

Auckland Plan 2050

Auckland's key challenges

November 2018



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Table of Contents

1	Background	5
2	Auckland in context	5
3	Population growth and its implications	6
4	Infrastructure and growth	8
5	Impacts for people.....	9
6	Housing ownership and affordability.....	13
7	Healthy, safe and secure homes.....	14
8	Reducing environmental degradation.....	15
9	References.....	20

1 Background

The purpose of this document is to provide a summary of the three key challenges identified in the Auckland Plan 2050 and the supporting information and data behind these.

The development of the Auckland Plan 2050 commenced with consideration of global and national trends that may have an impact on Auckland and New Zealand over the next 30 years.

Feedback was also sought from key users and implementers of the plan from within the council to understand the key issues with the plan. Further refinement of this feedback along with desktop analysis revealed the key challenges that Auckland needs to tackle if we are to achieve the Auckland we want by 2050. Three major challenges identified are:

- population growth and its implications
- sharing prosperity with all Aucklanders
- reducing environmental degradation.

While each of the three major challenges are discussed separately in this paper, there are strong interrelationships between them and they all centre on a story of growth.

2 Auckland in context

There has been sustained population growth in Auckland because it is a place of opportunity. People want to raise a family and pursue personal, business and career aspirations here. Auckland has a world-wide reputation for its quality of life. In large part this is because of its outstandingly beautiful natural environment and the lifestyle opportunities it offers.

Auckland is the largest commercial centre in New Zealand and contributes almost 40 per cent of the nation's gross domestic product. Auckland is the main gateway in and out of New Zealand, with the largest and most active international airport, largest international sea port and a critical freight distribution function. Its employment diversity, market size and business clustering enable it to attract high value economic activity and international investment other parts of New Zealand cannot.

Auckland's scale means it is able to support higher education and nurture highly specialised businesses across a range of industries, such as healthcare and research. This has attracted young people from across New Zealand, and particularly the upper North Island, to migrate to Auckland for work and educational opportunities.

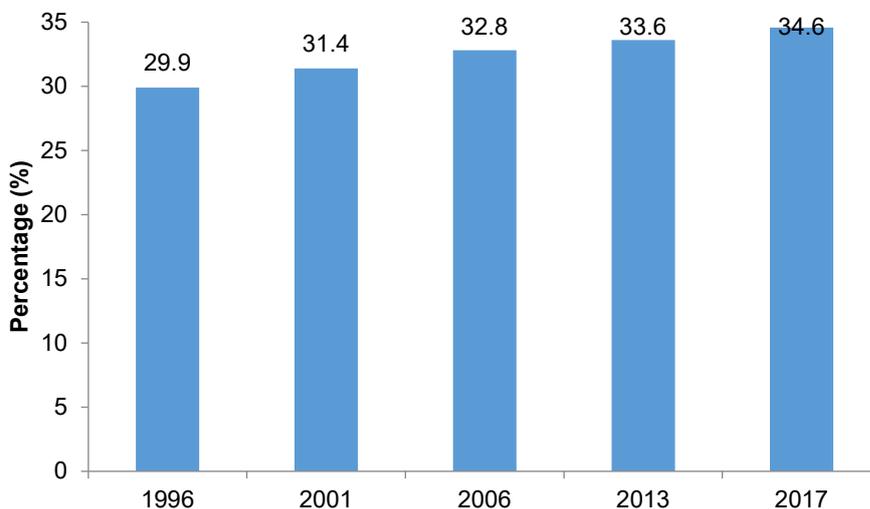
3 Population growth and its implications

Auckland is growing fast and at a far higher rate than anticipated.

As at 30 June 2017, the estimated population for the Auckland region was 1,657,200 (rounded to '1.66 million' in the Auckland Plan 2050). (Auckland Council, 2018b). This represented an increase of 180,700 from 2012, when the first Auckland Plan was released.¹ It also represented 34.6 per cent of the estimated population of New Zealand, which is significant, and means that, generally speaking, one in three New Zealanders lives in the Auckland region. (Auckland Council, 2018b).

Auckland's share of the national population count has been steadily increasing over time, as shown in Figure 1.

Figure 1 Proportion of New Zealand population living in Auckland (1996 to 2017)



Data source: Stats NZ, Subnational population estimates.

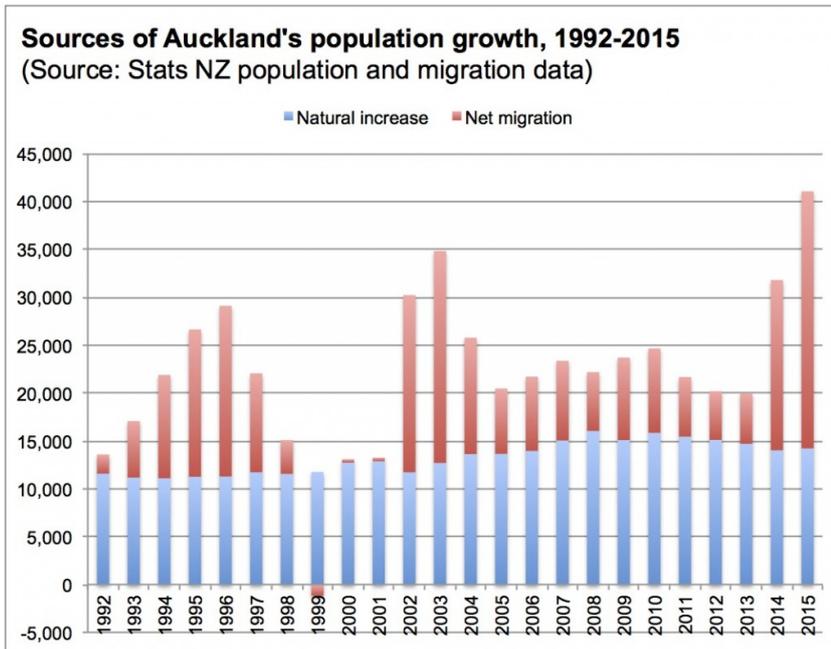
Stats NZ population projections (2013 (base)-2043, medium series) suggest that by 2043, Auckland could represent 39.3 per cent of the national population, up from 33.6 per cent in 2013. (Auckland Council, 2018b).

Over the next 30 years Auckland's population could increase by another 720,000 people to reach 2.4 million. This could mean another 313,000 dwellings and 263,000 jobs are required over this period.

Auckland's population growth is driven by both natural growth, meaning more births than deaths, and migration from overseas and from other parts of New Zealand (see figure 2). Natural growth is more easily planned for over the long-term, while changes in immigration patterns often require a more immediate response. (Auckland Council, 2018a).

¹ Please note that an earlier population estimate series was used in the development of the 2012 Auckland Plan; estimated population figures were revised after the 2013 Census.

Figure 2 Natural growth versus migration



4 Infrastructure and growth

The rate and speed of Auckland's population growth puts pressure on our communities, our environment, our housing and our roads. It means increasing demand for space, infrastructure and services. (Auckland Council, 2018a).

Demographic changes will also affect the demand for, and the range of, services that need to be delivered by Auckland's infrastructure. Over the next 20 years, there will be increasing numbers of older people and they will make up a greater proportion of Auckland's population. Households are expected to decrease in size, from approximately 3 to 2.7 people per dwelling. The population is also expected to become more ethnically diverse, with Pacific and Asian people expected to make up a larger proportion of Auckland's population. (Infrastructure Strategy, 2018).

The scale of investment required to fund transport and the other infrastructure needed to support Auckland's growth is significant (see figure 3). Even without the pressure of anticipated changes in Auckland's population over the next 30-years, Auckland's current infrastructure assets require maintenance, renewal and replacement. Regional disparities in service provision, resulting from historical underinvestment, also need to be addressed. (Infrastructure Strategy, 2018)

Figure 3 Management of council's infrastructure assets (capex and opex)

Overview of projected expenditure by infrastructure type:

Table 4.1: Total expenditure by infrastructure type 2019-2048		
Infrastructure type	Capital expenditure	Operating expenditure
Roads and footpaths	\$26.3 billion	\$23.8 billion
Public transport	\$18.0 billion	\$42.0 billion
Total Transport	\$44.3 billion	\$65.8 billion
Water supply	\$9.6 billion	\$10.7 billion
Wastewater	\$10.2 billion	\$16.6 billion
Stormwater	\$4.5 billion	\$8.0 billion
Total Water	\$24.3 billion	\$35.3 billion
Community Services	\$13.9 billion	\$31.6 billion
Total infrastructure investment	\$82.5 billion	\$132.7 billion

Source: Auckland Council 10 year budget 2018-2028, draft infrastructure strategy – baseline scenario

While population growth presents economic opportunities and results in a larger rating base, the amount of growth puts pressure on traditional funding sources. One of Auckland's biggest challenges is how to prioritise, sequence and fund growth-related infrastructure. (Auckland Council, 2018a).

Delivering Auckland's infrastructure requires co-ordination across a number of public and private organisations, depending on the type or scale of infrastructure (Infrastructure

Strategy, 2018). The infrastructure can range from major public transport projects such as rail, to community infrastructure such as libraries and recreation centres. It includes the largely ‘unseen’ infrastructure such as the water and wastewater network of pipes in the ground.

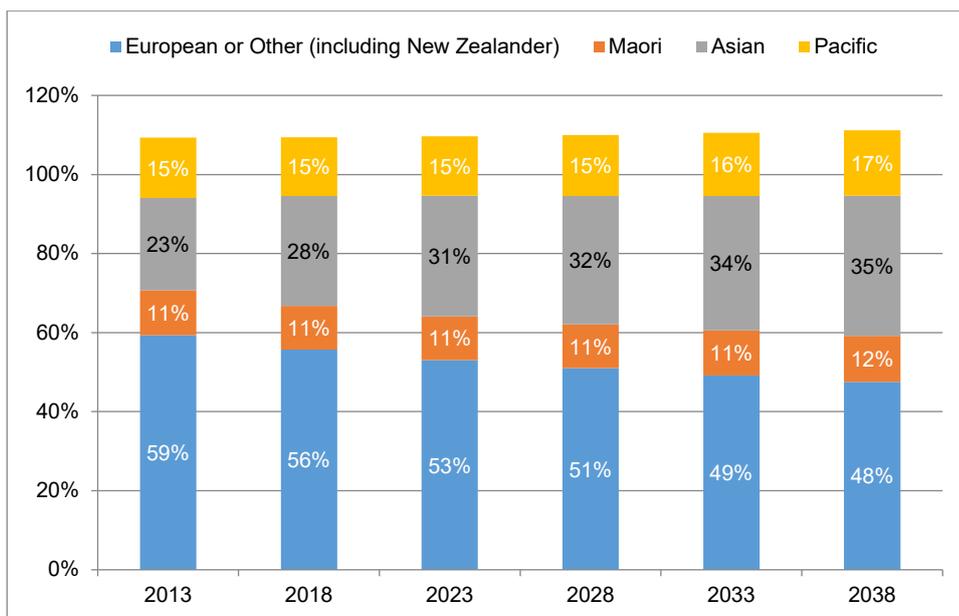
The Development Strategy proposes a plan for how and where Auckland will grow and provides clarity of where, and when, investment in planning and infrastructure may be needed. As noted earlier, around 313,000 dwellings and 263,000 jobs are likely to be required in Auckland over the next 30 years. The majority of this growth will need to be accommodated within Auckland’s existing urban area and significant future urban areas. The challenge is to support this growth in a cost-effective way and deliver good outcomes for the city. (Auckland Council, 2018c).

5 Impacts for people

Auckland’s population is growing and changing. What it means to fully participate and belong will continue to be important issues for all Aucklanders. (Auckland Council, 2018g).

Figure 4 shows the projected change in the distribution of each of the four main ethnic groups over the next 20 years. While Auckland has a very different ethnic composition to the rest of New Zealand and its ‘superdiversity’ is also projected to increase, diversity is not limited to ethnicity. Diversity encompasses age, gender, gender identity, sexual orientation, disability, nationality, religion and culture. (Auckland Council, 2018g).

Figure 4: Projected ethnicity distribution, Auckland



Source: Stats NZ 2013-base (update) ethnic population projections (released 2017)

The literature shows that the challenges of social cohesion are exacerbated where demographic trends change quickly and that the pace of change has the potential to create tension between newly arrived groups and established communities (Gooder, 2017). There is also the potential for tension between different groups within society such as older people and young people. Rapid population growth also increases pressure on existing social and community infrastructure, undermining the social fabric of communities (International Organization for Migration, 2015).

The challenge that Auckland faces is to maximise the benefits of diversity by creating an environment, which welcomes and celebrates diverse people, communities and businesses (Auckland Council, 2017b). This will require inclusion, equity, valuing and respect. To build cohesion, Auckland must strike a balance whereby a sharing of common values combines with respect for cultural diversity and differences, to together contribute to a shared sense of belonging. (Auckland Council, 2018g).

5.1 Sharing prosperity with all Aucklanders

Auckland's success is dependent on how well Auckland's prosperity is shared.

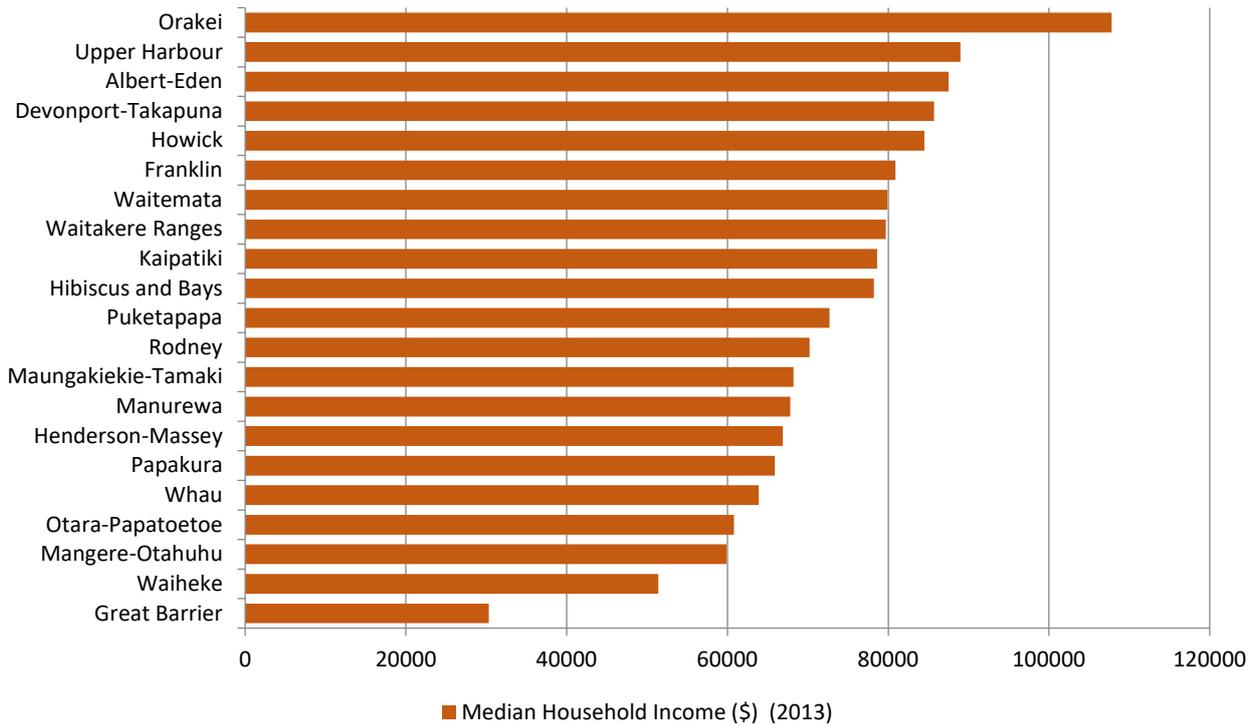
Inequalities undermine social cohesion and weaken social bonds (G20 Insights, 2017). Inequality has also been shown to have a number of negative consequences, including for life expectancy and health (Kondo et. al., 2009), social cohesion and trust (Lawrence & Bentley, 2015), educational performance and employment (Gibb, Fergusson & Horwood, 2012; Agasisti et. al., 2018), crime prevention (Fajnzylber, Lederman & Loayza, 2002) and social, cultural and civic participation (Laurence & Bentley, 2015).

Over the last five years, in many ways New Zealand's economy has been a good news story for those engaged in it. The national economy has grown and so have wages, salaries and employment. However, this prosperity has not benefited those outside the labour market as much (Salvation Army, 2017). Some indicators of this have been the increase in housing subsidies, increase in demand for food banks and persistent (though fluctuating) Not in Employment, Education or Training (NEET) rates. (Auckland Council, 2018f).

Many Aucklanders are prosperous and have high living standards, yet there are significant levels of socio-economic deprivation, often in distinct geographic areas. Income, employment, health and education outcomes are different in various parts of Auckland, and there are patterns across broad ethnic and age groups.

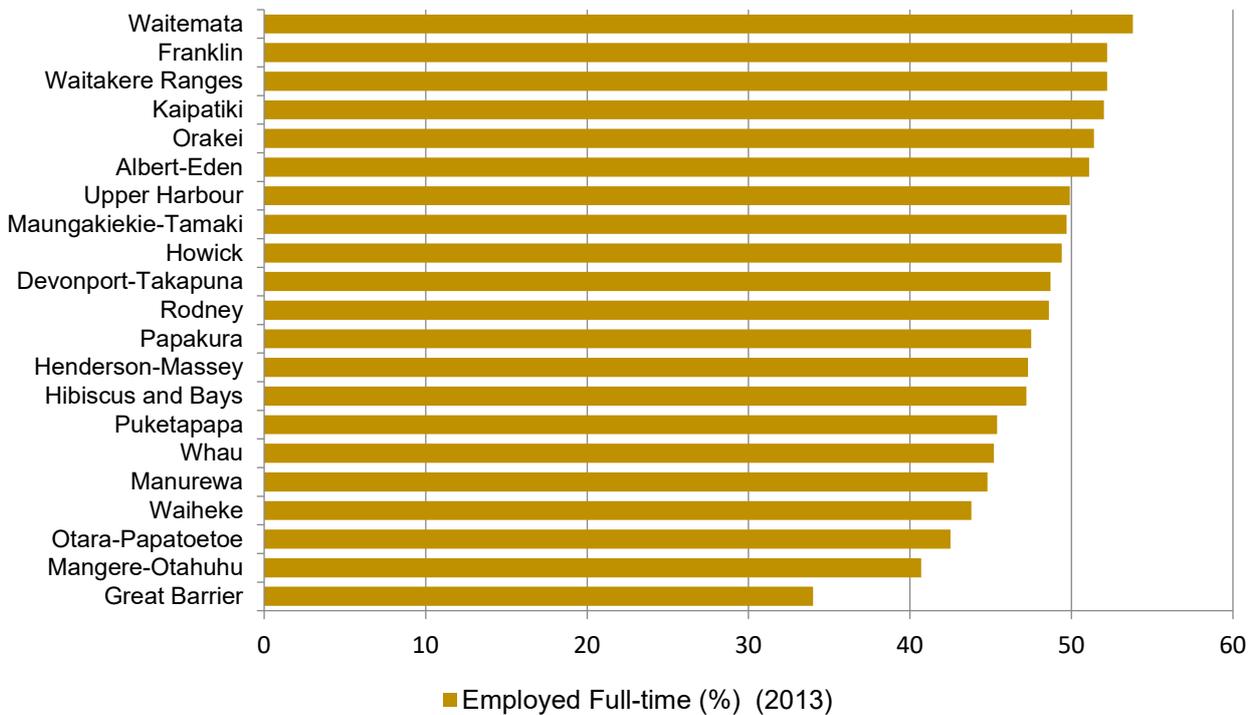
The spatial and generational effects of inequality are increasingly a part of the discussion on access, mobility, housing, infrastructure, employment and economic issues. To illustrate this point, Figures 5 to 7 show the differing rates of income, employment and education across Auckland, shown against each local board area. (Auckland Council, 2018a). Housing data is shown later in this section.

Figure 5 Income



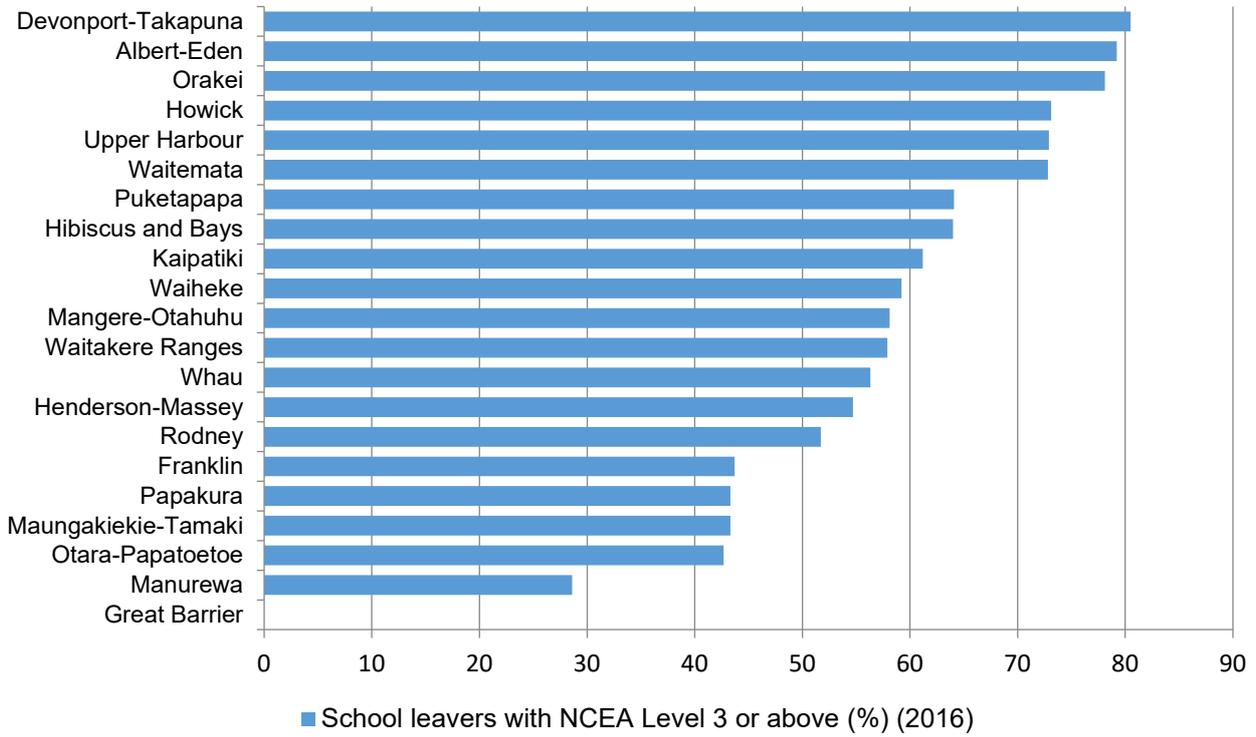
Source: Statistics New Zealand, median household income data

Figure 6 Employment



Source: Statistics New Zealand, employment data

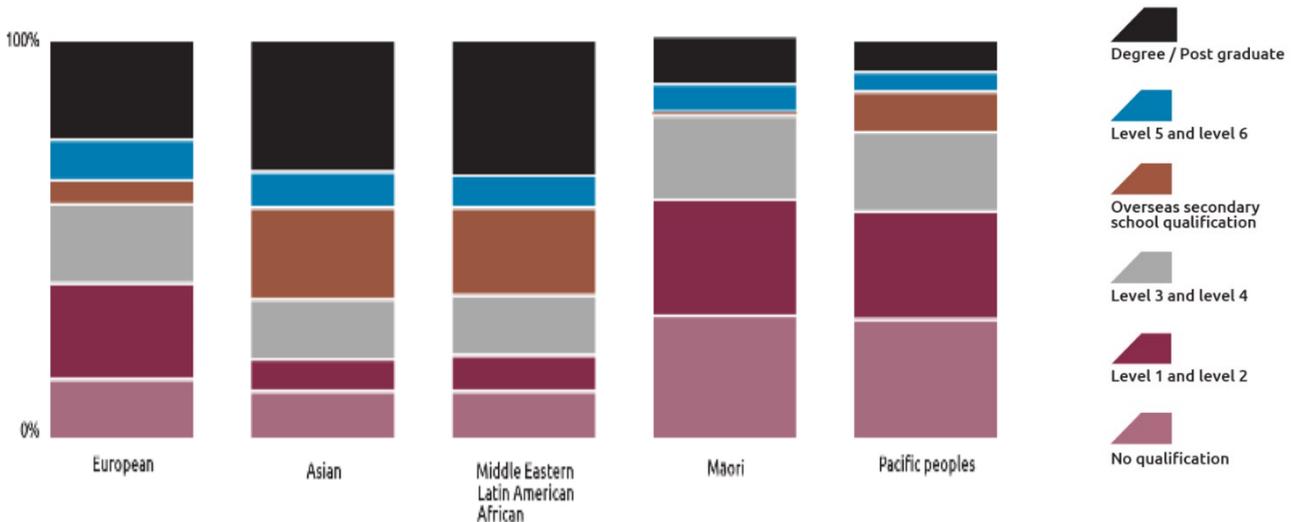
Figure 7 Education



Source: Ministry of Education, NCEA Level 3 or above data

Figure 8 below provides a snapshot of Aucklanders’ educational achievement by ethnicity (for those aged 15 and over). (Auckland Council, 2018f). Maori and Pacific peoples are less likely to obtain a degree or post graduate qualification than other ethnic groups.

Figure 8 Proportion of Aucklanders’ educational achievement ages 15 and over, by ethnicity (2013)



6 Housing ownership and affordability

Secure and healthy housing is associated with the accumulation of greater inter-generational wealth and other benefits not available to those living in short-term or unhealthy homes. Declining levels of home ownership, coupled with increasing housing related costs, is resulting in fewer Aucklanders being able to fully prosper.

The median house price in metropolitan Auckland is around ten times greater than the median household income (Auckland Council Chief Economist Unit, 2017a). Ideally it would not be more than three times greater, which has been considered the threshold for affordability (Robinson, Scobie & Hallinan, 2006)². Auckland has the highest median rent and is less affordable to rent in than any other region in New Zealand. The surge in house prices is primarily due to the supply shortfall compared to demand. This has been compounded by the ongoing desire to live and invest in Auckland, and relatively easy access to credit compared to other types of investments (Auckland Council Chief Economist Unit, 2017a).

Around 70 per cent of New Zealand's net wealth is held in housing (Johnson, 2015). However, this wealth is not distributed evenly. The wealthiest 20 per cent of households hold about 70 per cent of total household wealth. In contrast, the 40 per cent least wealthy households hold 3 per cent of total wealth (Stats NZ, 2016b). Current owner-occupiers and landlords in New Zealand have benefitted the most from rising house prices in Auckland.

With lower rates of home ownership than other Aucklanders (Stats NZ, 2016a), Māori and Pacific peoples are less likely to have the same opportunities for intergenerational wealth accumulation (Joynt, Tuatagaloa, and Lysnar, 2016; Lysnar, Tuatagaloa, & Joynt, 2016; Te Puni Kōkiri, 2017a).

Renting is no longer a short-term step before home ownership. It is becoming a long-term housing solution for many, and the number of lifelong renters is likely to increase (Eaqub & Eaqub, 2015). The price of private rentals has risen by approximately 25 per cent between 2012 and 2017 (Johnson, 2017a). Social cohesion and equity is at risk as the wealth inequality of home owners and renters increases (Joynt, 2017).

Affordability is more than just the price of a home. It includes other housing-related costs, (e.g. rent or mortgage payments, heating and transport), whether people own or rent their home. Auckland Council's serviceability affordability model (SAM) measures household incomes, interest rates and deposit requirements (see Figure 9). The model shows that affordability has reduced over the past 15 years, with the lowest point in June 2015 (2017a). (Auckland Council, 2018e).

² Internationally, affordability has been defined as households spending less than 30 per cent of their budget on housing, Experts are now defining affordability as spending less than 45 per cent of their budget on housing and transport combined, recognising the actual costs of running a household (Litman, 2018).

Figure 9 Serviceability affordability model (SAM) June 2001 – February 2018



Source: Auckland Council's Chief Economist Unit; Real Estate Institute of New Zealand; Reserve Bank of New Zealand

Housing costs have become an increasingly large part of the expenses of many low income households, which has serious consequences for inequality (Ministry of Social Development, 2016b). Higher housing costs relative to income can mean that households do not have enough to meet their basic needs such as food, clothing and medical care (Statistics New Zealand, 2015c). Increasing housing costs entrench wealth divisions, including neighbourhood segregation and reduce economic mobility (Figure.NZ, 2015).

7 Healthy, safe and secure homes

Housing is one of the key modifiable determinants of health. Healthy homes are well-insulated and ventilated, safe, clean, well-maintained, and not over-crowded (Michigan Department of Health & Human Services, n.d.). Declining rental affordability and competition for good quality stock means the most vulnerable Aucklanders are more likely to be in sub-standard and poor quality housing. Unhealthy housing in New Zealand is linked to a range of poor health indicators, with uneven distribution across different groups. Māori, Pacific, and Asian (MPA) are at greater risk of hospitalisation and death from preventable housing related disease. (Auckland Council, 2018e).

Fundamental to safe, secure housing is secure tenure. Secure tenure is housing in which tenants are protected from unfair forced eviction, harassment and other threats including predatory redevelopment and displacement (Human Rights Commission, n.d.).

The frequency of moving to other accommodation is higher in the rental sector. In 2013, 35 per cent of renters had lived in their home for less than one year, compared with 14 per cent who owned their own home (Goodyear & Fabian, 2014). This transience affects people's stability, and their ability to be part of a resilient, cohesive community. Seniors and school age children are particularly affected by transience in the rental market.

As lower income groups are pushed further onto Auckland's periphery in search of affordable housing, the most vulnerable Aucklanders are impacted the hardest by unaffordable housing. Gentrification in traditionally working class neighbourhoods is also increasingly pushing those on lower incomes further out to Auckland's peripheries, where amenities and transport are less developed (Friesen, 2009). This has resulted in lengthy travel times to employment, financial stress, overcrowding, and homelessness.

8 Reducing environmental degradation

Auckland's population growth places increasing pressure on our already stressed environment, highlighting the inherent tension/interdependency that must be managed carefully.

Auckland's attractiveness is in part based on its unique natural environment. Significant features in the landscape include the harbours, beaches, lakes, coastline, maunga, ranges and the Hauraki Gulf islands. They are part of our cultural heritage and are an important part of Auckland's identity. But they are vulnerable to degradation from the impacts of human activities and side effects of the city's functioning and development (Auckland Council, 2018a).

The decline in Auckland's environmental quality has been measured by long term environmental monitoring, reported in State of Environment Reports (Auckland Regional Council, 2009b; Auckland Council, 2015). The reports have long highlighted declining environmental quality, and degraded environments which were remaining degraded, rather than improving. This indicates that our current directions and approaches have been insufficient.

The 2015 Health of Auckland's Natural Environment report (Auckland Council, 2015) shows that air quality has improved significantly in the last few decades as a result of effective air quality management. All other indicators however, show a decline. Marine and freshwater environments, for example, have been polluted by sediments and contaminants arising from development, building and industrial activities. This is explored in more detail below.

8.1 Decline in Land Environments

Between 2005 and 2015, the composition of Auckland's landcover (e.g. farmland, native forest and exotic forestry) stayed mostly the same, but there were some major local changes, particularly in growth areas as they are developed to accommodate Auckland's

increasing population. Diversity of the species these environments support varies across the region, with higher biodiversity values in larger, more intact forests, like the Waitakeres and Hunuas. (Auckland Council, 2018d).

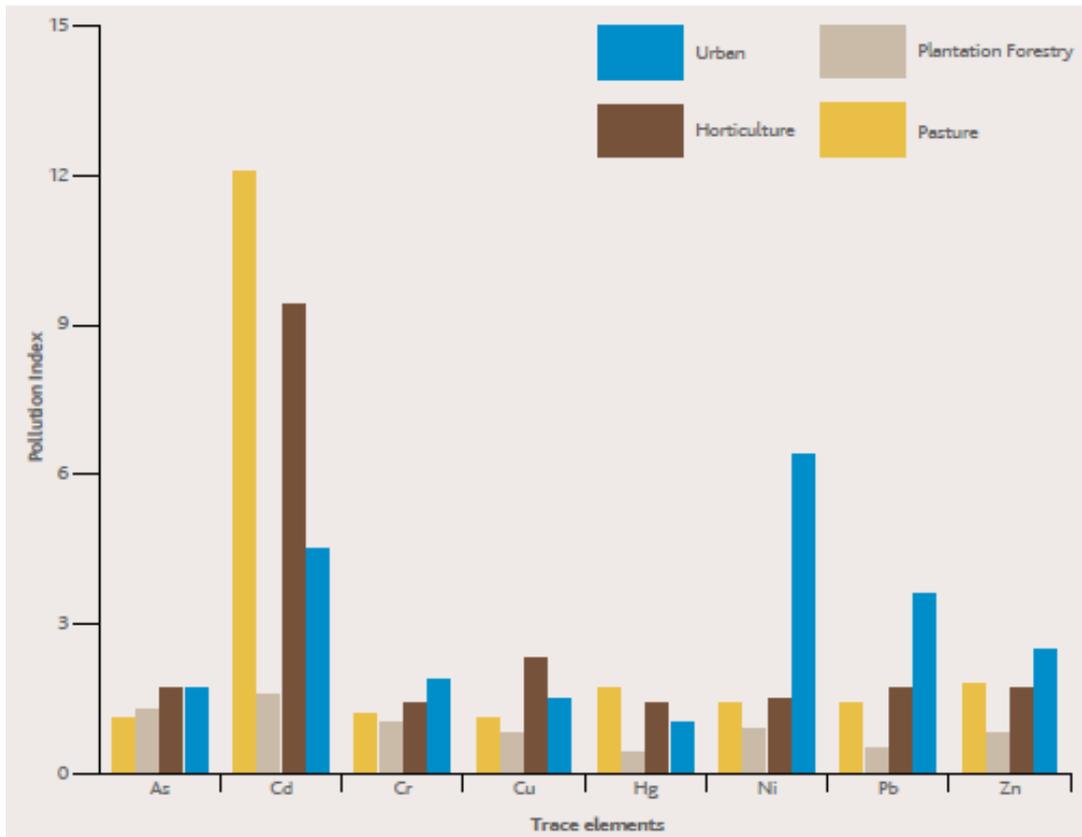
Auckland's growth has modified the region's natural landscapes. In some areas, this impact is more pronounced than in others, resulting in differences in natural features like the urban forest. Auckland's urban forest makes up 18 per cent of urban areas, with the lowest cover in light industrial areas and those with higher density and building heights. Protection of the urban forest is 50-50; 50 per cent has some protection and 50 per cent has no protection at all. Significant Ecological Areas protect 62 per cent of the protected trees in the region. Half of all trees are higher than 10m, and provide a wider range of environmental benefits, like habitat, shade and carbon storage than smaller trees (Bishop and Laurence, 2017).

Land environments are also under pressure from biosecurity risks. Kauri Dieback, a pathogen which attacks kauri, has been present in the Auckland region for several years, now infects 19 per cent of kauri, mostly concentrated in areas most popular for walking. Continued infection will mean that kauri may be completely lost as a species in Auckland. Similarly, in 2017 the Myrtle rust fungus was also discovered in the region. (Auckland Council, 2018d).

Activities on land have also affected the quality of the region's soils, particularly in rural environments where excessive fertiliser application and soil compaction reduces soil quality and encourages runoff (Curran-Cournane, 2015). Heavy metals, like copper (from fungicides) in rural environments, and nickel, lead and zinc in urban areas also have an impact on soil quality in the region (Auckland Regional Council, 2001; Curran-Cournane et al., 2015). Figure 10 below from the Health of Auckland's Natural Environment Report 2015 shows the pollution index by trace elements and land use types, with nickel featuring prominently in urban land uses and cadmium in horticulture/pasture.

Higher class soils, which have the versatility to support agricultural activities like market gardens, are under pressure from growth and development, particularly in southern growth areas (Curran-Cournane et al., 2014; Greenhalgh et al., 2017).

Figure 10 Pollution index by trace element and land use across urban and rural Auckland. 0-1=Low, 1-3=Moderate, Above 3=High.



Source: Health of Auckland's Natural Environment Report 2015

8.2 Degraded Marine Environments

Activities on land eventually have a downstream impact on the marine environment, resulting in reduced environmental quality. These issues are compounded by the diversity of uses and values in the marine environment, like recreation, customary harvest, tourism, species protection and commercial fishing. (Auckland Council, 2018d).

State of the Gulf reporting has consistently found that most environmental indicators are showing negative trends, or are staying stable at already degraded levels (Hauraki Gulf Forum, 2011; 2014; 2017). The 2017 State of the Gulf report highlighted several areas of decline in the Hauraki Gulf:

- pressure from fishing – estimated declines in snapper and crayfish stocks of 70-80 per cent, and commercial trawling methods occurring in sensitive ecological areas
- heavy metal run off from urban areas contaminating sediments
- high nutrient input from farming areas, particularly in the Firth of Thames
- wastewater overflows which occasionally breach swimming safety guidelines
- litter in the marine environment
- high sediment accumulation rates, and high suspended sediment levels and impact on ecology
- invasive marine species like Mediterranean fan worm

- ship strike and marine mammals
- pressure on seabirds for habitat and food.

8.3 Impacts of urban development

Auckland's growth has been accompanied by higher levels of urban development. Over the next 30 years, more urban development is projected.

While 'brownfield development' continues to occur (and provides significant benefits, for example, in terms of better utilisation of resources through increased density), the rate of 'greenfield development' is increasing rapidly. (Auckland Council, 2018a).

Greenfield developments distort the natural environment and can result in adverse impacts on the environment, for example, higher levels of stormwater runoff and pollutant loads. (Auckland Council, 2018a). Also, through the removal of vegetation, greenfield developments can cause higher levels of carbon dioxide in the atmosphere which, in turn, can result in climate change effects (Office of Brownfields and Land Revitalization, 2011).

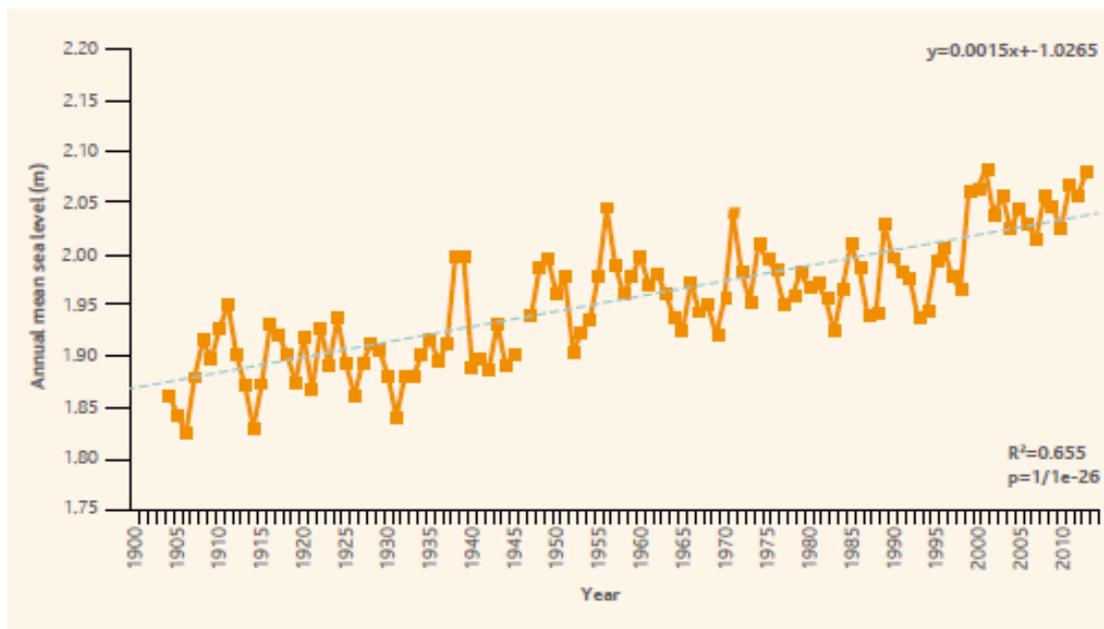
The conversion of greenfield land areas will need to be carefully managed in order to reduce adverse impacts on the environment as well as on people already living in those affected areas (for instance, on farmers). (Auckland Council, 2018a).

8.4 The effects of climate change

Auckland is exposed to a range of climate change impacts, such as sea level rise and more frequent extreme weather events. The effects of climate change may have direct and indirect impacts on our natural environments and sites of cultural heritage. (Auckland Council, 2018a).

Data from the 2015 Health of the Natural Environment Report in figure 11 below shows the results of sea level monitoring at the Port of Auckland in the Waitemata Harbour, demonstrating a general upward trend.

Figure 11 Annual mean sea level at the port of Auckland



Annual mean sea level at the port of Auckland, 1903-2013 (orange line). Significant sea level rise of 1.5mm/year illustrated by dashed blue trendline. Source: Ports of Auckland.

The Auckland Region climate change projections and impacts report prepared by NIWA for Auckland Council in November 2017 (NIWA, 2017) provided, for the first time, projected impacts of climate change for the Auckland region. Examples of direct impacts include climate change-induced flooding and coastal erosion. Indirect impacts could include changes in where and how Aucklanders must live in order to adapt to an altered climate. For example, areas of the Auckland region may become uninhabitable, whilst goods and services that are currently commonplace, may be more difficult to access due to difficulties in production, or in transportation from their places of origin/production. (Auckland Council, 2018d).

These impacts present challenges to Auckland's ability to achieve its social, economic, environmental and cultural objectives, such as:

- reduced performance of ecosystems and infrastructure as a result of changing climate conditions or damaging extreme events
- direct impacts on biodiversity, heritage assets, productivity and efficient market operations
- unequal distribution of impacts, with those such as the elderly, the very young, those living in poverty or with chronic health issues likely to be more negatively affected. (Auckland Council, 2018a).

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