appear to have been general obligations loans.

In contrast, modern arrangements do not actively support or enable revenue bonds. Today all loans are general obligations on the local authority.

Figure 24: Assessment of time consistency to maintain revenue bonds

| Mitigate inclination to bail out by reducing:                | Historic / Traditional (1867–1995) <sup>102</sup>  | Modern (1989 – present day) <sup>103</sup>  |
|--|--|---|
| Chance of default  | <p><b>Sufficient</b> – required majority voter approval to strike special tax and pledge it to a special project bond, and for tax to last the life of the bond. Demonstrable willingness to pay.</p> <p>Could have been enhanced by business case processes; the creation of the Local Authorities Loans Board in 1926 may have mitigated this.</p> | Possibly sufficient – no local voter requirement to issue debts or pledge rates as security for debts, so projects undertaken could be uneconomic.                    |
| Elected representative incentive to relieve citizens of harm | <p>Low, but <b>probably sufficient</b></p> <p>Receiver of debt could not increase rates or sell property without permission of Supreme Court.</p>  | <p><b>Low</b></p> <p>Receiver of debt can freely increase rates and sell property at will under s115 Local Government Act <a href="#">2002</a>.</p>                   |
| Elected representative incentive to protect public image     | <p><b>Sufficient</b> – voter approval required from 1876 to levy tax and issue bonds to insulate elected representatives from culpability.</p> <p>However, the Local Authorities Loans Board’s strong powers may have shifted moral responsibility and recourse to the Crown.</p>  | <p><b>Low</b></p> <p>Councils decide which projects to invest in.</p>   |
| Legislative ambiguity of no recourse                         | <p><b>Sufficient</b></p> <p>Local Authorities were only liable for the pledged security of special revenues.</p>   | <p>Low, but <b>probably sufficient</b>. Track record of Central Government transferring risk and liabilities to local governments.</p>                                |
| Fiscal ability   | <p><b>Sufficient</b> – Local Authorities could generally not significantly repay a special project bond if it was just for a part of their jurisdiction.</p> <p>However, if the project spanned the whole jurisdiction, Local Authorities could pay the whole debt from ordinary/general revenues.</p>   | <p><b>Low</b></p> <p>Councils have somewhat hard budget constraints, but there are no strict limits to raising rates, repurposing spending and issuing new debts.</p> |

<sup>102</sup> These include the Municipal Incorporations Acts [1867](#) and [1876](#), and the Local Bodies/Authorities Loans Acts [1886](#), [1901](#), [1913](#), [1926](#), [1956](#).

<sup>103</sup> These include Local Government Amendment (No 5) Act [1995](#), Local Government Act [2002](#), and Local Government (Ratings) Act [2002](#).

## Annex 4 – How to support competitive urban land markets with infrastructure

Figure 25 summarises the infrastructure requirements for both brownfield and greenfield development.

Figure 25: Each element of competitive land markets needs specific infrastructure components

| Development and infrastructure component              | How elements can support competitive urban land markets  |  |
|---|--|--|
|   | Urban expansion  | Urban intensification  |
| 1. Network growth planning                            | <ul style="list-style-type: none"> <li>Expansive and enabling regional spatial strategies for several decades of future growth. They plan arterial infrastructure corridors, public open spaces, land with high conservation value and sites of significance to mana whenua.</li> </ul>  |  |
| 2. Land availability                                  | <ul style="list-style-type: none"> <li>Development is free to occur anywhere in the area designated for future expansion in a regional spatial strategy.</li> </ul>  | <ul style="list-style-type: none"> <li>Refer to 'resource consent' (5) below.</li> </ul>   |
| 3. Land takings for public works                      | <ul style="list-style-type: none"> <li>Public Works Act powers for approved works.</li> </ul>  |  |
| 4. Land assembly for development                      | <ul style="list-style-type: none"> <li>Arrangements exist to facilitate small parcels of valuable land to be amalgamated to optimal size to enable optimal combination of land use development and infrastructure supply and uptake (to overcome hold-out, hold-up, transaction costs).</li> <li>A basis for consent for takings by the participating property owners is clearly established with adequate dispute resolution procedure to protect against abuse of powers – refer to 'governance' (13).</li> </ul>                                      |  |
| 5. Resource consent and planning permission           | <ul style="list-style-type: none"> <li>Permission for discontinuous development and for autonomous provision of development and connecting infrastructure.</li> <li>Regulation only of spillover effects not already regulated sufficiently within developments such as by an autonomous body-corporate type entity – refer to 'governance' (13, 14)</li> </ul>  | <ul style="list-style-type: none"> <li>Constraints to the natural environment and network infrastructures are managed by public law.</li> <li>Nuisances can be managed by private law (for example, torts) rather than public law, until such time that a city's urban land markets become competitive.</li> </ul> |
| 6. Within-development infrastructure                  | <ul style="list-style-type: none"> <li>The developer is responsible for the infrastructure within a subdivision.</li> </ul>  |  |
| 7. Setting of physical or service-potential standards | <ul style="list-style-type: none"> <li>Quality and environmental conditions are stipulated for natural environment concerns. Where assets will be built by one party and possibly vested to another, the network provider will likely need to define the required quality standards. A dispute resolution procedure is likely to be required. The conditions should not bias to favouring centralised natural monopoly infrastructures such that off-grid and distributed facilities are disadvantaged – refer to 'reversion of assets' (15).</li> </ul> |  |
| 8. Connection to infrastructure network               | <ul style="list-style-type: none"> <li>Developers are responsible for connecting to infrastructure networks</li> <li>Networks are likely dominated by a single network provider, and developers will need to be protected by regulated commercial interconnection terms.</li> <li>Developments that provide trunk infrastructure that benefits latecomer developments should benefit from latecomer contributions; this could be in the form of early investors buying capacity rights that are on-sold to later developments.</li> </ul>                |  |
| 9. Other infrastructure (social and community)        | <ul style="list-style-type: none"> <li>Developers facilitated to co-fund public services such as schools, community hubs etc. provided by central and local governments.</li> <li>Central government needs to provide and commit to clear processes for its co-funding to provide confidence to induce applications.</li> </ul>  |  |



| Development and infrastructure component  | How elements can support competitive urban land markets   |                       |
|---|---|-----------------------|
|   | Urban expansion   | Urban intensification |
| 10. Funding   | <ul style="list-style-type: none"> <li>• Developers fund both the infrastructure within a development and the growth component of any connecting infrastructure service-level improvements, resilience and renewal components remain funded by existing network provider.</li> <li>• Developers' funding comes from sales to new residents and from a ring-fenced loan that then becomes the responsibility of residents and not of general ratepayers or taxpayers. There should be fair, efficient, transparent basis for payment obligations through time to manage the 'lemons problem' (asymmetric information) and support the building of reputation and a track record.</li> <li>• A basis for consent for payment obligations by the participating property owners is clearly established with adequate dispute resolution procedures to protect against abuse of powers.</li> <li>• Operating costs are funded by residents through user charges, some form of body corporate levy and general land taxes (rates) to the extent they use neighbouring council infrastructure.</li> <li>• Latecomer developments make fair payments (that accord with commercial interconnection agreements) to reduce ring-fenced loans of existing residents and investors.</li> </ul> |                       |
| 11. Financing   | <ul style="list-style-type: none"> <li>• Developers have a larger and more complex financing task. They should manage and bear the development risk as the parties best able to manage infrastructure uptake from project-induced growth. They must initially finance potentially greater infrastructure costs using higher-cost finance and recover these from new residents.</li> <li>• Developers are reimbursed in turn by residents once development risks have surpassed and the project matures and becomes seasoned. Residents are likely to need a special arrangement to hold and service the loan using lower-cost finance, such as revenue bonds. If funding comes from user charges (such as tolls), some underwriting may be needed by property owners in the development through a special property tax in order to secure cost-efficient revenue bond finance. Underwriting could come from other governments (local, central) to the extent benefits are wider than just the development (service-level improvements to wider users, network resilience).</li> </ul>   |                       |
| 12. Pricing   | <ul style="list-style-type: none"> <li>• For pricing for the purpose of raising funding, refer to 'funding' (10).</li> <li>• There are trade-offs to optimise between using user charges and property taxes and their respective timing. Relying on user charges (such as tolls and farebox revenues) prematurely before development occurs may be too risky and require property tax underwrites from neighbouring councils anyway. This is particularly so when the wider network isn't priced (such as free parallel roads).</li> <li>• Short-run marginal cost pricing should be used on facilities that are starting to congest. This would allocate the facility to those that benefit most. It would create funding to repay fixed costs, thus reducing the need for fixed fees or taxes that may excessively extract from people that do not benefit and/or are not sufficiently wealthy.</li> </ul>  |                       |
| 13. Governance of autonomous provision such as through an autonomous community district (ACD) | <ul style="list-style-type: none"> <li>• If the facilities are provided autonomously, residents will need their own body corporate type entity to own and operate and collect levies for operational costs.</li> <li>• Putting the ACD in the hands of a private-for-profit opens residents to the risk of exploitation by a monopoly supplier if it is too difficult to write and enforce complete contracts.</li> <li>• Ideally, there should be congruence between those that benefit, pay and vote.</li> <li>• The structure will also need to balance the evolving competing needs of developers versus residents over the lifetime of the development.</li> <li>• The Urban Development Act 2020 in conjunction with the Infrastructure Funding and Financing Act 2020 can be used and enhanced over time.</li> </ul>   |                       |

| Development and infrastructure component                                  | How elements can support competitive urban land markets   |                       |
|---|---|-----------------------|
|   | Urban expansion   | Urban intensification |
| 14. Governance of collaborative provision (such as joint action agencies) | <ul style="list-style-type: none"> <li>• Major urban development and infrastructure projects may have bespoke requirements to interface with their built environments, particularly for complex urban renewals. This may necessitate multiple governance bodies to discover and maximise the value proposition to different parties (for example, refer to <a href="#">Box C</a>).</li> <li>• ACDs can provide distribution or local area networks but may need to collaborate with transmission/bulk network operators (such as for bulk water supply and treatment, mass transit, electricity generation and storage, highways, secondary schools).</li> <li>• These transmission/bulk network operators may already exist, or new entrants emerge to create a joint action agency (JAA). A JAA is most credit worthy when it has several participants, step-up provisions where participants pay more if a member defaults and 'take or pay' contracts so members pay regardless of use or operational performance.</li> </ul> |                       |
| 15. Reversion of assets from ACD  | <ul style="list-style-type: none"> <li>• There should be clear and mutually agreeable terms of reversion of the assets of an ACD to a local authority, network provider or Waka Kotahi. There should be a prearranged timeframe, with parameters for either side to exercise an option for earlier reversion. A process facilitated by a third party should exist for unforeseen circumstances (for example, force majeure events).</li> <li>• Reversion may benefit councils if ACDs have high revenues and low debts and disbenefit ACD residents if their tax and public debt liabilities increase. Conversely, reversion may benefit ACD residents if they desire more general-purpose local governance and lower taxes and disbenefit incumbent councils and their ratepayers if the ACDs have high liabilities and low property tax bases.</li> </ul>   |                       |

# Annex 5 – Terms of reference Urban Land Markets Group

## Terms of Reference – Urban Land Markets Group

1. Purpose – To provide an independent stream of advice to the Associate Minister on the extent to which the resource management reform process supports competitive urban land and housing markets.
2. Rationale - The planning system is widely accepted to have been one of the main factors in NZ's highly dysfunctional urban land and housing markets. The RM reform process is a once in a generation opportunity to tackle this.
3. Participation is by invitation. Members have been invited to participate because of their expertise in urban land and housing markets. All are contributing pro bono.
4. The group is convened and chaired by the Associate Minister.

### *How the group will operate*

5. Meetings will be conducted by Zoom on a fortnightly cycle with an agenda and background reading circulated in advance.
6. Minutes will be taken by the Minister's staff and circulated to the group.
7. From time to time the Associate Minister will distil advice from the discussions to be shared with the Minister for the Environment.
8. Members are encouraged to share information within the group and continue discussions in between meetings.

End

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