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## **Economic Policy Centre**

The University of Auckland Business School

# **A New Approach to Urban Planning**

**Benno Blaschke, Geoff Cooper, Eric Crampton, Stuart Donovan, Ryan Greenaway-McGrevy, Brendon Harre, Wayne Heerdegen, Kirdan Lees, Peter Nunns, Gail Pacheco, Chris Parker**

Prepared for the Associate Minister for the Environment Hon. Phil Twyford

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# Preamble

Associate Minister for the Environment Hon Phil Twyford convened this 'Urban Land Markets Group' of subject matter experts to provide independent advice to the Minister in the context of the resource management system reforms. 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, and so individuals do not necessarily endorse every element in the advice. No members had any conflicts to disclose. The group's Terms of Reference are appended at the rear. For any queries please contact the Minister's office. Group members are:

Dr Benno Blaschke

Wayne Heerdegen

Geoff Cooper

Dr Kirdan Lees

Dr Eric Crampton

Peter Nunns

Stuart Donovan

Dr Gail Pacheco

Dr Ryan Greenaway-McGrevy

Chris Parker

Brendon Harre

Observer from Strategic Planning Act team: Mark Vink

This is the first report authored by the group.

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## A new approach to urban planning

### Introduction

In March 2021 Cabinet (CAB-21-MIN-0045) confirmed:

*that the government's overarching policy objectives for the housing market are to:*

*1 ensure that every New Zealander has a safe, warm, dry, and affordable home to call their own – whether they are renters or owners;*

*2 support more sustainable house prices, including by dampening investor demand for existing housing stock, which would improve affordability for first-home buyers;*

*3 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.*

The Ministerial Oversight Group on resource management reform has agreed that reform should:

*Better enable development within environmental biophysical limits including a significant improvement in housing supply, affordability and choice, and timely provision of appropriate infrastructure, including social infrastructure*

This is supported by an underpinning outcome of:

*Housing supply is responsive to demand, with competitive land markets enabling more efficient land use and responsive development, which helps improve housing supply, affordability and better meets a range of housing needs (by type, size, location and price point)*

This paper starts from this objective and asks how resource management reform can be used to improve opportunities for housing supply while working within environmental limits and delivering improvements in overall environmental quality.

### **How urban planning affects housing supply and affordability**

Resource management systems shape the supply of housing and influence the price of urban land. These impacts can be either deleterious or beneficial, depending upon the specific policy approach.

Urban planning can have a deleterious impact on housing supply and affordability if it constrains opportunities for new development by excessively limiting new subdivision or redevelopment and infill of existing urban areas. Over time, these mean that new housing construction will lag demand growth and housing will increasingly fail to meet people's demands, eg because it is too small or in the wrong location.<sup>1</sup>

Empirical evidence demonstrates that:

- Planning-related constraints to housing development are linked with lower rates of home-building<sup>2</sup>
- Planning-related constraints drive up housing and land costs above the level they would be in a less-constrained market.<sup>3</sup>

Urban planning can have a beneficial impact on housing supply and affordability by providing an enabling and coordinating framework for urban development and infrastructure provision. Without appropriate advance planning, development can occur in an uncoordinated and ultimately inefficient way. Planning is needed to ensure that transport corridors that can be provided to enable efficient multi-modal access to urban labour markets, to ensure that land is set aside for open spaces and public facilities like schools and hospitals, and to efficiently manage environmental effects.<sup>4</sup>

### **A new approach to urban planning**

The Resource Management Review Panel proposed a new approach to planning that aims to improve housing supply and affordability, while efficiently managing infrastructure provision and externalities associated with development. The Review Panel described this approach as follows:

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<sup>1</sup> Andrews, D., Sánchez, A.C. and Johansson, Å., 2011. *Housing markets and structural policies in OECD countries*. OECD Economics Department Working Papers, No. 836

<sup>2</sup> Mayer, C.J. and Somerville, C.T., 2000. Land use regulation and new construction. *Regional Science and Urban Economics*, 30(6), pp.639-662.

Saiz, A., 2010. The geographic determinants of housing supply. *The Quarterly Journal of Economics*, 125(3), pp.1253-1296.

Jackson, K., 2016. Do land use regulations stifle residential development? Evidence from California cities. *Journal of Urban Economics*, 91, pp.45-56.

Nunns, P., 2018. *The determinants of housing supply responsiveness in New Zealand regions*. Paper presented at the New Zealand Association of Economists Conference, Auckland.

<sup>3</sup> Glaeser, E.L. and Gyourko, J., 2002. *The impact of zoning on housing affordability*. National Bureau of Economic Research No. w8835.

Glaeser, E.L., Gyourko, J. and Saks, R., 2005. Why is Manhattan so expensive? Regulation and the rise in housing prices. *The Journal of Law and Economics*, 48(2), pp.331-369.

Grimes, A. and Liang, Y., 2009. Spatial determinants of land prices: Does Auckland's metropolitan urban limit have an effect?. *Applied Spatial Analysis and Policy*, 2(1), pp.23-45.

Ministry of Business, Innovation and Employment, 2017. *National Policy Statement on Urban Development Capacity: Price efficiency indicators technical report: Rural-urban differentials*. Available online at <https://www.hud.govt.nz/assets/Urban-Development/NPS-UDC/34f4e7cf0b/National-Policy-Statement-on-Urban-Development-Capacity-Price-efficiency-indicators-technical-report-Rural-urban-differentials.pdf>.

Lees, K., 2019. Quantifying the costs of land use regulation: evidence from New Zealand. *New Zealand Economic Papers*, 53(3), pp.245-269.

Nunns, P., 2021. The causes and economic consequences of rising regional housing prices in New Zealand. *New Zealand Economic Papers*, 55(1), pp.66-104.

<sup>4</sup> Angel, S., 2012. *Planet of cities* (p. 360). Cambridge, MA: Lincoln Institute of Land Policy.

Bertaud, A., 2018. *Order without design: How markets shape cities*. Cambridge, MA: MIT Press.

*“a competitive urban land market is a well-planned and well-regulated built environment:*

- a. by ‘competitive’, we mean there is ample supply of alternative opportunities for development with the result that the price of land is not artificially inflated through scarcity*
- b. by ‘well-planned’ we mean that infrastructure and land use provision is aligned and timely provision of infrastructure avoids unnecessary costs*
- c. by ‘well-regulated’ we mean that the positive and negative external effects of land and resource use are considered in decision-making, and the costs of regulation are minimised and commensurate with the benefits. Positive effects include economies of agglomeration, and the benefits of proximity and access to urban amenities. Negative effects include pollution and effects from industry, effects of development on heritage and character features, traffic congestion, and infrastructure costs (where they are not covered by development or user charges).”*

A competitive urban land market approach represents a significant change relative to current urban planning policy. At present, New Zealand’s urban planning system constrains the supply of alternative development opportunities, both upwards and outwards. Infrastructure is not planned and designated sufficiently in advance of development, which increases costs of provision and worsens long-term outcomes. While many urban planning rules attempt to control the positive and negative external effects of development, they often do so in an inefficient and inflexible way that adds cost without delivering sufficient benefits.<sup>5</sup>

The overall impact of current practices is to increase the price of urban land and reduce the amount of new homes that are built in response to growth in housing demand. While many factors affect the price of housing, including population growth, availability of mortgage credit, and tax policies that incentivise property investment, supply constraints account for a significant share of increases to urban land and housing prices in recent decades.<sup>6,7</sup>

Although current practices have significant costs for housing affordability, they do not appear to be delivering desired benefits for environmental management and urban performance. For instance, carbon emissions from road transport, which can be affected by urban form and the integration of land use with transport infrastructure, increased 96% between 1990 and 2019, which is significantly faster than population or economic growth.<sup>8</sup> Other environmental problems have persisted, and some have worsened.<sup>9</sup>

This paper explores how a new approach to urban planning could deliver better outcomes for both housing supply and affordability and long-run environmental outcomes. It draws upon international case studies to identify lessons for the design of the Strategic Planning Act (SPA) and Natural and Built Environments Act (NBA).

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<sup>5</sup> Productivity Commission, 2017. *Better urban planning inquiry*. Available online at <https://www.productivity.govt.nz/inquiries/better-urban-planning/>.

<sup>6</sup> Grimes, A. and Liang, Y., 2009. Spatial determinants of land prices: Does Auckland’s metropolitan urban limit have an effect?. *Applied Spatial Analysis and Policy*, 2(1), pp.23-45.  
Ministry of Business, Innovation and Employment, 2017. *National Policy Statement on Urban Development Capacity: Price efficiency indicators technical report: Rural-urban differentials*. Available online at <https://www.hud.govt.nz/assets/Urban-Development/NPS-UDC/34f4e7cf0b/National-Policy-Statement-on-Urban-Development-Capacity-Price-efficiency-indicators-technical-report-Rural-urban-differentials.pdf>.

Lees, K., 2019. Quantifying the costs of land use regulation: evidence from New Zealand. *New Zealand Economic Papers*, 53(3), pp.245-269.

Nunns, P., 2021. The causes and economic consequences of rising regional housing prices in New Zealand. *New Zealand Economic Papers*, 55(1), pp.66-104.

<sup>7</sup> The Discussion Document on the Government’s Policy Statement on Urban Development (GPS-HUD) acknowledges that insufficient supply is the major key contributing to escalating house prices. It proposes to include in the final GPS-HUD that even though low interest rates contribute to house price growth, it is actually the persistent lack of housing supply that explains poor housing affordability. See the Ministry of Housing and Urban Development (2021), Discussion Document: GPS-HUD, p. 40. Accessed 11 July 2021, <https://haveyoursay.hud.govt.nz/read-the-gps-hud/>.

<sup>8</sup> <https://environment.govt.nz/publications/new-zealands-greenhouse-gas-inventory-1990-2019/>

<sup>9</sup> Productivity Commission, 2017. *Better urban planning inquiry*. Available online at <https://www.productivity.govt.nz/inquiries/better-urban-planning/>.

## What good looks like

The rationale for reform is that New Zealand's current resource management system is not delivering good outcomes for environmental protection or housing supply and affordability. A corollary is that it is desirable to look outside New Zealand for examples of how spatial planning could achieve good outcomes in both areas.

A brief international review identified five case study cities that offer relevant lessons to guide the design of the SPA. These cities – New York City (US), Tokyo (Japan), Copenhagen (Denmark), Toronto (Canada), and Barcelona (Spain) – that both:

- Currently achieve better environmental performance than New Zealand cities as measured by carbon emissions per capita;<sup>10</sup> and
- Have managed to accommodate a significant period of significant urban growth while generally maintaining or improving housing affordability.<sup>11</sup>

Relevant (historical or current) urban planning policies in these cities, and selected outcomes achieved from these policies, are contrasted with New Zealand's approach from the 1950s onwards.

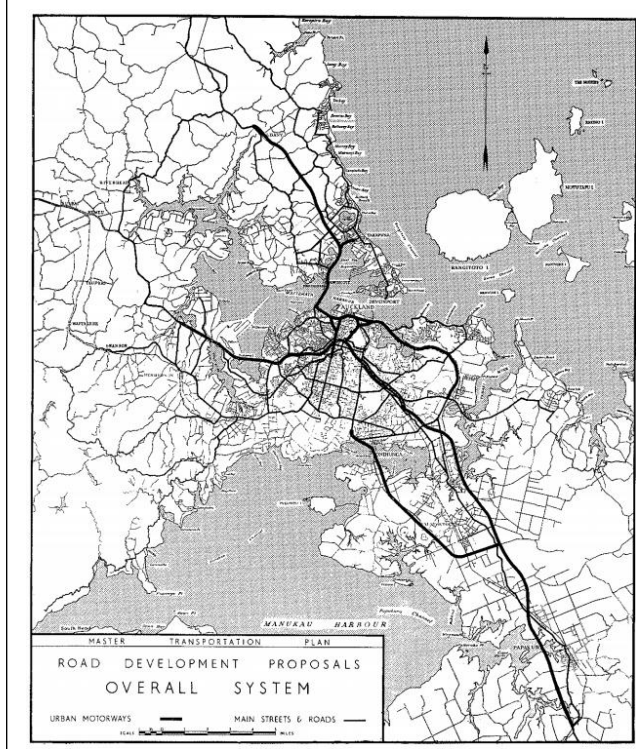
### Current and historical urban planning practices in New Zealand

*Selected policies: 1955 urban motorway plan; 1990s Metropolitan Urban Limit policy; 2016 Auckland Unitary Plan; 2016-2021 Auckland Transport Alignment Program*

Auckland's historical policy approach is exemplified by its 1950s urban motorway plans and its 1990s Metropolitan Urban Limit (MUL) policy. The first policy laid out a comparatively 'sparse' network of urban motorways that overlaid existing arterial roads and rural roads (Figure 1).<sup>12</sup> Whereas the provision of motorways initially enabled significant suburban expansion, by the 2000s major motorway corridors had limited capacity to accommodate further growth—leading to increased congestion levels, especially at peak times.

The second policy, the MUL, attempted to manage the negative environmental and infrastructure effects of urban growth by containing growth. Although initial versions of the MUL were mostly non-binding, the

Figure 1: 1955 Auckland urban motorway plan



<sup>10</sup> Carbon emissions are not the only relevant environmental outcome, but they can readily be compared across cities and hence are useful for initial benchmarking purposes.

<sup>11</sup> It is possible to measure how much urban growth cities (or greater metropolitan areas) accommodated using historical population data. It is more difficult to measure performance on housing affordability for two reasons:

- First, it is difficult to find relevant and comparable data on urban house prices in all cities of interest
- Second, as illustrated by the discussion of New York City, some of these cities accommodated growth in the past but have subsequently experienced slower housing development and higher growth in housing prices, and hence a comparison of current price outcomes may not be relevant.

There is circumstantial evidence that these cities improved housing affordability during the time periods under review, for instance in national-level property price trends or changes in urban form that are generally consistent with lower average housing prices.

<sup>12</sup> Master Transportation Plan for Auckland. 1955. Accessed from <https://www.greatauckland.org.nz/wp-content/uploads/2011/08/master-transport-plan-smaller.pdf>

policy became more binding in the 1990s and 2000s as policy changes gave it more teeth and urban growth approached the MUL.<sup>13</sup>

While the MUL was intended to incentivise infill and redevelopment, other planning rules created barriers to ‘upwards’ growth. The MUL therefore had an increasing upward impact on urban land prices between the 1990s and 2010s, contributing to declining housing affordability.<sup>14</sup>

There have been several key policy changes over the last decade, including Auckland Council amalgamation (2010), the development of the Auckland Unitary Plan (2016), and the Auckland Transport Alignment Project (originally developed 2016 and updated 2018 and 2021).

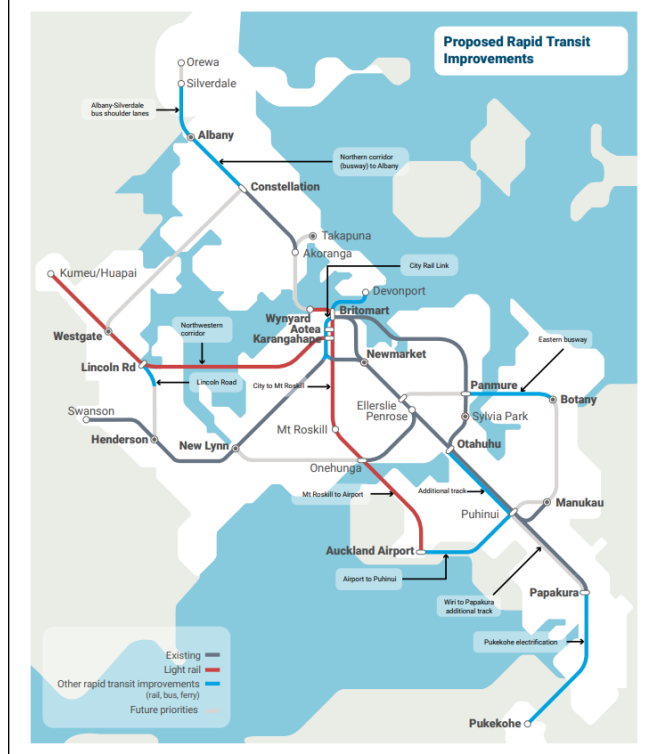
These policies represent a shift toward enabling more urban development, supported by urban transport networks. Implementation has been partial and often constrained by funding and lower-order implementation challenges. While some transport networks have been planned in advance of growth, corridor designation is still done on a ‘just in time’ basis immediately prior to when projects are constructed.

The Auckland Unitary Plan (AUP) consolidated pre-existing zoning codes, significantly increased housing development capacity throughout most of the city, and replaced the Metropolitan Urban Limit with a larger Rural-Urban Boundary that can be shifted by private plan changes.<sup>15</sup> The AUP approximately tripled housing development capacity relative to previous plans, although development often remains constrained by infrastructure availability.<sup>16</sup>

The AUP provided capacity for around 140,000 new homes in greenfield areas within the new Rural-Urban Boundary. ‘Live-zoning’ this capacity required designation of new transport corridors and funding and delivery of transport and water infrastructure. The Supporting Growth Programme was established to plan and designate transport corridors in greenfield areas.<sup>17</sup> Delivery of these corridors, and hence live-zoning of housing capacity, has been constrained by funding.

The Auckland Transport Alignment Project (ATAP) outlines an agreed approach for upgrading Auckland’s transport networks, and signalled the need to investigate congestion pricing.<sup>18</sup> It includes

Figure 2: ATAP rapid transit network plan



<sup>13</sup> Hill, G., 2008. *The Effectiveness of the Auckland Metropolitan Urban Limit – Ring-fencing Urban Development*. Presented at the Environmental Defence Society Conference, 11-12 June 2008. Available online at <https://www.aucklandcouncil.govt.nz/plans-projects-policies-reports-by-laws/our-plans-strategies/unitary-plan/history-unitary-plan/documentssection32reportproposedaup/appendix-3-1-8.pdf>.

<sup>14</sup> Grimes, A. and Liang, Y., 2009. Spatial determinants of land prices: Does Auckland’s metropolitan urban limit have an effect?. *Applied Spatial Analysis and Policy*, 2(1), pp.23-45.

Zheng, G., 2013. *The effect of Auckland’s Metropolitan Urban Limit on land prices*. Productivity Commission research note.

Ministry of Business, Innovation and Employment, 2017. *National Policy Statement on Urban Development Capacity: Price efficiency indicators technical report: Rural-urban differentials*. Available online at <https://www.hud.govt.nz/assets/Urban-Development/NPS-UDC/34f4e7cf0b/National-Policy-Statement-on-Urban-Development-Capacity-Price-efficiency-indicators-technical-report-Rural-urban-differentials.pdf>.

<sup>15</sup> However, the AUP did not necessarily increase capacity in all locations. For instance, the previous Waitakere City Council District Plan did not set building height limits in some locations.

<sup>16</sup> For information on the quantity of development capacity enabled by the plan, relative to Council’s proposed plan, see <https://www.aucklandcouncil.govt.nz/plans-projects-policies-reports-by-laws/our-plans-strategies/unitary-plan/history-unitary-plan/ihp-designations-reports-recommendations/Documents/ihp013urbangrowth.pdf>

<sup>17</sup> <https://www.supportinggrowth.govt.nz/>

<sup>18</sup> <https://www.transport.govt.nz/area-of-interest/auckland/auckland-transport-alignment-project/>



strategic road network improvements and, for the first, time, sets out a future rapid transit network development programme for the city (Figure 2). Implementation of this plan, including corridor protection activities, is constrained by funding.

### **How case study cities compare**

Table 1 presents some key information on these five cities, plus Auckland. A brief case study of each city is presented in an appendix.

All six cities have accommodated multi-decade periods of rapid population growth. Auckland's population tripled over the 1960-2010 period, which falls in the middle of the range.<sup>19</sup> While comparable data on housing prices is not readily available, the available evidence suggests that the five international cities were able to accommodate growth without dramatic house price increases.

Policies adopted in the five international cities facilitated more competitive urban land markets during periods of significant urban growth. They expanded the supply of development capacity for both outward and upward expansion and provided a long-term framework for efficient infrastructure provision. This in turn allowed cities to accommodate large increases in population without large increases in house prices.

Housing supply and affordability outcomes have not been maintained over time in all cities. For instance, New York City and Toronto have experienced declining housing affordability in recent decades, linked to restrictive planning policies, while Tokyo relaxed restrictions on urban redevelopment in the 1990s and 2000s and has since enjoyed improved affordability. This highlights the need to plan and provide for growth on an ongoing basis, rather than relying on past planning.

The international cities have achieved better long-run environmental outcomes, at least in terms of carbon emissions linked to urban form.<sup>20</sup> Auckland has higher transport-related CO<sub>2</sub> emissions than all five cities and higher overall emissions than three out of five.<sup>21</sup> International cities' plans provided for the efficient provision of transport infrastructure, including high-quality public transport and active mode options, that has in turn supported a higher-density urban form. They have also generally provided for parks and public open spaces, and in some cases protection of areas of ecological value.

By contrast, planning in Auckland has historically achieved housing supply at the expense of environmental outcomes, or vice versa. Between the 1950s and 1980s, Auckland accommodated rapid population growth without accelerating housing prices, but in doing so created long-run problems for water quality and carbon emissions. Starting in the 1990s, Auckland used its Metropolitan Urban Limit to attempt to manage the environmental and infrastructural impacts of growth, but this has contributed to worsening housing affordability.

In contrast to Auckland, other cities leveraged periods of significant urban growth to lay foundations for sustainable long-term outcomes without significantly inflating housing prices.

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<sup>19</sup> All comparator cities are currently larger than Auckland. However, with the exception of Tokyo, the periods of growth that are highlighted in this table occurred at a point when other cities were similar in size to Auckland and other NZ cities.

<sup>20</sup> Historic land use planning will affect contemporaneous emissions because it influences the long-run efficiency of transport networks and opportunities for intensification. However, there is a significant time lag between the highlighted policies and current emission outcomes, and it is likely that other factors have also played a role.

<sup>21</sup> Higher overall emissions in New York City and Toronto reflect higher use of fossil fuels for electricity generation and heating.

Table 1: Case study cities' performance on key metrics

City	Time period	Selected policies	Population growth over period	Other notes on housing affordability outcomes	CO <sub>2</sub> emissions (tonnes per capita per year)	
					Total	Transport
New York City (US)	1810-1860	1811 Commissioners' Plan	Increased by a factor of 10	US house prices were stable over this period	5.8	1.8
Tokyo (Japan)	1950-2000	Flexible zoning for development up and out; land readjustment	Increased by a factor of 3	House prices rose from 1950 to 1990 but have since reduced	4.1	0.7
Copenhagen (Denmark)	1950-2000	1947 Finger Plan	Increased by 30%	Large suburban expansion in early decades; slower growth since 1980s	2.6	1.0
Toronto (Canada)	1900-1950	Late-1800s designation of arterial street grid	Increased by a factor of 3	Canadian house prices were stable over this period	6.3	2.2
Barcelona (Spain)	1860-1910	1859 Cerdà plan	Increased by 60%	Large suburban expansion; improved housing quality	1.8	0.6
Auckland (NZ)	1960-2010	1955 urban motorway plan; 1990s Metropolitan Urban Limit policy	Increased by a factor of 3	House prices were stable until early 1990s but have risen rapidly since then	4.7	2.7

Notes:

- CO2 emissions data sourced from C40 Cities Knowledge Hub, *Greenhouse gas emissions interactive dashboard*. Available online at [https://www.c40knowledgehub.org/s/article/C40-cities-greenhouse-gas-emissions-interactive-dashboard?language=en\\_US](https://www.c40knowledgehub.org/s/article/C40-cities-greenhouse-gas-emissions-interactive-dashboard?language=en_US).
- New York City: Population from Wikipedia ([https://en.wikipedia.org/wiki/New\\_York\\_City#Demographics](https://en.wikipedia.org/wiki/New_York_City#Demographics)). 1810 population: 119,700 people; 1860 population: 1,174,800 people. National house price data from Knoll, K., Schularick, M. and Steger, T., 2017. No price like home: Global house prices, 1870-2012. *American Economic Review*, 107(2), pp.331-53.
- Tokyo: Population from Wikipedia ([https://en.wikipedia.org/wiki/Greater\\_Tokyo\\_Area#Demographics](https://en.wikipedia.org/wiki/Greater_Tokyo_Area#Demographics)). 1950 population: 11.27 million; 2000 population: 34.45 million. National house price data from Knoll, K., Schularick, M. and Steger, T., 2017. No price like home: Global house prices, 1870-2012. *American Economic Review*, 107(2), pp.331-53.
- Copenhagen: Population from Andersen, H.T., Hansen, F. and Jørgensen, J., 2002. The fall and rise of metropolitan government in Copenhagen. *GeoJournal*, 58(1), pp.43-52. 1950 metro area population: 1.4 million; 2000 population: 1.8 million. Urban form changes from Illeris, S., 2004. How did the population in the Copenhagen region change, 1960-2002?. *Dela*, (21), pp.405-421.
- Toronto: Population from Wikipedia ([https://en.wikipedia.org/wiki/Demographics\\_of\\_Toronto](https://en.wikipedia.org/wiki/Demographics_of_Toronto)). 1901 metro area population: 440,000; 1951 population: 1,262,000. National house price data from Knoll, K., Schularick, M. and Steger, T., 2017. No price like home: Global house prices, 1870-2012. *American Economic Review*, 107(2), pp.331-53.
- Barcelona: Population from Statistical Institute of Catalonia (<https://www.idescat.cat/pub/?id=aec&n=245&lang=en>). 1860 metro area population: 726,300; 1910 metro area population: 1,141,700. Urban form changes from Neuman, M., 2011. Centenary paper: Ildefons Cerdà and the future of spatial planning: The network urbanism of a city planning pioneer. *Town Planning Review*, 82(2), pp.117-145.
- Auckland: Population data from Polkinghorne, J., 2017. *A New Zealand Local Population Database*. Presented at the 2017 New Zealand Association of Economists conference. 1961 regional population: 512,600; 2013 population: 1,438,400. National house price data from Coleman, A. and Landon-Lane, J., 2007. *Housing markets and migration in New Zealand, 1962-2006*. Reserve Bank of New Zealand discussion paper 2007/12.



## How urban planning can improve housing supply and affordability

International case studies illustrate how good urban planning can improve the competitiveness of urban land markets and, in doing so, improve housing supply and affordability.

### Successful plans provide open-ended frameworks for urban development

The first lesson from the above case studies is that urban planning can provide for significant urban growth while achieving better environmental outcomes than New Zealand's current planning system. Successful plans tend to provide 'open-ended' frameworks for long-term growth rather than accommodating a specific quantity of growth over a limited time horizon. They are therefore more successful in:

- Delivering an ample supply of alternative development opportunities, which in turn improves the functioning of urban land markets
- Responding to shocks that affect how urban development occurs, such as faster-than-expected growth, technological or economic changes, natural hazards, and climate change impacts.

### Advance transport and infrastructure network provision is essential

The second lesson is that planning can lay a framework that allows outward development to occur in an orderly way while providing for upward development throughout the city. To achieve this, plans should:

- Identify future transport / infrastructure corridors that facilitate efficient public transport and active transport journeys and that they can be adapted to provide high-capacity rapid transit networks. As New York, Toronto, and Barcelona demonstrate, this can be achieved by laying out a connected street grid, rather than a hierarchical system of local roads that feed into arterial roads and arterials that feed into a small number of motorways.<sup>22</sup> Tokyo demonstrates that, if a street grid is not laid out in advance, other measures, such as land readjustment, are needed to retrofit it.<sup>23</sup>
- Provide for public open spaces, community facilities, and an appropriate mix of residential and commercial uses.
- Adopt an enabling approach to growth at the edge of the city provided that developments comply with plans for transport corridors.

Compared to New Zealand's current 'just in time' model for designating transport corridors, designating and/or acquiring corridors in advance of growth is expected to reduce infrastructure costs in the long run. This is because buying land well in advance is significantly cheaper than buying it after an area has begun developing or intensifying or building expensive tunnels or structures to avoid development.<sup>24</sup> However, it does require up-front funding for planning and land acquisition and changes to resource management and Public Works Act legislation.

### Land use regulations need to enable intensification

The third lesson is that supporting land use regulations need to enable, rather than constrain, intensification throughout the city. It is necessary to be much more enabling of intensification to avoid 'excess' development at the edge of the city. Excessive restrictions on intensification can limit

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<sup>22</sup> Ellickson, R.C., 2012. The law and economics of street layouts: how a grid pattern benefits a downtown. *Alabama Law Review*, 64, p.463.

<sup>23</sup> Sorensen, A., 2002. *The making of urban Japan: cities and planning from Edo to the twenty-first century*. Routledge.

<sup>24</sup> For instance, Infrastructure Australia found that advance purchase of 7 major road and rail corridors would save up to \$57 billion in future land acquisition and tunnelling costs. Infrastructure Australia, 2017. *Corridor Protection: Planning and investing for the long term*. Available online at <https://www.infrastructureaustralia.gov.au/publications/corridor-protection-planning-and-investing-long-term>.

construction in areas that are well-served by infrastructure and drive up housing prices. This is illustrated by the contrast between New York City, where the 1961 zoning code limited construction and drove up housing prices, and Tokyo, where there are fewer restrictions on redevelopment and where housing remains more affordable.

Of our case studies, Tokyo currently has the most enabling approach to both urban intensification and greenfield development. Key policies include:

- Standardisation of urban residential and business zones at the national level. These zones are designed to be generally enabling of development, including mixed-use development. Local governments are then responsible for determining which zones apply where.
- Limited ability for local governments to restrict the location of development, for instance through imposition of an urban growth boundary.
- Land readjustment policies that allow groups of property owners to amalgamate, re-subdivide, and redevelop their sites, sharing in the development uplift from these schemes.

Interestingly, Tokyo's approach combines strong national direction about urban planning rules with provision for neighbourhood-level redevelopment schemes initiated by groups of landowners. This suggests that a well-designed combination of national direction and policies that enable localised redevelopment schemes, infrastructure provision, and waivers on development controls can facilitate development.<sup>25</sup>

### **Outward expansion is also needed**

Barriers to intensification prevent people from living in the places where they might want to live, in the ways they would like to live. But only enabling intensification may not deliver affordability. The ability to convert land at the city's fringes into housing, even if rarely taken up, anchors house and apartment prices in denser parts of the city.

Land prices in inner areas are less likely to escalate rapidly when potential new developments at the fringes provide options, including well-designed greenfield transit-oriented development. Without such options, it is too easy for any improvements in a city's desirability, or for productivity increases in the urban area, to simply lead to land price increases that benefit existing landowners rather than residents and potential residents more broadly.<sup>26</sup>

### **Funding, financing, and institutional design**

Funding and financing of infrastructure and the design of local government institutions are out of scope for resource management reform. This paper does not make recommendations on these issues. However, as they play an important role in local government decision-making about enabling development, urban planning reforms should consider linkages with other policy settings and reform agendas. Different policy settings can either incentivise councils to enable urban development, or disincentivise them from doing so.

New Zealand's current local government funding and financing framework relies heavily on general obligations finance, which is based on debt raised by public bodies with repayments guaranteed by the total revenue generated by the relevant government entity. The total amount of debt raised by councils is also subject to constraints. Many of the funding tools available to councils, such as development contributions and targeted rates, also rely on this type of debt and are consequently subject to the same challenges. In addition, councils have little ability to transfer risk associated to

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<sup>25</sup> Ortalo-Magné, F. and Prat, A., 2014. On the political economy of urban growth: Homeownership versus affordability. *American Economic Journal: Microeconomics*, 6(1), pp.154-81.

<sup>26</sup> Parker, C., 2021. *Uncompetitive urban land markets*. Paper presented at the 2021 New Zealand Association of Economists Conference, Wellington, New Zealand.

with providing infrastructure and enabling urban development to other parties, such as private developers or special-purpose vehicles.

Under current policies, councils may choose to limit or channel development to minimise the financial risks they face when providing infrastructure to enable development. This results in a less responsive urban planning system. Auckland's recent experience demonstrates that councils can struggle when there is a limited pool of infrastructure funding and financing available to support new development.

Conversely, infrastructure funding and financing policies that allow funding responsibilities and risks to be transferred, rather than resting with councils, can make it easier for councils to enable development. Changes to infrastructure funding and financing policies, while out of scope for resource management reform, are likely to be needed to realise the full benefits of competitive urban land markets. This is because councils may not be financially capable of significantly increasing development capacity if they continue to rely heavily on general obligations finance.

The scale of local government can also affect incentives to enable or oppose development. There are alternative hypotheses about how institutional design may influence incentives. On one hand, having many small local governments may encourage them to compete for development. On the other hand, larger local governments are likely to internalise more of the regional economic benefits of growth as well as bearing localised costs, and hence may be more supportive of growth.

## How urban planning can best achieve environmental benefits

New Zealand faces various environmental problems, some of which are exacerbated by urban development.<sup>27</sup> Environmental issues that are particularly relevant to urban development include:

- CO<sub>2</sub> emissions from household energy use: In New Zealand, where most electricity is renewably generated, these mostly arise from vehicle use
- Other environmental impacts of vehicle use: These include particulate emissions that affect human health and noise externalities
- Water quality impacts: These include wastewater system outflows from legacy infrastructure and stormwater runoff from impervious surfaces
- Consumption of open space: This can affect biodiversity and environmental quality if development occurs in sensitive areas.

Regional spatial planning must consider how best to address these issues, noting that land use policies may not be the only or best method for addressing some specific issues.

### Using pricing to reduce vehicle travel and emissions

Pricing policies can be effective at reducing vehicle travel and emissions. Two key examples are:

- New Zealand's Emissions Trading Scheme (ETS), which is intended to set a binding cap on total economy-wide emissions and price emissions to drive reductions. New Zealand has committed to reaching net-zero greenhouse gas emissions by 2050 and achieving significant interim reductions prior to this.<sup>28</sup> As emissions reductions must be achieved throughout the economy, there is a need to set economy-wide signals through the ETS as well as reducing sector-specific barriers to emissions reductions.<sup>29</sup>
- Congestion charging, which can significantly reduce negative congestion externalities related to vehicle use in urban areas as well as reducing vehicle emissions. Congestion charging has been investigated for Auckland and is currently the subject of a Select Committee inquiry.<sup>30</sup> If implemented, congestion charging will improve the use of existing infrastructure, inform better transport planning by providing credible signals of effective demand, and require people to make location and land use choices that internalise the congestion costs that they impose on other transport users.

Regional spatial planning should take the above policies into account, and complement pricing policies by:

- Providing flexibility for households and businesses to optimise their location decisions in response to price signals. Under current policy, it may be challenging for people to relocate closer to work or education due to constraints to building more homes in accessible areas, or businesses to relocate closer to their customers due to limited availability of business land.
- Establishing transport corridors that facilitate efficient provision of public transport and active modes. This will in turn make it easier for people to change transport behaviours in response to prices.

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<sup>27</sup> MRCagney, 2019. *The costs and benefits of urban development*. A report for the Ministry for the Environment. Available online at <https://environment.govt.nz/publications/the-costs-and-benefits-of-urban-development/>.

<sup>28</sup> The Treasury has found that the current ETS price band falls short of the price that would be needed to achieve New Zealand's international commitments to hold global warming to below two degrees Celsius. This does not mean that the ETS cannot be an effective instrument – merely that prices would have to significantly rise over time to achieve required outcomes. Treasury, 2020. *CBAX Tool User Guidance*. Available online at <https://www.treasury.govt.nz/publications/guide/cbax-tool-user-guidance>.

<sup>29</sup> Climate Change Commission, 2021. *Ināia tonu nei: a low emissions future for Aotearoa*. Available online at <https://www.climatecommission.govt.nz/our-work/advice-to-government-topic/ināia-tonu-nei-a-low-emissions-future-for-aotearoa/>.

<sup>30</sup> Ministry of Transport, 2020. *The Congestion Question: Main Findings*. Available online at <https://www.transport.govt.nz/area-of-interest/auckland/the-congestion-question/>.

Making it easier for people to change home locations, work locations, and travel behaviours will reduce the cost of abating emissions within the ETS.

### The impact of urban form on vehicle travel and emissions

Urban form can influence vehicle travel and hence vehicle emissions. This is one of the theoretical rationales for policies like Auckland's former Metropolitan Urban Limit that aim to limit urban development to a more compact area and raise average urban densities.

However, the MUL is a blunt instrument that is not particularly effective at reducing vehicle travel or emissions. This is because a 10% increase in citywide average population density only leads to a roughly 0.6% reduction in vehicle travel.<sup>31</sup> As shown above, cities that have adopted a regional spatial planning type approach have achieved significantly larger emission reductions.

Larger per-capita reductions in vehicle travel, and corresponding increases in use of public transport, walking, and cycling, can be facilitated through appropriate lower-altitude policies that are consistent with the overall regional spatial planning approach outlined above.<sup>32</sup> In general, the aim of these policies should be to make it easier to choose home locations, work locations, and travel behaviours that require less vehicle travel, both in terms of number and length of journeys, and vehicle emissions. This will in turn reduce the cost of abating emissions within the ETS.

Planning can facilitate these outcomes by:

- Coordinating between multiple landowners and infrastructure providers: This may include:
  - Regulating design of street networks in new suburbs to provide for an efficient network of public transport services and convenient and safe walking access
  - Investment and policy changes to improve walking access in existing urban areas, noting that poor walking access is often a barrier to using public transport
- Reducing barriers to the development of denser and more diverse land use outcomes, including but not limited to transit-oriented development. This may include:
  - Easing restrictions on density in inner-city and inner-suburban areas and around rapid transit stations, as these locations are likely to generate fewer vehicle trips
  - Easing restrictions on mixed-use development both in existing and new urban areas by allowing small-scale retail, commercial, and office activities in residential zones.

Achieving better urban form outcomes **does not** require a restriction on the location of development. While it is important to enable more development in areas that are likely to generate fewer vehicle trips, it is not necessary to restrict development in greenfield areas. A well-designed mixed-use transit-oriented development 3km outside the existing urban edge will generate fewer car trips than a poorly-designed infill development 3km inside the urban edge.

### Protecting sensitive areas from development

Protection of sensitive areas that are inappropriate for urban development is a key objective for regional spatial planning. This can be done by identifying 'no-go' areas where development will be prevented or controlled.

<sup>31</sup> Ahlfeldt, G.M. and Pietrostefani, E., 2019. The economic effects of density: A synthesis. *Journal of Urban Economics*, 111, pp.93-107.

<sup>32</sup> Ewing, R. and Cervero, R., 2010. Travel and the built environment: A meta-analysis. *Journal of the American planning association*, 76(3), pp.265-294.

The researchers found that factors that matter most include:

- Destination accessibility: a 10% reduction in distance to the city centre reduces average car travel by 2.2%
- Land use mix: Developments that provide a greater mix of housing, jobs, and recreational destinations result in fewer car trips and more walking trips
- Street network design: A 10% increase in the density of intersections and streets, which improves walking access, reduces car travel by 1.2%
- Access to public transport: A 10% reduction in distance to the nearest public transport stop reduces car use by 0.5%, even before accounting for service quality.

The combined effect of multiple factors is larger than their individual effect.

See also Tian, G., Park, K., Ewing, R., Watten, M. and Walters, J., 2020. Traffic generated by mixed-use developments—A follow-up 31-region study. *Transportation Research Part D: Transport and Environment*, 78, p.102205.

This is a potentially important mechanism for protecting areas with ecological significance or biodiversity value. However, there are several challenges to achieving this in practice that must be addressed by legislation:

- First, if the right information is not available when the regional spatial plan is prepared, 'no-go' areas may not be accurately identified. If not, environmental values will not be successfully protected.
- Second, 'no-go' areas must be applied parsimoniously, focusing on the locations with the highest need for environmental protection rather than areas with 'amenity' concerns. If protections are applied too broadly, in a way that makes it impossible to respond to urban development needs, then they are likely to be unwound at the district/regional plan level or through plan changes and resource consents. It may be preferable to protect fewer areas but protect them much more stringently.
- Third, identification of these 'no-go' areas in regional spatial plans must be followed by plan changes under the Natural and Built Environments Act to implement an appropriate level of protection.

There is a risk that these designations will be used more broadly than is warranted, or in ways that are inconsistent with the underlying preservation principles. For instance, widespread limitations on development of agricultural land may have unintended negative consequences for the environment, such as forcing long-distance 'leapfrog' urban development or locking in negative environmental impacts from some farming uses. As a result, central government may wish to limit the proportion of land designated as 'no-go' areas by councils, especially in areas where housing is unaffordable.



## Implications for overall urban policy strategy

Three dimensions are relevant to achieving Cabinet’s third goal of competitive urban land markets that are well-planned and well-regulated:

1. **Planning:** long-term growth corridor planning to help future development and investment
2. **Regulation:** the regulation of land use, such as zoning
3. **Infrastructure:** the supply of local public infrastructure and public services.

These three dimensions also relate to a fourth dimension:

4. **Local public governance:** the design of the local government system.

The first two dimensions are within scope of the resource management reforms, but the latter two are also important for their success. There is a need to consider how multiple reform agendas, including the Local Government Commission’s Future for Local Government Inquiry, will complement or conflict with each other.

The following table compares two broad approaches to the three dimensions of planning, regulation, and infrastructure: a ‘restricted’ approach and an ‘enabled’ approach. In general, if one of the three dimensions remains intrinsically restricted, it will create pressure for the other two to become restrictive also. On the other hand, if two dimensions are enabling, it will pressure the third to evolve to a more enabling state.

In practice, there are ‘shades of grey’ in each area, rather than a ‘black and white’ distinction. Improvements within each area can achieve benefits. However, only the right-hand column is compatible with fully competitive urban land markets.

*Table 2: Stylised framing of contrasting urban policy strategies*

	<b>Restricted</b>	<b>Enabled</b>
<b>Planning</b> (prior preparation)	<b>Targeted and directed</b>	<b>Expansive and enabling</b>
<b>Regulation</b> (of land use)	<b>Growth contained</b> and sequenced	<b>Growth permitted</b> if served by infrastructure
<b>Infrastructure</b>	<b>GO finance only</b> (general obligations) (minor role for IFF Act finance)	<b>Both revenue and GO finance</b> <b>General funding corridor takings</b>

The remainder of this section focuses on requirements for planning and regulation systems within the RM reforms to create enabling systems for competitive urban land markets. They make the working assumption that infrastructure supply and local public governance systems will likewise be reformed to be sufficiently enabling.

### Implications for the design of the Strategic Planning Act

The following table summarises implications for the design of the Strategic Planning Act.

*Table 3: Suggested SPA design elements*

<b>Design element</b>	<b>What to do</b>	<b>What not to do</b>
Planning for long-term growth and uncertainty	Regional spatial plans should be required to provide a framework that will:	Regional spatial plans should not just consolidate on the status quo and implement

	<ul style="list-style-type: none"> <li>• Enable cities to double or triple in population, rather than being limited to forecast growth over a 30-year period</li> <li>• Enable alternative scenarios for the spatial distribution of growth, rather than providing for only a single growth scenario.</li> <li>• Anticipate the possibility of job dispersion as well as job centralisation; dispersion requires the potential for non-radial public transport networks</li> </ul>	existing project strategies.
Future transport networks	<p>Regional spatial plans should be required to outline a future transport network that:</p> <ul style="list-style-type: none"> <li>• Facilitates efficient public transport and active transport journeys by serving diffuse trip patterns and reasonable walking distance to PT routes (such as an arterial grid)</li> <li>• Corridors are wide enough to be repurposed to provide high-capacity rapid transit networks and future mobility technologies to accommodate potential future intensification</li> <li>• Identifies street networks for new urban areas that are consistent with the above.</li> </ul>	<p>Regional spatial plans should not:</p> <ul style="list-style-type: none"> <li>• Generally specify infrastructure projects; rather, just the options for potential functions and performance outcomes</li> <li>• How the projects will be funded and financed</li> </ul>
Other major infrastructure	<p>Regional spatial plans should be required to outline the future location of:</p> <ul style="list-style-type: none"> <li>• Other 'lead' infrastructure that requires significant amounts of land or dedicated corridors</li> <li>• Future regional parks and open space networks for new urban areas.</li> </ul>	Regional spatial plans should not include non-arterial streets and other follower (ie, non-lead) infrastructure.
Identifying sensitive areas	<p>Regional spatial plans should identify 'no-go' areas for development in a parsimonious and well-informed way. Legislation, or subsequent national direction, should provide clear guidance on how to identify no-go areas, including:</p> <ul style="list-style-type: none"> <li>• Defining what types of issues might qualify for protection – this should focus on environmental protection rather than 'amenity' concerns</li> <li>• Defining standards of evidence for identifying 'no-go' areas in these plans.</li> </ul>	Regional spatial plans should not apply 'no-go' designations to areas without robust evidence, or to an excessive degree that constrains social and economic wellbeing. Consideration should be given to limiting the proportion of land designated as 'no-go' areas by councils, especially in areas where housing is unaffordable.

### Implications for the design of the Natural and Built Environments Act

We understand that Ministers intend for all regulatory functions for both the natural and built environments would be located in one act, and that mechanisms to execute plans set out in the

Strategic Planning Act would also be located in that same act. The following table summarises implications for the design of the Natural and Built Environments Act.

Table 4: Complementary NBEA design elements

Design element	Description
Infrastructure corridor designations	<p>Legislation should clearly outline how future transport networks and other major infrastructure identified in regional spatial strategies will be progressed towards designations under the Natural and Built Environments Act, which award the power to take the compulsorily land, and award notional planning permission to undertake the works.</p> <p>There is also a need to consider how corridor acquisition will be funded, noting that the Public Works Act requires for designating authorities to purchase land if owners require them to do so. Potential options include establishing a dedicated corridor acquisition fund<sup>33</sup> or using land readjustment to spread costs and benefits more equitably across landowners near corridors.<sup>34</sup></p> <p>The principle of congruity is that the contributions (ie those that pay) should be aligned closely with those that benefit and those that authorise the activity and the use of powers.<sup>35</sup> For example, this would imply that if the benefits of planning support more competitive urban land markets, those benefits would be national, and would likely require national funding contributions to, amongst other things, align local and regional with national incentives.</p>
Reducing barriers to intensification	<p>Legislation should clearly outline how combined district/regional plans prepared under the Natural and Built Environments Act will reduce barriers to intensification within the existing urban area.</p> <ul style="list-style-type: none"> <li>• This could be achieved in multiple ways, including by legislating for consistency between regional spatial plans and plans prepared under the NBA, or using national direction under the NBA to set standards for minimum intensification opportunities.</li> </ul>
Providing for private plan changes	<p>Legislation should facilitate private plan changes provided that they:</p> <ul style="list-style-type: none"> <li>• Are not in 'no-go' areas identified in regional spatial plans</li> <li>• Do not result in development within identified/designated infrastructure corridors</li> <li>• Self-fund required infrastructure and/or make appropriate contributions to publicly-provided infrastructure.</li> </ul>
Improving urban form	<p>Legislation should clearly outline how combined district/regional plans prepared under the Natural and Built Environments Act should improve urban form at a lower-altitude level. Subject to achieving good design outcomes, the location of development should not be restricted.</p>
Protecting sensitive areas	<p>Legislation should clearly outline how combined district/regional plans prepared under the Natural and Built Environments Act will implement protection for 'no-go' areas identified by regional spatial plans.</p>

<sup>33</sup> Infrastructure Australia, 2017. *Corridor Protection: Planning and investing for the long term*. Available online at <https://www.infrastructureaustralia.gov.au/publications/corridor-protection-planning-and-investing-long-term>.

<sup>34</sup> Hong, Y. and Needham, B., eds, 2007. *Analyzing Land Readjustment: Economics, Law, and Collective Action*. Cambridge, MA: Lincoln Institute of Land Policy. Available online at <https://www.lincolnst.edu/sites/default/files/pubfiles/analyzing-land-readjustment-full.pdf>.

<sup>35</sup> Schön, Wolfgang (2018) *Taxation and Democracy*, Max Planck Institute for Tax Law and Public Finance, Working Paper 2018 – 13, October 2018, [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3267279](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3267279)

## Appendix: International case study cities

### Case study 1: New York City (US)

*Selected policies: 1811 Commissioners' Plan; liberal zoning policies until 1961*

New York City is the largest and densest city in the United States, with the highest rates of public transport usage in the US and, as a result, the lowest transport-related carbon dioxide emissions.<sup>36</sup> This is a positive result of long-term spatial planning that initially provided for significant 'outward' growth but ultimately provided for a larger amount of 'upward' growth.

The 1811 Commissioners' Plan (Figure 3) provided a framework for much of New York City's growth. It laid out a street grid for Manhattan Island at a time when only 10% of the island had been developed. This plan facilitated almost a century of 'outward' growth, but because a regular street grid and (later) major urban parks were reserved, this happened in an orderly way.

Providing wide, straight arterials in advance of growth meant that it was easy to adopt new transport technologies that facilitated more intensive urban development, in particular the subway system.<sup>37</sup> This facilitated significant 'upward' growth in the first half of the 20<sup>th</sup> century (Figure 4).

The intensification of Manhattan slowed significantly after it adopted a new zoning code in 1961. While new high-rise buildings continue to be built, the annual number of new dwellings constructed continues to lag pre-1961 levels. Approximately 40% of the buildings in Manhattan would not be allowed to be built today.<sup>38</sup> Apartment prices are significantly higher than they should be due to the resulting scarcity of housing.<sup>39</sup>

### Case study 2: Tokyo (Japan)

*Selected policies: Liberal land use policies set at national level; flexible land development at edge of city; land readjustment policies to facilitate corridor development and widening*

Tokyo is the largest city in Japan. Its population has more than tripled since the end of World War II and continues to grow even though Japan's population has begun to decline. Housing prices have been stable since Japan's 1980s property boom and bust, as new housing is built at a rapid rate.<sup>40</sup>

Figure 3: 1811 Commissioners' Plan for New York City

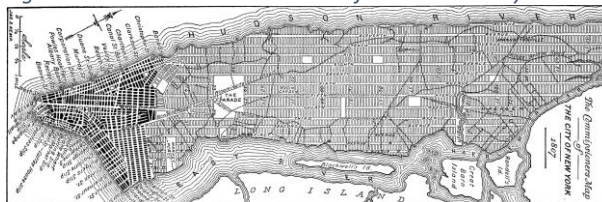


Figure 4: The upward growth of Manhattan



<sup>36</sup> Glaeser, E.L. and Kahn, M.E., 2010. The greenness of cities: Carbon dioxide emissions and urban development. *Journal of urban economics*, 67(3), pp.404-418.

New York City does not have the lowest overall emissions because it uses more energy for heating and cooling than coastal Californian cities.

<sup>37</sup> In its early decades, the city's rail system was built at relatively low cost through cut-and-cover subways or elevated rail along arterial roads. Current subway extensions, such as the Second Avenue Subway, are considerably more expensive as tunnel boring machines and mined station construction are used to avoid disrupting things at street level.

<sup>38</sup> Bui, Chaban, and White, 2016. 'Forty percent of Manhattan's buildings could not be built today.' *New York Times*, 19 May 2016.

<https://www.nytimes.com/interactive/2016/05/19/upshot/fifty-percent-of-manhattans-buildings-could-not-be-built-today.html>

<sup>39</sup> Glaeser, E.L., Gyourko, J. and Saks, R., 2005. Why is Manhattan so expensive? Regulation and the rise in housing prices. *The Journal of Law and Economics*, 48(2), pp.331-369.

<sup>40</sup> In 2014, Tokyo City, the core city, consented almost 11 new dwellings per 1000 residents. Since 1991, the fastest consenting rate New Zealand has achieved has been 7.7 new dwellings per 1000 residents. Harding, R. 2016. 'Why Tokyo is the land of rising home construction but not prices.' *Financial Times*, 3 August 2016.

<https://www.ft.com/content/023562e2-54a6-11e6-befd-2fc0c26b3c60>

National-level policies result in extremely permissive local urban planning rules that facilitate large amounts of development both ‘out’ and ‘up’. Local governments have limited ability to control urban development at the city fringe. Because agricultural landholdings on the city fringe tend to be small, this resulted in an extremely competitive land development market in the postwar decades.<sup>41</sup>

Urban redevelopment is facilitated by urban zoning rules that are set at a national level and applied locally.<sup>42</sup> Central government relaxed zoning rules and made it easier to rezone land in the 1990s and early 2000s. As a result of these permissive rules Tokyo has achieved a very high rate of new housing construction – 55% of the homes in Tokyo have been built since 1991, often in low-rise and mid-rise buildings.<sup>43</sup>

The downside of Tokyo’s flexible urban planning rules is that development can proceed in an uncoordinated way without sufficient provision for public infrastructure and open spaces. Japan’s land readjustment system is intended to address this issue.<sup>44</sup> It allows landowners in an area to pool their land to provide, say, a new or widened road and adjust boundaries to ensure that all landowners benefit from the scheme. Land readjustment has been widely used – by 2003 roughly 30% of Japan’s total urban land area had been subject to a land readjustment scheme.<sup>45</sup>

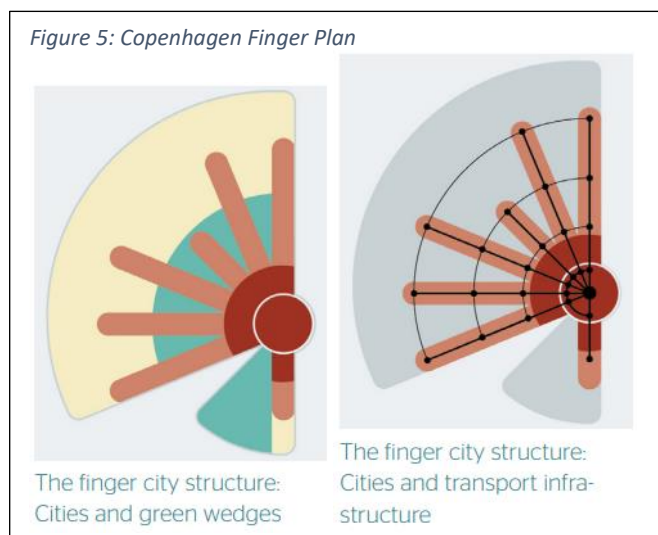
### Case study 3: Copenhagen (Denmark)

*Selected policies: 1947 Finger Plan providing for outward development along multiple transport corridors, with protection of ‘green wedges’ between corridors*

Copenhagen is the largest city in Denmark. Its current population is slightly larger than Auckland’s. The city, and Denmark as a whole, experienced several decades of rapid growth after World War II, leading to significant suburban expansion, followed by slower growth since the 1980s.<sup>46</sup>

Copenhagen’s Finger Plan (Figure 5) was first proposed in 1947 and continues to provide a framework for the city’s growth.<sup>47</sup> It provides for intensification within Copenhagen city (the ‘palm’ of the hand) and suburban expansion along five ‘fingers’ served by radial rapid transit and road networks and ring roads. It restricts development in ‘green wedges’ between the ‘fingers’ to provide recreational open space.<sup>48</sup>

While Danish planning includes prescriptive elements around the location of new developments vis-à-vis transport facilities, the Finger Plan as a whole provides an open-ended framework for growth.



<sup>41</sup> Sorensen, A., 2002. *The making of urban Japan: cities and planning from Edo to the twenty-first century*. Routledge.

<sup>42</sup> Ministry of Land, Infrastructure and Transport, 2014. *Introduction of Urban Land Use Planning System in Japan*. Available online at <https://www.mlit.go.jp/common/001050453.pdf>.

<sup>43</sup> Gleeson, J., 2019. *Housing in four world cities: London, New York, Paris and Tokyo*. Greater London Authority Housing Research Note 3. Available online at <https://s3-eu-west-1.amazonaws.com/airdrive-images/wp-content/uploads/sites/6/20200804092413/GLA-Housing-Research-Note-3-Housing-in-four-world-cities.pdf>

<sup>44</sup> Arai, Y., Sakaki, S., and Chen, M., 2019. *Land Readjustment in Japan : Case Study*. World Bank working paper. <http://documents.worldbank.org/curated/en/481571569562840686/Land-Readjustment-in-Japan-Case-Study>.

<sup>45</sup> Hong, Y. and Needham, B., eds, 2007. *Analyzing Land Readjustment: Economics, Law, and Collective Action*. Cambridge, MA: Lincoln Institute of Land Policy. Available online at <https://www.lincolnst.edu/sites/default/files/pubfiles/analyzing-land-readjustment-full.pdf>.

<sup>46</sup> Illeris, S., 2004. How did the population in the Copenhagen region change, 1960-2002?. *Dela*, (21), pp.405-421.

<sup>47</sup> Sørensen, E. and Torfing, J., 2019. The Copenhagen Metropolitan ‘Finger Plan’: A Robust Urban Planning Success Based on Collaborative Governance. In *Great Policy Successes* (pp. 218-243). Oxford University Press.

<sup>48</sup> Danish Ministry of the Environment, 2015. *The Finger Plan: A Strategy for the Development of the Greater Copenhagen Area*. Available online at [https://danishbusinessauthority.dk/sites/default/files/fp-eng\\_31\\_13052015.pdf](https://danishbusinessauthority.dk/sites/default/files/fp-eng_31_13052015.pdf).



This includes allowing for non-contiguous development and simultaneous development along multiple 'fingers' and protecting future transport / infrastructure corridors.

#### Case study 4: Toronto (Canada)

*Selected policies: Late-1800s designation of north-south and east-west arterial roads; use of arterials to provide frequent public transport services*

Toronto illustrates some common features of urban development in western Canada. Like New Zealand, it experienced an initial period of rapid urban growth in the late 1800s. Unlike New Zealand, a uniform rectangular system was used for land surveying.<sup>49</sup> Late-1800s land surveys established a grid of 20m wide concession roads spaced around 1 mile apart throughout the future Toronto urban area.<sup>50</sup>

As Toronto grew, concession roads were converted from rural roads to urban arterials. This allowed the city to expand in multiple directions without undermining infrastructure provision. Figure 6 shows that the resulting street grid is now used to provide an efficient public transport network that is well-used even in comparatively low-density areas at the edge of the city.<sup>51</sup> This supported subsequent intensification within the Toronto city centre and throughout the urban area.

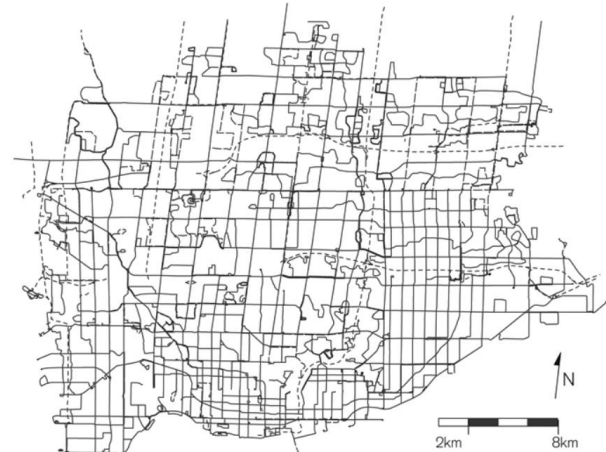
Other Canadian cities, such as Calgary, Ottawa, Edmonton, and Vancouver, adopted similar policies. All of these cities have comparatively high public transport usage compared to New Zealand cities.<sup>52</sup> However, while some Canadian cities (Calgary, Ottawa, Edmonton) now have affordable house prices, others (Toronto, Vancouver) have poor affordability. This highlights the fact that initial policy success does not always guarantee good long-term outcomes.

#### Case study 5: Barcelona (Spain)

*Selected policies: 1859 Cerdà plan for expansion beyond the medieval city walls*

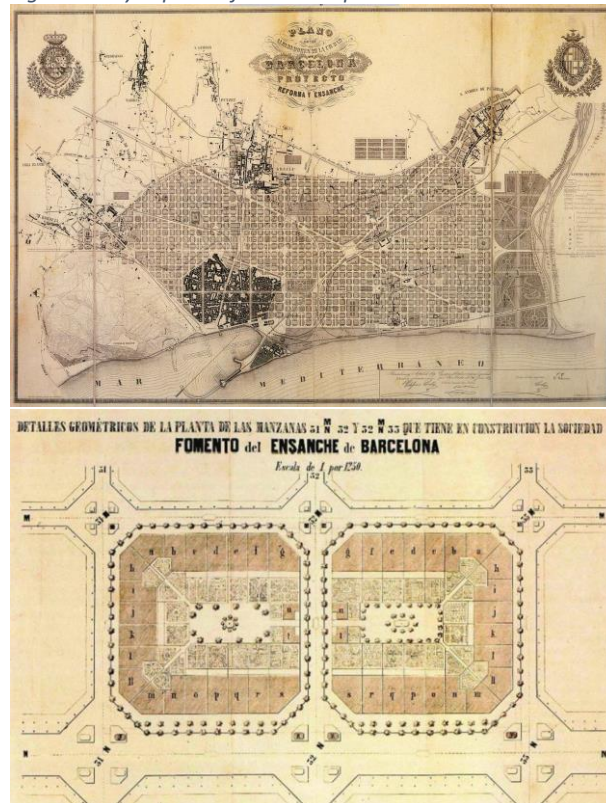
After its medieval city walls were removed, Barcelona laid out a plan to expand the

Figure 6: Toronto's bus and streetcar network



Source: Redrawn from Toronto Transit Commission (2012).

Figure 7: Key aspects of the Cerdà plan



<sup>49</sup> Libecap, G.D., Lueck, D. and O'Grady, T., 2011. Large-scale institutional changes: Land demarcation in the British Empire. *The Journal of Law and Economics*, 54(S4), pp.S295-S327.

<sup>50</sup> Angel, S., 2012. *Planet of cities* (p. 360). Cambridge, MA: Lincoln Institute of Land Policy.

<sup>51</sup> For a discussion of the outcomes achieved by Toronto's public transport network and the service planning principles underpinning it, see Chapter 6 in Mees, P., 2009. *Transport for suburbia: beyond the automobile age*. Earthscan.

<sup>52</sup> Ian Wallis Associates and MRCagney, 2011. *Auckland Passenger Transport Performance Benchmark Study*. A report for Auckland Council.



city's area by a factor of ten.<sup>53</sup> The plan's engineer, Ildefonsa Cerdà, established a regular street grid, crossed by several diagonal avenues, and regulated the layout of buildings and city blocks to ensure access to open space, sunlight, and ventilation (Figure 7).<sup>54</sup>

The Cerdà plan provided for cost-effective implementation of emerging or new transport technologies, including the retrofitting of an urban rail network through the urban core, future provision of a regional motorway network, and provision of an effective bus network.<sup>55</sup>

The plan has also adapted to changing land use requirements. Although originally intended for housing, the expansion area now accommodates a balance of employment and residential uses.<sup>56</sup> This in turn reduces average commuting distances and enables greater use of walking trips.

## Summary of key policies

Table 5 summarises and compares some key policies across cities.

Different case study cities adopted different approaches to laying out future transport networks. New York and Barcelona had the most comprehensive / directive approach to advance transport corridor designation, as they laid out a fine-grained street grid over a comparatively large expansion area. Toronto and Copenhagen have laid out arterial roads or major rail/road corridors in advance, while leaving local street networks to be planned and delivered later. Tokyo has the least directive approach, and hence must rely upon land readjustment to retrofit streets into its urban form, with only partial success.

Of the case study cities, Tokyo has the strongest policies to enable both fringe development and intensive redevelopment. These policies are set at the central government level, with local implementation by councils and landowners. By contrast, Barcelona and Copenhagen have the most directive approach to achieve built form outcomes, including (in Barcelona) regulating the design of buildings and street blocks to ensure sunlight and open space access and (in Copenhagen) requiring some land uses to be located near train stations to encourage use of the rail network for commuting trips. However, during their periods of growth, none of these cities relied upon urban growth boundaries to limit development, as Auckland has done.

Lastly, Copenhagen has the most directive approach to 'no-go' areas through its 'green wedge' policy, while Tokyo does not set 'no-go' areas or provide for urban parks. New York, Toronto, and Barcelona all historically set aside land for parks in advance of urban growth.

*Table 5: Comparison of key policies across cities*

Policy	New York City (US)	Tokyo (Japan)	Copenhagen (Denmark)	Toronto (Canada)	Barcelona (Spain)	Auckland (NZ)
Advance transport corridor designation	Yes		Yes	Yes	Yes	Formerly
Street grid	Yes			Yes	Yes	
Park / open space designation	Yes		Yes	Yes	Yes	Some
Enables fringe development	Yes	Yes	Along corridors	Yes	Yes	

<sup>53</sup> Pallares-Barbera, M., Badia, A. and Duch, J., 2011. Cerdà and Barcelona: The need for a new city and service provision. *Urbani izziv*, 22(2), pp.122-136.

<sup>54</sup> Roberts, D., 2019. 'Barcelona's remarkable history of rebirth and transformation.' *Vox*, 8 April 2019. <https://www.vox.com/energy-and-environment/2019/4/8/18266760/barcelona-spain-urban-planning-history>

<sup>55</sup> García-López, M.A., 2012. Urban spatial structure, suburbanization and transportation in Barcelona. *Journal of Urban Economics*, 72(2-3), pp.176-190.

Badia, H., Argote-Cabanero, J. and Daganzo, C.F., 2017. How network structure can boost and shape the demand for bus transit. *Transportation Research Part A: Policy and Practice*, 103, pp.83-94.

<sup>56</sup> Neuman, M., 2011. Centenary paper: Ildefons Cerdà and the future of spatial planning: The network urbanism of a city planning pioneer. *Town Planning Review*, 82(2), pp.117-145.

Land readjustment to retrofit corridors		Yes				
Enables intensification	Formerly	Yes	Formerly	Some	Some	Some
Urban growth boundary						Yes

## **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