

4 Urban trends

Key points

- New Zealand is a largely urbanised country; yet the extent is highly dependent on how an “urban area” is defined. The commonly cited figure that 86% of New Zealanders live in urban areas is based on a New Zealand-specific definition that includes cities as well as small towns. Other definitions give lower percentages.
- Population growth has been unequally distributed, with high growth concentrated in or near Auckland while a majority of other main urban areas have grown either modestly or not at all. A significant number of smaller urban areas have experienced population decline. Projections indicate these trends will continue.
- Low-growth and declining areas have older populations and tend to lose a greater share of their younger population. The consequent decline of the working-age population is likely to have a negative impact on the average income growth of these areas.
- Auckland’s population is unique in that it is larger, younger, denser, faster growing and more ethnically diverse than most other New Zealand cities. Strong natural population increase and international migration have driven its growth.
- Patterns of employment growth vary considerably between cities. Most growth in Wellington is focused in the centre; in other cities, growth is much more dispersed. Employment-growth patterns and development patterns share similar trends, suggesting the link between the location of jobs and where people choose to live is strong.
- New Zealand cities face spatial inequalities as people who earn more and are more educated cluster in inner suburbs and suburbs with natural amenities, while those who earn less and who are less educated tend to live in the outer suburbs.
- Many New Zealand councils have policies aimed at creating a compact urban form for their cities; yet most have struggled to achieve this goal. While cities have become denser, growth tends to be accommodated largely through developing land in outer suburbs. Barriers to densification include a lack of development capacity and community support for inner-city living.
- Declining areas tend to respond with policies aimed at revitalising the local economy by creating jobs and attracting migrants, rather than adapting to decline. Yet evidence suggests that the effectiveness of these policies is limited.

New Zealand is a largely urbanised country. Chapter 2 highlighted that urban areas are attractive because they offer numerous benefits, including greater job opportunities and higher wages. Over the past century, the attractiveness of urban areas has brought about a worldwide trend of migration from rural areas to cities and towns. New Zealand urban areas range in size from large cities like Auckland to townships as small as Leeston.

Although urbanisation is linked with economic prosperity, population growth in cities creates significant challenges. As cities grow, they face pressures to accommodate residents by developing housing, providing infrastructure and growing the number of jobs. They must achieve this while ensuring that the natural environment and existing amenities are protected.

While many urban areas experience population growth, others face stagnating or declining populations. This chapter examines how the shape of New Zealand urban areas has changed over time, and how local

policymakers have responded to urban issues including managing growth and decline. It places a particular emphasis on the trends observed in larger cities and discusses how these differ across the country.

4.1 How urbanised is New Zealand?

New Zealand is often described as one of the most highly urbanised countries in the world. However, it is hard to make reliable “apples with apples” comparisons of urbanisation across countries (Box 4.1). The United Nations (2014a) estimates that more than 86% of New Zealanders live in urban areas. That said, New Zealand has only one city of international size (Chapter 2), and is home to a large number of small towns that are defined as urban.

Box 4.1 Defining “urban”

The primary challenge in measuring urbanisation is obtaining comparable data. The most common measure is the share of the national population living in urban areas, yet what constitutes an urban area has no standard definition. As a result, global databases frequently compile information based on country-specific definitions.

Statistics New Zealand’s official classification system separates urban areas into three subcategories:

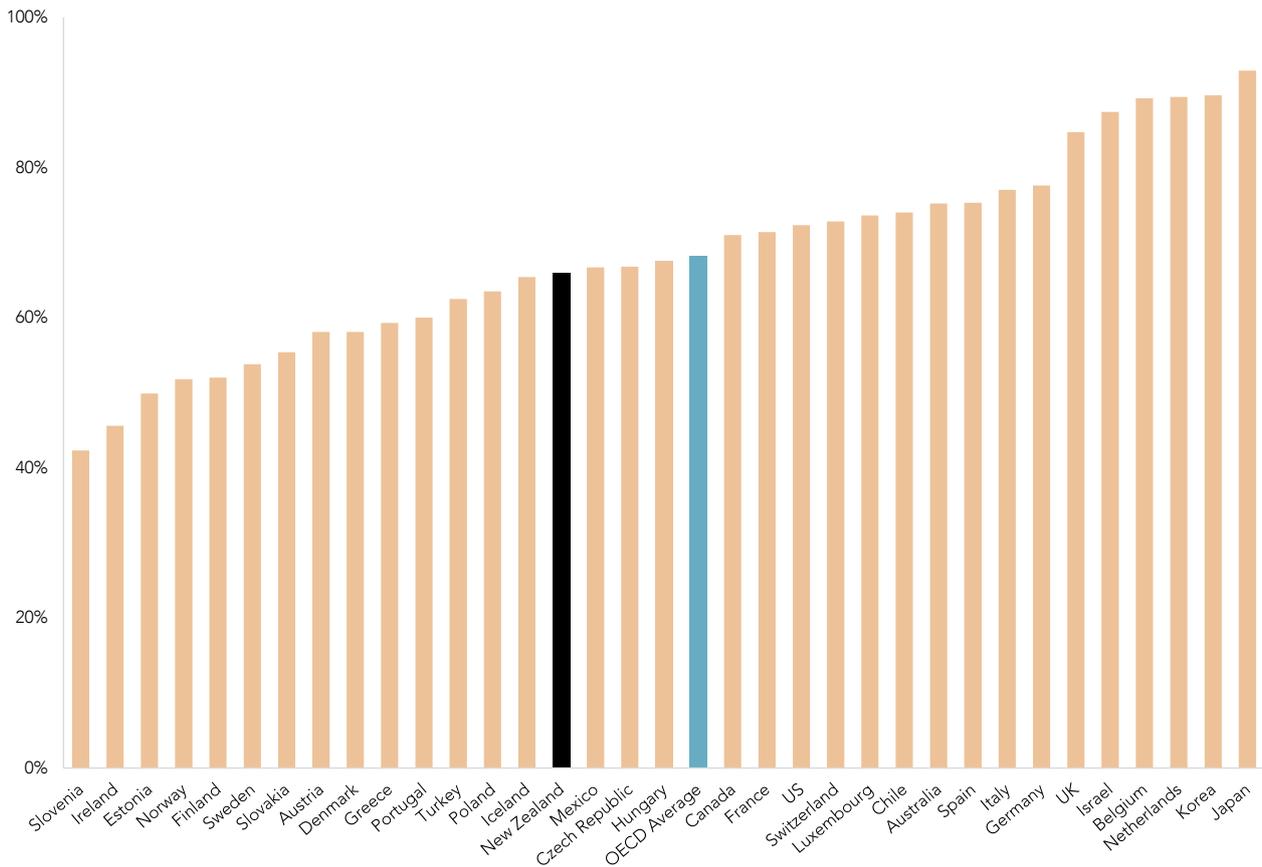
- Main Urban Areas – large urban areas centred on a city or major urban centre, with a minimum population of 30 000;
- Secondary Urban Areas – areas with populations between 10 000 and 29 999 people and which are centred on the larger regional centres; and
- Minor Urban Areas – towns with a population of 1 000 or more, not already classified as a main or secondary urban area.

Other country definitions vary considerably, leading to unreliable comparisons. For example, in Japan, urban areas include any area with more than 50 000 people, while Iceland defines an urban area as any locality with more than 200 people. Countries also use different methods to define urban area boundaries such as population density thresholds and political and administrative boundaries.

Source: Statistics New Zealand (n.d); United Nations (2014b).

Uchida and Nelson (2008) developed the Agglomeration Index to make more reliable and robust comparisons of urbanisation across countries. The index characterises an urban area by a minimum threshold of 150 people in each square kilometre, a maximum travel time of 60 minutes to the centre, and a minimum population of 50 000. This contrasts with the Statistics New Zealand definition (Box 4.1) as well as those of numerous other national statistical offices, which tend to set the minimum population of urban areas at much lower levels. Figure 4.1 shows Agglomeration Index estimates for all OECD countries for 2008.

The Agglomeration Index gives lower results than the United Nations estimates, suggesting that New Zealand’s urbanisation is overstated. Result comparisons indicate that a large number of New Zealanders live in urban areas that international standards consider are towns and rural centres rather than cities. The Agglomeration Index estimates that only 66% of New Zealanders lived in urban areas in 2008, compared with the OECD average of 68%. By comparison, the United Nations estimates that 86% of New Zealanders lived in urban areas in 2008, compared with their OECD average of 77%. The Agglomeration Index is more reliable as it uses a consistent methodology across all countries.

Figure 4.1 Agglomeration Index for OECD countries, 2008

Source: Uchida & Nelson, 2008.

Note: The Agglomeration Index represents the percentage of a country's population who live in urban areas.

F4.1

The extent of New Zealand's urbanisation depends very much on the definition used. The commonly cited figure that 86% of New Zealanders live in urban areas is based on a New Zealand-specific definition. Other definitions indicate lower levels of urbanisation.

4.2 Population growth and decline

Population growth is unequally distributed

Population growth has been unequally distributed across the country over the last two decades, with high growth mostly concentrated in or near Auckland (Figure 4.2). Auckland alone contributed close to half of national growth between 1996 and 2015. During the same period, Tauranga was the fastest growing main urban area in New Zealand, growing yearly on average by about 2.3%, followed by Auckland and Hamilton. These three areas are often collectively referred to as the Golden Triangle due to their recent rapid growth and how close they are to each other.

Outside the Golden Triangle, levels of growth have been relatively low. Wellington and Christchurch experienced modest yearly growth below 1% between 1996 and 2015. However, Christchurch's lack of growth is likely attributed to the impact of the Christchurch earthquakes on internal migration. Population levels barely grew in Gisborne, Dunedin and Rotorua; were unchanged in Invercargill, and declined in Whanganui.

Figure 4.2 Average yearly population growth of New Zealand main urban areas, 1996–2015

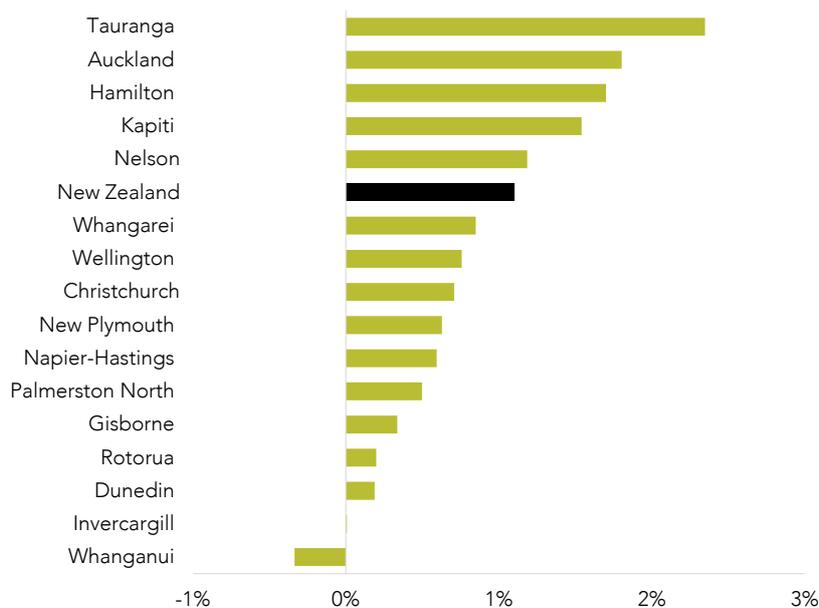
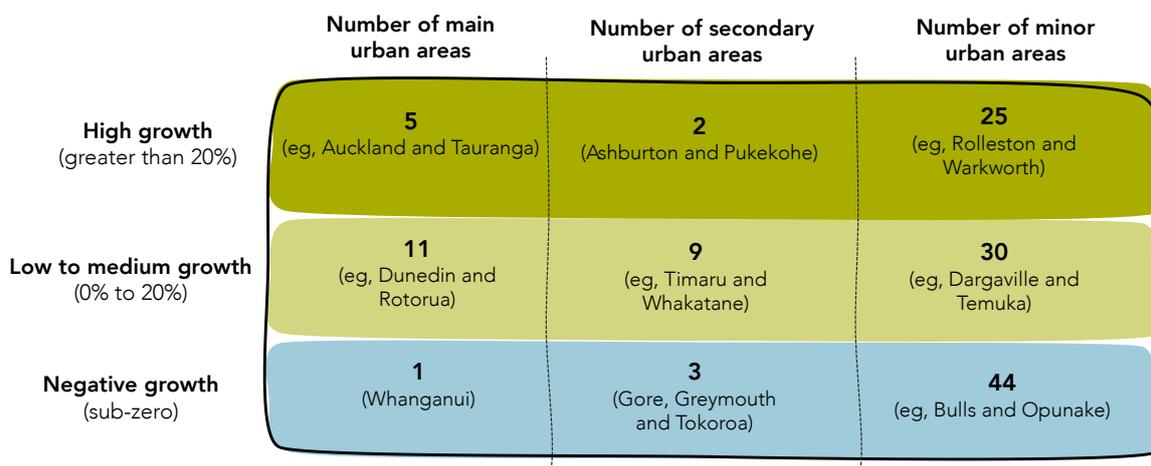


Figure 4.3 Population change of urban areas, 1996–2015



Source: Productivity Commission analysis of Statistics New Zealand data.

Notes:

1. Main, secondary and minor urban areas are based on Statistics New Zealand classifications as outlined in Box 4.1.
2. Auckland, Hamilton, Wellington and Napier-Hastings urban areas are made up of smaller urban zones.

A large number of New Zealand urban areas have experienced population decline, however most decline is focused in minor urban areas (Figure 4.3). Close to 45% of minor urban areas declined between 1996 and 2015, while other towns such as Rolleston and Kerikeri experienced rapid growth. New Zealand is not alone in having declining urban areas, but in countries such as Japan, Germany and South Korea decline has affected cities as well as smaller towns.

Recent trends are projected to continue

Population projections reinforce recent trends of unequal growth among New Zealand cities and the emergence of the Golden Triangle (Figure 4.4).²³ Auckland, Hamilton and Tauranga are projected to continue to drive national population growth, and are expected to hold close to 45% of New Zealand’s population by 2043. Christchurch is projected to experience faster growth compared to the period between 1996 and 2015, while populations in Invercargill and Dunedin are projected to remain stable.

²³ Projections are purely based on recent demographic trends and patterns, as well as international experiences. This means they are vulnerable to the assumptions made and so may not provide a good basis for future planning.

An increasing number of urban areas are projected to decline in population compared with recent trends, but with most decline in smaller towns (Figure 4.5). Approximately 9% of New Zealanders live in urban areas that are projected to decline. Most main urban areas are not projected to decline, although 8 of the 14 secondary urban areas (populations between 10 000 and 29 999) are projected to do so. By comparison, only three secondary urban areas experienced population decline between 1996 and 2015.

Figure 4.4 Population growth projections for New Zealand main urban areas, 2013–2043

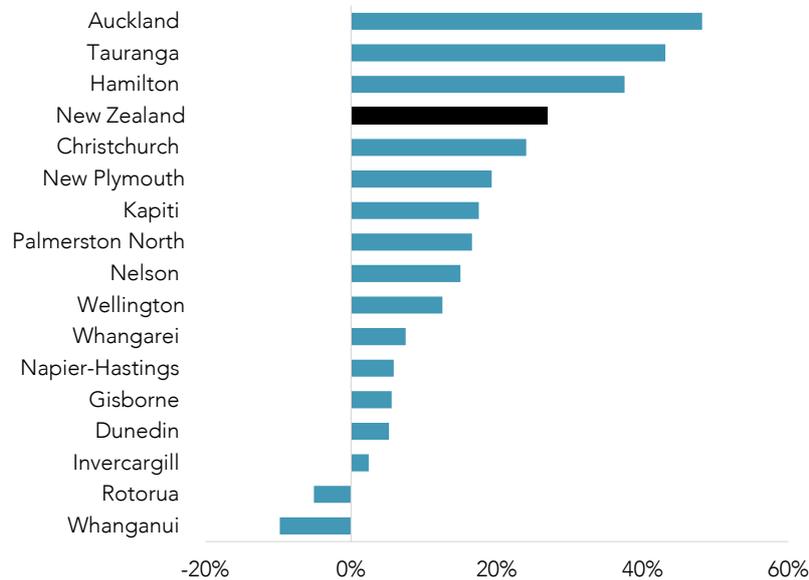
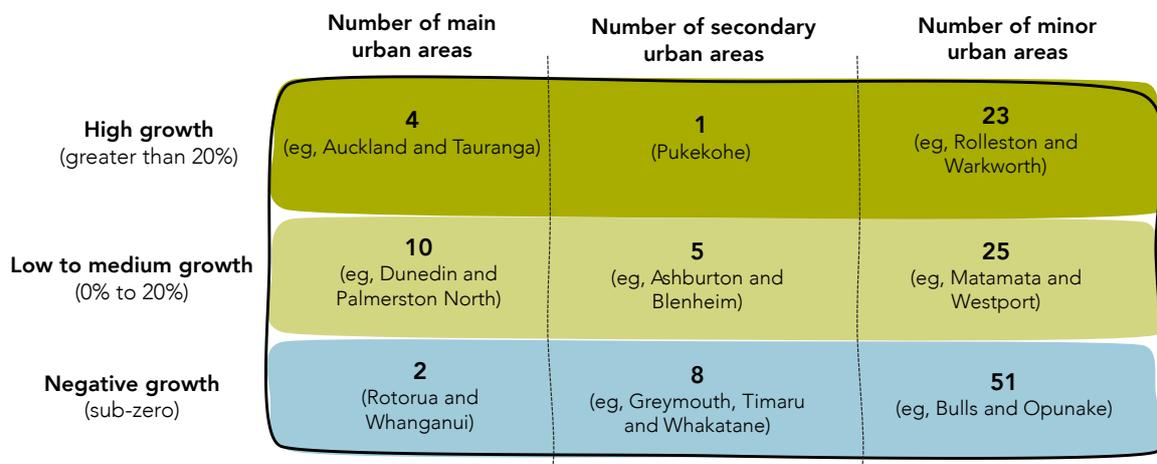


Figure 4.5 Projected population change of urban areas, 2013–2043



Source: Productivity Commission analysis of Statistics New Zealand data.

Notes:

1. Main, secondary and minor urban areas are based on Statistics New Zealand classifications as outlined in Box 4.1.
2. Auckland, Hamilton, Wellington and Napier-Hastings urban areas are made up of smaller urban zones.

The impact of internal migration for urban areas

People moving between cities and towns are major contributors to the growth or decline of those cities and towns. A combination of natural increase, internal migration and international migration drive population growth. Populations in smaller towns tend to suffer more in regions where growth is mainly driven by internal migration, because people are often attracted to larger towns and cities with greater job opportunities and more amenities. Yet recent internal migration patterns in New Zealand reveal that the trend of migration away from these smaller low-growth areas does not alone explain the growth of fast-growing cities (Table 4.1).

Table 4.1 Net internal migration across New Zealand's fast growing cities, 2008–2013

	Auckland	Hamilton City	Tauranga City
Whangarei District	(558)	225	138
Auckland	-	(222)	825
Thames-Coromandel District	(768)	195	189
Waikato District	(2 229)	(972)	15
Hamilton City	222	-	15
Tauranga City	(825)	(15)	-
Kawerau District	(6)	54	54
Rotorua District	75	486	402
Wellington City	1104	(288)	(144)
Christchurch City	3 282	249	258
Net Internal Migration	(4 575)	2 505	3 618
Total Population Change	87 700	11 500	8 500

Source: Statistics New Zealand, Census.

Notes:

1. Table 4.1 shows the net inflow of domestic migrants between Auckland, Hamilton and Tauranga and a selection of other territorial authorities. For example, Auckland's internal migration estimate with Christchurch of 3 282 indicates that 3 282 more people migrated from Christchurch to Auckland than from Auckland to Christchurch.
2. Numbers in brackets indicate a net outflow of domestic migrants. For example, Auckland's internal migration estimate with Waikato District of (2 229) indicates that 2 229 more people migrated from Auckland to the Waikato District than from the Waikato District to Auckland.

More New Zealanders migrated from Auckland than moved there between 2008 and 2013. Many of those who left the region moved to nearby areas including Whangarei District, Tauranga and the Waikato District. Even so, Auckland was a net recipient of migrants from Wellington and Christchurch. Indeed, a large number of residents left Christchurch permanently after the 2010 and 2011 earthquakes.

High levels of internal migration into Tauranga and Hamilton may help to explain low levels of growth and decline in nearby urban areas such as Rotorua, Whangamata, and Kawerau. Both Tauranga and Hamilton attracted a net inflow of residents from Rotorua District, Thames-Coromandel District and Kawerau District, with Rotorua District losing almost 900 residents. Notably, just under a quarter of Tauranga's positive internal migration between 2008 and 2013 were migrants from Auckland. By contrast, Hamilton suffered a net loss of migrants to Auckland.

Internal migration patterns indicate that the rapid growth of cities in New Zealand may result in people moving into neighbouring districts. Waikato District gained more than 3 000 residents from Auckland and Hamilton between 2008 and 2013, despite only having a population of about 60 000 in 2008. People may often choose to migrate to small towns outside cities, where they are still able to commute to work in city centres but where houses are more affordable. For example, the town of Pokeno is located in Waikato District but is within commuting distance of Auckland. As a result, Pokeno has seen significant development in recent years.

How much internal migration, natural increase or international migration drives the growth of larger cities varies. Internal migration contributed to nearly 40% of population growth in Tauranga and about 20% of growth in Hamilton. Hamilton's growth is a large result of strong natural increase. This is because Hamilton's population has the lowest median age in the country. Despite losing many residents to cities and towns nearby, Auckland's population has grown rapidly due to strong natural increase and international migration. This is discussed in more detail later in this chapter.

4.3 Demographic trends

Demographic characteristics such as the age structure of a city are hugely important for determining the rate of long-term population growth. The previous section analysed the distribution of population growth across New Zealand. Similar to patterns of growth, New Zealand cities are varied in their demographic profiles.

Low-growth cities lose their younger population

Age structures differ markedly between high-growth cities and low-growth cities across the country, particularly in terms of population ageing. An ageing population reduces the share of people at reproductive age. This in turn can lead to a smaller natural increase and, for some areas, the onset of a falling population.

In towns and cities facing decline, the younger demographic often are the first to leave. This causes a net loss of the young adult population (Local Government New Zealand (LGNZ), 2015b; Jackson & James, 2015). Figure 1.6 shows that low-growth cities Whanganui, Invercargill and Dunedin experienced a greater decline in the share of young adult population compared with high-growth areas. As this age group makes up a large proportion of the younger and more productive demographic, the result highlights the potential negative impact on income growth for low-growth urban areas.

The age structures of high-growth cities in New Zealand are younger compared with low-growth cities. The median age of Auckland and Hamilton's populations in 2013 were 35 and 32 respectively, compared with the national median age of 38. Further, Hamilton experienced little change to its age structure between 1996 and 2013 while Auckland maintained a large share of population aged 20 to 29. Surprisingly, the share of young adults in Tauranga fell quite considerably despite it being the fastest-growing main urban area. This may reflect a trend of older people migrating to the area to retire.

Large student populations in Dunedin and Hamilton help to explain their large numbers of people aged 20 to 24. However, the effect of Auckland's large student population on its age structure is less marked. This is most likely because students make up a much smaller proportion of Auckland's total population.

F4.2

Low-growth cities have older populations and tend to experience a greater decline in the share of their young adult population compared with faster-growing cities. As this age group makes up a large proportion of a city's working age population, population decline is likely to have a negative impact on average income growth.

Auckland's demographic profile is unique

While a number of factors have contributed to strong population growth in Auckland, its younger age structure has been a primary driver through natural increase. Figure 4.7 shows that Auckland's population growth would remain strong, even with zero migration, due to steady levels of natural increase. The city has one of the youngest regional populations in New Zealand. This means that it has larger numbers of Aucklanders at a reproductive age. This contributes to population growth.

Net migration has played a cyclical role in influencing growth in Auckland.²⁴ Over 42% of Auckland's growth since 1996 is due to migration, compared with 15% for the rest of New Zealand. Net migration levels were highest between 2002 and 2006, and during 2014 and 2015, while most other periods saw lower levels.

Incoming international migrants have driven periods of strong net migration in Auckland and contributed to its unique diversity. Between 2002 and 2006, Auckland experienced a net migration boom. This occurred despite the number of residents leaving Auckland well exceeding the number of New Zealanders moving to Auckland during the same period (NZPC, 2012a). Partly as a result, its population is more ethnically diverse than most other New Zealand cities (Figure 4.9). In particular, shares of Asian and Pacific populations in

²⁴ Net migration estimates include international migrants and New Zealanders who have migrated to or from Auckland.

Auckland are considerably higher than the rest of the country, making up nearly 40% of Auckland’s population.

Figure 4.6 Age structure of selected New Zealand territorial authorities, 1996 and 2013



Source: Statistics New Zealand, Census.

Figure 4.7 Components of population change in Auckland, 1997–2015

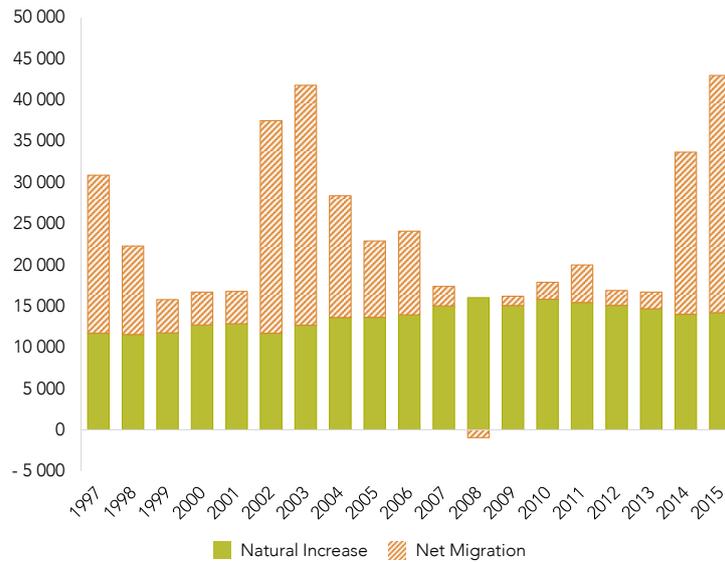


Figure 4.8 Age structure of Auckland vs rest of New Zealand, 2013

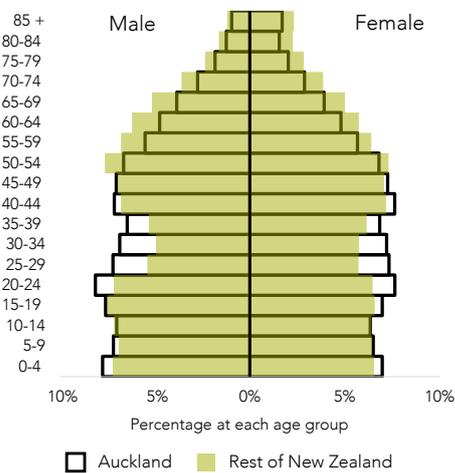
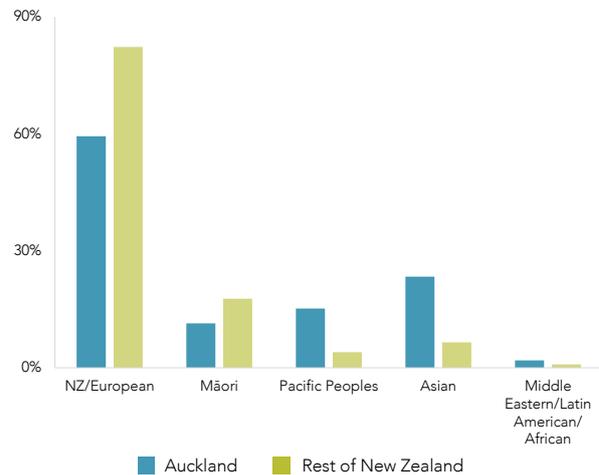


Figure 4.9 Ethnic structure of Auckland vs rest of New Zealand, 2013



Source: Productivity Commission analysis of Statistics New Zealand data.

4.4 Location of people, houses and jobs

It matters where a city’s people, houses and jobs are located. Where people live in cities affects their access to jobs, commuting costs, proximity to amenities and general quality of living. People are limited in their choice of location by the available housing. Alternatively, where jobs are located across a city influences a firm’s choice of employees. Large labour markets make it easier for firms to find the right match of skills to meet their needs. This raises both their productivity and the earnings of their employees (Chapter 2).

As cities grow, they face pressures to accommodate residents through housing development and job growth and choices about how and where to do so. The next section discusses spatial trends observed across New Zealand cities, relating to where people live in cities, and the locations of employment and new development.

New Zealanders in cities are living closer together

Population density estimates show that New Zealand cities have become denser. Population density is an important concept in urban planning, as it captures whether and how much a city is making use of its available land. Various approaches to measuring urban population density lead to different results (Box 4.2). However, certain approaches can produce misleading estimates.

Box 4.2 Measuring density

Population density is traditionally estimated using an average density measure. This method uses the following formula:

$$\text{Average density} = \frac{\text{Population}}{\text{Urban Area}}$$

The approach is often used for international comparisons because it is straightforward to calculate.

However, this method can lead to counter-intuitive results. Results tend to underestimate the density of cities with large expanses of lightly populated fringe suburbs. The Demographia *World Urban Areas* report (2016) states that Melbourne has a density of 1 500 people/km², Christchurch has a density of 2 000 people/km² and Hamilton has a density of 2 200 people/km². These results stem largely from the fact that Melbourne's urban area has many peripheral suburbs with fewer people living in them, despite the city having a densely populated centre and a much larger overall population.

An alternative approach is to measure population-weighted density. This method estimates individual densities for smaller areas across a city, and assigns a weight for each area based on its share of the city's population before summing these weighted densities together. This measure better reflects the density of the neighbourhood in which the city's average resident lives. As a result, it is especially useful for capturing the agglomeration benefits of proximity that a city experiences. The following example applies the above approach.

Consider a city made up of three areas, each of 10 hectares. The three areas have 50, 50 and 200 people. Under average density measures, density = 300/30 = 10 people/hectare. This hides the fact that two-thirds of the population live in a region with a density of 20 people a hectare. Under population-weighted density measures, density = 15 people/hectare. This is a better reflection of true residential density.

Source: Nunns (2014); Demographia (2016).

The Commission has used the population-weighted density methodology to calculate densities for six New Zealand cities over three census periods (2001, 2006 and 2013), as well as densities for the five largest Australian cities for the 2011 census period. Results are presented in Figure 4.10 and Figure 4.11.

Auckland and Wellington densified significantly between 2001 and 2013. The neighbourhood in which the average resident in Auckland lives was approximately 33% denser in 2013 than in 2001. Both Auckland and Wellington experienced their greatest increase in density between 2001 and 2006. This likely reflects a rapid rise in apartment development in the central business districts (CBDs) of Auckland and Wellington.

Despite experiencing significant population growth, Hamilton and Tauranga experienced only modest increases in density. This suggests that populating lower density suburbs rather than the central city has accommodated their growth. Like Auckland and Wellington, both cities saw a larger increase in density between 2001 and 2006.

The decrease in Christchurch's density between 2006 and 2013 reflects the 2010 and 2011 earthquakes, which resulted in a large outflow of residents.

Although smaller in population, Auckland and Wellington are among the densest cities in Australasia. Even though Auckland has a reputation as a relatively low-density city, Figure 4.11 indicates that Auckland is the second densest city in Australasia behind Sydney. Also, Wellington is the fourth densest Australasian city. Even so, Australian and New Zealand cities are mostly not very dense by international standards.

Figure 4.10 Percentage change in population-weighted density for New Zealand cities

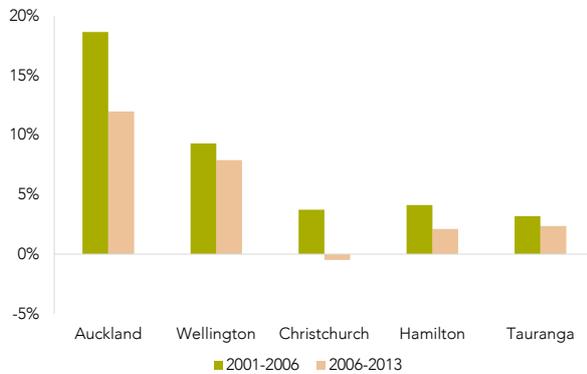
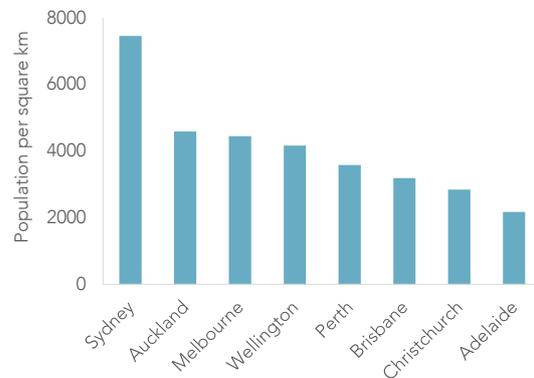


Figure 4.11 Population-weighted densities of Australasian cities, 2011 and 2013



Source: Productivity Commission analysis of Statistics New Zealand and Australian Bureau of Statistics data.

Notes:

1. New Zealand cities are defined at meshblock level, using the Statistics New Zealand urban area definition. Their density estimates are for 2013.
2. Australian cities are defined at meshblock level, using the Australian Bureau of Statistics significant urban area definition. Their density estimates are for 2011.
3. Density is measured by the number of people per square kilometre.
4. Population-weighted density is calculated using the following formula: $Density_t = \sum_i \left(\frac{pop_{it}}{\sum pop_{it}} \right) \left(\frac{pop_{it}}{area_i} \right)$ where i and t indicate meshblock and time.

F4.3

The populations of Auckland and Wellington have become significantly denser over the last fifteen years. Both cities are among the densest in Australasia, although they are not very dense by international standards.

Growing out rather than growing up

Growing cities need to provide for more housing. Broadly speaking, cities can 'grow out' (enabling construction at the edge of the city), 'grow up' (permitting more intensive development within established areas), or combine the two approaches. While becoming denser, most large New Zealand cities have tended to grow at their fringe rather than in their inner suburbs.

To observe patterns of residential development in New Zealand, the Commission has analysed absolute changes in occupied dwellings for four New Zealand cities over three census periods (2001, 2006 and 2013). The results of the analysis are presented in Figure 4.12. The figures show the relative contribution to dwelling growth of a city's suburbs by their distance from the city centre.

Figure 4.12 The contribution to dwelling growth by distance from centre of four cities



Source: Productivity Commission analysis of Statistics New Zealand data.

Notes:

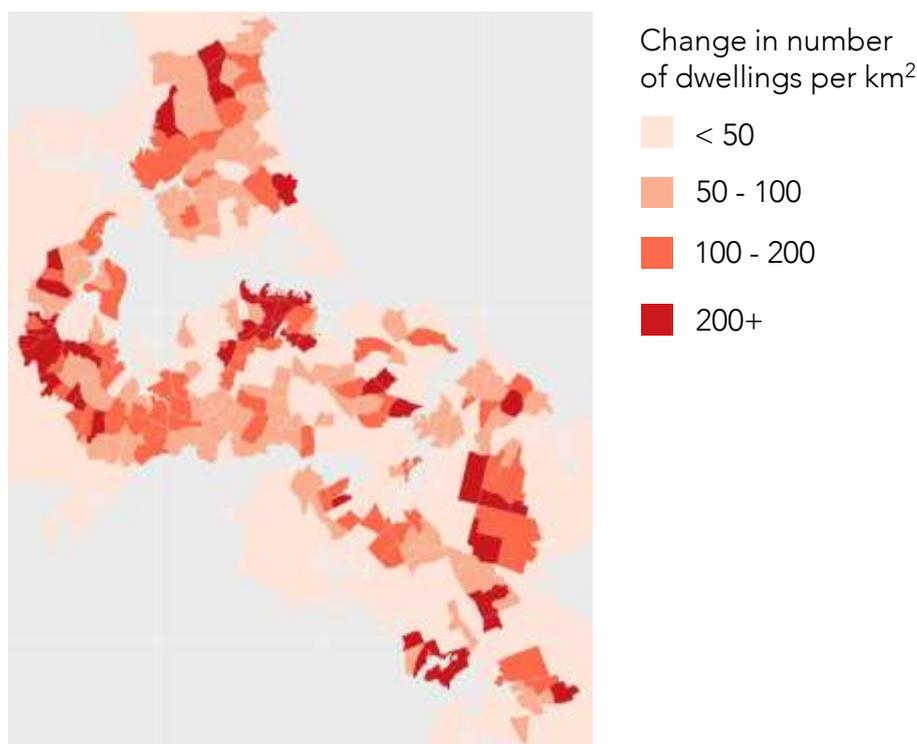
1. Distance to the centre of each city studied is measured as a linear distance between centres and each area unit.

In Wellington, a large share of development occurred in the inner-city. Over half of all new dwellings in Wellington between 2001 and 2006 were within 5 km of the city centre. Between 2006 and 2013, development was more evenly distributed across the city.

Dwelling growth in Tauranga was heavily concentrated in suburbs outside the city centre, while Hamilton saw a slightly more even distribution of development. Over 60% of development in Tauranga occurred between 5 km and 10 km from the city centre. In Hamilton, areas within 5 km of the city centre contributed to close to a third of dwelling growth between 2001 and 2006. Those areas had a smaller contribution to dwelling growth between 2006 and 2013.

While Auckland’s dwelling density increased significantly between 2001 and 2013, the majority of development was focused in the outer suburbs. Close to 70% of dwelling development in Auckland was located in areas further than 10 km from the city centre. In contrast, inner suburbs have made a relatively subdued contribution towards development.²⁵ Figure 4.13 highlights this point, but also reveals the high level of development in Auckland’s CBD. That level reflects the rapid construction of residential apartments during the early 2000s (Goodyear & Fabian, 2014).

²⁵ Due to the scale of Auckland, the Commission considers suburbs within 10 km of Auckland’s city centre to be “inner suburbs”. For other New Zealand cities, the Commission considers inner suburbs to be within 5 km of the city centre.

Figure 4.13 Absolute change in the dwelling density of Auckland, 2001–2013

Source: Productivity Commission analysis of Statistics New Zealand data.

Development trends indicate that most New Zealand cities tend to grow at the fringes rather than grow up. Urban limits in Auckland have helped to encourage the containment of development. Yet outside the central city, development has tended to intensify closer to the urban fringe. Similarly, dwelling growth in Hamilton and Tauranga tends to be located in areas outside the inner-city.

Much of the literature on global urban development indicates that urban areas around the world have experienced similar trends. OECD (2012a) finds that more population growth in OECD cities has occurred close to the urban boundary compared to in the urban centre. Similarly, Angel et al. (2011) note that a long-term trend of low-density development has occurred in many urban areas worldwide. Bruegman (2005) argues that sprawl is the natural pattern of development in places with a high level of wealth and where people can choose where they live.

Conversely, Ehrenhalt (2012) suggests that wealthier residents in the United States are now choosing to live in city centres close to amenities, rather than relying on cars to live in sprawling suburbs. He proposes that these trends could occur in other metropolitan centres. Fishman (2005) makes a stronger claim that a preference shift is occurring in cities away from suburban living and towards denser inner-city living.

F4.4

New Zealand cities tend to grow out rather than up. Except in Wellington, recent urban growth has largely occurred in outer suburbs.

Knowledge-intensive services are concentrated in cities

Knowledge-intensive services in New Zealand are concentrated in cities. Close to 70% of employment in knowledge-intensive services is located in the three largest cities (Auckland, Wellington and Christchurch) (Figure 4.14). These services typically require technical or professional skills and qualifications and include industries such as finance and insurance, scientific research and software publishing.²⁶

²⁶ Knowledge Intensive Services are defined by the Ministry of Business, Innovation and Employment (2014) using the ANZSIC06.

The Commission's inquiry into *Using land for housing* (2015a) noted that service industries tend to congregate in the centre of cities to take advantage of agglomeration benefits. As Chapter 2 discusses, knowledge-intensive services gain especially from knowledge spillovers when firms cluster together.

Employment in knowledge-intensive services grew by about 43% between 2000 and 2015, contributing to strong growth in the services sector. Nearly a third of all jobs in the services sector in New Zealand are in knowledge-intensive industries.

Figure 4.14 Location of jobs in knowledge-intensive services, 2015

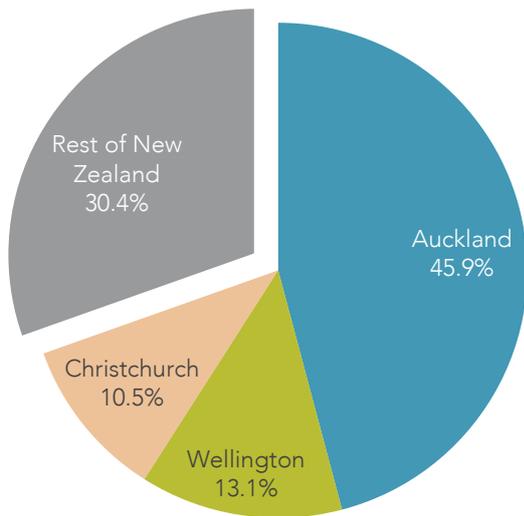
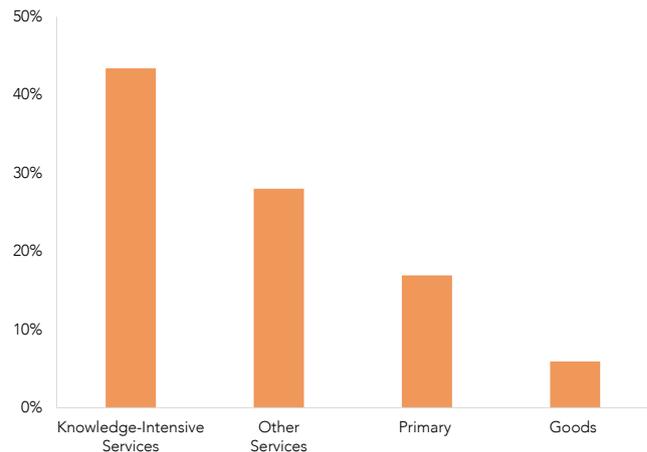


Figure 4.15 Job growth by sector in New Zealand, 2000–2015



Source: Statistics New Zealand, Business demography statistics.

Notes:

1. The data are in employment counts, not hours. This means that different changes in part-time work and full-time work in different sectors may influence the data.
2. Sectors are classified using the Australian and New Zealand Standard Industrial Classification ANZSIC06.

Employment growth patterns vary across cities

Patterns of employment growth in New Zealand, and in particular how much city centres have contributed to employment growth, vary considerably across large cities (Figure 4.16). The job structure of New Zealand cities – in terms of where jobs are concentrated – and strong growth in the services sector have played important roles in driving employment growth patterns. These patterns follow similar trends to housing development patterns, suggesting the link between the location of jobs and where people choose to live is strong.

Employment growth in Wellington is heavily concentrated in the CBD. Strong growth in knowledge intensive services has likely driven this growth. Wellington is a mono-centric city, where employment is concentrated in the city centre. Approximately one third of jobs in Wellington's city centre are in knowledge-intensive services that benefit from knowledge spillovers, among firms clustered together. More than 60% of job growth in Wellington between 2000 and 2015 was located within 2 km of the city centre. Strong job growth in the CBD also helps to explain the strong trend of inner-city residential development.

In greater Christchurch, the centre of the city experienced a decrease in jobs, while employment grew in suburban areas. This reflects the 2010 and 2011 earthquakes, which forced many firms previously located in the CBD to relocate to suburbs outside the central city. The largest contribution to job growth occurred in suburbs further than 10 km from the city centre, reflecting the rapid population and economic growth in the Selwyn and Waimakariri districts.

Figure 4.16 Share of employment growth by distance from the centre of four cities, 2000–2015

Source: Statistics New Zealand, Business demography survey.

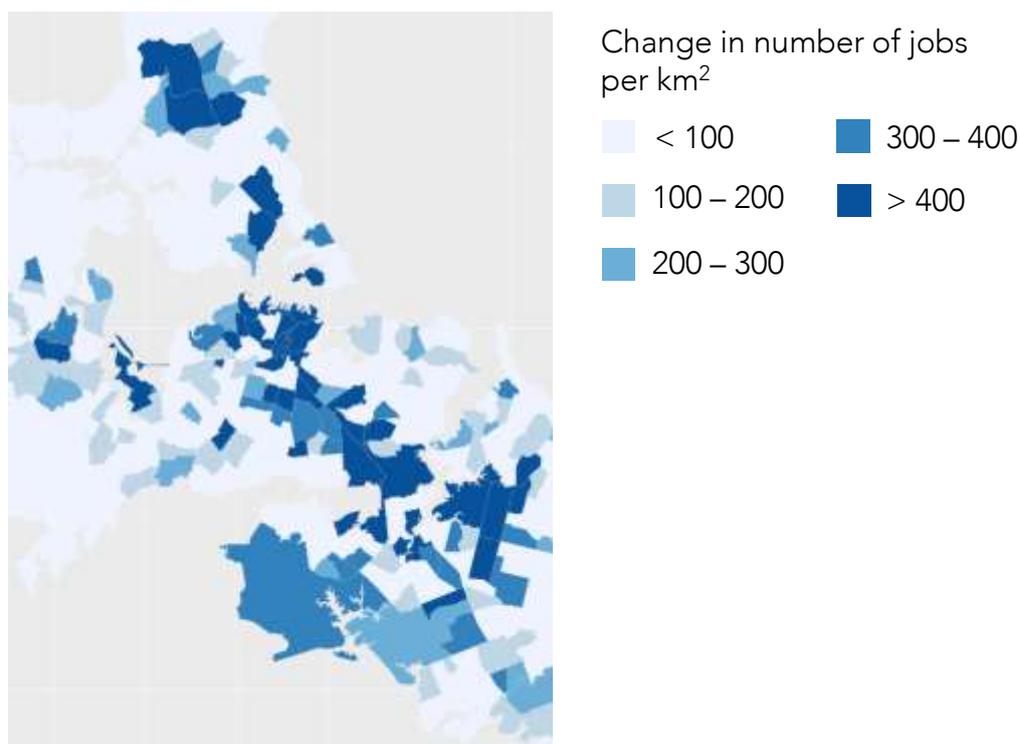
Notes:

1. Distance to centre of each city studied is measured as a linear distance between centres and each area unit.
2. The intervals on the x axis for Auckland increase in increments of 4 km, rather than 2 km for other cities, to reflect its larger size.

In Hamilton, employment growth in the inner-city was low compared to Auckland and Wellington, while around a third of job growth was located in areas between 4 km and 6 km from the CBD.

Unlike many other Australasian cities, including Wellington and Melbourne, Auckland has a poly-centric structure. Cities that are poly-centric have more than one centre where jobs are concentrated, and therefore where workers commute to. Several employment nodes are located across Auckland, including the Auckland CBD, Newmarket, Takapuna, Pakuranga and Manuwera (Grimes & Liang, 2007).

Employment growth trends in Auckland are consistent with its poly-centric urban form and with recent patterns of housing development. Outer suburbs between 12 km and 16 km from the city centre and inner suburbs (within 4 km of the city centre) experienced the greatest employment growth (Figure 4.16). These suburbs include several of Auckland's employment nodes such as the Auckland CBD, Pakuranga, Otahuhu and Takapuna. Outer suburbs in north Auckland and southeast Auckland saw significant dwelling development between 2001 and 2013 (Figure 4.13), and strong employment growth between 2000 and 2015 (Figure 4.17). As with Wellington, strong employment growth in service industries has likely grown the centre of the city. (NZPC, 2015a).

Figure 4.17 Absolute changes in employment density in Auckland, 2000-2015

Source: Productivity Commission analysis of Statistics New Zealand data.

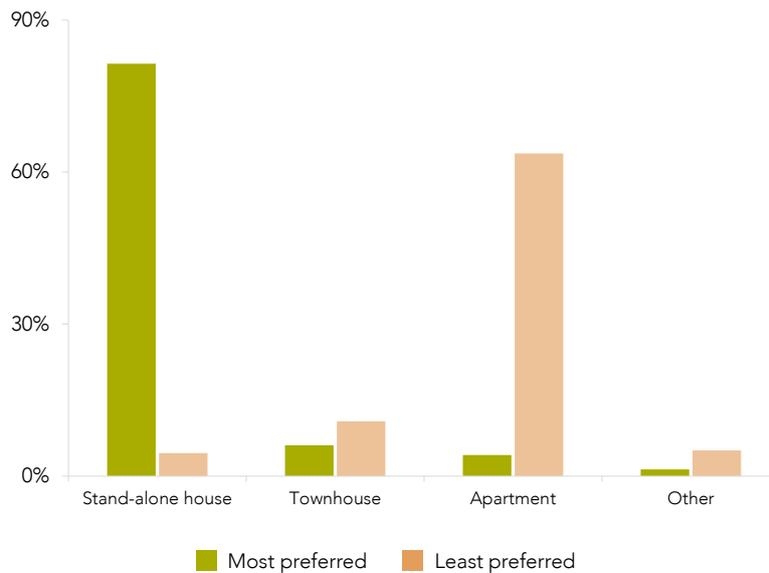
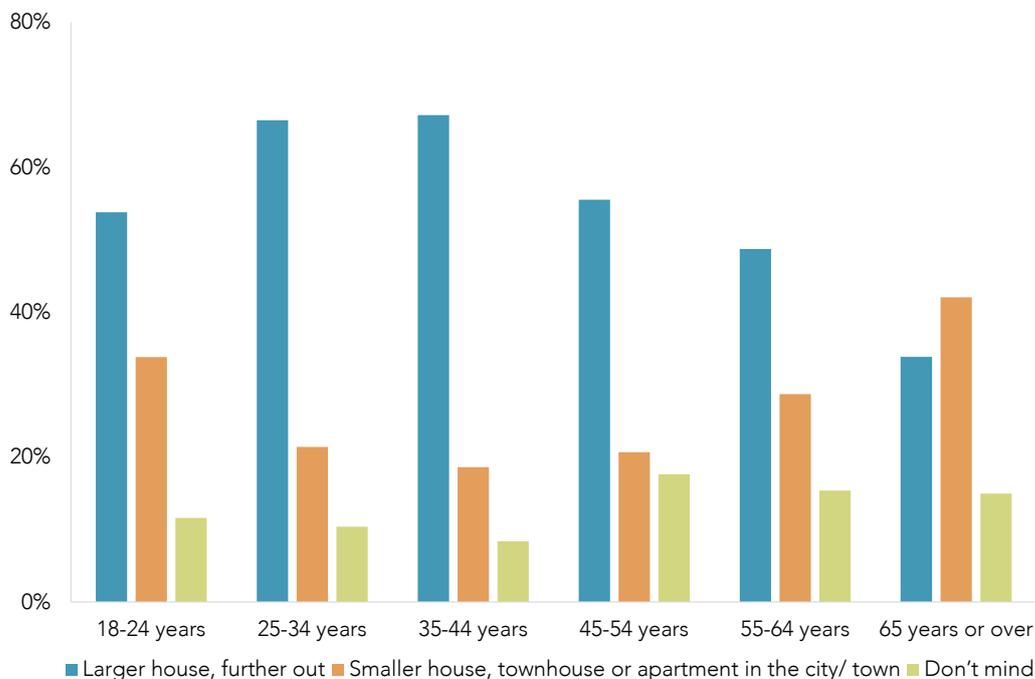
Patterns of employment growth for New Zealand cities are largely consistent with patterns of housing development, following the notions that “people follow jobs” and “jobs follow people”. Whether people primarily move to be near jobs, or businesses move to be near workers, is one of the leading debates in urban economics. A large volume of research exists on the interrelationship between employment growth and population growth.

Academic literature generally supports the finding that population growth has a greater pull on jobs than job growth does on population. Carlino and Mills (1987) found that population growth and employment growth are interrelated in counties in US states, but that the effect of population growth is greater. Similarly, Hicks and Faulk (2016) found that jobs tended to relocate to be near people in Indiana in the 2000s, while the movement of workers to jobs was insignificant. Hoogstra, Florax and Van Dijk (2005) reviewed relevant literature and noted that little support exists for the hypothesis that employment growth drives population growth. However, they also noted that conclusions strongly depend on the particular emphasis of each study.

Preference for large, standalone houses outside the city centre

People make a number of trade-offs when they decide where to live. Trade-offs may include whether to live in the CBD or in the suburbs, in a standalone house or in an apartment, and whether to be closer to schools or to shopping centres. The preferences of residents shape the priorities and actions of decision makers, and in turn can influence the way in which cities develop. Naturally, as cities change over time so do preferences.

Howden-Chapman et al.’s (2015) survey of housing preferences reveal a strong preference of New Zealanders for large, standalone houses, although the results depended on each person’s age (Figure 4.18 and Figure 4.19). More than 80% of respondents would most prefer to live in a stand-alone home, while close to 64% of respondents would least prefer to live in an apartment. Over half of respondents felt that having space is more important than having a shorter commuting time. Yet those aged 18 to 24 and over 55 were less averse to living in a smaller residence in the city. This indicates that the age of a person (their stage of life) is an important driver of the type of housing the person chooses. A survey by Preval, Chapman and Howden-Chapman (2009) shared similar findings.

Figure 4.18 Most and least preferred dwelling type to live in, 2015**Figure 4.19 Preference between size and proximity to urban centre by age, 2015**

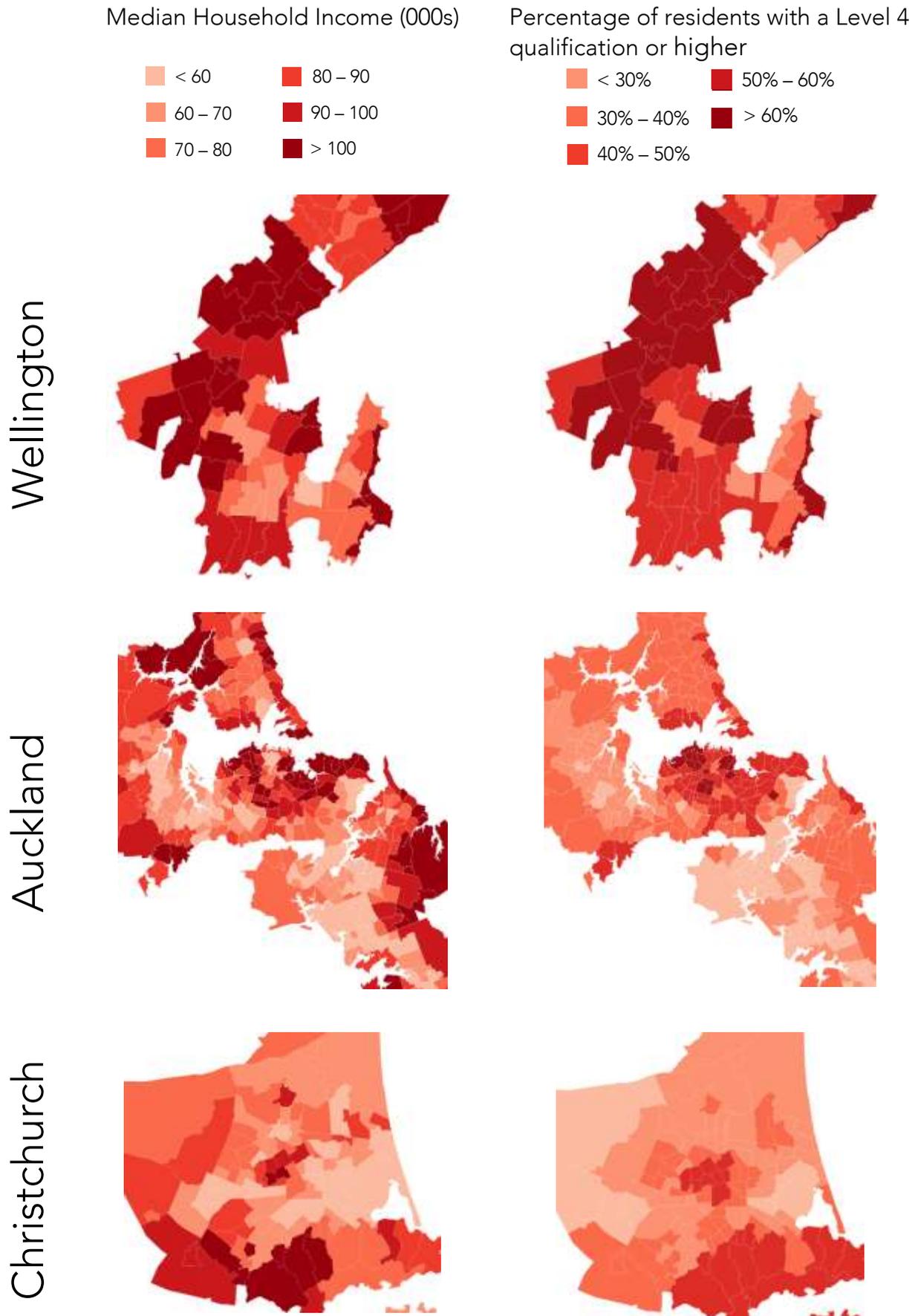
Source: Productivity Commission analysis of Howden-Chapman et al. (2015) data.

Similarly, UMR Research (2009) conducted a survey of locational preferences. That survey found that 39% of respondents most preferred to live in a suburb, compared with 11% for the central city, 22% for a small town and 26% for a rural area.

People who earn more and are more educated tend to live centrally

Significant income and education disparities exist in cities, including in New Zealand. Figure 4.20 illustrates that residents who earn more and are more educated tend to cluster in the inner suburbs and in suburbs with desirable natural attributes, particularly in Auckland and Christchurch. In contrast, a large proportion of residents who earn less and are less educated tend to cluster in the outer suburbs. As Chapter 2 highlights, these spatial inequalities can contribute to social exclusion, where residents in poorer or less-educated neighbourhoods face socio-economic barriers.

Figure 4.20 Income and qualification distribution for New Zealand cities, 2013



Source: Productivity Commission analysis of Statistics New Zealand data.

Notes:

1. A level 4 qualification relates to the New Zealand Qualifications Framework set by NZQA.
2. Cities are broken down into census area units as defined by Statistics New Zealand.

In Auckland and Christchurch, those residents who earn more and are more educated tend to cluster in suburbs near the city centre. Suburbs with lower levels of income and education are clustered in east Christchurch and in south Auckland and west Auckland. The main exceptions in both cities are suburbs close to natural amenities such as beaches and attractive views. These suburbs also attract those with higher incomes and education. Also, Auckland has many lower-income residents in its CBD because of its large student population.

Despite Auckland's poly-centric form, residents with higher education and greater incomes do not tend to live close to employment nodes outside the city centre. This may reflect that these employment nodes consist of fewer knowledge-intensive services or higher-earning industries.

Wellington exhibits patterns of spatial inequality, but less so than Auckland and Christchurch. Residents who earn more and are more educated tend to cluster in the inner suburbs and in suburbs close to the coastline. However, levels of income and education are higher in Wellington than in most other New Zealand cities.

Recent studies propose that population growth at the city fringe can contribute to spatial inequalities (Chapter 2). While evidence is mixed, the trend of most development occurring close to the urban fringe in New Zealand raises questions about the role of planning policies in influencing social outcomes and how people's housing choices affect their longer-term mobility.

F4.5

Spatial inequalities in levels of income and education exist in New Zealand's largest cities. Residents who earn more and are more educated tend to cluster in the inner suburbs and in suburbs with desirable natural attributes. By contrast, residents who earn less and are less educated tend to cluster in the outer suburbs.

4.5 Responding to growth and decline

Local governments in New Zealand are responsible for providing the services and infrastructure to support urban living. Changes in the size and population of cities – either upward or downward – can be challenging for local authorities to respond to effectively. This section discusses how councils have used policy to address issues relating to growth and decline.

Managing the growth of cities

Fast-growing New Zealand cities currently attempt to steer growth with urban limits and densification policies. However this has not always been so. Historically, urban development in New Zealand – particularly in larger cities – has comprised of sprawling low-density suburbs. Population growth has been absorbed through the expansion of greenfield developments. Such a settlement pattern occurred in part due to automobile-centred transportation and a lack of concern for environmental impacts. A strong preference of people for detached homes has also played a significant role in driving suburban development.

Some associate sprawl with traffic congestion, environmental damage and the inefficient provision of infrastructure. They also often argue that sprawling cities discourage community-oriented social patterns, promote private transport instead of walking, cycling and public transport, and ultimately lower each resident's quality of life.

These concerns about accommodating growth through sprawl have brought about a gradual shift in planning policy in New Zealand towards more compact urban development. Local government policies have drawn heavily from international trends influenced by the Compact City planning movement (Box 4.3).

Box 4.3 The 'Compact City' movement

Since the late 1980s, an increasing number of cities worldwide have pursued a compact form and promoted high-density living, public transport and accessibility. The movement began as a simple urban containment policy to protect the local natural environment. However, over time, it adopted broader policy objectives for liveability and global environmental issues.

Compact City policies aim to achieve "urban sustainability" by promoting environmental quality, economic prosperity and social equity. It is argued that by influencing the use of space in cities, policies can reduce intra-urban trip distances and so reduce the costs of transporting goods and services. Proponents also argue that maintaining a compact form helps to conserve farmland and biodiversity around urban areas and to make infrastructure investment more efficient. Other perceived benefits include reductions in carbon emissions through public transport, greater quality of life and better health outcomes for city residents, and stimulation of economic growth.

There is strong debate about the Compact City movement and its policies. Arbury (2005) emphasises the complexity of the urban environment, and notes that policies designed to achieve a compact urban form may have unintended consequences. Concern has also been raised around air pollution problems associated with increased traffic congestion, housing supply constraints and a loss of open and recreational space, resulting from a compact form. Michael Neuman (2005) argues that

the compact city is neither a necessary [n]or sufficient condition for a city to be sustainable and that the attempt to make cities more sustainable only by using urban form strategies is counterproductive. Instead, conceiving urban form as a processual outcome of urbanization opens the door to a new and dynamic conception of urban planning that is based on a reversal of the last century's (not exclusive) focus on urban form governed by the static tools of the plan and zoning. (p. 23)

Source: OECD (2012b).

The growing trend of Compact City policy in New Zealand began with the introduction of the Auckland Regional Growth Strategy (ARGS) in 1999. The strategy aimed to accommodate the city's growing population in a way that did not further degrade the natural environment, economic viability and social equity of the Auckland region. It promoted both urban limits and densification policies to manage growth. Zhao, Chapman and Howden-Chapman (2011) argue that the trend of continuing urban sprawl around Auckland has been slowly diminishing since the ARGS was introduced. Yet in its *Using land for housing* report, the Commission noted an important downside of an urban limit restriction of land supply for housing has driven up land and house prices in Auckland.

Growth management and compact urban development have become central tenets of New Zealand urban policy. Section 4.2 finds that although population growth is unequally distributed across urban areas, a majority of cities have experienced some recent growth. Many local governments have introduced growth management strategies that aim to constrain the expansion of their cities (Table 4.2). Plans vary in their scale and scope.

Table 4.2 Selection of New Zealand spatial plans

Plan	Councils Involved	Summary
Whangarei Growth Strategy	Whangarei District Council	<ul style="list-style-type: none"> • Long-term strategy to accommodate growth in Whangarei District over the next 30–50 years. • Emphasis placed on urban consolidation as opposed to intensification. Most planned future development occurring near existing urban areas that have the capacity to grow to take advantage of existing assets, including the Whangarei District Council's infrastructure.
The Auckland Plan ²⁷	Auckland Council	<ul style="list-style-type: none"> • Plan that outlines how Auckland Council will address the challenges of Auckland's future growth. • Promotes the idea of a liveable and compact city with an excellent transport system, resilient communities and quality urban and natural environment. • Target set that 60% to 70% of future residential development will be within the 2010 Metropolitan Urban Limit.
Future Proof	Waikato Regional Council, Waikato District Council, Hamilton City Council, Waipa District Council	<ul style="list-style-type: none"> • A subregional growth strategy that focuses on providing well-designed, sustainable and affordable housing (including lifestyle options). • Supports urban renewal and increased densities in new residential development to accommodate growth and reduce people being dependent on their car for transport in the region.
Hamilton Urban Growth Strategy	Hamilton City Council	<ul style="list-style-type: none"> • Strategy that places a focus on developing land within urban limits more efficiently, and promotes compact living environments that limit sprawl. • Identifies greenfield development areas required to accommodate future growth.
SmartGrowth	Tauranga City Council, Western Bay of Plenty District Council, Bay of Plenty Regional Council	<ul style="list-style-type: none"> • A blueprint for future urban development to accommodate rapid growth in the western Bay of Plenty subregion. • Planning tools include urban limits as well as residential density targets. • Settlement pattern looks to promote a more compact urban footprint and protects productive rural land for the foreseeable future.
Wellington Urban Growth Strategy	Wellington City Council	<ul style="list-style-type: none"> • A strategy with objectives that include improving walking amenities and public transport, increasing medium-density housing, and encouraging a mixture of housing types.
Greater Christchurch Urban Development Strategy	Christchurch City Council, Selwyn District Council, Waimakariri District Council, Environment Canterbury	<ul style="list-style-type: none"> • A strategy (prepared before the Christchurch earthquakes) that aims to identify growth areas within the Greater Christchurch area. • The proposed settlement pattern is based on maintaining the distinction between urban and rural areas by concentrating development at and around existing urban areas.

Plans discussed in Table 4.2 place a heavy focus on the pursuit of “urban sustainability” while accommodating growth. All plans emphasise the importance of maintaining the distinction between urban and rural areas to limit sprawl. However, the degree to which cities aim to mitigate the sprawl effects of growth varies. For example, the Auckland Plan, Wellington Growth Strategy and SmartGrowth place a

²⁷ Auckland Plan is required under the Local Government (Auckland Council) Act 2009.

heavier emphasis on pursuing a compact form compared with other strategies such as the Whangarei Growth Strategy.

Councils often say urban intensification is a necessary tool to manage growth sustainably. Intensification refers to an increase in density within an established area. Policies that councils have implemented to promote intensification include residential density targets, urban growth boundaries and zoning for medium-density housing. The desired level of intensification is often linked to the ratio of greenfield to brownfield development or the proportion of growth which will be accommodated within urban limits. For example, the Auckland Plan specifies that 60% to 70% of Auckland's growth will be contained within existing urban limits.

Johnson (2008) notes that the focus of growth management planning in New Zealand has shifted from how to simply manage growth to how to create a more desirable future for residents. Many councils support the idea of a compact urban form so as to benefit the environment, increase public transport use and reduce car dependency, and increase amenity value.

While faster growing councils have been to the fore in preparing growth strategies, councils with low population growth have also expressed a desire for a more compact urban form. Dunedin City Council (2012) states that

the overall objective for urban form and future development for Dunedin is to have a Compact City with resilient townships. (p. 31)

Palmerston North City Council (2010a) labels a compact city as one of its four economic objectives in its Residential Growth Strategy.

Gap between council aspirations and outcomes

A gap seems to exist between council aspirations of compact cities as expressed in their plans and actual policy outcomes. An evaluation of the Auckland Regional Growth Strategy in 2007 highlighted many challenges around delivering residential intensification including a lack of development capacity, little community support and a lack of consistency between regional plans and district plans (Regional Growth Forum, 2007). In Tauranga City Council's submission to the Commission for the *Using Land for Housing* inquiry, it noted that

Residential infill and intensification is expected to accommodate 25% of the sub region's growth to 2051 in accordance with the BOPRC Regional Policy Statement... This would be about 300 to 400% greater than the recent trend for residential intensification. (sub. 47 attachment one, p. 68)

Greater Christchurch Urban Development Strategy Partnership also reported to the Commission in an engagement meeting difficulties faced in achieving densification targets.

As discussed, New Zealand cities have become denser but residential development tends to be concentrated near the urban fringe. Auckland in particular observed a subdued level of development in inner suburbs close to the city centre. Public preference for larger, stand-alone houses away from the city centre plays a key role in driving these trends (section 4.4). The tendency for existing property owners to oppose intensification in their neighbourhood also plays a role (Chapter 8). A high concentration of development in outer suburbs may not necessarily harm the neighbouring rural environment. However, it does not help to realise some of the perceived benefits of a compact urban form, including walkability and accessibility. To achieve these benefits, more development would be needed closer to the city centre.

F4.6

Many New Zealand councils have policies aimed at creating a compact urban form for their cities. Yet most have struggled to achieve this goal, particularly in densifying their inner-city suburbs.

Responding to decline

Many local authorities perceive population decline as a significant challenge. Section 4.3 notes that declining areas tend to lose a greater share of their younger and more productive residents, thus negatively impacting the local economy. The resulting impact on incomes and job opportunities hurts the wellbeing of local

residents and families. It could also potentially create a cycle of decline, with people choosing to migrate towards more prosperous towns and cities. Additionally, declining councils can find it hard to maintain service levels and fund the maintenance and replacement of infrastructure assets with a declining rating base.

The Terms of Reference for this inquiry ask the Commission to investigate the arrangements needed for areas of the country seeing economic contraction rather than growth.

Although most New Zealand cities are projected to grow over the next 30 years, a significant number of smaller urban areas are projected to decline. The following paragraphs discuss how councils have responded to decline pressures.

The most common planning response to urban decline in New Zealand has been planning ways to revitalise the local economy and reverse decline (Hollander et al., 2009). Ruapehu District Council (2015), for example, highlights the link between economic prosperity and population growth:

Reversing our population decline and growing our population is a critical success factor to our future economic wellbeing. (p. 16)

Most declining councils prepare Economic Development Strategies that outline initiatives aimed at stimulating population and economic growth. Examples of initiatives include removing development contributions to encourage commercial and housing development (Whanganui District), redeveloping the CBD (Grey District) and collaborating between districts to promote local business (Kawerau District, Whakatane District and Opotiki District). Despite projections of a 40% population decline in the Kawerau District, the Council (2015) argues that

population decline as projected will not eventuate due to: the anticipated future growth in Kawerau's commercial/industrial sector and subsequent availability of jobs, the lower cost of living and increased quality of life when compared to living in larger centres. (p. 117)

Yet, evidence on the success of these policies is mixed. Neumark and Simpson (2014) review relevant literature and argue that policies aimed at boosting the economic performance of underperforming areas are often ineffective. They also propose that positive evidence of these policies does not consider whether these areas will be able to sustain growth on their own following the immediate impact of revitalisation policies. McMillan (2015) argues that attempting to combat decline is increasingly challenging in New Zealand as demographic and economic trends encourage outmigration. Similarly, Hollander et al. (2009) contend that

aiming for economic growth in order to regain population growth – an uneasy compromise – is the most typical response of planners and politicians, a strategy that rarely leads to success anywhere. (p. 12)

Alternatively, there are pockets throughout New Zealand where local councils have looked to adapt to the changing circumstances presented by population decline. Rangitikei District Council is an example of a district council that has focused on shrinking its built infrastructure to match its declining population; a practice often referred to as right-sizing (Box 4.4).

Box 4.4 **Adapting to decline**

Right-sizing strategies aim to slow the rate of population decline and manage its consequences. Strategies focus on stabilising the current population, providing services and upholding quality of life while bringing cities and towns down to a size that enables an area to pay for itself. The evidence about whether right-sizing has been successful is limited, since only a small number of urban areas have adopted these strategies.

Rangitikei District Council in particular has addressed the issue of population reduction head-on. The three largest towns in Rangitikei District (Bulls, Marton and Taihape) have all experienced recent declines. In response, the Council identified the following as likely changes to its infrastructure by 2046:

- a smaller urban water and wastewater reticulation network;
- increasing alternative water and wastewater provision;
- a larger rural water supply network (but not necessarily Council owned or managed);
- a larger network of roads, but of more varying condition, and some in private ownership; and
- a smaller number of Council-managed community facilities, with some transferred to community ownership.

Source: LGNZ (2015b).

4.6 Conclusion

New Zealand is a largely urbanised country, yet the extent of its urbanisation – and its comparability with other countries – depends on the definition used. The commonly cited figure that 86% of New Zealanders live in urban areas is based on a New Zealand definition. That percentage includes people living in cities like Auckland down to towns as small as Leeston. Estimates should be treated with some care, as other definitions lead to lower results.

A majority of New Zealand cities and towns are growing but at varying rates. Most growth in cities is concentrated in or near Auckland, while most other cities face either modest growth or stagnation. Decline is mostly limited to smaller urban areas, although the number of declining urban areas is projected to increase. Demographic trends in low-growth cities suggest that the onset of population decline has negative implications for the local economy.

Many New Zealand councils have policies aimed at creating a compact urban form for their cities, however most have struggled to achieve this goal. While cities have become denser, a large share of development and employment growth within cities has occurred in areas outside the inner-city.

The complexity and scale of planning for large cities is vastly different compared to smaller towns. In particular, Auckland faces unique planning challenges with a larger, denser and faster-growing population than nearly all other New Zealand cities. The last twenty years have seen a number of Auckland-centred planning initiatives, ranging from the Auckland Regional Growth Strategy to the more recent Auckland Plan. However, all local councils, regardless of size, face planning challenges in the provision and servicing of infrastructure and local public amenities, and land-use regulation, despite the diversity in their experiences.