

Demand for business land in the Wellington- Horowhenua region

Assessing future needs

Report prepared for the Wellington Regional
Leadership Committee Secretariat,
Tuesday 19 May 2023



SENSE PARTNERS
DATA LOGIC ACTION



Key points

Time to plan to meet continuing increases in business land demand

- Our assessment shows demand for business land will grow strongly across the Wellington-Horowhenua region over the next 3 decades, fuelled by higher expected population growth. Including Horowhenua District is consistent with the Wellington Regional Growth Framework, and the underlying spatial characteristics of demand for business land across the councils.
- Expect high growth in demand for business land to continue and increase beyond the previous 2018 assessment, driver in part by stronger population projections.
- Growth will be uneven. Local trends and nuance will determine where demand falls.

TABLE 1: DEMAND FOR BUSINESS LAND WILL VARY BY LOCAL COUNCIL
Increase in hectares of additional business land required by local council

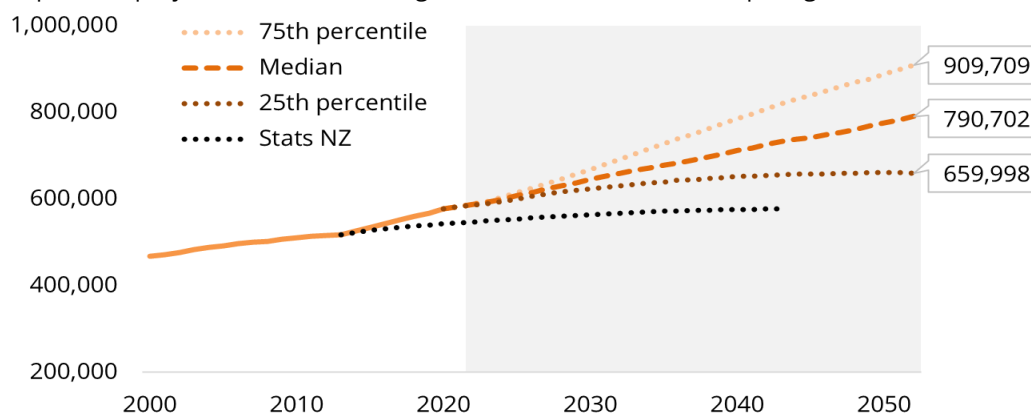
Horizon	HDC	KCDC	PCC	WCC	HCC	UHCC	SWDC	CDC	MDC
3 years	6.1	12.2	15.1	24.7	24.9	1.0	-1.1	7.5	-1.0
10-years	21.0	29.1	49.3	81.4	86.0	2.3	1.5	26.8	10.2
30-years	53.0	91.9	143.7	233.2	280.8	44.1	7.7	133.5	31.2

Source: Sense Partners

Population growth is the main driver of economic activity

- Councils used the Statistics New Zealand 2013 Census medium projection for our previous business land demand report in 2018. Population growth across the region has been stronger, increasing demand for business land.
- In this report, we use projections drawn from a bespoke demographic forecast model. Our central projection is supplemented by two additional scenarios. Our high growth scenario is a 75th percentile projection. Our low growth is a 25th percentile projection.

FIGURE 1: ROBUST POPULATION GROWTH DRIVES ECONOMIC ACTIVITY
Population projections for the Wellington – Horowhenua - Wairarapa region



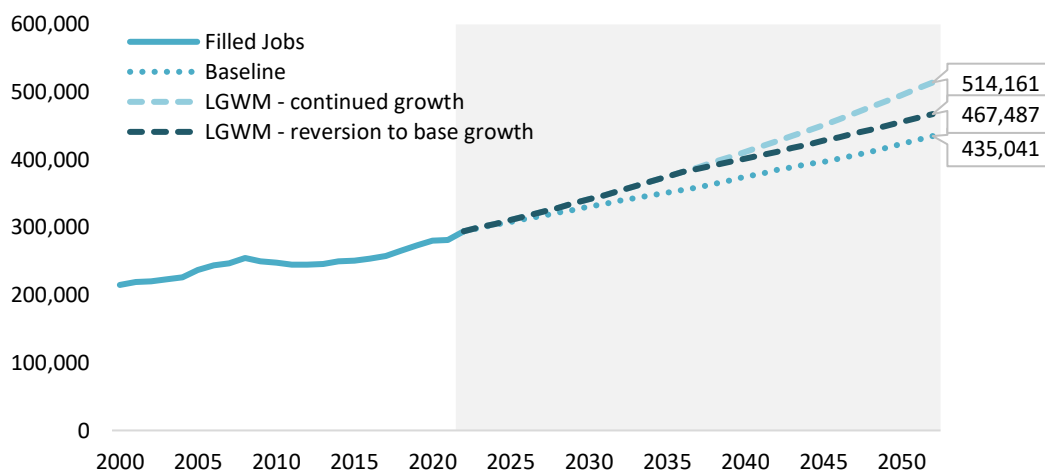
Source: Sense Partners



Transport investment will further boost economic activity

- Transport investment is a major influence on the rate and shape of demand growth. A number of major projects are in the pipeline, and some have already been completed.
- We adjust our baseline scenario to reflect two transport scenarios. Our Transport 1 scenario includes the Northern Corridor, Riverlink, and Rail Network Investment. Our Transport 2 scenario includes, in addition, Let's Get Wellington Moving.
- The transport 1 scenario includes projects already completed, and some projects highly likely to be completed over the period. As a result, all results presented in this report include the impact of these projects as a default.
- Our high-level modelling suggests transport linkages are important for economic activity. Without investment other regions are more attractive to firms and workers.

FIGURE 2: GOOD TRANSPORT LINKS WILL LIKELY INCREASE DEMAND SUBSTANTIALLY
Employment projections for the Wellington – Horowhenua – Wairarapa region



Source: Sense Partner

Accommodating demand will be a challenge

- Geography is a major constraint across much of the Wellington region. This increases the cost of developing land, as well as impeding transport access. It may prove difficult to accommodate the full set of projected demand due to these natural constraints.
- Competition with residential uses adds another complicating element. The same land ideal for business is often just as ideal for residential uses. Some sectors can co-locate with residential activity and may be less impacted. Some sectors, particularly industrial, may find themselves priced out of an area.
- Councils also have work underway to increase densities under the National Policy Statement on Urban Development and the Medium Density Residential Standards that could influence future demand and supply.



Improved transport links will boost growth in Horowhenua

- Future expansions of the Northern Corridor (Kāpiti Expressway) into Horowhenua district will improve accessibility to and through the region. Businesses locating here will be able to serve much of the Lower North Island, a benefit we expect will drive demand for industrial land.

TABLE 2: ADDITIONAL DEMAND BY SECTOR, HOROWHENUA (HECTARES)¹

	COM	GOV	RET	EDU	HEA	IND	OTH
3yr	0.1	0.1	1.4	0.2	-0.2	2.9	1.6
10yr	0.3	0.4	3.4	0.8	0.5	11.9	3.6
30yr	0.9	1.7	8.6	2.7	2.9	30.3	5.8

Source: Sense Partners

Industrial demand may shift north to Kāpiti Coast

- Recently opened segments of the Northern Corridor, namely Transmission Gully, have significantly improved access into Kāpiti from the south. This is encouraging strong population growth, in turn driving demand for healthcare, retail, and education. We expect industrial activity will flow north as well.

TABLE 3: ADDITIONAL DEMAND BY SECTOR, KĀPITI COAST (HECTARES)

	COM	GOV	RET	EDU	HEA	IND	OTH
3yr	1.0	-0.2	3.5	0.5	1.4	5.1	1.0
10yr	2.6	-0.2	8.9	1.6	4.8	9.1	2.3
30yr	6.0	-0.1	22.7	5.5	14.3	39.4	4.2

Source: Sense Partners

Transport links make Porirua an ideal place to do business

- Porirua sits at the intersection of a major north-south and east-west routes. This makes the area an ideal place to locate to service much of the region. We expect this accounts for much of the increase in demand, particularly in logistics businesses (industrial sector).

TABLE 4: ADDITIONAL DEMAND BY SECTOR, PORIRUA (HECTARES)

	COM	GOV	RET	EDU	HEA	IND	OTH
3yr	0.3	-0.1	0.6	1.4	-0.7	12.2	1.3
10yr	0.8	-0.1	3.2	3.7	0.3	37.1	4.2
30yr	2.6	0.1	12.9	11.0	7.0	92.8	17.4

Source: Sense Partners

¹ COM – Commercial; GOV – Government; RET – Retail; EDU – Education; HEA – Healthcare; IND – Industry; OTH – Other



Government activity drives employment growth in Wellington City

- As the centre of central government, Wellington's public sector employment will grow in line with government needs. Commercial services, much supporting government but other sub-sectors as well, will grow accordingly. Increases in population will boost demand for related support services, such as retail and healthcare.

TABLE 5: ADDITIONAL DEMAND BY SECTOR, WELLINGTON CITY (HECTARES)

	COM	GOV	RET	EDU	HEA	IND	OTH
3yr	1.5	0.3	8.3	2.7	1.5	8.7	1.8
10yr	5.3	3.4	18.0	6.6	5.1	39.8	3.2
30yr	25.7	14.0	46.3	18.5	15.6	108.6	4.5

Source: Sense Partners

Demand in Lower Hutt is driven by industrial activity

- Lower Hutt is the largest centre of industrial employment in the region. This existing strength creates its own demand, as the benefits from locating near other firms attract more demand.

TABLE 6: ADDITIONAL DEMAND BY SECTOR, LOWER HUTT (HECTARES)

	COM	GOV	RET	EDU	HEA	IND	OTH
3yr	0.4	-0.7	3.5	2.0	2.9	14.1	2.6
10yr	1.4	-0.7	8.8	4.8	10.6	52.3	8.8
30yr	6.1	-0.5	26.6	15.0	36.2	155.8	41.6

Source: Sense Partners

Beyond some short-term uncertainty, demand is solid in Upper Hutt

- In the short term, our numbers show some uncertainty around industrial jobs relative to qualitative information that suggests strong demand. However, over the long term, our numbers show to expect robust demand. If Lower Hutt struggles to accommodate their demand, we expect many firms to choose to locate in Upper Hutt.
- In the short-term, projected demand is highly influenced by transport modelling. We encourage councils to take a longer-term view and acknowledge the interplay between supply and our demand forecasts will ultimately determine local pressures.

TABLE 7: ADDITIONAL DEMAND BY SECTOR, UPPER HUTT (HECTARES)

	COM	GOV	RET	EDU	HEA	IND	OTH
3yr	0.0	-0.3	1.0	-0.4	-0.1	1.1	-0.4
10yr	0.2	0.1	2.9	0.4	0.5	-1.8	0.1
30yr	1.1	0.9	9.9	3.2	2.7	25.5	0.8

Source: Sense Partners



Tourism is a big driver of growth in South Wairarapa

- We expect tourism will continue to drive demand for retail services, such as accommodation and hospitality. The wine industry in Martinborough is an asset for the region, and a driver of tourism.

TABLE 8: ADDITIONAL DEMAND BY SECTOR, SOUTH WAIRARAPA (HECTARES)

	COM	GOV	RET	EDU	HEA	IND	OTH
3yr	0.0	0.0	0.6	0.0	0.0	-2.1	0.3
10yr	0.1	0.0	1.4	0.0	0.1	-0.6	0.4
30yr	0.3	0.0	3.6	0.4	0.4	2.8	0.2

Source: Sense Partners

Carterton is soaking up industrial activity for the Wairarapa

- The Waingawa industrial zone in Carterton is attracting industrial demand from across the entire Wairarapa region. The zone is immediately next to Masterton township, and so much of the flow on demand is expected to locate there.

TABLE 9: ADDITIONAL DEMAND BY SECTOR, CARTERTON (HECTARES)

	COM	GOV	RET	EDU	HEA	IND	OTH
3yr	0.0	0.0	0.0	0.1	0.0	6.9	0.4
10yr	0.1	0.0	0.1	0.2	0.2	25.7	0.6
30yr	0.2	0.0	0.9	0.5	0.5	130.7	0.8

Source: Sense Partners

Masterton is a key urban services centre for the Wairarapa

- Masterton is the largest township in the Wairarapa and acts as a services centre for the region. Steady population growth will drive demand for retail, education, and healthcare. The town will benefit from the Waingawa industrial zone on its doorstep. Working from home and the impact of internet shopping will also impact on demand for business land within the Masterton District.

TABLE 10: ADDITIONAL DEMAND BY SECTOR, MASTERTON (HECTARES)

	COM	GOV	RET	EDU	HEA	IND	OTH
3yr	-0.4	-0.2	1.4	0.3	0.9	-3.8	0.9
10yr	-0.3	-0.2	2.9	0.7	3.0	2.7	1.5
30yr	0.3	-0.2	7.4	2.3	9.8	9.9	1.7

Source: Sense Partners



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1. Overview

The purpose of this report is to quantify business land demand

This report has been prepared for the Wellington Regional Leadership Committee (WRLC) as a report for the wider Wairarapa-Wellington- Horowhenua region. It will be used to support spatial and other planning being undertaken by the WRLC for that region. Whilst the report breaks land requirements down to a council level, WRLC will be developing a regional response to meet required levels of expected demand. In the short term, this planning will be undertaken as part of the region's Future Development Strategy.

This report also helps councils think about the outlook for the regional economy, assesses demand for business land 3, 10 and 30 years from today to 2052, and responds to the requirements of the National Policy Statement on Urban Development Capacity (NPS-UD).

It is also intended to help councils across the region – Carterton District, Horowhenua District, Kāpiti Coast, Lower Hutt, Masterton District, Porirua City Council, Upper Hutt, Wellington City, South Wairarapa District Council, - plan. Our framework includes Horowhenua District. This approach is consistent with both the Wellington Regional Growth Framework,² spatial planning boundaries and underlying spatial characteristics of demand for business land across councils.

Business demand is assessed across nine sectors. These are commercial, government, retail, logistics, industrial, agricultural, healthcare, education, and a catch-all "other" category. Agriculture results are only considered in the context of Horowhenua and Wairarapa, as it is an important sector in these areas.

We report results for both floorspace demand and land demand. This helps to inform councils' understanding of the role of density across regions and across business sectors.

We look beyond the formal limits of the Greater Wellington Region

The continued development of the Northern Corridor expressway is improving connectivity between Horowhenua and the Wellington region. Over time, Horowhenua is likely to become a cohesive part of the regional economy, seamlessly providing valuable goods, services, workers, and homes to the region.

This means that the demand for business land across the Greater Wellington region will be strongly influenced by what happens in Horowhenua, and vice versa. Given this likely evolution, it makes economic sense to include Horowhenua in an assessment of business and demand.

We structure our analysis using an urban economics framework

The methodology and analysis contained in this report are driven by a body of theory in urban economics. This theory, backed up by an abundance of empirical research, tells us that people

² See <https://wrgf.co.nz/>



and businesses want to be close together. Being close together bring a variety of benefits, which economists classify as “agglomeration benefits.” In brief, these are:

- **Labour market improvements.** Both people and firms have more options of where to work and who to hire. More options mean better matching between workers and firms, improving productivity and incomes.
- **Market size improvements.** Businesses have access to a larger market to sell goods into. Both businesses and people have access to a larger market of suppliers, improving the range of choices and lowering costs through competition.
- **Innovation improvements.** Innovation is a creative and spontaneous process. In cities and towns, likeminded people can meet but also be challenged by new perspectives. Education opportunities also concentrate in cities. This combo fuels innovation.
- **Amenity improvements.** People living in cities may have access to a greater range of amenities. This includes niche products for sale, but also more people with a common identity. Cities and town centres can also better support community facilities, like libraries.

There are limits to how close people and firms can get. Aside from literal physical limits, the main considerations are land availability, permitted density, the cost of construction, and the quality of transport connections.

Some businesses require lots of land, such as farms. These principles apply rural economies and towns just as much as they apply in larger cities. And some businesses produce externalities, such as air pollution. These are also limits which constrain how close businesses can get.

Land availability will determine the horizontal spread of the city. Permitted density, alongside construction costs and financing, will determine the horizontal rise of the city. Together, these factors will determine the shape of the city, and how much space it has. People need space to live, work, and play. Firms need space to produce the goods and services consumed in the city and exported.

The transport system is what ties this all together. A better transport system means people can live further apart, enjoying more space and lower construction costs, while retaining the benefits of closeness. A better transport system also gives businesses cheaper access to more customers. This larger market may include export markets in other regions and overseas.

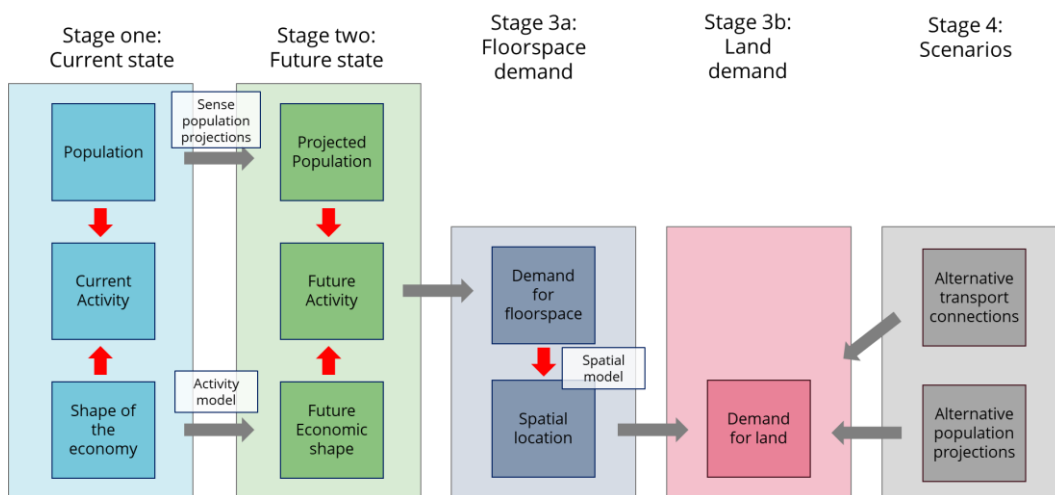
The demand for land over time, and where that demand is strongest, will be influenced by the intersection of land availability, permitted density, construction costs, and transport connections. Councils can have a strong and direct impact on many of these factors.



We adopt a four-stage process to forecast future land demand

The modelling method is split into four stages. These are illustrated in Figure 3 below.

FIGURE 3: WE ADOPT A FOUR STAGE PROCESS TO FORECAST FUTURE LAND DEMAND
Stylised approach to forecasting business land demand



Source: Sense Partners

Stage 1: Current state

The first stage looks at the current state of the regional economy across the Wellington region. The two key aspects of this are population demographics and sector composition.

Population data helps us understand the size of the market and the workforce in the Wellington region. This will determine to what extent people and businesses can tap into the agglomeration benefits discussed above. The higher the population, the more economic activity there will be. This will drive demand for land.

Sector composition gives an indication of what types of business are setting up in the region. This is important because different businesses use different amounts of land. Logistics businesses tend to require large amount of land per worker. Office based businesses, on the other hand, can be readily run out of multi-story towers, reducing the amount of land they need per worker.

Stage 2: Future state

The second stage utilises a model of economic activity to project region wide employment out to 2052. This model draws on job numbers by sector over the past 20 years as its key input. The model uses statistical methods to calculate the relationship between different sectors over time and trends implied by the data. These trends and relationships are carried forward.

This assumes that the past is a good guide of the future. Carrying past trends and relationships forward can give a reasonable idea of what future demand will look like. But this only applies as long as those trends and relationships remain consistent. COVID and the impact of working from home are yet to fully emerge in the data.



A separate spatial model is then used to allocate the region wide employment to each territorial authority. This gives projections of employment, by sector, for each territorial authority out to 2052.

Stage 3: Floorspace and land demand

The third stage converts the employment forecasts into projections of demand for land. It does this via a two-step conversion. First, employment is translated into demand for floorspace. This is done using an estimate of square metres per employee. This differs across sectors, with some requiring more space than others. The estimate also changes over time, reflecting trends in floorspace use across industries.

The result of this is a projection of floorspace demand. The relationship between floorspace demand is partially a result of regulations on permitted density in certain areas. Some sectors, like commercial offices, will take advantage of permissive density allowances to economise on land. Other sectors, such as industrial, cannot be reasonably carried out in a tall building and require more land to function.

Stage 4: Alternative transport connections

Demand for land will be heavily influenced by the quality of transport connections across the region. Business land demand can also be influenced by residential location choices. Transport projects only just coming online, or those anticipated in the future, won't be reflected in the historical data used in our model. As such, we apply a separate adjustment to demand projections to account for transport improvements.

In this stage, we use methods from the Waka Kotahi Monetised Benefits and Costs Manual (MBCM)³ to evaluate assumptions about the impact of two transport projects on business land demand. The first is the Northern Corridor expressway, including Transmission Gully and the Kāpiti Expressway. The second is a set of assumptions about the Mass Rapid Transit (MRT) component of the Let's Get Wellington Moving (LGWM) package of transport improvements.

Stage 5: Alternative population scenarios

The future is intrinsically uncertain. Changes in economic conditions and population growth can be quite sudden. A good example is the impact of the COVID pandemic. An unforeseen event, this massively impacted the economy through near-total shutdowns. Migration, a cause of volatility in population growth, can to a total standstill after the initial return of many Kiwis.

To help address this uncertainty, we include two additional population growth scenarios, a low and high scenario. We then estimate the impact of these varying scenarios on land use. This gives an idea of the potential variation that might occur in future.

³ <https://www.nzta.govt.nz/assets/resources/monetised-benefits-and-costs-manual/Monetised-benefits-and-costs-manual.pdf>



2. The current economy

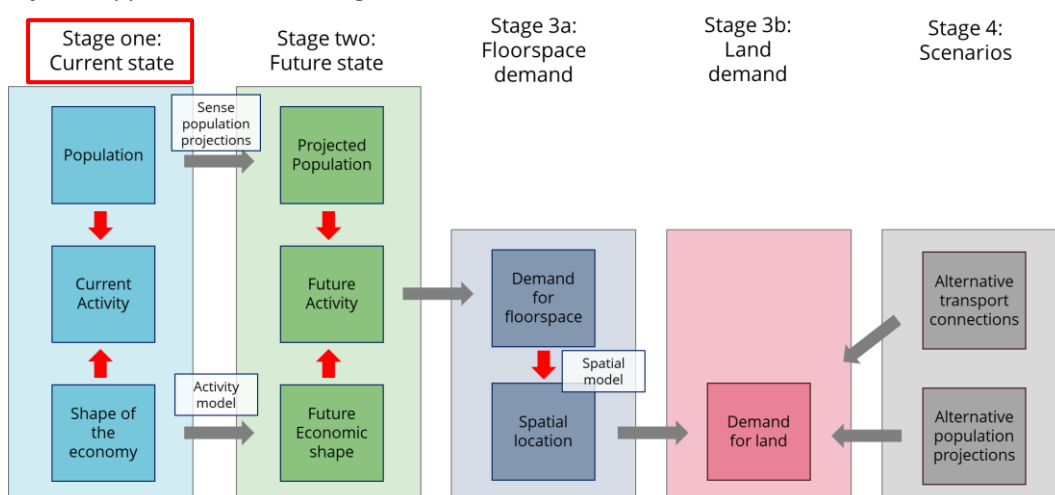
2.1. Our modelling approach

Stage 1 considers drivers of growth and provides key model inputs

The first stage looks at the current state of the regional economy across the region. Where possible we reference data from the Wellington region councils and Horowhenua. The main components are demographic data and business sector composition data. This provides essential inputs into the modelling in later stages.

Additional analysis of economic activity helps us understand the drivers of growth across the region, which may influence the nature of land use over time. We also consider the impact of the recent COVID-19 pandemic, and whether the flow on effects will be temporary or permanent.

FIGURE 4: UNDERSTANDING THE CURRENT ECONOMY IS THE FIRST STEP
Stylised approach to forecasting business land demand



Source: Sense Partners

2.2. Drivers of growth

Identifying drivers of growth to understand likely future trends

Assessing the current state of the regional economy will give an indication of existing trends, and how these trends are likely to play out. In particular, we aim to isolate important drivers of economic growth. Understanding these will help calibrate our model of employment projections.

High household incomes attract growth to the Wellington region

The Wellington region has a high concentration of jobs in upper income brackets with variation across territory authorities. Figure 5 below shows the distribution of median incomes



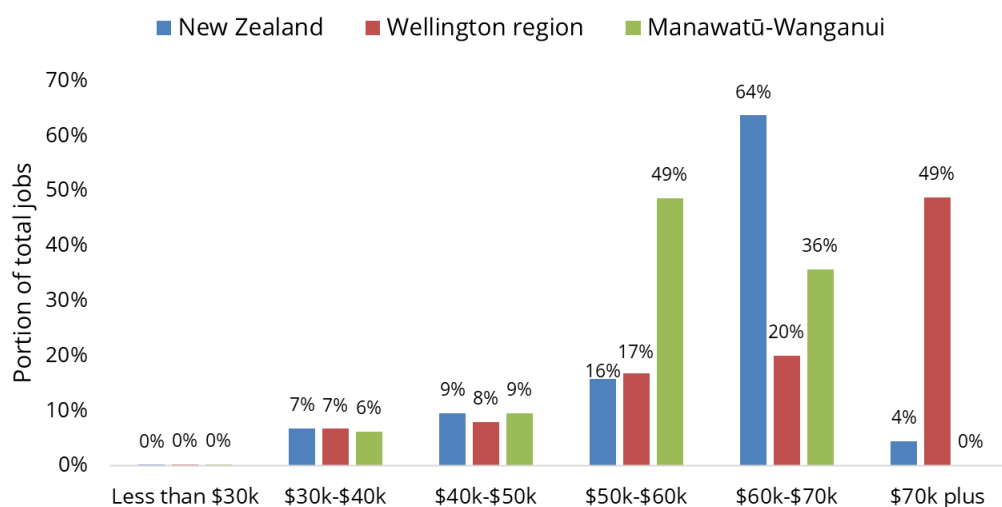
across all jobs and sectors, grouped into income bands. Almost half of jobs in the Wellington region earn a median wage in advance of \$70,000. For the rest of the country, this figure is just 4%. The bulk of jobs NZ wide lie in the \$60,000 to \$70,000 band. This pattern has been consistent over time and was noted in our last report on business land demand in 2017.

Horowhenua lies in the Manawatū-Wanganui region. The region has lower incomes compared to Wellington or New Zealand as a whole, with 49% of jobs lying in the \$50,000 to \$60,000 income bracket. The Wellington numbers are skewed by the concentration of central government in Wellington City. Government jobs in Wellington earn an average \$77,500, compared to \$62,000 in Manawatū-Wanganui.

Despite the prominence of Government, all jobs in Wellington have a higher average income than in Manawatū-Wanganui. This is the result of agglomeration benefits – the productive gain from being in a large urban cluster.

Within the Wellington region, there is variation in local incomes. Many of the higher paying jobs are located in Wellington City, for example. However, the people working those jobs frequently live outside of Wellington City, as far afield as Horowhenua and Masterton. The ability to work remotely, and the much broader acceptance of this post-pandemic, will increase this spread. This means that the flow on benefit of those jobs is felt across the region.

FIGURE 5: WELLINGTON REGION'S INCOME DISTRIBUTION IS SKEWED HIGHER
Median income distribution



Source: Statistics New Zealand

High levels of education are reflected in estimates of human capital

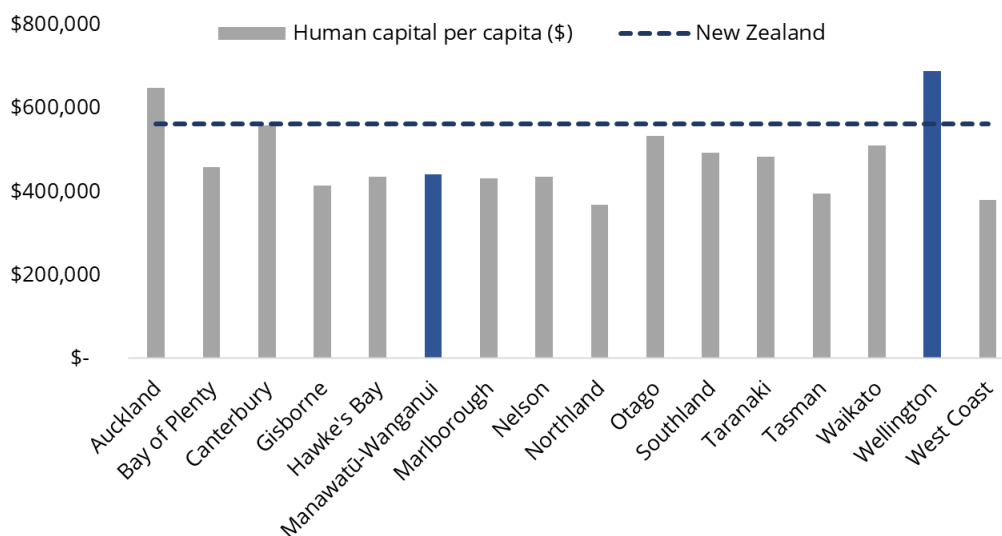
The high incomes identified above are reflective of the concentration in Wellington of a highly educated workforce. While local education institutes contribute, this really reflects educated people being attracted from all over New Zealand. Figure 6 below shows a statistical estimate of the value of qualifications.



A higher value represents a concentration of higher qualifications, such as tertiary and postgraduate degrees. This also indicates an improved ability to make use of those qualifications. This is a key aspect of the agglomeration benefits discussed in Section 1 of this report.

The human capital estimate for Horowhenua is \$322,000. This is lower than the \$440,000 estimate for the wider Manawatū-Wanganui region. The reason is that the regional figure is impacted by the city of Palmerston North. Much like incomes, human capital tends to be higher in larger cities than in smaller towns.

FIGURE 6: WELLINGTON HAS THE HIGHEST PER CAPITA HUMAN CAPITAL
Regional estimate of human capital per person, 2018



Source: Sense Partners

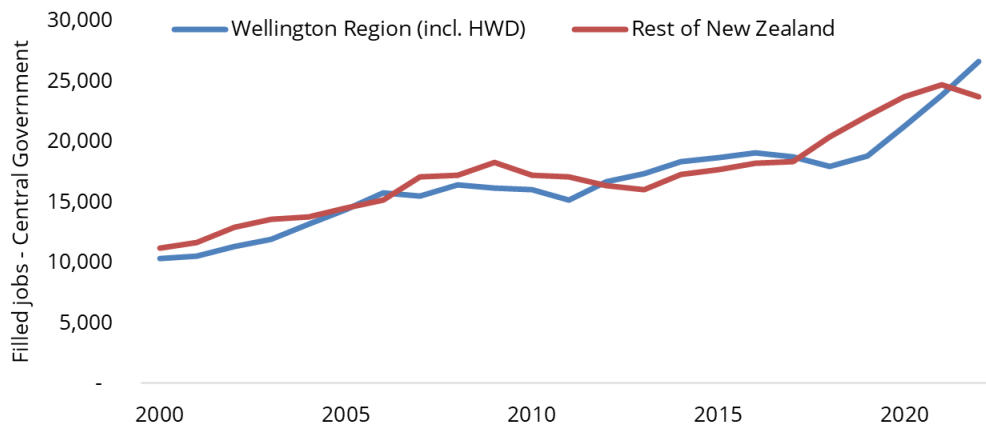
The concentration of Government helps drives incomes and education

Government is a major direct and indirect employer of highly qualified individuals, and New Zealand's civil service is largely concentrated in Wellington. Figure 7 below shows that roughly half of Central Government administrative jobs are located in the Wellington region. Direct employment comes in the form of employing individuals within government agencies. Indirect employment occurs in the commercial sectors which support government operations, such as lawyers and consultants.

Central government is relatively price-insensitive compared to other sectors, so they are able to out-compete others for office space. Relatively inelastic demand for commercial services ensures those sectors are also able to compete for remaining space. The result is that only highly productive sectors, such as the tech industry, can afford to compete for the remaining space. This raises median incomes across the region, but particularly in Wellington city.



FIGURE 7: CENTRAL GOVERNMENT IS CONCENTRATED IN WELLINGTON
Employee count by ANZSIC06 sector – Central Government Administration



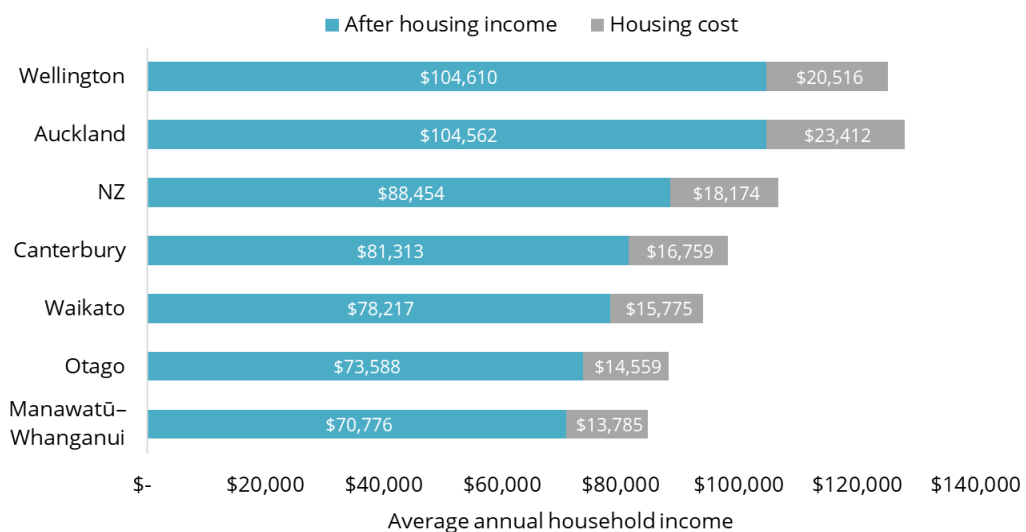
Source: Statistics New Zealand

The region has a slender advantage over Auckland housing costs

Figure 8 below shows estimates of housing costs and after housing disposable incomes. Housing costs reflect rents and mortgage costs across the housing stock. This estimate, has lower housing costs for Wellington than Auckland, giving the region a slight edge in disposable incomes. But there are local variations – Masterton is more affordable, but the gap is closing.

Note that housing costs are not adjusted for housing quality or local amenities that can improve quality of life. Housing costs may be higher in Auckland due to a warmer climate, for example. Higher costs may also reflect better urban amenities, such as parks or nightlife. The tools available to compete with other parts of the country are not simply lower house costs, but a better living experience. This includes a quite rural lifestyle in areas like the Wairarapa and Horowhenua.

FIGURE 8: WELLINGTON HOUSING COSTS SLIGHTLY LOWER THAN AUCKLAND
Household income pre- and post-housing costs. Wellington region excl. Horowhenua.



Source: Statistics New Zealand

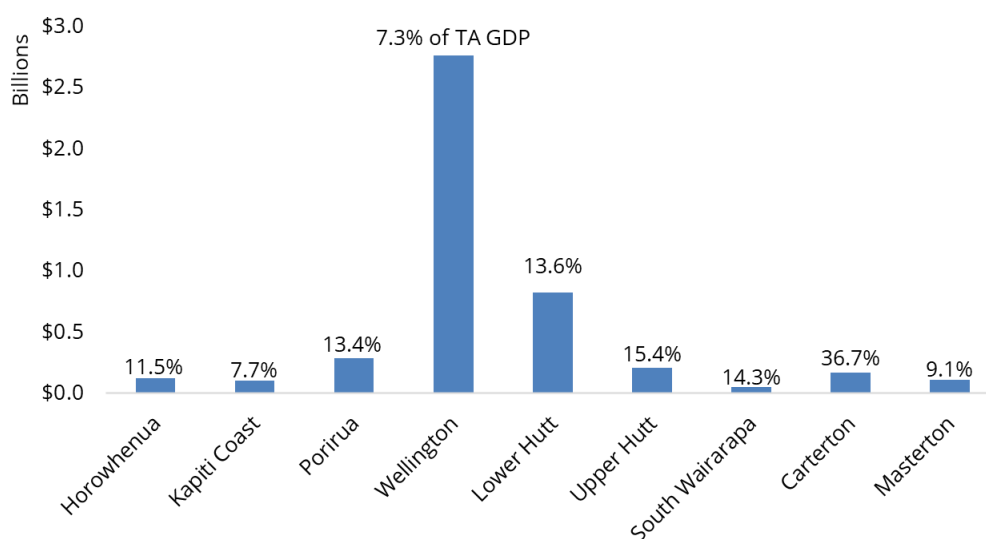


Manufacturing is an important component of economic activity

As measured by contribution to GDP, manufacturing is the largest industry in the country. In the year to March 2019, the sector contributed \$30.6b to GDP. In the Wellington region, however, it is only the 3rd largest industry overall, at \$4.6bn.

This ranking by no means indicates poor performance. Indeed, with just 6% of NZ wide manufacturing jobs producing 15% of manufacturing GDP, the Wellington region punches above its weight. Figure 9 below shows that much of the sector's GDP contribution is concentrated in Wellington city. This includes food and light manufacturing. However, manufacturing represents a larger share of all other Territorial Authorities' local economies.

FIGURE 9: MANUFACTURING IS CONCENTRATED IN WELLINGTON
Estimated nominal GDP by industry - manufacturing, 2019.



Source: MBIE, Statistics New Zealand

The prominence of manufacturing in local economies has been falling over time.

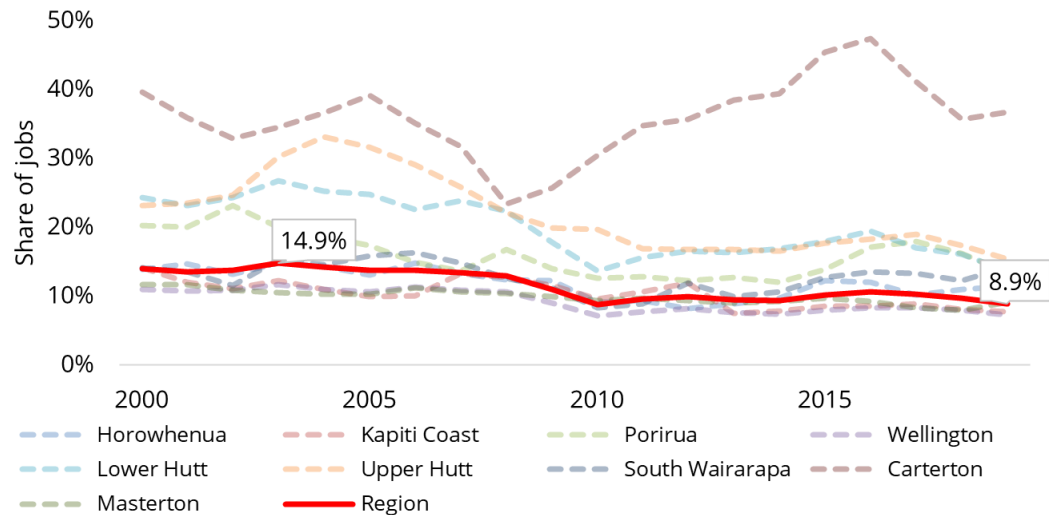
Figure 10 below indicates that manufacturing, as a share of local GDP, has fallen across most of the region since 2000. In 2019, the latest year local GDP estimates are available, manufacturing contributed 8.9% of local GDP. This is down from a 21st century high of 14.9% in 2003.

However, breaking this growth down we can see a change in the pattern. From 2000 to 2010, manufacturing GDP grew at an average 1.6% per year. This is compared to a 4.4% average across the entire regional economy, explaining the fall in share. Since 2021, however, this trend has ceased. Manufacturing has grown at 4%, while total GDP has grown at 3.9%.

The standout exception is Carterton District. The district contains a high portion of industrial land adjacent to Masterton township and is soaking up industrial demand from across the Wairarapa. A common spatial plan across the three districts in Wairarapa ensures that industrial demand will continue to be channelled into Carterton district.



FIGURE 10: MANUFACTURING IS FALLING IN PROMINENCE ACROSS THE REGION
Estimated share of total nominal GDP by industry – manufacturing

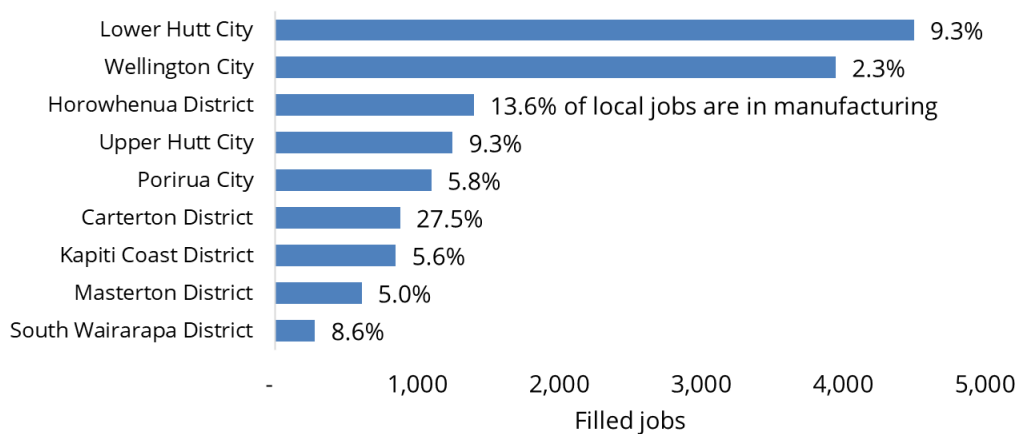


Source: MBIE, Statistics New Zealand

Since the GFC, manufacturing has come to be a prominent driver of economic growth, maintaining its share in the economy. There is also an important spatial pattern to manufacturing growth. Manufacturing's share of GDP has grown fastest in areas furthest from Wellington City. Manufacturing's share has risen from 9.2% in 2010 to 11.5% in 2019 in Horowhenua, 8.4% to 14.3% in South Wairarapa, and 30.5% to 36.7% in Carterton.

This high growth is in the context of smaller local economies. However, it does imply the potential for a movement of land-intensive manufacturing outward toward cheaper land. In terms of employment, Lower Hutt, with 4,500 manufacturing jobs, has the highest concentration of manufacturing employment in the region. This represents 9.3% of the area's total jobs.

FIGURE 11: A HIGH SHARE OF HUTT VALLEY JOBS ARE IN MANUFACTURING
Employee count by ANZSIC06 sector – Manufacturing, 2022



Source: Statistics New Zealand

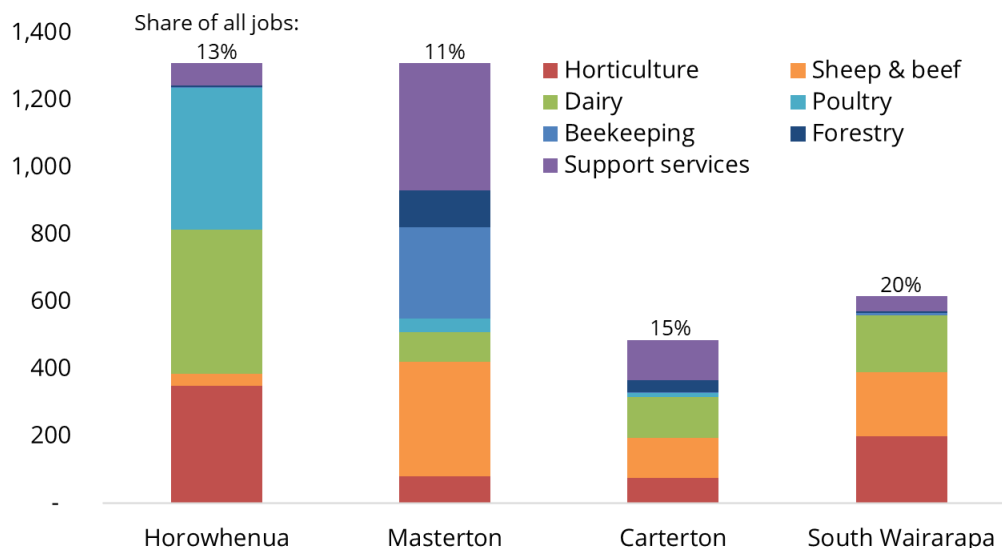


Agriculture remains important to Horowhenua and Wairarapa

In the main population centres, such as Wellington City or the Hutt Valley, agriculture (including horticulture) is a small portion of overall employment. Kāpiti also has an important agricultural component given its climate and location. For Horowhenua and Wairarapa, however, agricultural employment plays a significant role in local economies. This includes direct employment on the farm and in the packhouse. The sector also supports 1,500 jobs in the local food processing industry, exporting nationwide and globally.

Figure 12 below shows employment in the agriculture sector. Horowhenua and Masterton are the largest employers, with over 1,350 jobs each. The industry breakdown varies considerably across the region as well. Horowhenua has a larger focus on poultry, dairy, and horticulture. Masterton is a support centre for the wider Wairarapa region, while also supporting employment in sheep & beef, and beekeeping.

FIGURE 12: AGRICULTURE JOBS ARE SIGNIFICANT IN WAIRARAPA AND HOROWHENUA
Employee count by ANZSIC06 sector – Agriculture, 2022



Source: Statistics New Zealand

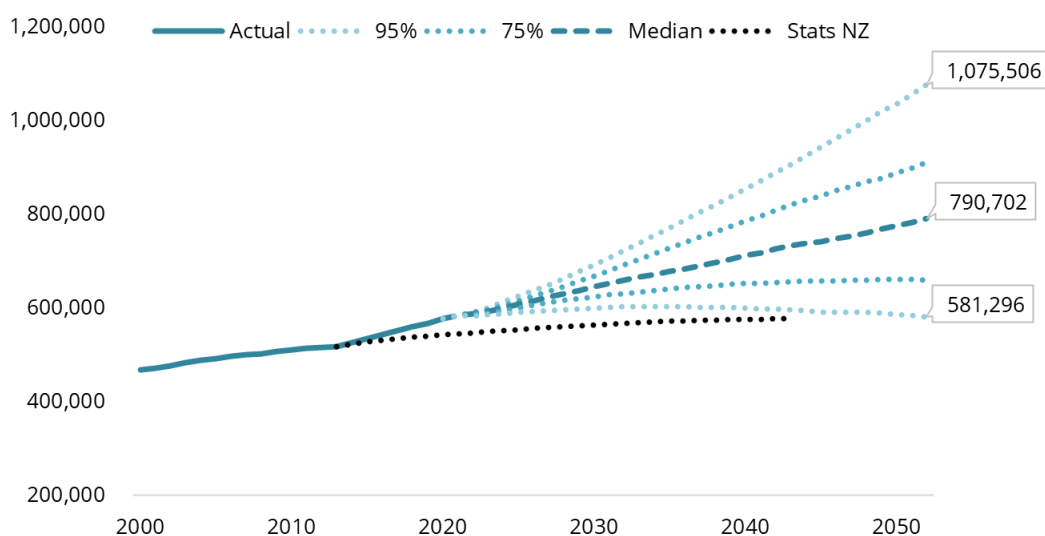


2.3. Demographic change

Population growth has exceeded previous forecasts

For our previous business land demand report in 2018, councils decided to use Statistics New Zealand's medium projections as the central case. Statistics New Zealand's high projection, and a projection by forecast.id, similar to Statistics New Zealand's medium projection, were used as robustness checks.

FIGURE 13: POPULATION GROWTH HAS EXCEEDED PREVIOUS FORECASTS
Sense Partners and StatsNZ population projections, Wellington region (incl. Horowhenua)



Source: Sense Partners, Statistics New Zealand

Since that time, population growth has pushed higher. Population growth over the past 5 years has been three times as strong as Statistics New Zealand expected, despite border closures associated with COVID-19.

Both the higher population starting point and a stronger population projection imply a need to accommodate much higher demand for business land than the previous study. Figure 13 shows the difference between the median Sense Partners population forecast we adopt as our baseline and the Statistics New Zealand medium forecast is stark.

Internal migration responds to economic opportunity

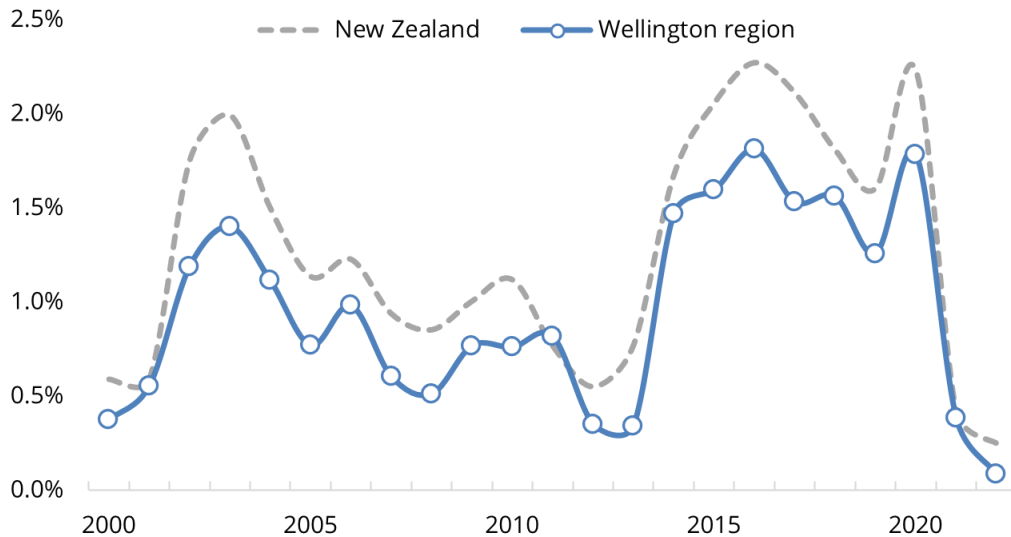
High income and job growth attracts new residents from other regions and from overseas. This is a two-way relationship. Population growth, in turn, drives economic activity through increasing demand for goods and services, as well as an increased supply of workers and entrepreneurs. Understanding population growth is, therefore, an important aspect in understanding economic activity and, in turn, land demand.

Across the region, growth has slightly lagged in comparison to New Zealand wide growth. The figures below look at a breakdown of population growth by territorial authority. These indicate that prior to the 2013-2014 immigration surge, population growth was concentrated in



Wellington city and Kāpiti Coast. Since then, the relationship has flipped, with Wellington City growth slowing and other areas increasing.

FIGURE 14: GROWTH ACROSS THE REGION HAS LAGGED NZ AS A WHOLE
Population growth, Wellington Region including Horowhenua



Source: Statistics New Zealand

As Wellington City has bumped into capacity constraints, particularly in housing, growth has started to move outward from the centre. Kāpiti can provide affordability and connectivity and has seen growth across all age groups including families and mid-late career groups and continues to be particularly attractive for older households and individuals.

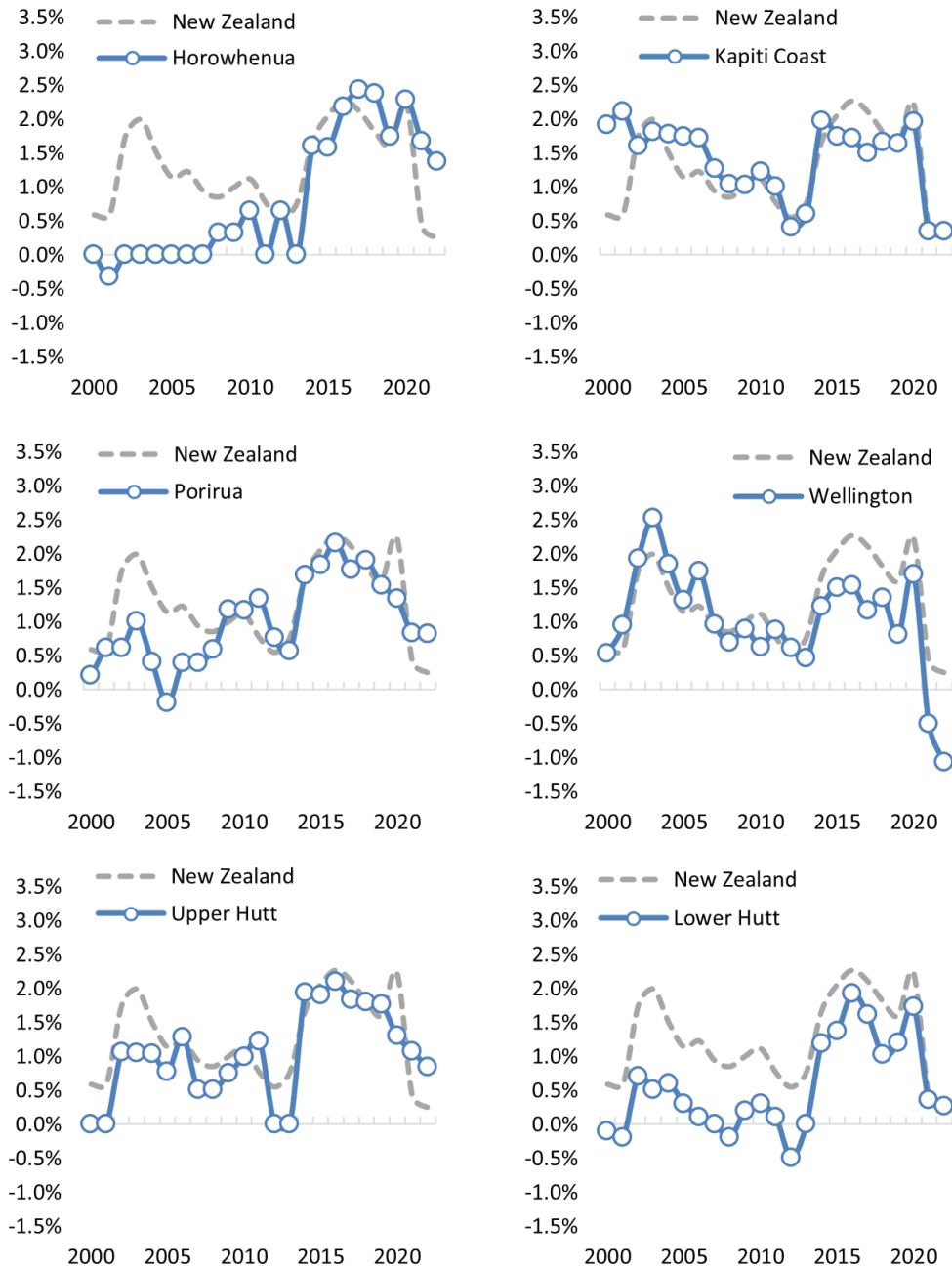
The shortfall between local population growth and NZ wide growth in the early 2000s was sharpest in those areas furthest out, like Wairarapa and Horowhenua. As growth has spread out, those areas are now experiencing population growth in line with, or even exceeding, NZ wide growth.

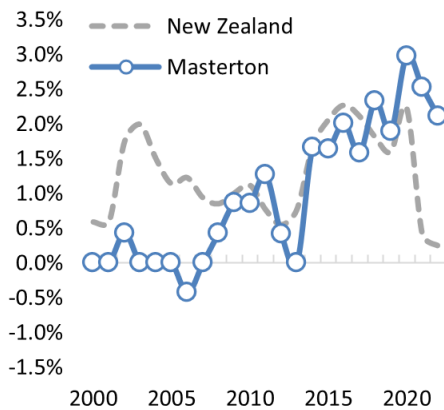
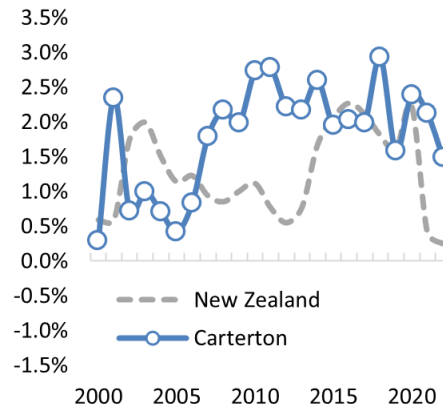
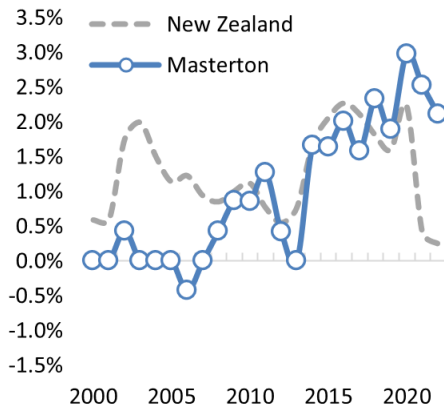
All areas have experienced a sharp downturn coinciding with the pandemic lockdowns. This is due to the border closers, and hints at the importance of international migration in regional population growth.



FIGURE 15: POPULATION GROWTH VARIES ACROSS THE REGION

Population growth by Territorial Authority, 2000 - 2022





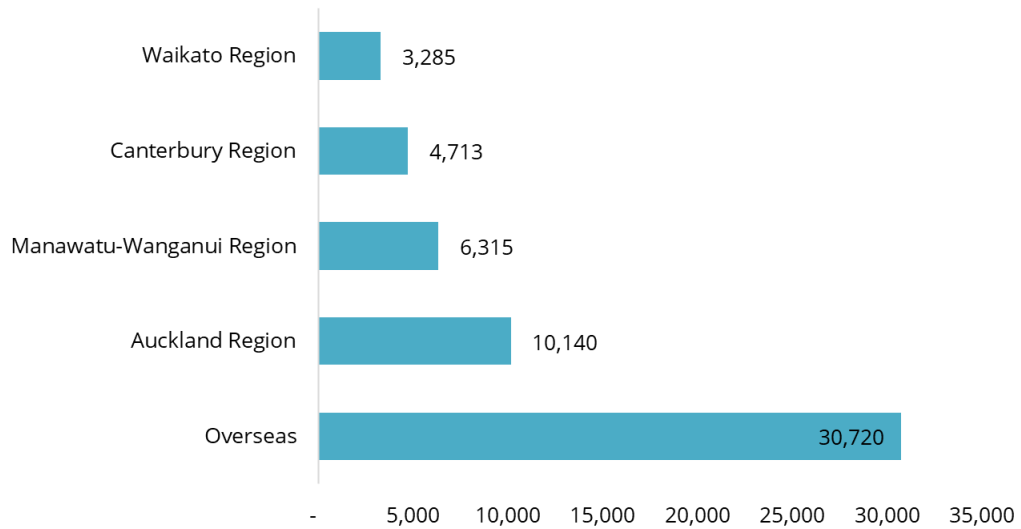
Source: Statistics New Zealand

Migration accounts for much of the short-term variation in growth

Base population growth, in the form of births and deaths, only changes slowly over time. Migration, in comparison, can change rapidly as is the primary source of short-term variation in population growth. As one of the country's largest urban agglomerations, the Wellington region attracts domestic migrants from all over New Zealand. The region's high incomes and concentration of niche and specialist employment helps the region attract migrants. The main source of inward migration is international migration.



FIGURE 16: THE WELLINGTON REGION MOSTLY ATTRACTS OVERSEAS IMMIGRANTS
Regional council area of usual residence five years ago, census 2018 to 2022



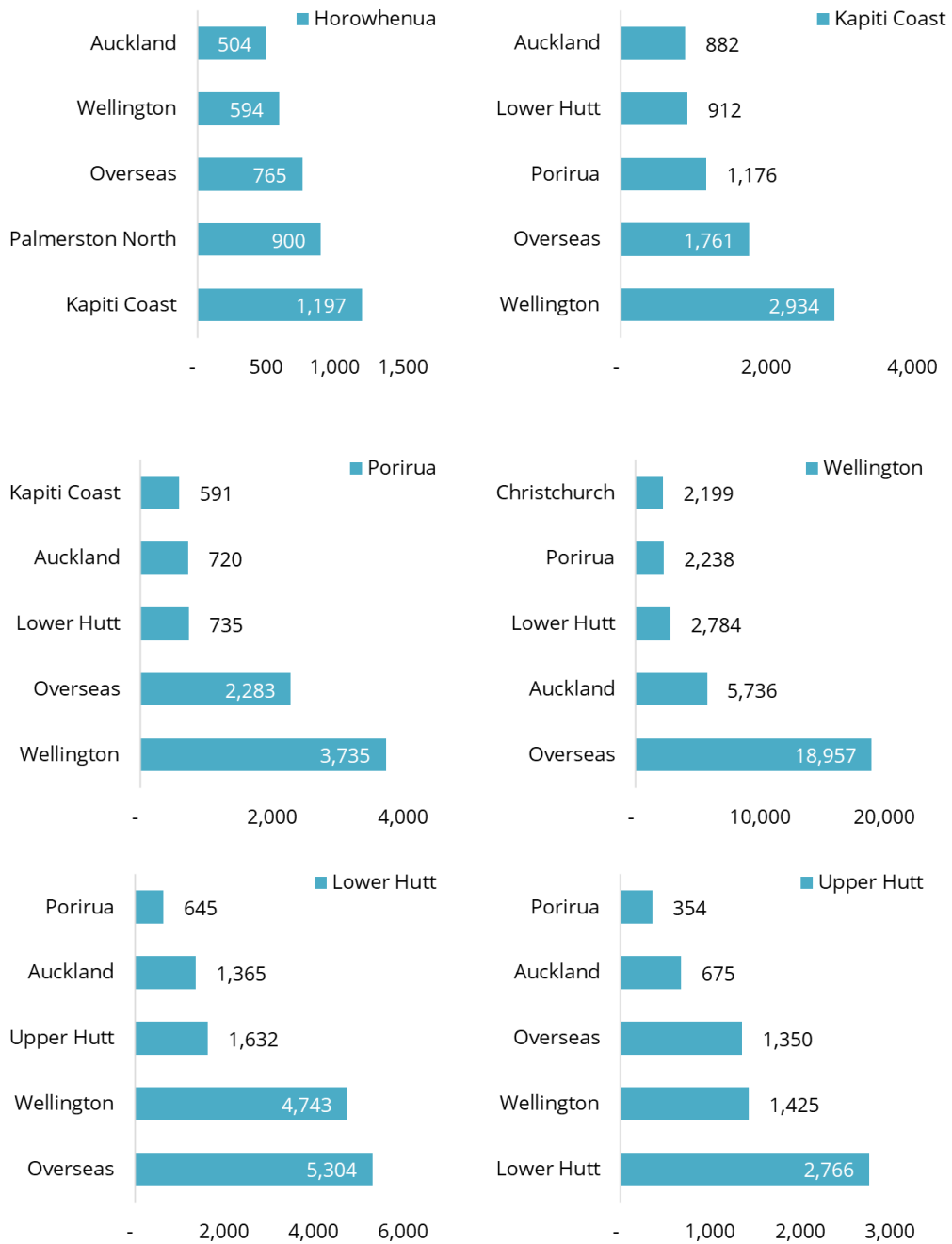
Source: Statistics New Zealand

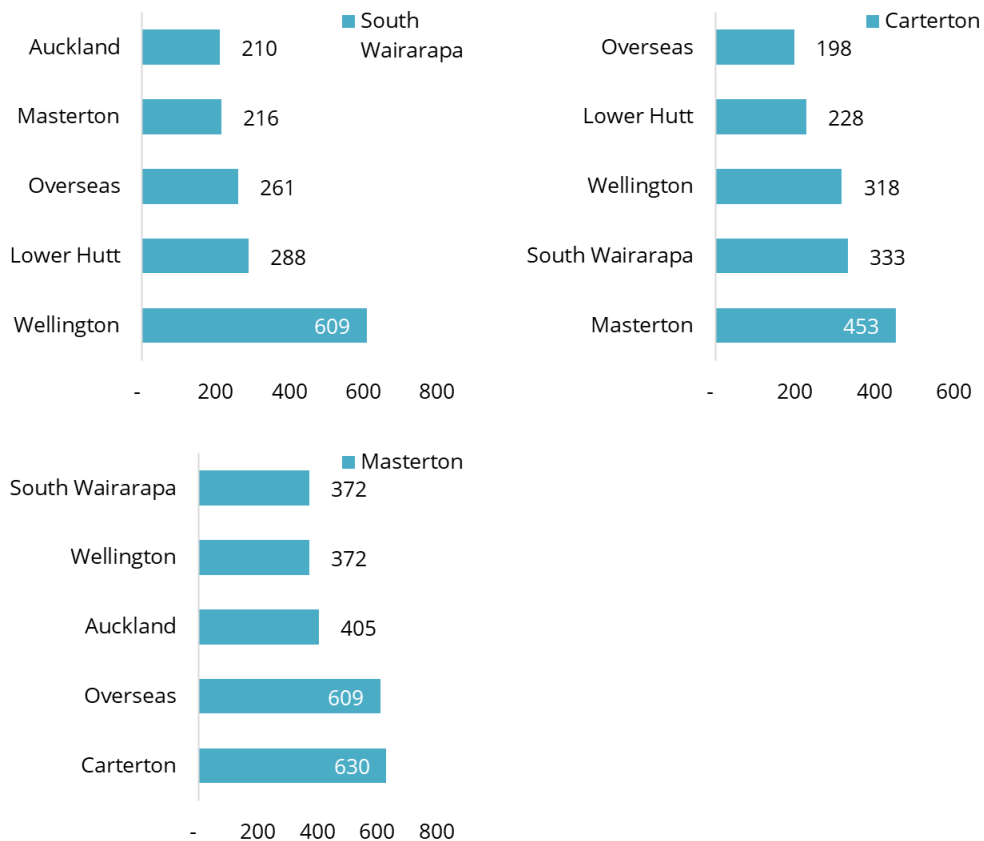
There is a strong core-periphery dynamic within the region. With the exception of overseas migrants, each territorial authority tends to attract most migrants from its neighbouring council. Auckland is also a common source of inward migration, reflecting that city's own strong population growth and capacity constraints.

There is a knock-on effect as extra-regional migrants (overseas, Auckland, etc) move predominantly to Wellington City. A crowding out effect incentivised Wellington residents to move into neighbouring areas, in turn prompting a shift of their own.



FIGURE 17: THERE IS A KNOCK-ON EFFECT OF MIGRATION THROUGH THE REGION
Territorial authority area of usual residence five years ago, census 2018





Source: Statistics New Zealand

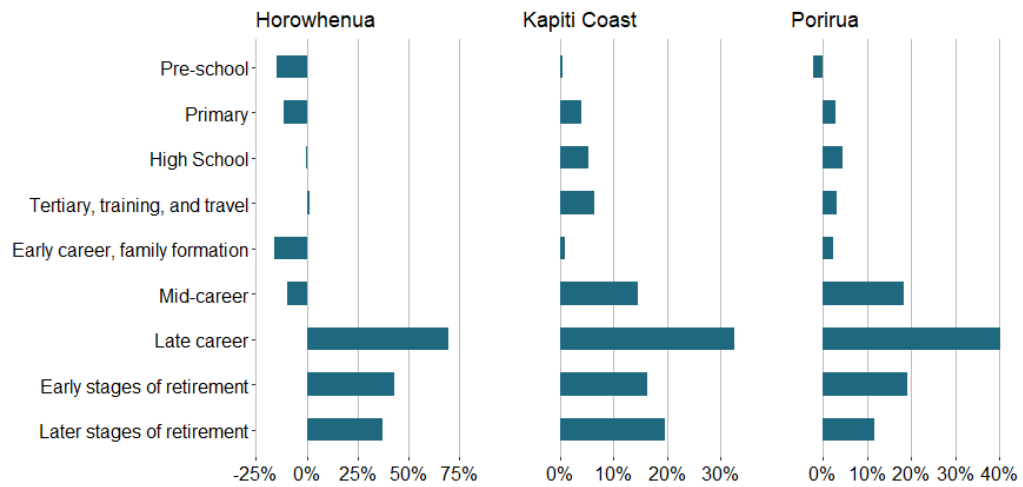
International migration can be very difficult to project, as there is a complex range of interacting push-pull factors. There is strong competition between countries for workers so the rate of migration is affected by local conditions. Job opportunities, housing affordability, and an appealing lifestyle are some factors which will attract migrants. Global conditions are also an important factor, and people often leave their homelands due to negative domestic concerns.

Most areas are ageing, while Wellington City attracts youth

Figures 18 to 20 show the contribution of age groups to total population growth between 1998 and 2018 in each territorial authority. The largest source of growth is in older age groups. In part, this reflects a population that is ageing faster than it is growing. Late career individuals (51 – 65 years) make up a large portion of growth in all areas. This cohort is likely to still be in the labour force. With years of accumulated workforce experience, they may bring a considerable productive boost to local economies. Over this period, household size has fallen.



FIGURE 18: KĀPITI COAST ATTRACTS MORE THAN JUST RETIREES
Contribution to population growth by age group, 1998 - 2018



Source: Statistics New Zealand, Sense Partners

FIGURE 19: WELLINGTON IS ATTRACTING YOUNGER COHORTS
Contribution to population growth by age group, 1998 - 2018



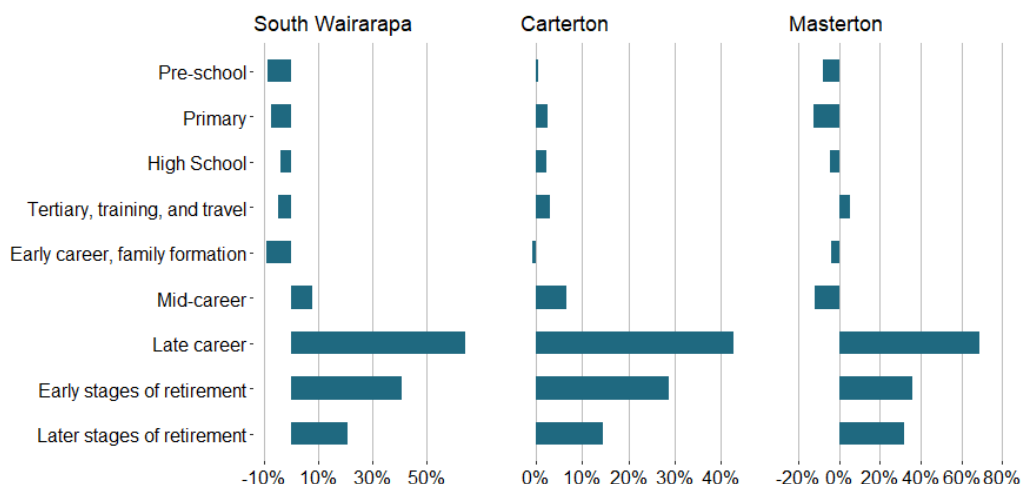
Source: Statistics New Zealand, Sense Partners

Wellington city is unique in that growth is spread across most age groups. Growth in the tertiary group (ages 18 to 25) makes up 18% of total growth, while mid-career (36 – 50) makes up 17.6%. Upper and Lower Hutt have both experienced strongest growth in mid and late career groups. This reflects the attractiveness of the Hutt Valley for affordable housing, and local employment opportunities likely play a part as well.

In Wairarapa, retirement aged individuals (66 years and over) have made up a larger portion of total growth (up to 40%) compared to other areas, including Kāpiti Coast. The strongest growth has come from the late career cohort (up to 68%). This could indicate older households moving in anticipation of retiring in the area.



FIGURE 20: WAIRARAPA'S POPULATION HAS BEEN AGEING FASTER THAN ELSEWHERE
Contribution to population growth by age group, 1998 - 2018



Source: Statistics New Zealand, Sense Partners

2.4. Sectoral composition

Sector allocations reflect common land use types

Employment across the Wellington region is grouped into a set of sectors. These sectors are intended to broadly reflect different types of land use. The floorspace per worker and the site coverage differs between each sector. This helps to give a more granular picture of land use demand across each territorial authority, reflecting the varying composition of each economy. The sectors, a combination of ANZSIC06 industry classification, are summarised below.

Commercial: A range of professions likely to take place in conventional office type buildings. Density is typically higher, and floorspace per worker may be lower. This sector includes a portion of accommodation services employment, intended to capture demand for hotels and hospitality venues that may be found on lower levels of office buildings. A portion of education and healthcare employment is also included to reflect the portions of those industries taking place in an office environment, away from a school campus or hospital.

Government: Focusing on both central and local government employment, the land use type is expected to be very similar to the commercial category. However, the nature of Government employment is unique. In particular, central government employment tends to grow proportionally to employment across all of New Zealand, which may differ from the region. Due to this unique driver, it is kept separate.

Industrial: This includes both manufacturing and construction, as well as logistics operations. Manufacturing is typically very space intensive given the number of workers, due to larger amounts of heavy machinery and tools. Construction is unique in that the actual construction activity occurs offsite to the business's location. Their land is required for the marshalling of staff and storage of equipment when not in use on a building site. Both typically occur in industrial zoned land.



Retail: Includes all retail trade as well as the bulk of accommodation & food services employment. The proportions reflect the split between food services employment and accommodation services employment. The former has more employees in a given space, and so employment growth here will translate to higher floorspace demand.

Healthcare: Includes hospitals, as well as various primary and specialist care providers, such as dentists or physiotherapists. This category also includes residential care services. In many of these instances, the land use profile may be similar to retail or commercial.

Education: Includes early childhood centres, primary schools, high schools, and tertiary education provides such as universities and polytechnics. This also includes community education, such as sports training and community arts classes. Many of the activities in this category may be characterised by large, concentrated campuses covering a significant land area.

Other: A catchall term for remaining land uses and activities not classified elsewhere. This includes agriculture jobs, as well as utilities.



TABLE 11: ALLOCATION OF ANZSIC06 CLASSIFICATIONS TO SECTORS

Commercial	Industrial	Government	Retail	Healthcare	Education	Other
H. Accom. & food services (15%)	B. Mining (10%)	O. Public administration & safety (100%)	G. Retail trade (100%)	Q. Healthcare and social assistance (75%)	P. Education & training (75%)	D. Electricity, gas, water, and waste services (70%)
J. Information, Media, and Tele. (100%)	C. Manufacturing (100%)		H. Accom. & food services (85%)			S. Other services
K. Financial and Insurance (100%)	D. Electricity, gas, water, and waste services (30%)					A. Agriculture, forestry, & fisheries (100%)
L67. Property operators and real estate services (100%)	E. Construction (100%)					
M. Professional, scientific, and technical services (100%)	F. Wholesale trade (100%)					
N. Admin. & support services (100%)	I. Transport, postal & warehousing (100%)					
P. Education & training (25%)	L66. Rental & hiring services, except real estate (100%)					
Q. Healthcare & social assistance (25%)						

Source: Sense Partners

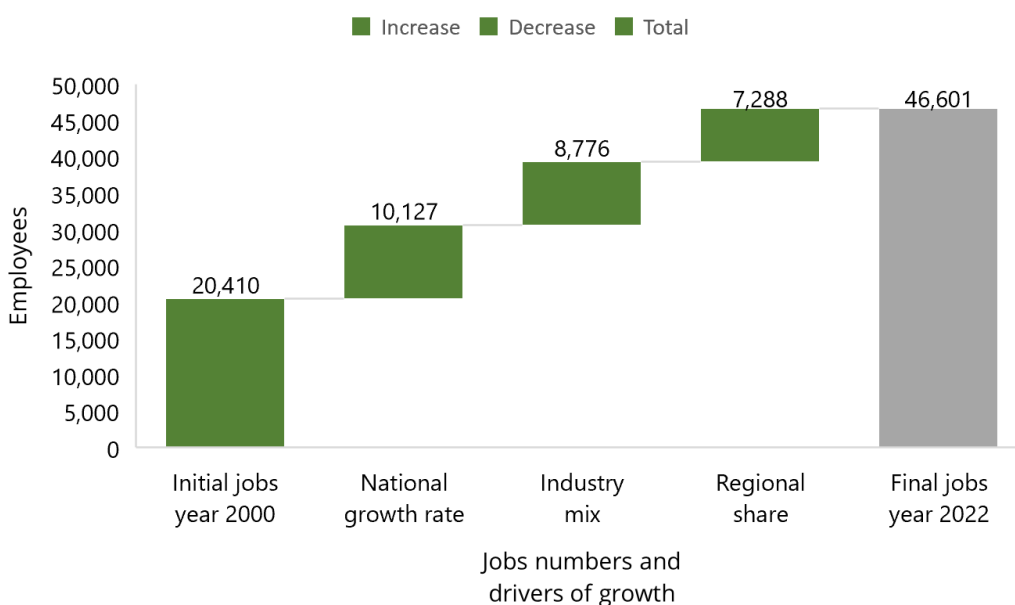


Government drives a higher share of commercial employment

The concentration of central government in Wellington city is driving up employment in both government and the commercial sectors. With typically higher densities in these sectors, this is a big reason behind the dense urban form of Wellington City. Of course, urban form is the product of both demand and geographically constrained supply.

But it's not just a central government story. We decompose the growth in the government sector into growth from the overall or national employment growth rate, the growth rate in the government or public administration roles across the country and the extra share of regional growth that is specific to Wellington. Wellington's share of additional jobs since 2000 is growing but there is growth in public administration roles across the country increasing employment in this sector (see Figure 21: Public Administration jobs are an increasing share of all jobs)

FIGURE 21: PUBLIC ADMINISTRATION JOBS ARE AN INCREASING SHARE OF ALL JOBS
Share of total jobs by sub-sector and Wellington region, 2022



Source: Statistics New Zealand data, Sense Partners calculations

Figure 22 below shows the share of each sector in total employment in the region. The commercial sector employs 33% of workers in the region. These shares are compared to the Auckland region and to New Zealand as a whole. In Auckland, the commercial sector makes up 32% of employment, while NZ wide the sector only takes up 26%.

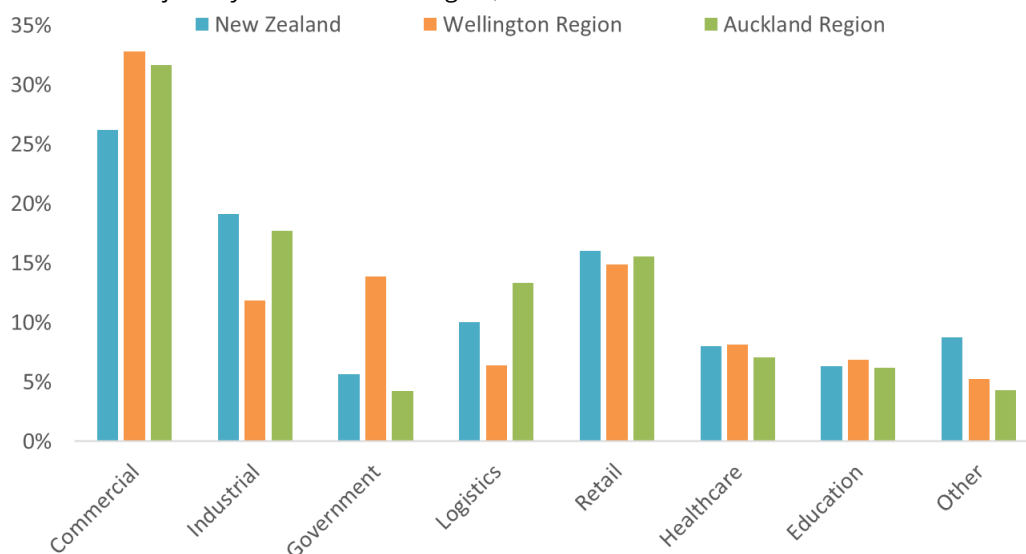
The commercial sector provides a high level of support services to central government, providing an explanation for the higher concentration in the Wellington region. However, commercial services industries also support all other parts of the economy, such as through legal advice or accounting services.



The region has a lower share of industrial and logistics employment compared to Auckland or New Zealand wide. This reflects the fact that central Government is largely concentrated in the region, taking up a much higher share of employment. This pushes against industrial and logistics, which does not directly support government in the way commercial services do.

Education, healthcare, and retail have relatively consistent shares of employment across Wellington, Auckland, and NZ wide. This reflects the role of these sectors in supporting the population. At the region level, Wellington is expected to consume as much education per person as anywhere else in the country.

FIGURE 22: WELLINGTON REGION JOBS ARE CONCENTRATED IN SERVICES
Share of total jobs by sub-sector and region, 2022



Source: Statistics New Zealand

Commuting is a factor behind varying sector shares

The region as a whole is marked by the presence of Government. However, there are considerable differences within and across the region. Wellington city is the main government and commercial services centre. Porirua and the Hutt Valley are both centres of manufacturing and logistics. Kāpiti Coast is primarily a residential services centre, but it too has a base of local industry and commercial services. Both Horowhenua and Wairarapa are prominent agricultural areas.

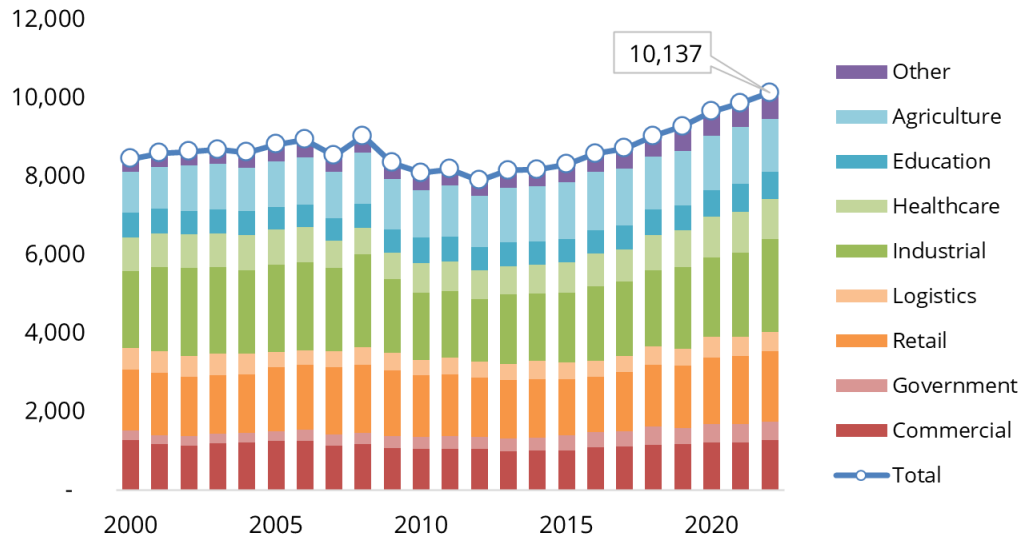
A key pattern in the spatial distribution of sectors is commuting. Many people live outside of Wellington but commute into the city for work. There is likely some retail leakage into Wellington city as a result. COVID and working from home will make a difference. However, we still expect, and the data confirms, that those commuters will still seek retail services closer to home.

This relationship extends to both education and healthcare, as families send their children to school closer to home rather than in Wellington city. Retail, education, and healthcare nearest their homes are consequently a higher share of employment in those areas. Kāpiti Coast, in



particular, has a higher proportion of retail employment, at 23.8%, than areas like Wellington (11%). This is also reflective of a larger population of retired households.

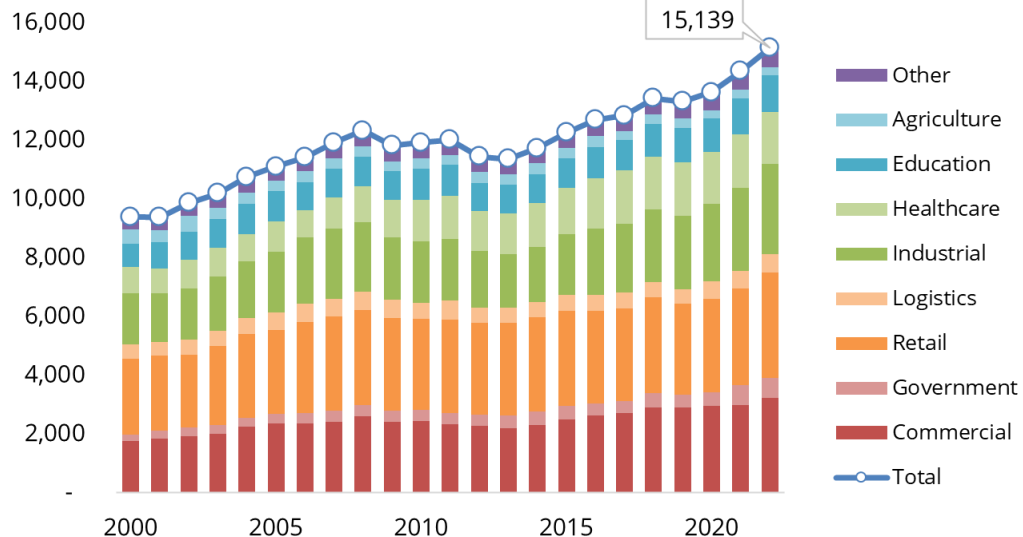
FIGURE 23: AGRICULTURE IS A MAJOR FEATURE IN HOROWHENUA
Employee count by sector, Horowhenua



Source: Statistics New Zealand

Food processing, measured as part of the industrial sector here, has taken advantage of improved connectivity to build on local agriculture in Horowhenua. Kāpiti Coast has a high retired population. As a result, healthcare jobs play a more prominent role in the local economy. Retail also has a higher share, catering to both retired and commuter households.

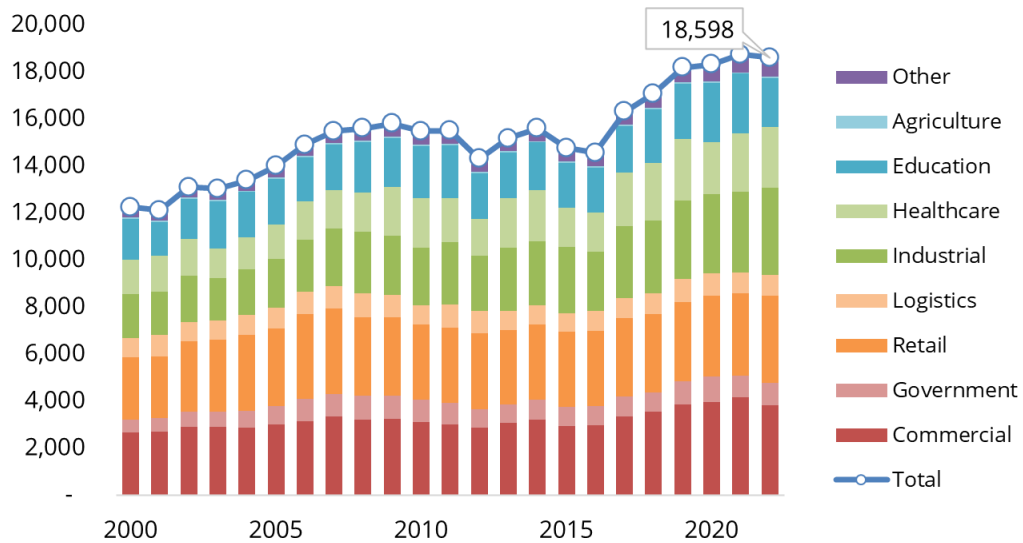
FIGURE 24: KĀPITI COAST RETAIL SUPPORTS A RETIRED AND COMMUTER POPULATION
Employee count by sector, Kāpiti Coast



Source: Statistics New Zealand



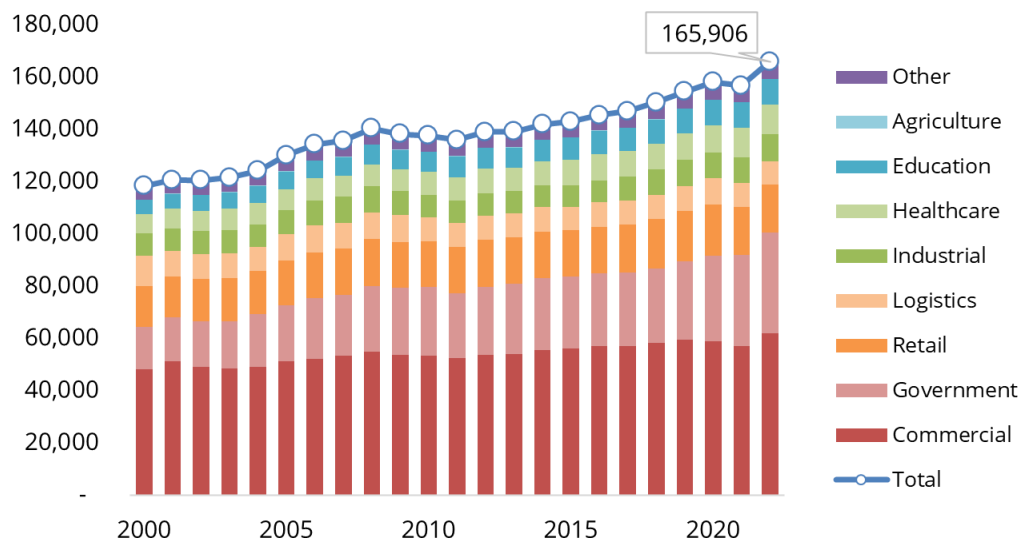
FIGURE 25: PORIRUA HAS HIGH EDUCATION AND HEALTHCARE SHARES
Employee count by sector, Porirua



Source: Statistics New Zealand

Porirua, not as renowned as a retirement area, still supports a high number of commuter families. This is reflected in the higher shares of both education and healthcare in the city. Wellington city jobs are dominated by the government and commercial sectors. The latter supports the former, and many commercial services have clustered in Wellington to support government.

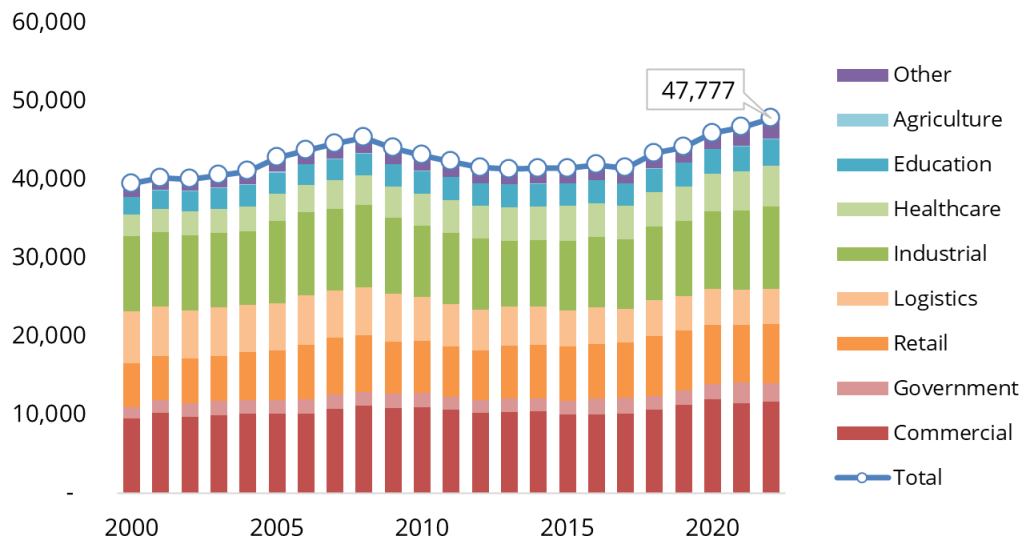
FIGURE 26: JOBS IN WELLINGTON ARE MAINLY GOVERNMENT AND COMMERCIAL
Employee count by sector, Wellington city



Source: Statistics New Zealand



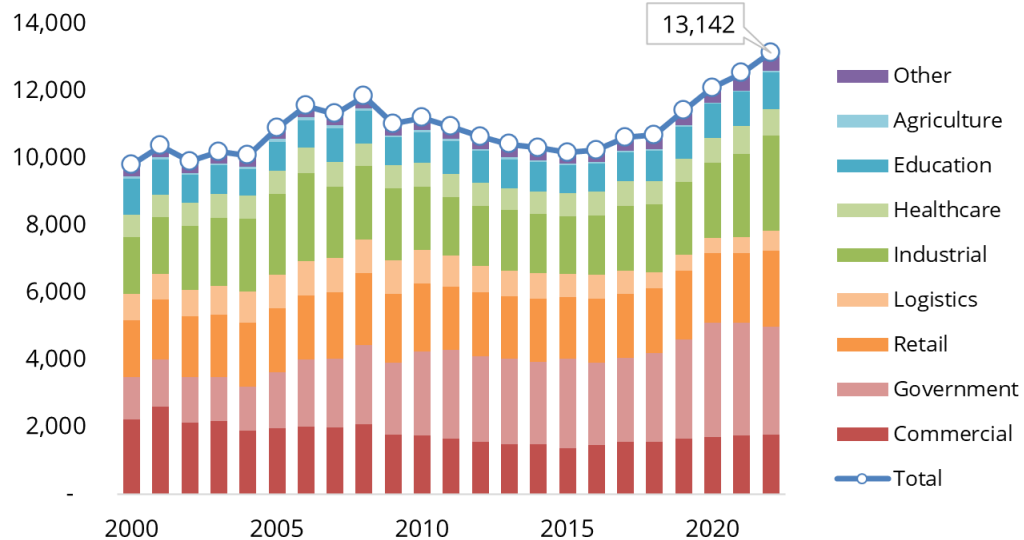
FIGURE 27: LOWER HUTT IS A CENTRE OF MANUFACTURING IN THE REGION
Employee count by sector, Lower Hutt



Source: Statistics New Zealand

Lower Hutt services this commuter population, but also has a strong manufacturing base of its own. It has the highest number of manufacturing jobs in the region, at 4,500. Upper Hutt has a comparatively high level of Government employment. This reflects the presence of Trentham Military Camp and Rimutaka Prison, both of which employ considerable numbers of people.

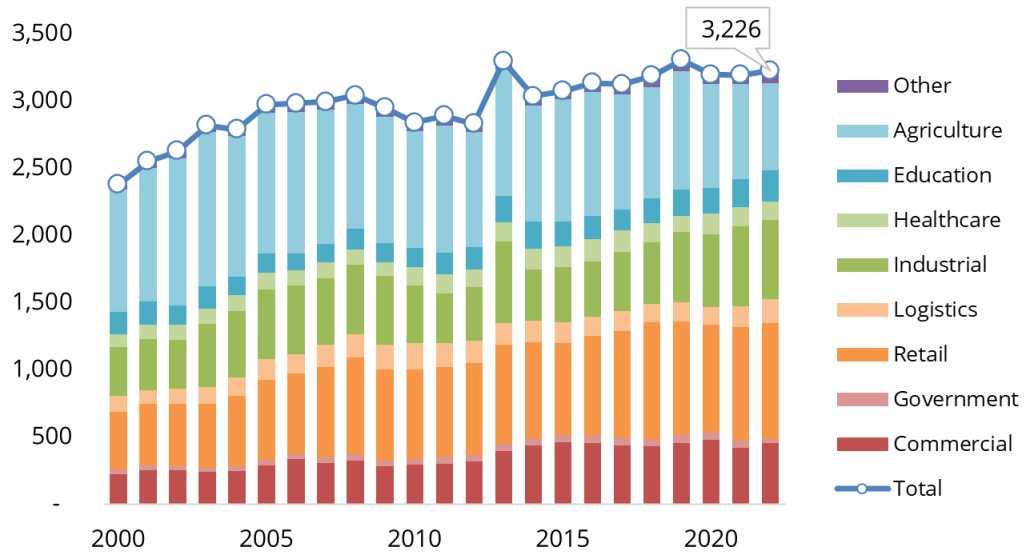
FIGURE 28: UPPER HUTT IS A LOCAL CENTRE OF GOVERNMENT EMPLOYMENT
Employee count by sector, Upper Hutt



Source: Statistics New Zealand



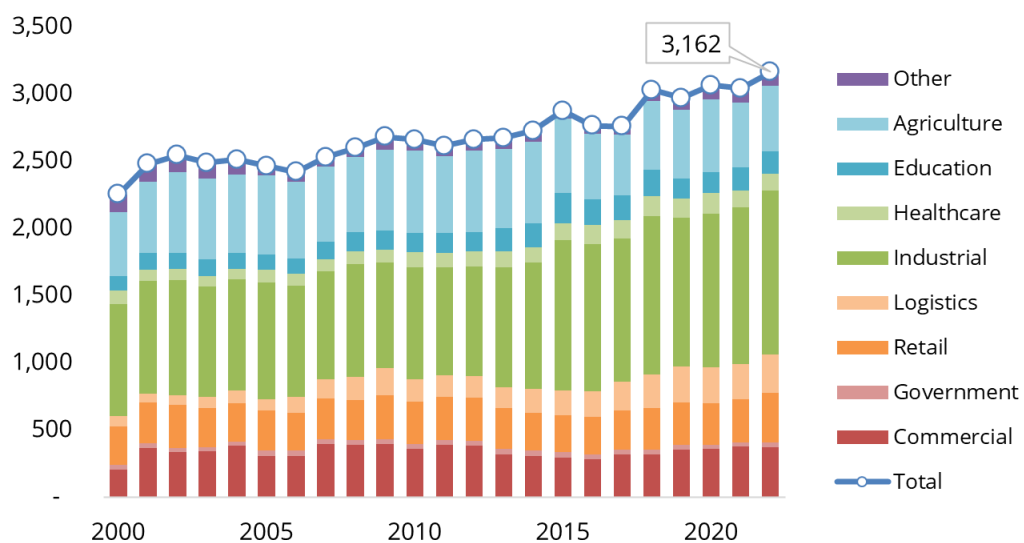
FIGURE 29: AGRICULTURE IS LOSING ITS DOMINANCE IN SOUTH WAIRARAPA
Employee count by sector, South Wairarapa



Source: Statistics New Zealand

South Wairarapa is mainly characterised by Agricultural employment. However, retail is a considerable portion of jobs. Our retail includes accommodation and hospitality, so this likely reflects the strength of tourism in the district. Carterton has a high share of industry in its total jobs. This reflects the concentration of industry in the Waingawa industrial zone to the north. Many of the industries setting up here are food processors. These food processors are supported by the wider Wairarapa regions agricultural sector. All districts in the Wairarapa region have a high share of agricultural jobs.

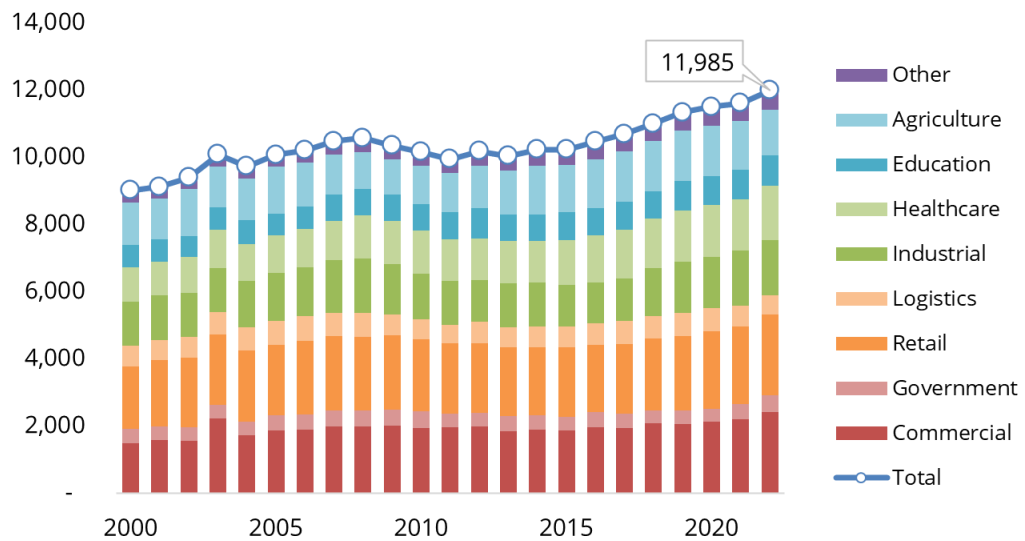
FIGURE 30: INDUSTRIAL JOBS HAVE A HIGH SHARE IN CARTERTON
Employee count by sector, Carterton



Source: Statistics New Zealand



FIGURE 31: MASTERTON HAS A RELATIVELY EVEN SPREAD ACROSS SECTORS
Employee count by sector, Masterton



Source: Statistics New Zealand

The data above looks at 9 different sectors. These vary to the sectors used in the main projections, with fewer used. The reason is tractability of the model and reliability of granular data mean we have had to use fewer sectors to generate stable outcomes.



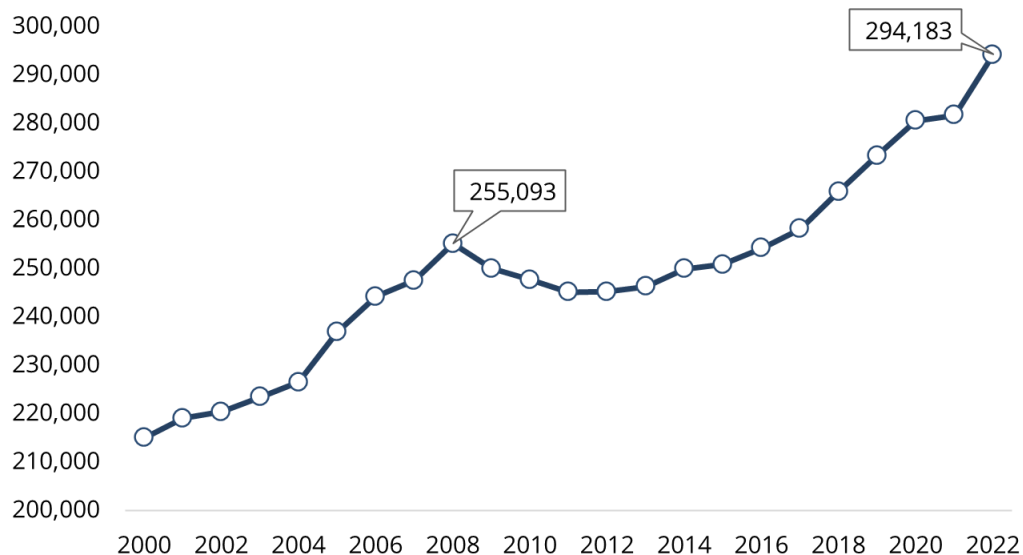
2.5. The impact of COVID-19

The pandemic only briefly slowed jobs growth

Growth in employment across the Wellington region and Horowhenua averaged 2.3% per year between February 2015 and February 2020. Between 2020 and 2021, growth mediated to just 0.4%. In the year to February 2022, however, employment has grown 4.5%.

Assuming pre-pandemic growth was sustainable, the economy would have reached 300,000 jobs in 2022 had the pandemic not occurred. As of February 2022, there remained a slight shortfall compared to this no-pandemic counterfactual. So the pandemic has not triggered a sustained fall in employment, in contrast to the 2008 global financial crisis.

FIGURE 32: COVID BRIEFLY INTERRUPTED STRONG EMPLOYMENT GROWTH
Wellington region, employee count



Source: Statistics New Zealand

COVID-19 has changed working patterns...

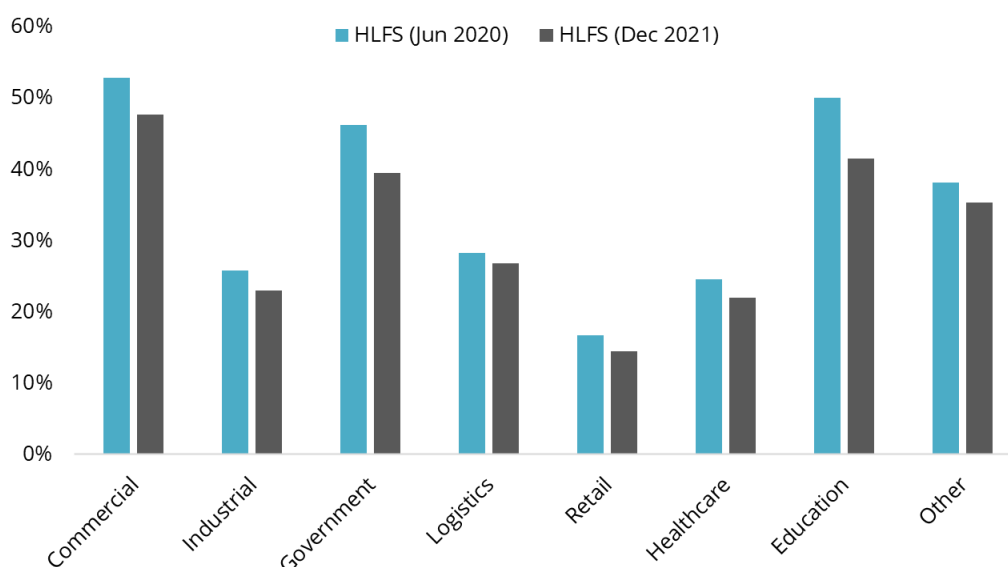
The Alert Level restrictions enacted by the Government in 2020 suppressed the spread of COVID in the community, resulting in positive health outcomes. This, however, had large impacts on the economy and businesses.

Under Alert Level 3 and 4 many people who were unable to work from home were not able to work at all, and many non-essential businesses were closed. The impact on businesses varied significantly by sector. Some sectors need a physical presence on-site to produce goods and services.

Other sectors are less dependent on what the actual location of work and could operate with less interruption. Estimates indicate that the impacts range from accommodation and food service sector only being able to operate 11 percent of its capacity in Alert Level 4 to the utilities sector and government services being only minorly impacted.



FIGURE 33: PROFESSIONAL SERVICES EMPLOYEES CAN WORK REMOTELY
Household Labour Force Survey, NZ respondents working from home, share of total by sector



Source: Statistics New Zealand. NB: Data is not available before June 2020.

Because the concentration of different sectors varies across the country, regional impacts may be significantly different as a result to the COVID protection measures. Larger cities have a higher concentration of commercial businesses and government services than smaller cities and rural areas.

Commercial operations, largely containing businesses services and banking were significantly more able to work remotely than sectors like retail, healthcare, and industrial production. The rise in remote working fell slightly in some sectors as restrictions were eased but have remained high as businesses and employees have adjusted their way of working.

...many households are benefitting by working from home

International research estimates that working from home will persist and is providing benefits to workers and households. Not all households benefit equally. But on average, US data suggests working from home is delivering time savings of up to 2 percent for workers, who are directly more productive. The shift to working from home can also support the well-being of workers and households.⁴

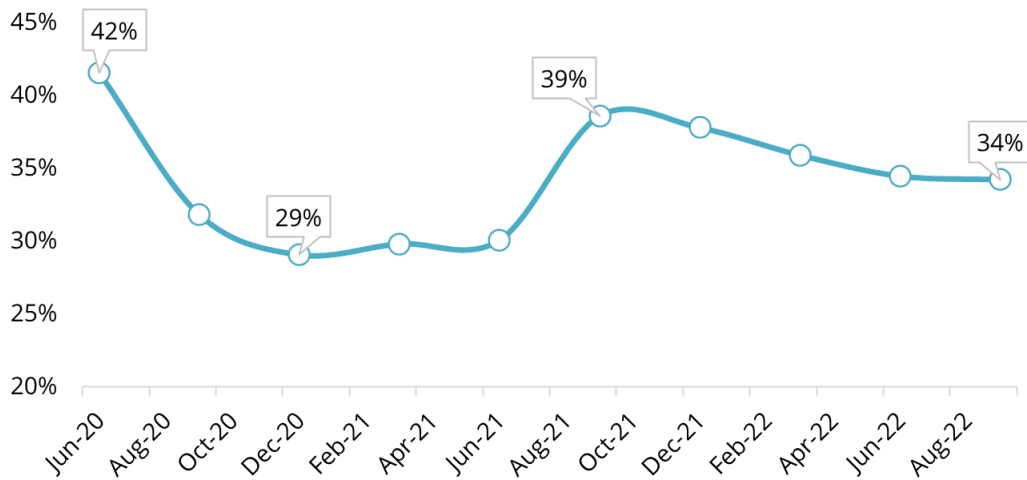
The 2018 New Zealand Survey of working life reports 16% of employees having arrangements with their employer to work from home and still be paid.⁵ People reporting they worked at home in the June 2020 quarter (including the initial AL4 and reduction to 3) rose to 42 percent.

⁴ See Aksoy, Cevat Giray Jose Maria Barrero, Nicholas Bloom, Steven J. Davis, Mathias Dolls and Pablo Zarate, 2022. "Working from Home Around the World," NBER Working Papers 30446, National Bureau of Economic Research, Inc.

⁵ <https://www.stats.govt.nz/reports/survey-of-working-life-2018>



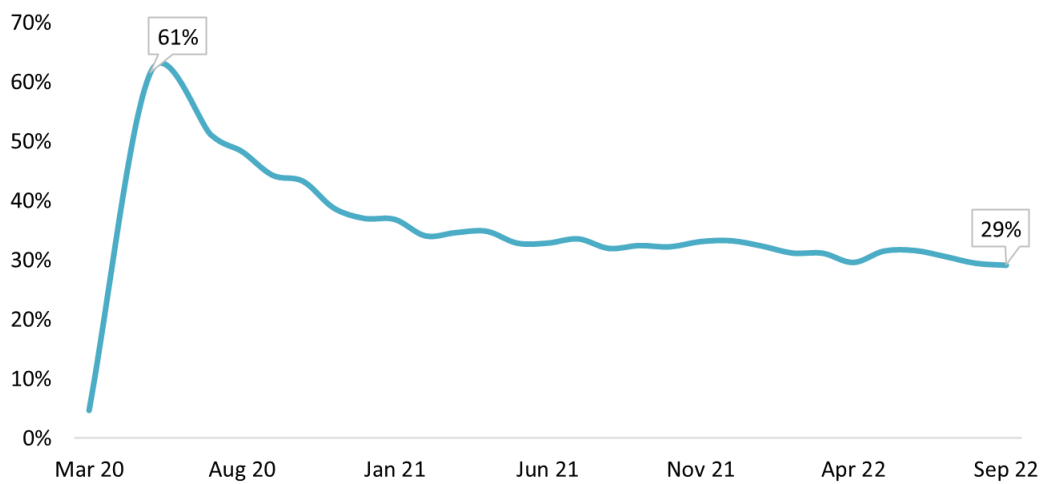
FIGURE 34: REMOTE WORKING HAS FLUCTUATED, BUT IS PERSISTING LOCALLY
Household Labour Force Survey, NZ respondents working from home, share of total over time



Source: Statistics New Zealand

Six months following the initial Alert Level 4 restrictions in 2020, 24 percent of employers had increased the number of employees who could work remotely. This increased to 30 percent a year later.⁶ While the number of workers reporting they work from home eased following the initial restrictions, the overall numbers rose and have only slightly trended down through time. This persistence has been seen overseas.

FIGURE 35: THE REMOTE WORKING TREND IS PERSISTING GLOBALLY AS WELL
Percentage of paid full days working from home



Source: Barrero et al, 2021.⁷

⁶ [NSEI Final report | Ministry of Business, Innovation & Employment \(mbie.govt.nz\)](https://www.mbie.govt.nz/assets/Uploads/NSEI-Final-report-2021.pdf)

⁷ Barrero, Jose Maria, Nicholas Bloom, and Steven J. Davis, 2021. "Why working from home will stick," National Bureau of Economic Research Working Paper 28731. <https://wfhresearch.com/data/> <https://www.nber.org/papers/w28731>



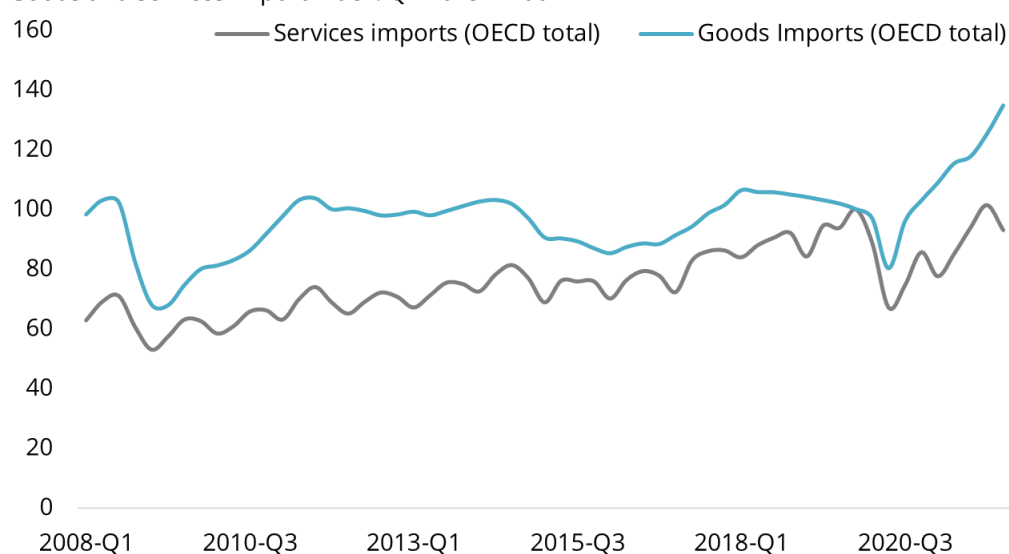
COVID-19 has changed consumption patterns

Shutdowns necessitated a change in the way people shopped. People had to resort to online purchases where physical stores were required to close. People had to adapt their shopping habits as generally face-to-face services were not available, but physical goods were.

These changes have, so far, proven relatively persistent. Online shopping and click-to-collect type offerings have become the new norm. Goods imports have increased faster than services exports, as people have replaced overseas holidays with physical purchases. With the lifting of mask mandates and the opening of borders, consumption habits may start to move back toward their pre-covid settings.

FIGURE 36: DEMAND HAS SHIFTED TOWARDS GOODS

Goods and services import index. Q4 2019 = 100



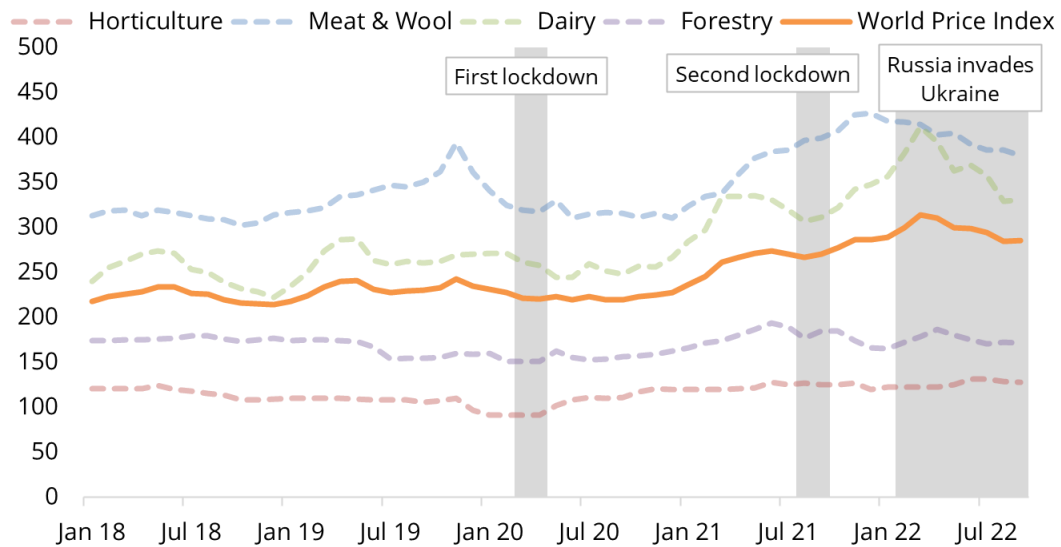
Source: OECD

A surge of global growth is a boon for the primary sector

Shutdowns heavily reduced economic activity. Rather than triggering a prolonged downturn, the ending of shutdowns led to a surge in global economic activity. This is reflected in high global commodity prices, a particular boon for some primary sector exporters. Between January 2020 and January 2022, dairy prices increased 31.7%, meat & wool prices increased 22.7%, and Horticulture prices increased 34.8%. Overall commodity prices increased 25.1%.



FIGURE 37: GLOBAL COMMODITY PRICES ARE INCREASING WITH DEMAND
ANZ world commodity price index, January 1986 = 100

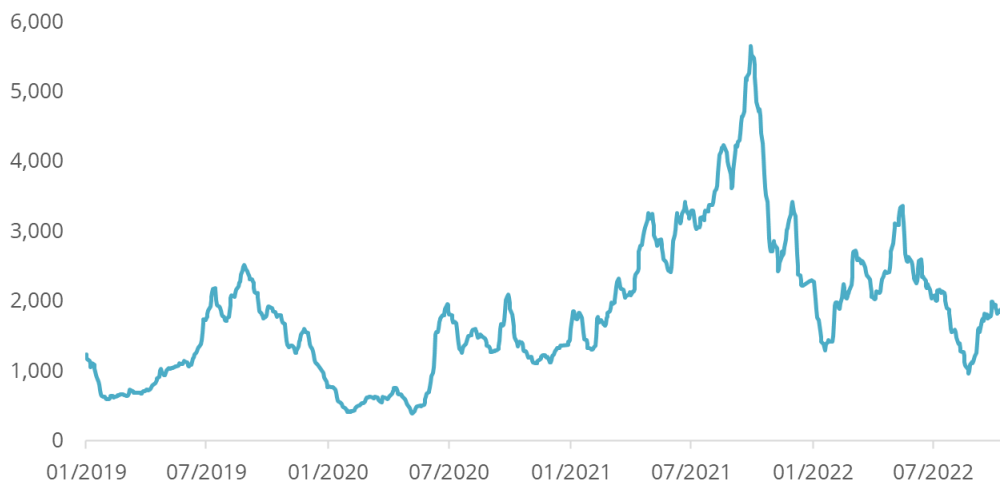


Source: ANZ research

In the short term, this has caused major supply chain disruptions

As global lockdowns eased over 2021, demand began surging. This occurred in the context of supply chains still managing the lockdown disruption, particularly in China. The result was a surge in shipping costs, increasing over 400% from January 2020 to a peak of \$5,000 per TEU⁸ in October 2021. This has had flow on effects through the entire economy, helping trigger recent high levels of inflation.

FIGURE 38: SHIPPING COSTS SPIKED DUE TO HIGH DEMAND AND DISRUPTION
Baltic Dry shipping cost index



Source: Investing.com

⁸ Twenty-foot Equivalent Unit (TEU) is a standardized measure used in shipping.



3. The future economy

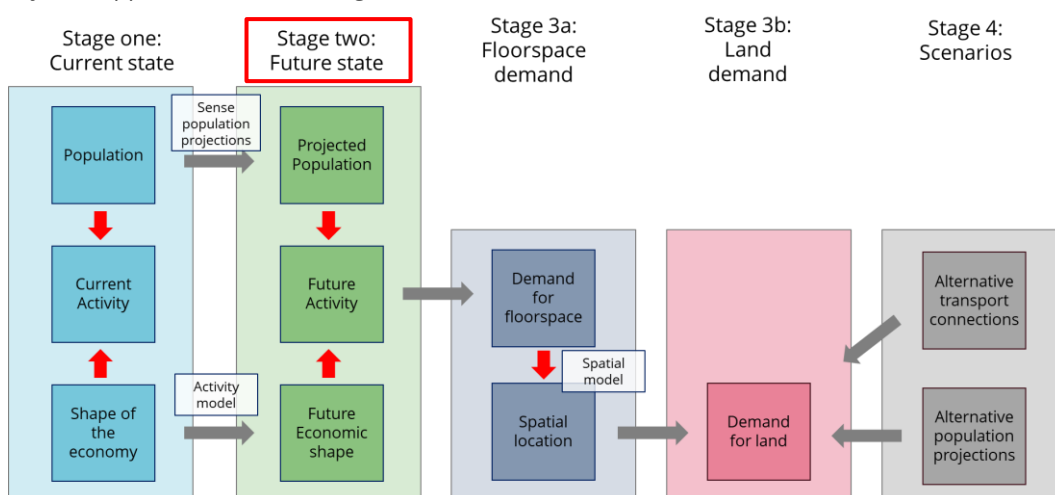
3.1. Our modelling approach

Stage 2 produces the core employment projections

Stage 2 utilises a model of economic activity to project region wide employment out to 2052. This model draws on job numbers by sector over the past 20 years as its key input. The model uses statistical methods to calculate the relationship between different sectors over time and trends implied by the data. These trends and relationships are carried forward using a separate projection of population growth.

A separate spatial model is used to allocate the region wide employment projection across each territorial authority. This gives projections of employment, by sector, for each territorial authority out to 2052.

FIGURE 39: WE USE THE CURRENT ECONOMY TO FORECAST THE FUTURE ECONOMY
Stylised approach to forecasting business land demand



Source: Sense Partners

3.2. Population projections

We use bespoke population projections as our base input

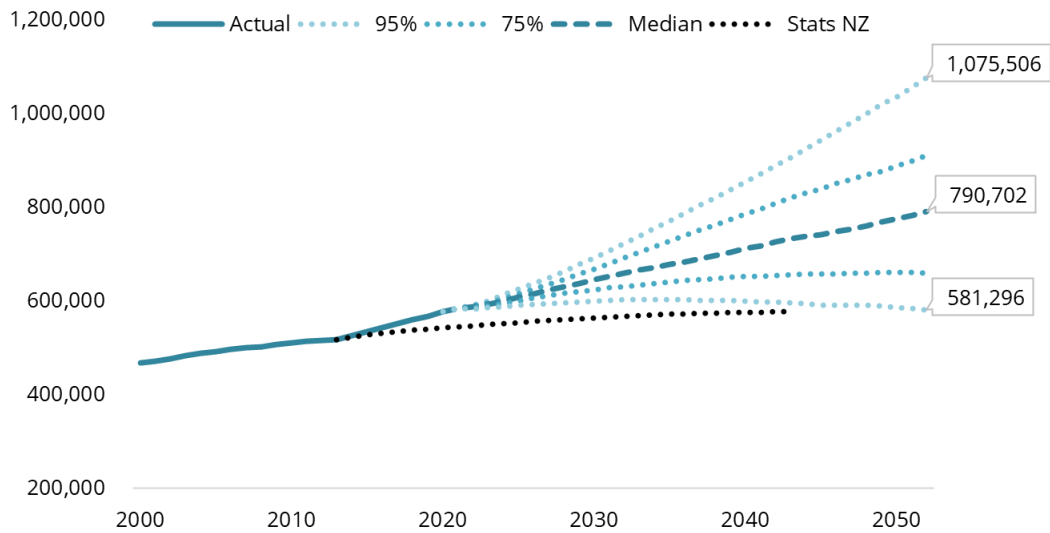
The previous Sense Partners report on business land demand in 2017 relied on Statistics New Zealand projections of population growth. These have proven to be an underestimate of actual population growth. The projection used in 2017 estimated a population of 547,000 people by 2022. The actual population in 2022 is 580,000.

This addition of 33,500 people across the region is a 6% increase on the original projection. The increase in demand arising from a 6% higher population could likely be accommodated within the existing footprint. This poses challenges when projecting growth over a 30-year period.



To address this, we use a set of population projections from the Sense Partners demographic model. This model was designed for the Wellington region as part of work conducted for Greater Wellington Regional Council. The projection is shown in Figure 40 below. The addition of a labour force participation assumption, gives our employment projections.

FIGURE 40: FOR OUR BASELINE POPULATION GROWTH WE USE THE 50TH PERCENTILE Sense Partners population projections, Wellington region and Horowhenua

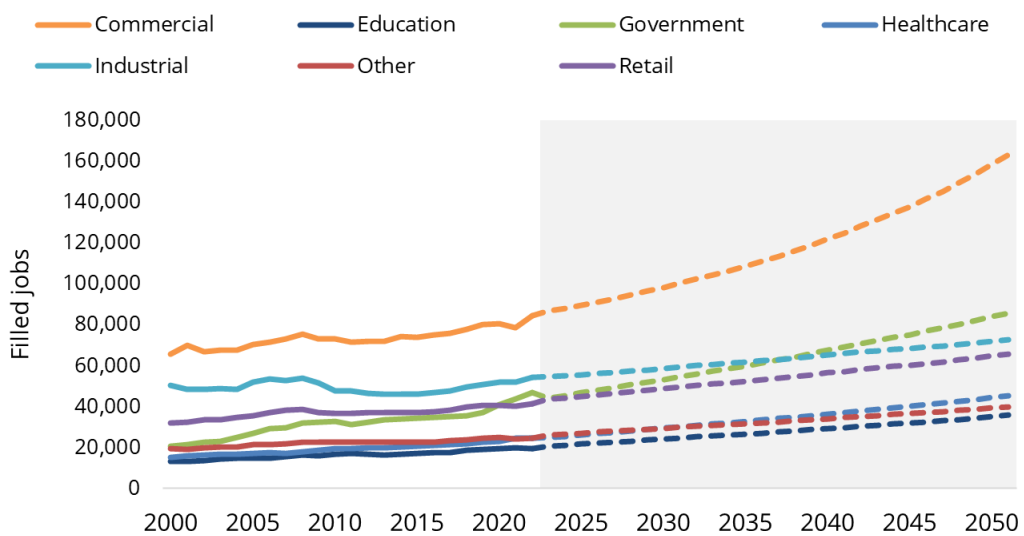


Source: Sense Partners

3.3. Employment projections

The result is a region wide estimate of the labour force

FIGURE 41: THE COMMERCIAL SECTOR REMAINS THE LARGEST EMPLOYER
Employment projections by sector, Wellington Region and Horowhenua



Source: Sense Partners



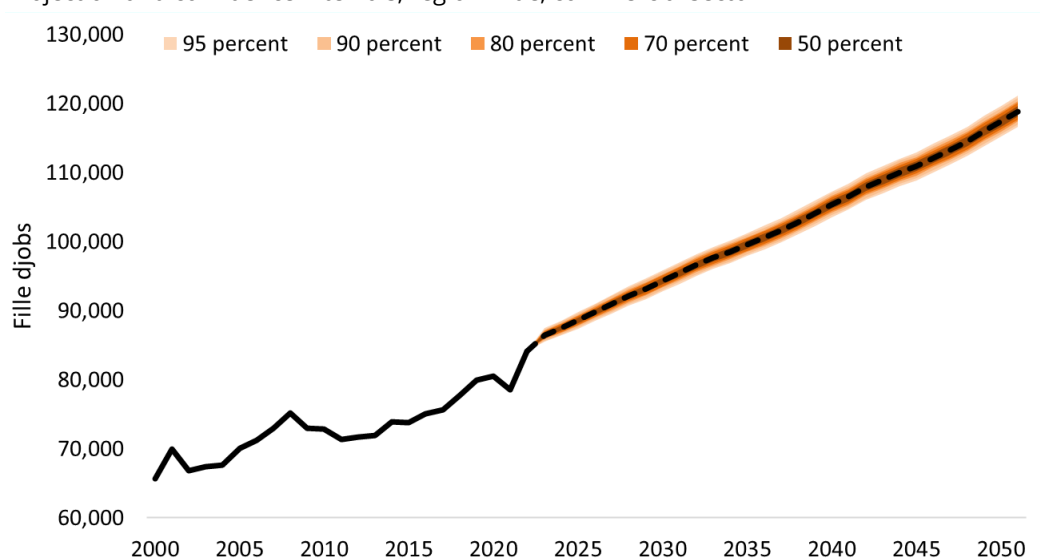
The primary output of the activity model is a projection of employment between 2023 and 2052 across seven sectors. This output is for the entire region inclusive of Horowhenua. The results are shown in Figure 41. The spatial model uses this result to allocate region wide employment across each Territorial Authority. The results for each Territorial Authority are summarised in the appendices of this report.

3.4. Local activity outlook

The commercial sector will grow in support of government

The commercial sector has grown at a compound annual average growth rate of 1.1% since 2000, gaining 18,400 jobs (28%). Since the post-GFC trough in employment in 2013, the sector has added 12,250 jobs and has long since recovered. An initial dip during the first set of pandemic lockdowns was quickly reversed.

FIGURE 42: THE COMMERCIAL SECTOR MAINTAINS STRONG GROWTH
Projection and confidence intervals, region wide, commercial sector



Source: Sense Partners

Looking forward, we expect the sector to maintain its long-term average growth into the future. This will see an additional 36,000 jobs in the sector by 2052. The model has identified a strong relationship between commercial sector employment and government sector employment, tightening the uncertainty bands. This indicates a strong central tendency.

It is important to keep in mind that commercial employment will fluctuate in response to external economic factors not examined in this model. A financial crisis in the US, a war over Taiwan, or extreme climate change could all exert a sudden and strongly negative impact on employment in this sector. Unexpected changes in expected population growth could also impact the outlook.

An important aspect of the commercial sector in Wellington City is that a substantial portion of the sector's activity is in support of central government. Lawyers, accountants, consultants,



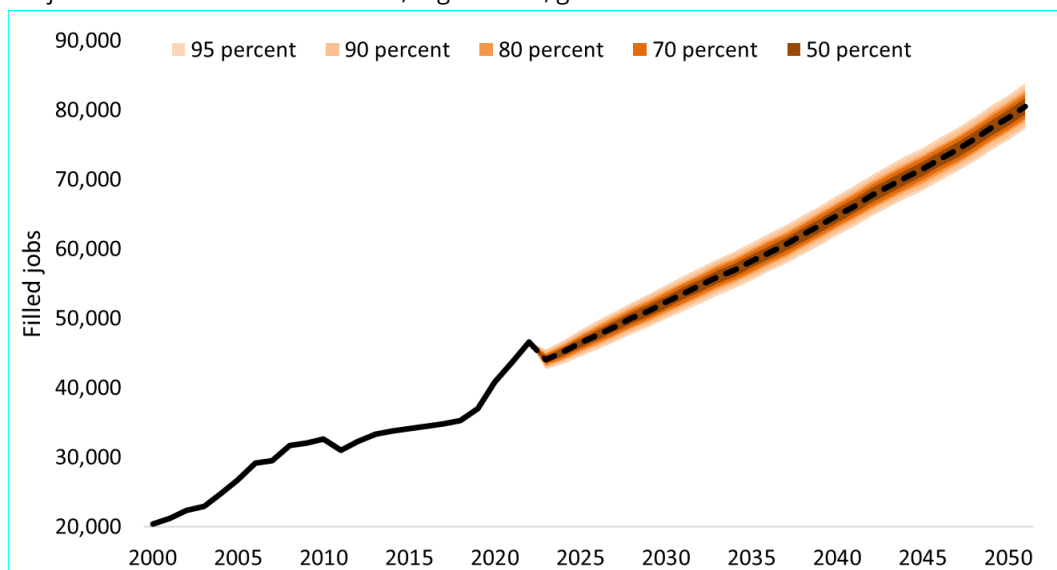
and a wide array of other commercial sector jobs directly cater to demand for commercial services arising from central government.

The government sector acts as a bedrock of growth

As a result, much of the expected growth in the commercial sector arises from the expected growth in the government sector. Growth in the government sector is largely driven by growth in economic activity, the population of New Zealand as a whole and preferences to public services. As the country grows, demand for government services grows and so does the size of the sector. The concentration of central government in Wellington means that employment growth is also concentrated in Wellington.

The presence of central government gives the region a hedge against changes in local economic factors. Wellington City benefits from the presence of government agencies. The rest of the region will benefit to varying extents by being the home to many of those working in central government. Naturally, the hedge that government provides is therefore strongest in Wellington City.

FIGURE 43: GOVERNMENT EMPLOYMENT GROWS IN LINE WITH NZ WIDE POPULATION Projection and confidence intervals, region wide, government sector



Source: Sense Partners

Industry has only now recovered from the Global Financial Crisis

However, there is more to the commercial sector than just servicing government. Many of those same lawyers and accountants will provide services to the industrial sector. The sector was hard hit by the GFC, losing 8,000 jobs (15% of the total) before employment started growing in 2013. It is only in 2022, 14 years later, that employment has recovered to its pre GFC level, at around 54,000 jobs.

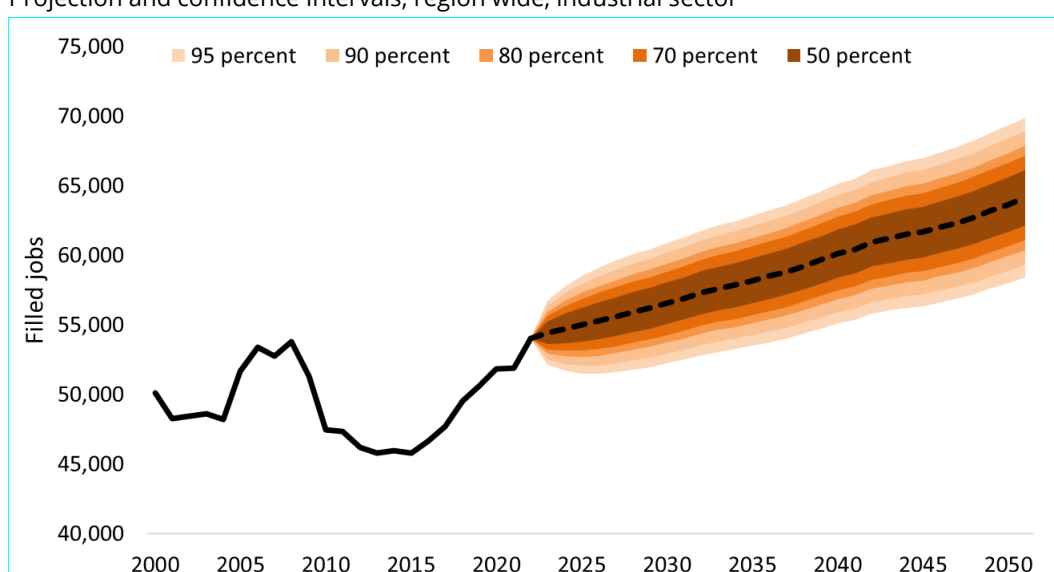
Part of this is the export-oriented nature of the sector. The commercial sector is domestically oriented and enjoys a stable base in the form of government demand. Industry, on the other



hand, is much more exposed to the ebbs and flows of international economic demand. This is why the GFC was so damaging to the sector.

Looking forward, we expect the sector to continue to grow, albeit within wide uncertainty margins. The scope for unexpected events overseas to impact the sector is huge. We cannot anticipate these events or their impact in this report. However, we can note that a sector facing the burden of tight land constraints and high land costs will be less able to deal with international economic tumult. Good land availability will help build a stronger industrial sector. Alongside innovation, land availability will have an important role in helping the sector grow, build resilience, and weather any international economic storms.

FIGURE 44: WIDE UNCERTAINTY BANDS REFLECT PAST VOLATILITY IN INDUSTRY
Projection and confidence intervals, region wide, industrial sector



Source: Sense Partners

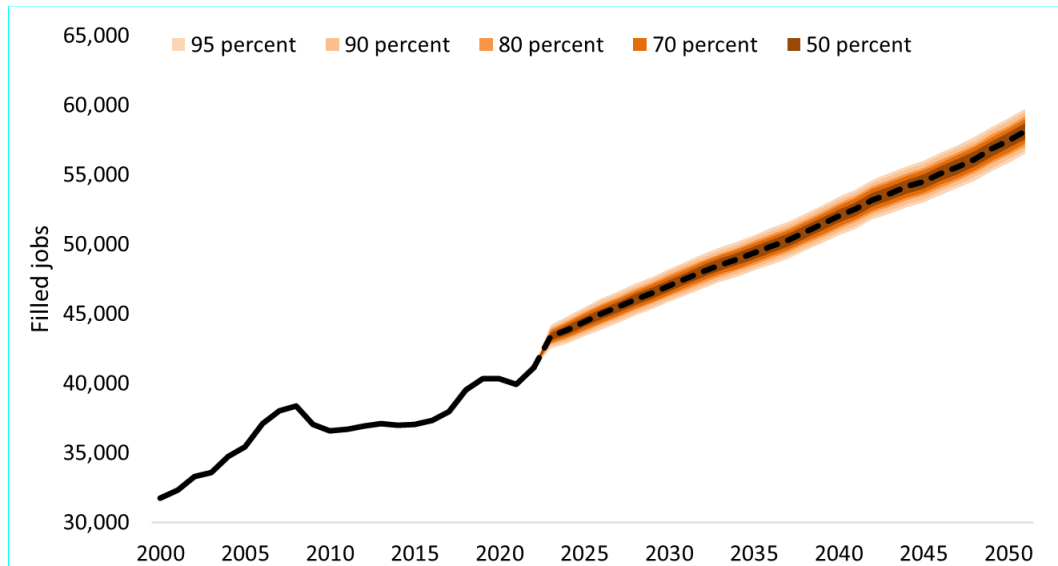
The retail sector services a growing population

The retail sector provides essential services to the local population, such as the provision of basic foodstuffs and material necessities. It also provides amenities and luxury goods, which may be more prone to swings in demand. The fall in employment after the GFC (down 1,700 jobs, or 4.4%) was proportionally less than other sectors. The fall also bottomed out quicker, reaching a low by 2011, and fully recovering by 2018. Looking forward, we expect retail jobs to grow in line with commercial and government sector jobs. This is because employment in those sectors will create demand for retail. Growth in other sectors will also stimulate demand.

A trend which may impact retail employment in future is a shift toward online shopping. However, discussion with stakeholders has identified a trend toward using existing stores as a facilitator of online shopping, rather than a substitute. Shoppers, particularly when looking for well-fitting clothes and footwear, may still opt to come into the store to try before they buy. Even if they leave empty handed to complete a purchase online later, that purchase may still be logistically facilitated by the store.



FIGURE 45: RETAIL GROWS IN SUPPORT OF COMMERCIAL AND GOVERNMENT SECTOR
Projection and confidence intervals, region wide, retail sector

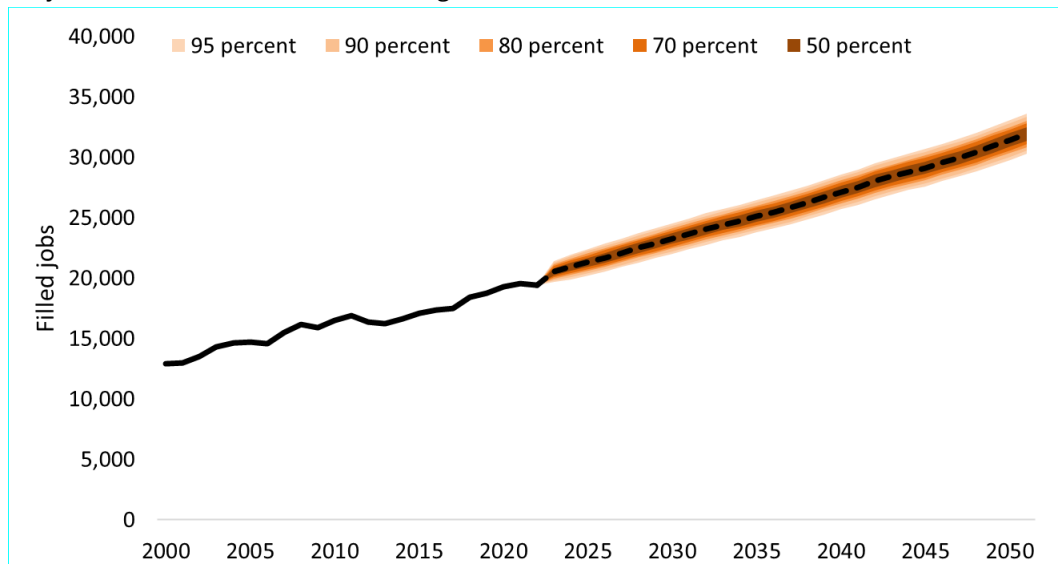


Source: Sense Partners

Education and healthcare are responding to demographic changes

FIGURE 46: STEADY GROWTH IN POPULATION MEANS STEADY GROWTH IN
EDUCATION EMPLOYMENT

Projection and confidence intervals, region wide, education sector



Source: Sense Partners

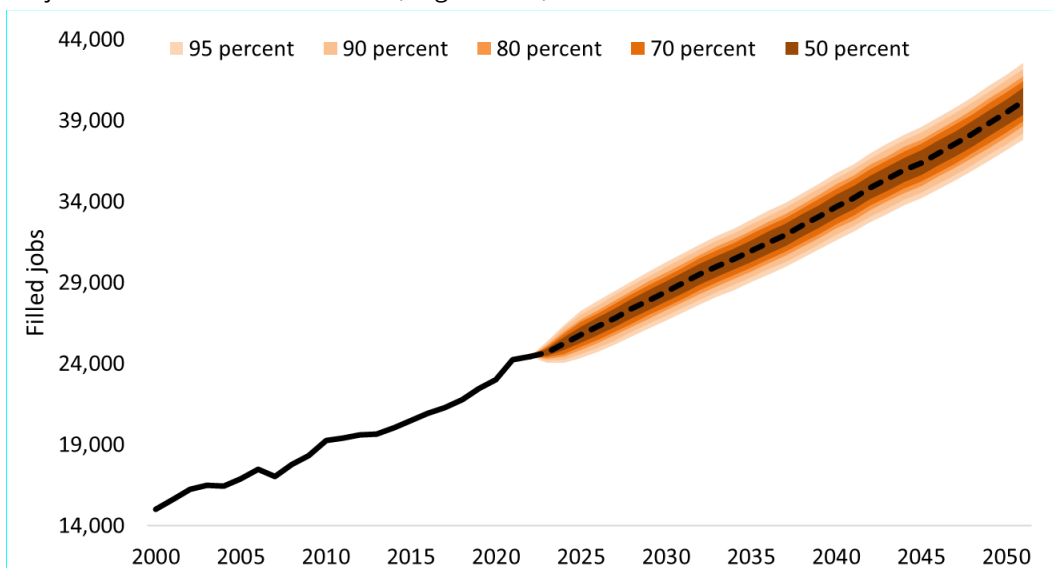
Growth in the education sector has been substantial over the past two decades. The sector has gained 6,472 jobs, an increase of 50%. Our projections indicate this growth will continue at the relatively steady pace seen over the past 20 years. The sector is relatively immune to



economic dips compared to other sectors. Naturally this is driven by demand for primary and secondary education, which is not as reactive to economic factors as demand in other sectors.

Healthcare is another sector that has experienced steady growth. We expect jobs in the sector to grow by 64% by 2052. This is compared to our projected population growth of 37% over that same time period. The reason growth is so much higher is that the population is ageing faster than it is growing, pushing up demand for healthcare.

FIGURE 47: THE POPULATION IS AGEING FASTER THAN IT IS GROWING
Projection and confidence intervals, region wide, healthcare sector



Source: Sense Partners

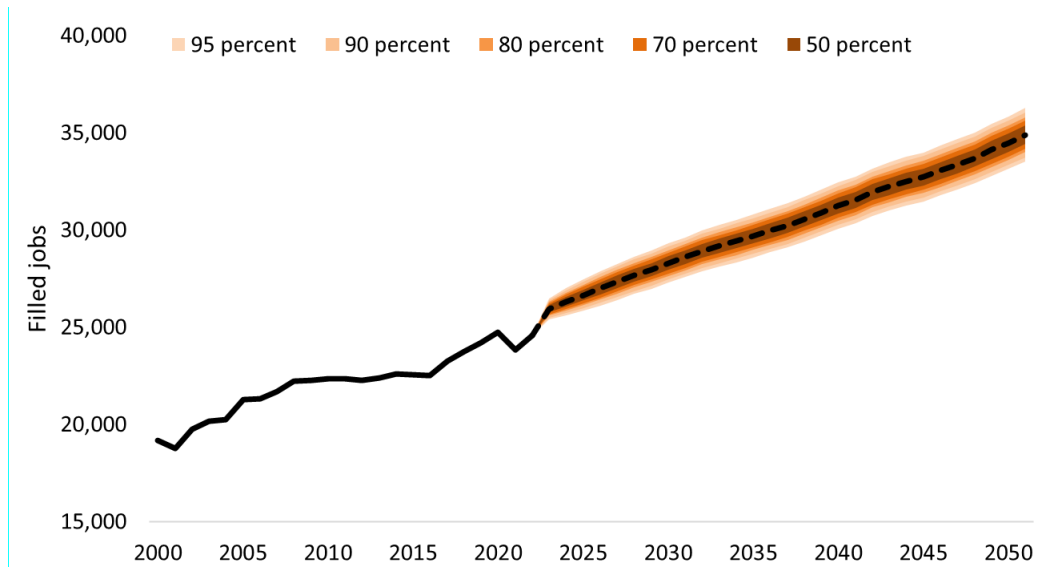
Remaining jobs are likely to grow alongside the population

The catch-all other sector in our model includes utilities, such as electricity, three waters, waste management, and gas. An increase in the population will drive demand for all the services provided by various utilities. As a result, we anticipate employment will grow in line with the population.

One trend we may see is the electrification of the national vehicle fleet, heating, and other industrial processes. This would massively increase the demand for electricity, potentially driving employment in this sector higher. However, at the same time, we could see improvement in labour productivity that may cancel out some of this effect.



FIGURE 48: POPULATION GROWTH DRIVES EMPLOYMENT IN THE "OTHER" SECTOR
Projection and confidence intervals, region wide, "other" sector



Source: Sense Partners



4. Business land demand

4.1. Our modelling approach

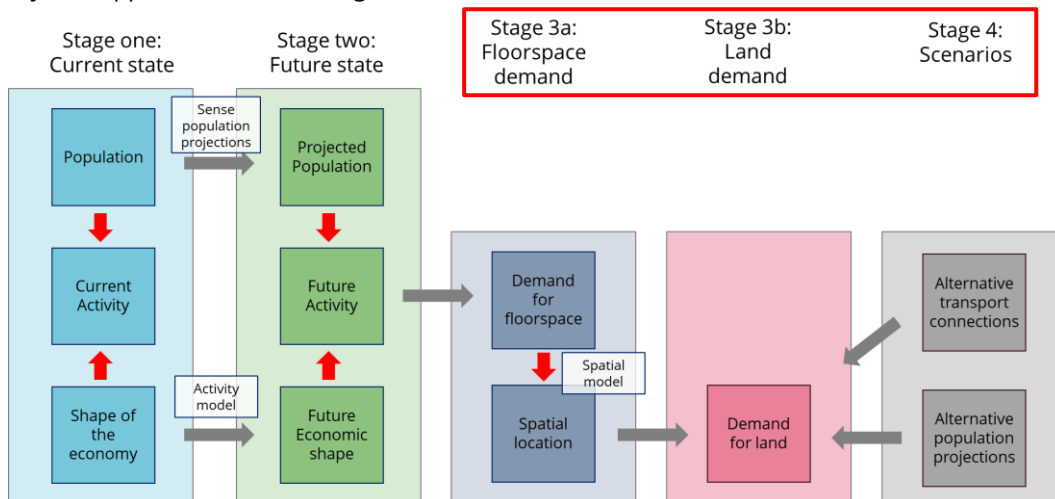
Stage 3 translates employment to floorspace and land demand

Stage 3 converts the employment forecasts into projections of demand for land. It does this via a two-step conversion. First, employment is translated into demand for floorspace. This is done using an estimate of square metres per employee. This differs across sectors, with some requiring more space than others. The estimate also changes over time, reflecting trends in floorspace use across industries.

We produce two core projections. The first is based only on the model outputs. The second is an adjustment for the impact of those transport projects recently finished or expected to be finished soon. These are the Northern Corridor, Riverlink, and Rail Network Investment. It is important to note that transport improvements are either already open or firmly in the pipeline. They are not an “if”, they are a reality.

As a result, it is only the transport adjusted projections that should be treated as the main output. We report the core baseline projections to give a sense of the impact of transport improvements.

FIGURE 49: WE TRANSLATE FUTURE ECONOMIC ACTIVITY INTO DEMAND FOR LAND
Stylised approach to forecasting business land demand



Source: Sense Partners

4.2. Mapping activity to floorspace

We use consistent floorspace assumptions

Table 12 below shows the floorspace per worker assumptions we use in this report. These are consistent with Sense Partners previous business land demand report delivered in 2017. Data from councils indicates that there has been no significant change on our last estimates.



TABLE 12: FLOORSPACE PER EMPLOYEE ASSUMPTIONS

Sector	Floorspace per employee
Commercial	17.5 m ²
Industrial	135 m ²
Government	17.5 m ²
Retail	35 m ²
Healthcare	40 m ²
Education	40 m ²
Other	40 m ²

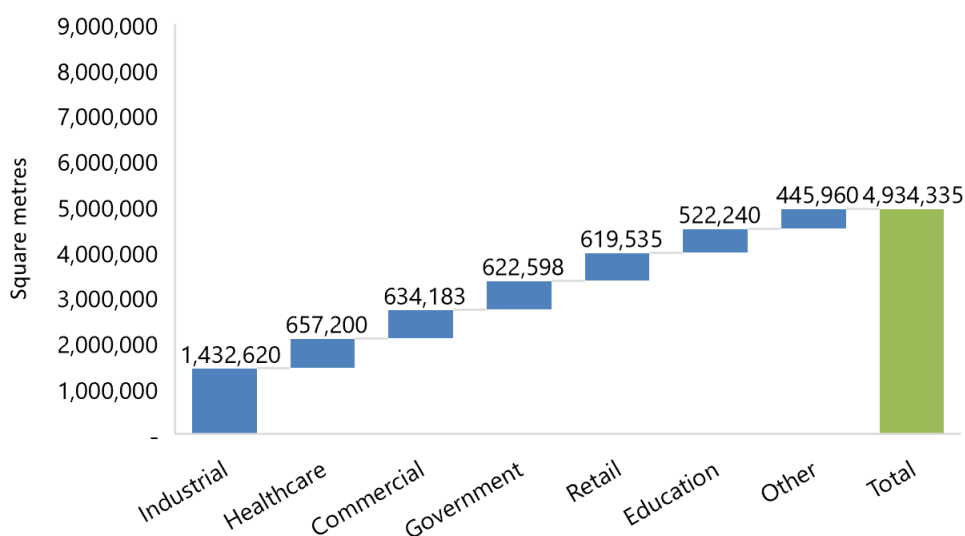
Source: Sense Partners

Growth highest in the industrial sector, but spread across all sectors

Results for the Wellington region (incl. Horowhenua), by sector, are reported in Figure 50 below. These are the core baseline figures which do not account for transport improvements arising from already- and soon-to-be-completed projects. We report them here to give a sense of the impact of transport improvements.

FIGURE 50: GROWTH IS SPREAD ACROSS ALL SECTORS

Projected change in floorspace demand, Baseline projection, 2022 – 2052



Source: Sense Partners

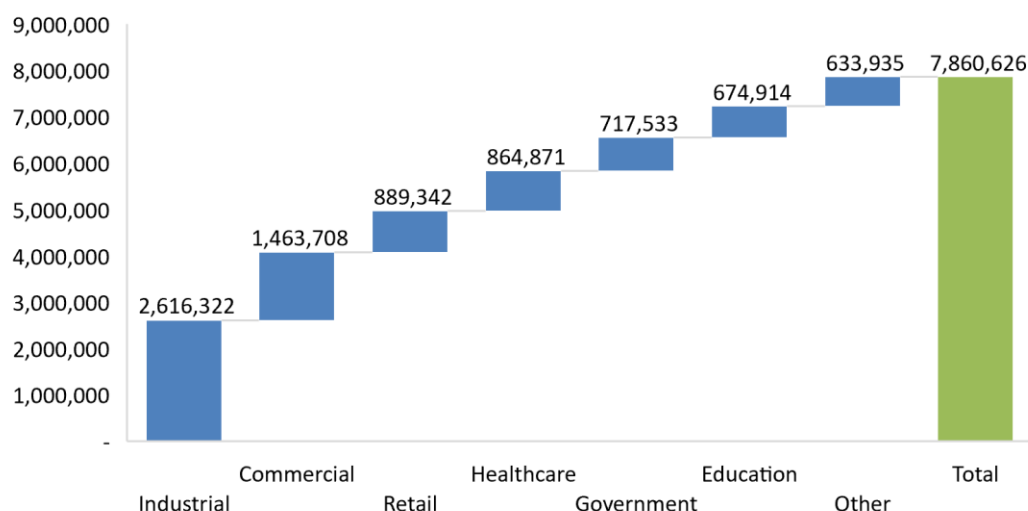
Transport improvements could increase demand by a further 60%

The combined effects of transport improvements lead to a 60% increase in floorspace demand by 2052 compared to the baseline projection. This is evenly allocated across sectors.



FIGURE 51: GROWTH IN FLOORSPACE IS RELATIVELY EVEN OUTSIDE THE INDUSTRIAL SECTOR

Projected change in floorspace demand, Transport Scenario 1, 2022 – 2052



Source: Sense Partners

Businesses will adapt their floorspace use to market conditions

These projections show floorspace demand based on a fixed track of floorspace per worker. This hides the dynamic interaction between supply and demand. A shortage of supply will be reflected in a higher price for available floorspace. Businesses will attempt to respond to this by reducing floorspace per worker where feasible.

This also applies to an increase in economic activity. An increase in turnover at retail stores, for example, may see those shops take on new staff and accommodate that demand within their existing footprint. Companies based in office blocks may try to reduce floorspace by shifting staff to smaller desks, removing some common areas, or by adopting a flexible work policy.

Each industry will have its own unique way of responding to limited floorspace. Some will be better able to respond than others. Businesses which require large floorspaces to function may be unable to adapt. These firms will face higher costs as a result of a floorspace scarcity. Some specific areas can lose business land through efficiencies and changing land uses.

4.3. Mapping floorspace to land

We use consistent floor to area assumptions

Table 13 below shows the floor to area ratio (FAR) assumptions we use in this report. A FAR greater than 1 indicates multiple floors, with a total floorspace greater than the size of the land parcel underneath. The site coverage ratios will be a function of both planning rules and demand. The site coverage ratios are consistent with those used in our previous business land demand report in 2017. Data from councils indicates that there has been no significant change on our last estimates. Indeed, the current building stock evolves only slowly so we should expect little change over time.



TABLE 13: FLOOR TO AREA RATIOS

Sector	HDC	KCDC	PCC	WCC	HCC	UHCC	SWDC	CDC	MDC
Commercial	0.7	0.7	0.7	5	1.3	1.3	0.7	0.7	0.7
Industrial	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Government	0.7	0.7	0.7	5	1.3	1.3	0.7	0.7	0.7
Retail	0.5	0.5	0.5	0.75	0.7	0.7	0.5	0.5	0.5
Health	0.5	0.5	0.5	0.75	0.7	0.7	0.5	0.5	0.5
Education	0.5	0.5	0.5	0.75	0.7	0.7	0.5	0.5	0.5
Other	0.5	0.5	0.5	0.75	0.7	0.7	0.5	0.5	0.5

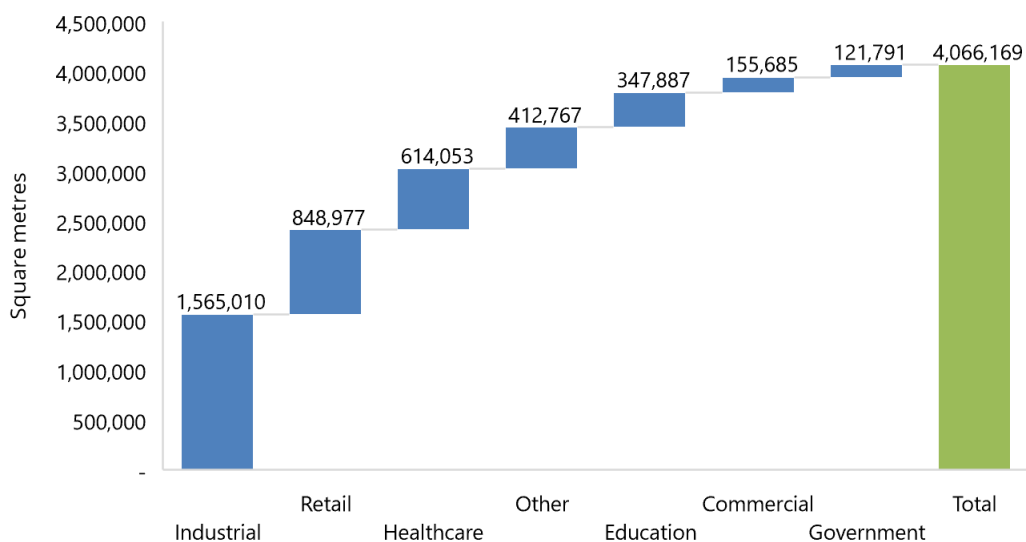
Source: Sense Partners

Differences in FAR across the region are partly due to differences in permitted density. However, the main driver is the higher demand to locate in Wellington City and areas nearest. High density is costly, and few businesses are willing to pay that cost in small towns with plenty of greenfields land nearby.

Industry is land intensive, driving demand for land

Results for the Wellington region (incl. Horowhenua), by sector are reported in Figure 52 below.

FIGURE 52: THE INDUSTRIAL SECTOR EXPERIENCES THE STRONGEST GROWTH
Projected change in land demand, *Transport Scenario 1, 2022 – 2052*



Source: Sense Partners



Land use changes in response to market conditions

We assume a fixed relationship between floorspace demand and land demand. This is a simplifying assumption, which hides an important dynamic interaction between supply and demand.

If demand for land goes up, but supply of land does not, the price of land will rise. As the price of land rises, businesses will seek to use less of it. They will attempt to do so by increasing density. The most obvious example is adding floors to a building. The high price of land in city centres is the driving force behind the tall office and apartment towers found there.

But density is expensive. Office towers require a lot of concrete, steel, and timber to stay standing. Businesses will only be willing to pay the higher cost if that location is worth the price. A location is worth it if it provides enough access to customers, suppliers, and workers to justify the cost. This is why we don't typically see tall buildings in rural areas.

The Wellington City centre, for example, is home to a high concentration of commercial, government, and retail jobs. These activities can be readily done in a high-density urban environment. In addition, there is a high benefit to these activities to being close together.

Co-locating government jobs may help with cooperation and coordination across organisations. Many commercial firms that provide services to government will want to be close by. Retail shops and restaurants see a market opportunity to service hungry workers.

This pattern is repeated at varying smaller scales in all city and town centres across the region.

Each business will adapt to land constraints in its own unique way

Some businesses cannot easily go up. Industrial activity may involve heavy machinery, or the storage of large quantities of goods. Placing these activities on higher floors can be expensive, as the building structure needs to be able to accommodate such heavy activity. It can also be simply impractical and make the manufacturing or logistics process complex.

Of course, a manufacturing business will likely have some administrative functions, such as accounting or management. An office on an upper floor can accommodate these sorts of activities, and free up some ground floor space for the heavy stuff.

Retail businesses can feasibly be done on upper floors. Restaurants, classified as part of retail in this report, may benefit from a view that attracts customers. However, shops will typically prefer somewhere where they can be seen by passers-by. In this case, they will prefer to concentrate at or very close to where those passers-by are, such as street level. Large format retail, much like industrial activity, may be simply too expensive to attempt at high altitudes.

Each business will be able to adapt to land constraints in its own unique way, shaped by the specific types of activity it undertakes. Scientists can experiment in a lab on upper floors. Unless they are experimenting with explosives. For this reason, industrial activities usually occur away from city centres, where land is more affordable.



Transport helps businesses balance access and cost

Businesses are trying to achieve a balance. On the one hand is access to suppliers, customers, and workers. On the other hand, is cheap land and lower costs. For businesses that cannot easily go up, there are two alternatives. One is to simply endure the high cost of land and keep going. The other is to pack up and move to somewhere with cheaper land.

Access to suppliers, customers, and workers can be achieved in two broad ways. One is proximity. Being physically located next to your suppliers gives a business better access to those suppliers. The other is through transport. A transport system allows businesses to be located further away from suppliers, while still having the same level of access. The better the transport system, the further away businesses can be.

The transport system is an essential component in helping businesses manage the trade-off between locating in high-cost areas close to customers, and low-cost areas further away. This means that decisions around investment in transport will influence where businesses will want to locate.

Recent changes to the transport network in the form of the Northern Corridor will have a large impact on where firms choose to locate. A high degree of interest is being seen in land at the southern terminus of Transmission Gully, in Porirua. This land is near both the Northern Corridor and two of the only meaningful east-west links, SH58 and Ngauranga Gorge. Because of this accessibility, businesses located here will be able to serve customers across the region better than they could elsewhere.

Geographic constraints will shape demand across the region

The cost of using land is heavily influenced by geography. Building on a slope is typically more expensive than on flat land, with the exception of swampy ground. When a business makes a choice about where to locate, part of the balancing act will be the cost of construction in certain areas.

Some land may be very close to suppliers and customers, or very close to good transport links. But if that land happens to be on the side of a very steep hill, or on a peat bog, then the cost of construction may outweigh all other benefits.

As with density, different businesses will approach the problem differently. Industrial activity, which often requires a large, flat space, will be the most impacted. By contrast, residential activity can go up, or use a terraced built form, neither of which may be suited to industry.

In the absence of planning constraints and even with ample infrastructure provision, some sites just aren't worth it. Businesses will seek out those sites which can balance access to markets with the cost of construction. Catering to the demand forecasts in this report may prove challenging due to geographic constraints.

The combination of transport and geography may shift demand

There is an abundance of flat land further up the coast in Kāpiti and Horowhenua, at least compared to Wellington City, Porirua, and the Hutt Valley. In past years, poor access to the



area meant that the remoteness of this land outweighed the benefit of low cost for many businesses. The Northern Corridor has changed this by significantly improving access.

With the vastly improved accessibility, we can expect to see a movement of business demand up the coast. Much of this is likely to be led by industry, which is in greater need of land than other sectors. Industry is also feeling the burn of constrained, suitable land in existing industrial hubs, like Lower Hutt.

By contrast, access to the Wairarapa is quite poor. There is a rail connection, but road freight faces the high cost of going over the Rimutaka ranges. This means that the equally abundant flat land in Wairarapa is not as desirable for businesses because of its isolation from the wider Wellington market. Businesses that do locate there will likely focus on the local market.

Alternatively, they are being supplied by primary industries in the area, such as food processing. For these businesses, the right balance is indeed to favour locating near to suppliers rather than near to customers.

Residential competition will impact businesses differently

An important factor to consider is that alongside the geographic constraints and accessibility-cost balancing act there is competition. Demand for residential land is high across the region. Residential demand may bid up the price of land, making it unaffordable for businesses and pushing them further out.

Some businesses, such as retail, can either co-locate with residential activity or be done in close proximity with few adverse consequences. An apartment building with ground floor shops is a simple and common example. This ability to co-locate is combined with the fact that new dwellings mean new customers. Not only can retail co-locate, but it may also be highly beneficial for it to do so.

This means that some business sectors will be buoyed by residential demand. The problem is that some businesses create externalities. This may be noise pollution from a nightclub, air pollution from a fertiliser plant, or any number of other impacts. Where businesses create significant externalities, they may not be able to effectively co-locate with residential activity.

These businesses, primarily but not exclusively industrial, are in a much more direct competition against residential activity for scarce land. While we project forward increases in demand for industrial land, this competition may see that demand priced out of the market.

Legislation has changed the floorspace-land relationship

On top of all the constraints and careful balancing acts described above is the impact of planning constraints. Site coverage, height limits, and recession planes are some of the many planning tools that constrain the use of land.



Recent changes in planning rules, prompted by the National Policy Statement on Urban Development⁹, have led to an increase in permitted density. With the increase in permitted density, the relationship between floorspace demand and land demand changes.

Broadly speaking, the impact of the changes has meant that planning constraints are no longer the main constraint holding back development. This allows, and there will be, an increase in supply. Eventually, demand will bump up against far more binding constraints, particularly geography.

This is complicated by further legislative changes. The ability to use greenfield growth may be impacted by the recently implemented National Policy Statement for Highly Productive Land¹¹. Flat land ideal for industry happens to, not infrequently, be quite good for agriculture too. Rules preventing the movement from agriculture to other uses will severely constrain how councils are able to accommodate growing demand.

In some areas, this could be addressed through a further loosening of density restrictions, like height or site coverage. But due to the high cost of density, particularly on a fault line, this is not a perfect substitute. And as discussed, for some sectors it is not much of a substitute at all.

Demand is not inevitable

Where supply is constrained, through natural geography, legislation, or fierce competition, demand will be priced out of the market. The greater the constraints, the more demand will be lost. This loss may come in the form of relocations to other areas with better supply. It may also come in the form of a complete loss.

In this report, we project forward demand based on past relationships and expected population growth. This is largely unconstrained demand, or what demand could be in a world with fewer constraints. How demand in future plays out will be determined the various constraints discussed above, as well as broader economic conditions and population movements.

Councils should view this demand as something to aspire to within the constraints they are able to influence and noting that some constraints may be insurmountable.

⁹ Ministry for the Environment (2020) *National Policy Statement on Urban Development*.
<https://environment.govt.nz/acts-and-regulations/national-policy-statements/national-policy-statement-urban-development/>

¹⁰ Ministry for the Environment (2020) *National Policy Statement on Urban Development*.
<https://environment.govt.nz/acts-and-regulations/national-policy-statements/national-policy-statement-urban-development/>

¹¹ Ministry for the Environment (2022) *National Policy Statement for Highly Productive Land*.
<https://environment.govt.nz/publications/national-policy-statement-for-highly-productive-land/>



5. The impact of transport links

5.1. Transport improvements and economic activity

Transport improvements enhance productivity

Transport networks – including road and rail - facilitate the movement of people and goods across space. This includes movement within cities, across regions, across the country, and connections to the wider world. The ability for the transport system to improve mobility is a key factor in how productive a city can be.

Agglomeration benefits arise when people and firms locate in close proximity. The proximity required to achieve a certain outcome will depend on how good transport connections are. Excellent transport connections mean people can live further away while still enjoying the benefits of the city. This applies to firms as well.

Improving transport links can enable people and firms to take advantage of more affordable land further out from the urban core, without increasing their transport costs. This has important implications for land demand in areas that enjoy improved accessibility. The improvements also mean that people and firms remaining in the urban core enjoy lower transport costs.

The combined result of improvements, and their flow on effects through the economy, are an increase in economic activity. This can be measured by estimating an improvement in urban economic productivity.

5.2. Wellington northern corridor

The Northern Corridor improves capacity and resilience

The Wellington Northern Corridor is a series of motorway projects intended to improve the capacity and resilience of Wellington's SH1 connection North. Segments of the new corridor have already opened, while further segments are under construction and in planning phases. The projects constituting the Corridor are:

- **The Smart Motorway:** A system of dynamic speed restrictions applied to SH1 between the Terrace tunnel and Johnsonville designed to improve vehicle flows.
- **Transmission Gully:** A 27km motorway from Linden to Mackay's Crossing, with interchanges on SH58. Completed in March 2022, the motorway has replaced the old coastal route, improving travel times and road capacity.
- **Mackay's to Peka Peka:** An 18km motorway, opened in 2017, forming the first part of the Kāpiti Expressway to open to users. It provides a bypass of Kāpiti township and high-capacity motorway facilities through to Peka Peka.
- **Peka Peka to Ōtaki:** A continuation of the Kāpiti Expressway, due for completion in late 2022.



- **Ōtaki to North of Levin:** The final planned segment of the Kāpiti expressway linking Horowhenua with the Greater Wellington region. The expressway is anticipated to open to users in 2029.

The Land Demand forecast in this report relies on jobs data through to February 2022. Transmission Gully, a key segment in the route, did not open until late March 2022. Incompletion of Transmission Gully represented a gap in the Northern Corridor which left the Mackay's to Peka Peka segment isolated. We expect this isolation would have limited the economic impact of the expressway completed in 2017.

As a result, we expect that the jobs data to February does not reflect the near- or long-term impact of the Northern Corridor. It is true that economic activity may have already adjusted in anticipation of the Corridor opening. However, identifying what activity has occurred in anticipation of the corridor opening and what activity would have occurred anyway is a complex task. In addition, we expect the bulk of the adjustment to economic activity will occur in the long term.

Given this, we treat our baseline projections as separate from the impact of the Northern Corridor. This means we require an adjustment to our base projections to reflect the impact that the improvement in transport connectivity will have.

The Corridor will substantially lower travel times

We do not seek to replicate detailed business case work done for these projects. Nor do we seek to identify a benefit-cost ratio or to assess the net benefit of these projects. Rather, we aim to identify an impact on land demand. To do this we adopt a procedure from the Waka Kotahi Monetised Benefits and Costs Manual (MBCM) to evaluate agglomeration benefits. We do this based on expected improvements in travel time.

TABLE 14: PRE-COMPLETION TRAVEL TIME MATRIX, MINUTES

	HDC	KCDC	PCC	WCC	HCC	UHCC	SWDC	CDC	MDC
HDC	-	36	57	77	73	78	117	130	144
KCDC	36	-	30	45	47	45	84	97	111
PCC	57	30	-	21	31	31	70	83	97
WCC	77	45	21	-	19	31	70	83	97
HCC	73	47	31	19	-	19	58	71	85
UHCC	78	45	31	31	19	-	39	52	66
SWDC	117	84	70	70	58	39	-	13	27
CDC	130	97	83	83	71	52	13	-	14
MDC	144	111	97	97	85	66	27	14	-

Source: Various



Table 14 above and Table 15 below show the pre- and post-corridor travel times between each Territorial Authority in the region. For areas along the route itself, substantial travel time savings are expected. This includes a 29% reduction, or 22 minutes, in travel times from Wellington city to Horowhenua. This will bind each terminus and all the areas in between in a tighter economic link.

TABLE 15: POST-COMPLETION TRAVEL TIME MATRIX, MINUTES (REDUCTION)

	HDC	KCDC	PCC	WCC	HCC	UHCC	SWDC	CDC	MDC
HDC	- (7)	29 (7)	42 (15)	55 (22)	63 (10)	71 (7)	110 (7)	123 (7)	137 (7)
KCDC	29 (7)	-	23 (7)	30 (15)	37 (10)	35 (10)	74 (10)	87 (10)	101 (10)
PCC	42 (15)	23 (7)	-	17.5 (3)	28 (3)	31 (nc)	70 (nc)	83 (nc)	97 (nc)
WCC	55 (22)	30 (15)	17.5 (3)	-	19 (nc)	31 (nc)	70 (nc)	83 (nc)	97 (nc)
HCC	63 (10)	37 (10)	28 (3)	19 (nc)	-	19 (nc)	58 (nc)	71 (nc)	85 (nc)
UHCC	68 (10)	35 (10)	31 (nc)	31 (nc)	19 (nc)	-	39 (nc)	52 (nc)	66 (nc)
SWDC	110 (7)	74 (10)	70 (nc)	70 (nc)	58 (nc)	39 (nc)	-	13 (nc)	27 (nc)
CDC	123 (7)	87 (10)	83 (nc)	83 (nc)	71 (nc)	52 (nc)	13 (nc)	-	14 (nc)
MDC	137 (7)	101 (10)	97 (nc)	97 (nc)	85 (nc)	66 (nc)	27 (nc)	14 (nc)	-

Source: Sense Partners

Our modelling suggests the corridor increases activity

We adopt a procedure from the Waka Kotahi Monetised Benefits and Costs Manual (MBCM) to estimate a change in economic productivity arising from the agglomeration benefits of the Corridor. As a supplement to this method, we construct a simplified, uni-modal gravity model of transport. This allocates trips between zones at the Statistical Area 2 (SA2) level. This is done proportional to employment and population in each SA2, and an estimate of the travel cost between each SA2. Changes in travel cost result in a reallocation of trips and a reduction in transport cost.

Figure 53 below shows the estimated impact on GDP of the Northern Corridor improvements in the year 2052. We assess a single year increase in GDP as this will indicate the amount of land needed to sustain that increase in all other years.

The relative benefit, or the percentage increase in GDP, is highest in Kāpiti Coast, at 1% per annum. Kāpiti Coast enjoys a prime position on the Northern Corridor, with expressway extending both north and south. This centrality gives Kāpiti the greatest improvement in region wide connectivity, and this is reflected in the increase in economic activity.

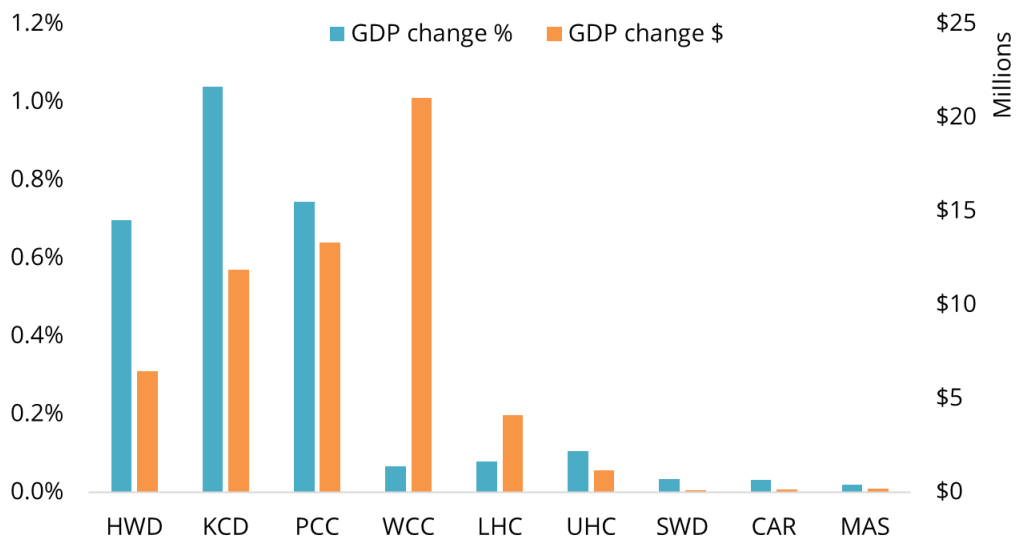


Horowhenua and Porirua both enjoy substantial increases in economic activity due to their respective locations at each end of the new corridor. At about 0.7% of GDP per year, accumulating every year, both areas will see an increase in demand for business land.

The absolute benefit in dollar terms is highest in Wellington city, at \$21m per year (2022 dollars). This simply reflects the higher pre-existing level of economic activity in that area, rather than a disproportionate benefit.

The Hutt Valley, via SH58, can take advantage of the corridor's improved connectivity. However, relatively poor region-wide east-west links ultimately limit the ability for the Hutt Valley to benefit from this north-south connection. Wairarapa faces the same issue. These areas gain some benefit from the flow-on effects of increased economic activity in Wellington and up the coast.

FIGURE 53: THE RELATIVE IMPACT IS HIGHEST IN KĀPITI COAST
Estimated impact on annual GDP by 2052

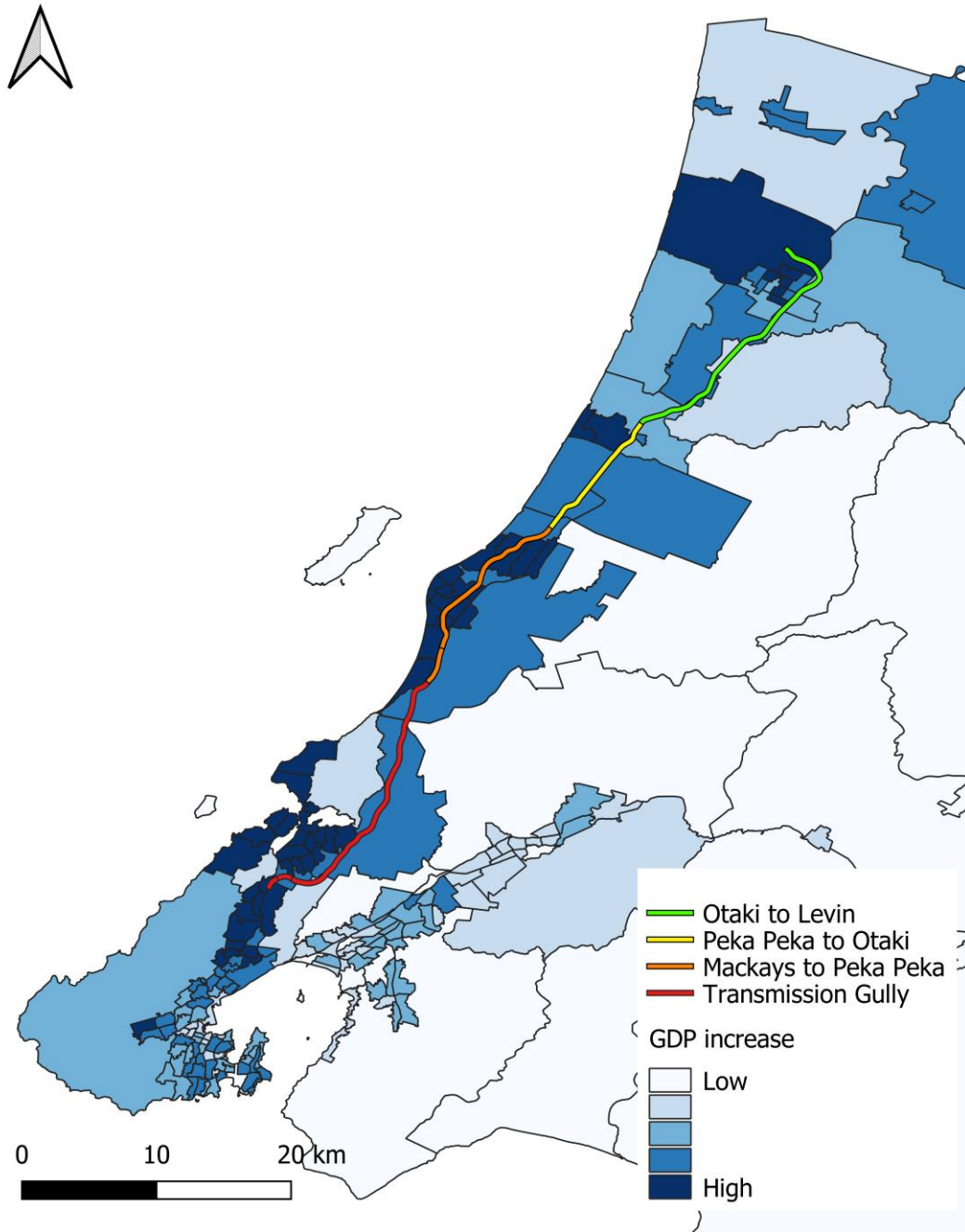


Source: Sense Partners

The spatial allocation of benefits varies across the region. The simplified model adopted assesses benefits at the SA2 level. These are strongest in more populated areas and along the route itself. The benefits are visualised in Figure 54 below.



FIGURE 54: ECONOMIC ACTIVITY INCREASES ALONG THE WHOLE ROUTE
Estimated change in GDP (\$) by SA2

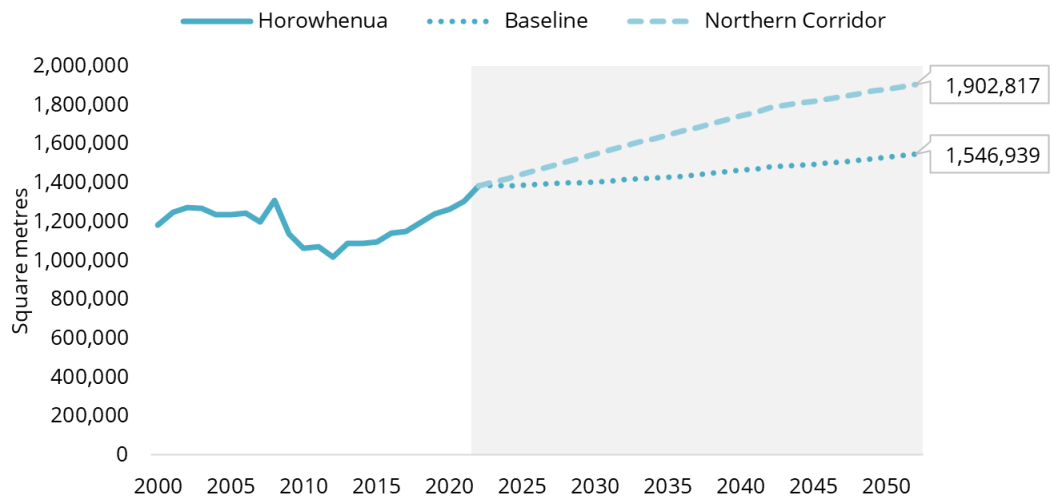


Source: Sense Partners



Land demand increases most along the immediate route

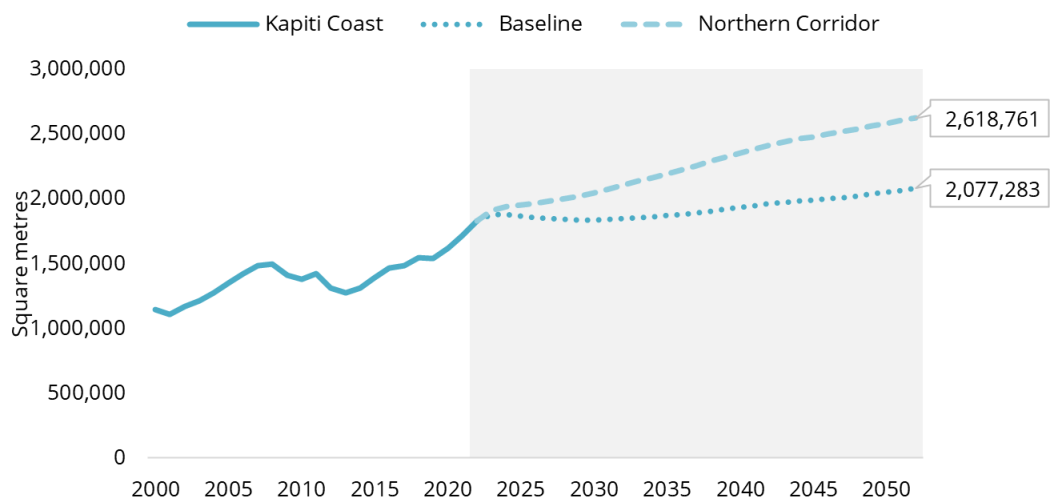
FIGURE 55: LAND DEMAND IS 23% HIGHER IN HOROWHENUA BY 2052
Projected land demand, Horowhenua



Source: Sense partners

We expect the economic benefit of the road will diminish over time due to increases in congestion and a corresponding reduction in travel time. This will not offset the gain, rather it will simply arrest any further growth in economic activity. We do not model increases in congestion. However, we assume that the marginal benefit will gradually fall to 0 by 2052.

FIGURE 56: LAND DEMAND IS 26% HIGHER IN KĀPITI COAST BY 2052
Projected land demand, Kāpiti Coast



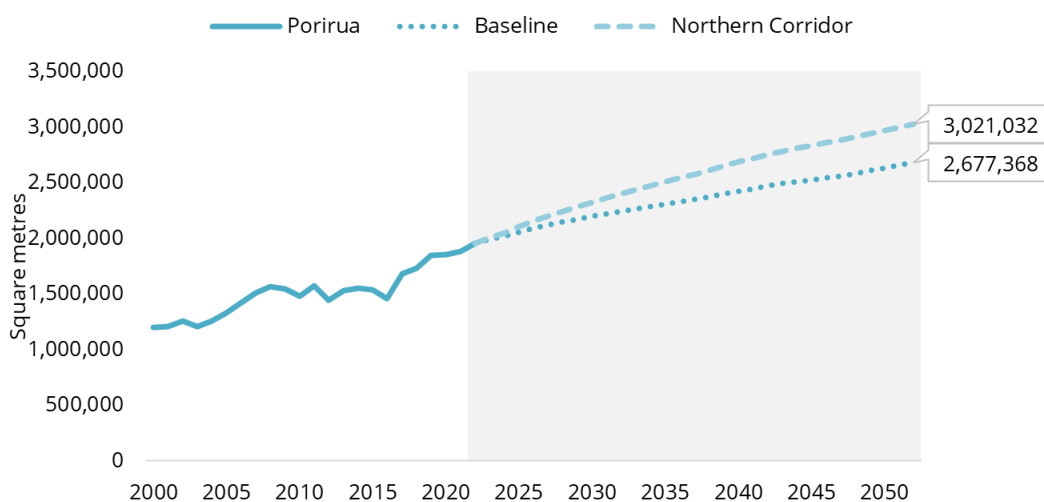
Source: Sense partners

Only three Territorial Authorities - Horowhenua, Kāpiti Coast, and Porirua - experience a significant increase in business land demand. We estimate demand will be 23%, 26%, and 13% higher, respectively, by 2052 as a result.



FIGURE 57: LAND DEMAND IS 13% HIGHER IN PORIRUA BY 2052

Projected land demand, Porirua



Source: Sense partners

Economic activity will likely shift up the coast a little in the future

The role of central government in driving employment and its concentration mean that Wellington city will remain the centre of economic activity for the region. However, the Northern Corridor opens up connectivity to Kāpiti Coast and Horowhenua. The relative abundance of flat land compared to Wellington and the Hutt Valley will, if plan enabled, prove an attractive prospect for more land intensive sectors, particularly the industrial sector.

As a result, of this accessibility, economic activity has started to evolve northward up the coast. As more firms take advantage of cheaper land, the concentration of firms will increase. More firms in closer proximity mean agglomeration benefits. A positive feedback loop will be triggered, generating more growth in turn. This is likely to be strongest in industrial uses, for whom locating next to government agencies is less of an imperative. However, all sectors will likely see a shift in growth northward.

While this report does not consider residential land, it is important to note that this connectivity applies to people as well as firms. As more people seek affordable living and a high level of natural amenities, the population of the coast will rise. This will increase demand for retail, education, and healthcare services, in turn increasing demand for land. Opportunities in industrial employment will also attract new residents to the area, forming another positive feedback loop.

A key factor in how this evolution will play out is the supply of plan and infrastructure enabled land. A balancing act occurs between cheap land and the cost of getting goods to market. The Northern Corridor shifts that balance in favour of Kāpiti Coast and Horowhenua.

But there are limits to any shift north. The location of end users of industry production matters. Transport costs – including both time and money – to reach customers will remain important. Congestion is occurring in Ngauranga Gorge making travel times from the coast to CBD/Airport more variable.



5.3. Riverlink

We focus on the transport aspect of the Riverlink package

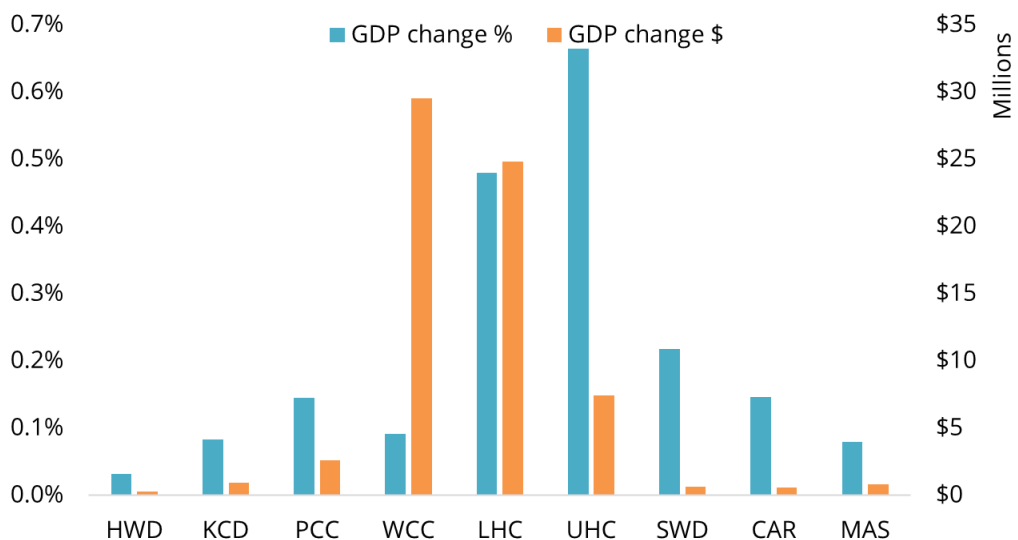
Riverlink is a package of projects centred on Lower Hutt. This includes flood protection, urban regeneration, and transport improvements. We focus on assessing the impact of the transport improvements. The reason is these improvements are on a key regional strategic transport corridor, SH2, and the benefits will be felt across the region.

The November 2020 Single Stage Business Case for the Melling Transport Improvements (now part of the Riverlink package), suggests a 5.7-minute reduction in travel time along the SH2 corridor during peak hours¹². To model the impact, we split Lower Hutt into three zones – north, south, and central. The trip matrix for the region is set up, and any journeys likely to pass through the interchange are identified.

For example, trips from Upper Hutt to Wellington City will likely pass through the interchange. The 5.7-minute travel time reduction is applied to these trips. Trips from South Wairarapa to Porirua, on the other hand, are more likely to use SH58, and so the reduction is not applied. We divide Lower Hutt into three zones because not all trips originating in Lower Hutt will pass through the interchange. For example, trips from the Seaview industrial area heading into Wellington are not likely to use the interchange.

Riverlink will boost economic activity throughout the Hutt Valley

FIGURE 58: THE IMPROVEMENTS HELP SHIFT ECONOMIC ACTIVITY NORTH
Estimated impact on annual GDP by 2052



Source: Sense Partners

¹² Stantec (2019), *Melling Transport Improvements SSBC*. Prepared for NZ Transport Agency. <https://www.nzta.govt.nz/assets/projects/melling-transport-improvements/single-stage-business-case-for-melling-transport-improvements.pdf>

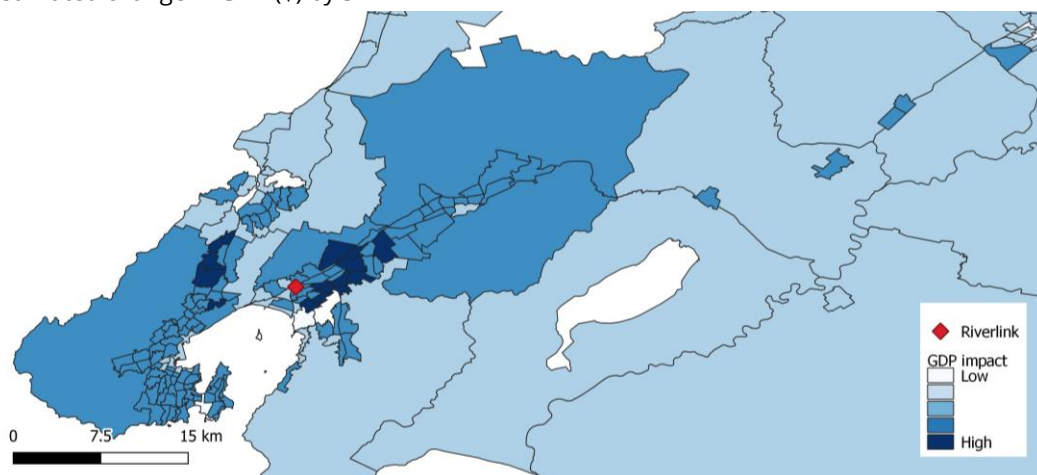


The economic impact in dollar terms, shown in Figure 58 above, is highest in Wellington City. This is a function of a lower percent gain applied to a larger economy. Proportionally, the highest gain is in Upper Hutt, with a 0.7% increase in GDP by 2052. This is because trips originating in Upper Hutt are predominantly destined for Wellington City, and all of these will benefit from the improvement.

Lower Hutt will, as expected, gain a decent boost in economic activity. By 2052, economic activity will be 0.5% higher, some \$25m in 2022 dollars. This is \$25m every year, and so the benefits accruing over time will be significant. This is the result of improved accessibility to and from Lower Hutt, improving the economic benefit to businesses of locating there.

There are small, but measurable gains in Wairarapa and Porirua as well. This is because SH2 functions as a strategic corridor, providing access into Wairarapa from Wellington and Porirua. Improvements in Lower Hutt will benefit those trips moving along the entire corridor.

FIGURE 59: BENEFITS WILL BE FELT ALONG THE ENTIRE CORRIDOR
Estimated change in GDP (\$) by SA2



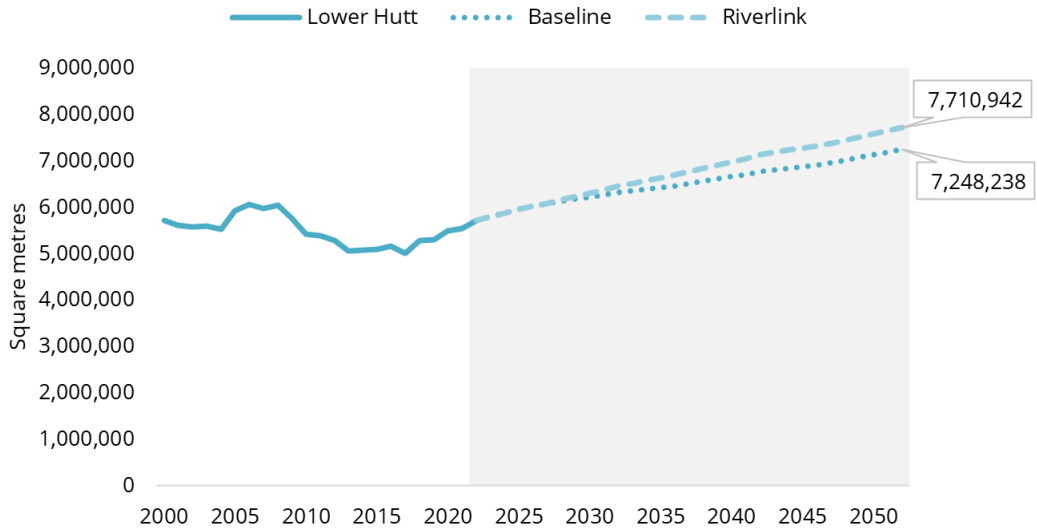
Source: Sense Partners

The impact on marginal land demand will fade over time

The overall impact will be to shift economic activity further North into the Valley. With faster travel, land in the Hutt Valley becomes a better substitute for land in Wellington city. With this increase in economic activity comes an expected increase in land demand. We allocate land demand proportional to the increase in economic activity. The result is an extra 460,000m² demand in Lower Hutt, a 6.4% increase.



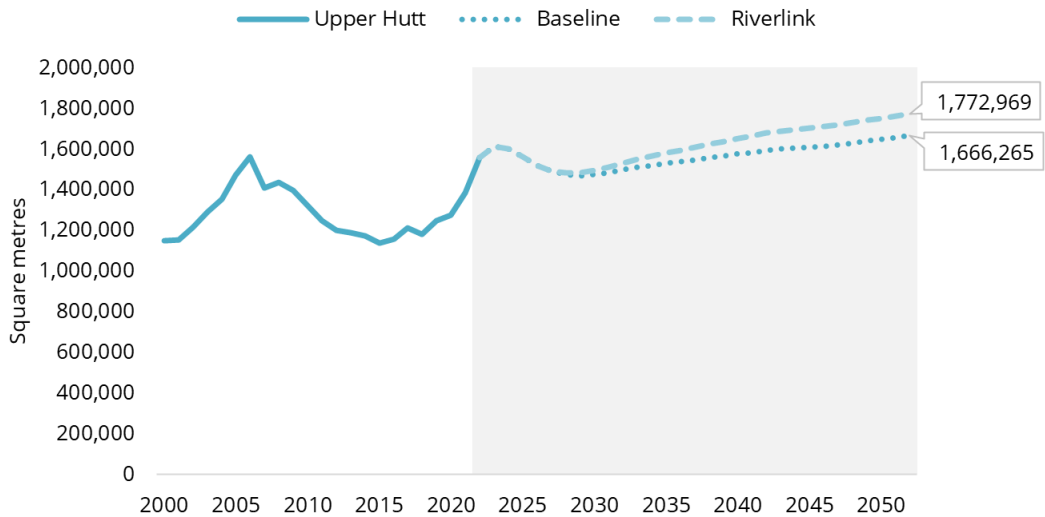
FIGURE 60: LAND DEMAND IN LOWER HUTT IS 6% HIGHER BY 2052
Projected land demand, Lower Hutt



Source: Sense Partners

We expect that demand for travel will pick up shortly after the improvements are completed, currently expected around 2027. However, we expect that the impact on land demand will fade over time, though at a permanently higher level. We model this as an immediate increase in marginal demand equivalent to the increase in GDP. This is gradually reduced to 0 by 2052.

FIGURE 61: THE PROPORTIONAL IMPACT IS SIMILAR THROUGHOUT THE HUTT VALLEY
Projected land demand, Upper Hutt



Source: Sense Partners



5.4. Rail Network Investment

Rail is the backbone of the region's transport network

The rail network forms the high-capacity backbone of the region's transport network. Improvements to the network have the potential to shape economic activity across the region. A programme of investment is planned for the network over the next 30 years. To understand the potential impact of this investment on business land demand, we draw on material from two business cases.

First, we consider a range of investments scheduled in the Wellington Rail Programme Business Case.¹³ This is supplemented with investments identified for the Wairarapa in the Lower North Island Integrated Rail Mobility business case.¹⁴

Broadly, this investment package will improve frequencies and travel times across the network. These can be considered as reductions in the generalised cost of travel (the cost of travel is not simply the ticket price.) Based on material in these two business cases, we have inferred a reduction in travel times via rail across the region. These are shown in Table 16 below.

TABLE 16: REDUCTION IN TRAVEL TIME BY RAIL BETWEEN AREAS (MINUTES)

	HWD	KCD	PCC	WCC	LHC	UHC	SWD	CAR	MAS
HWD		0	0	0	0	0	0	0	0
KCD	0		7	7	7	7	0	0	0
PCC	0	7		7	7	7	0	0	0
WCC	0	7	7		7	7	15.3	15.3	14
LHC	0	7	7	7		7	15.3	15.3	15.3
UHC	0	7	7	7	7		15.3	15.3	15.3
SWD	0	0	0	15.3	15.3	15.3		3.8	6.2
CAR	0	0	0	15.3	15.3	15.3	3.8		2.4
MAS	0	0	0	15.3	15.3	15.3	6.2	2.4	

Source: Sense Partners assumptions derived from business cases

A small reduction in travel times for cars and other road vehicles is also assumed. This arises from mode shift toward rail, leaving fewer cars on the road and thus reduced congestion. The reduction is assumed at 5%. Table 17 below shows the assumed mode share of rail to which the rail travel time reductions are applied.

¹³ Stantec (2022) *Wellington Rail Programme Business Case: Wellington's Strategic Rail Plan*.
https://www.gw.govt.nz/assets/Documents/2022/08/rpt_wellington_rail_pbc_final_220725_Redacted.pdf

¹⁴ RPS (2021) *Lower North Island Rail Integrated Mobility*.
https://www.gw.govt.nz/assets/Documents/2022/05/Redacted-LNIRIM_DBC_V1_20211101_Council-Approved_Redacted.pdf



TABLE 17: ASSUMED MODE SHARE OF RAIL

	HWD	KCD	PCC	WCC	LHC	UHC	SWD	CAR	MAS
HWD		9%	61%	61%	0%	0%	9%	9%	9%
KCD	9%		61%	61%	0%	0%	9%	9%	9%
PCC	61%	61%		61%	0%	0%	9%	9%	9%
WCC	61%	61%	61%		61%	61%	20%	20%	20%
LHC	0%	0%	0%	61%		61%	20%	20%	20%
UHC	0%	0%	0%	61%	61%		20%	20%	20%
SWD	9%	9%	9%	20%	20%	20%		20%	20%
CAR	9%	9%	9%	20%	20%	20%	20%		20%
MAS	9%	9%	9%	20%	20%	20%	20%	20%	

Source: Sense Partners

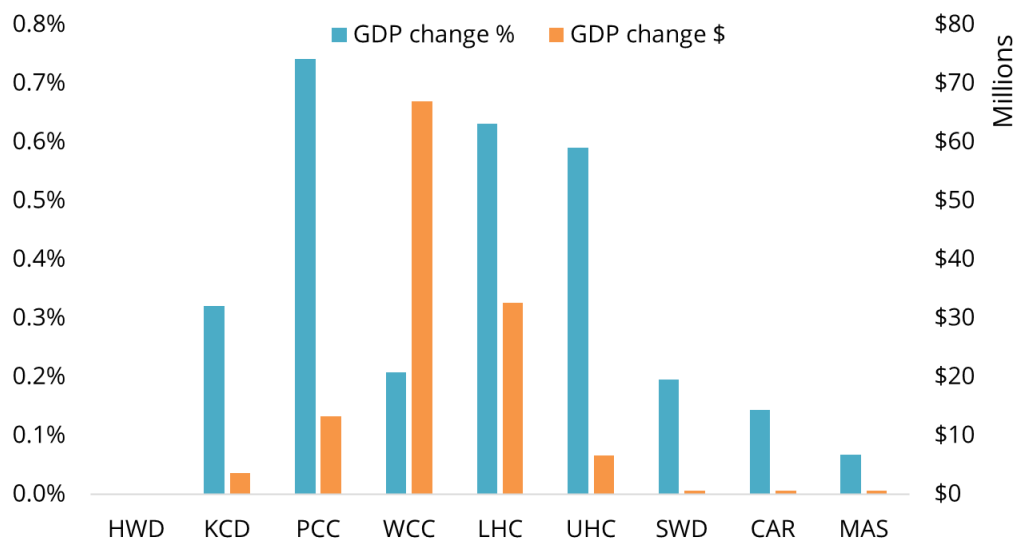
Benefits are largest closest to Wellington City

The economic impact is concentrated in and around Wellington City. The rail network, as it is currently operated, is focused on transporting people into and out of Wellington City. The improvements in frequency will benefit those areas closest to Wellington. This is because the uniform reduction in travel time represents a larger portion of these areas already lower travel times.

The travel time reductions for the Wairarapa are significant, and larger than those expected in other areas of the network. However, low frequency remains a barrier to a higher mode share for rail. As a result, the increase in economic activity in the Wairarapa arising from the investment is very modest.

FIGURE 62: BENEFITS ARE HIGHEST IN AREAS CLOSEST TO WELLINGTON CITY

Estimated impact on annual GDP by 2052



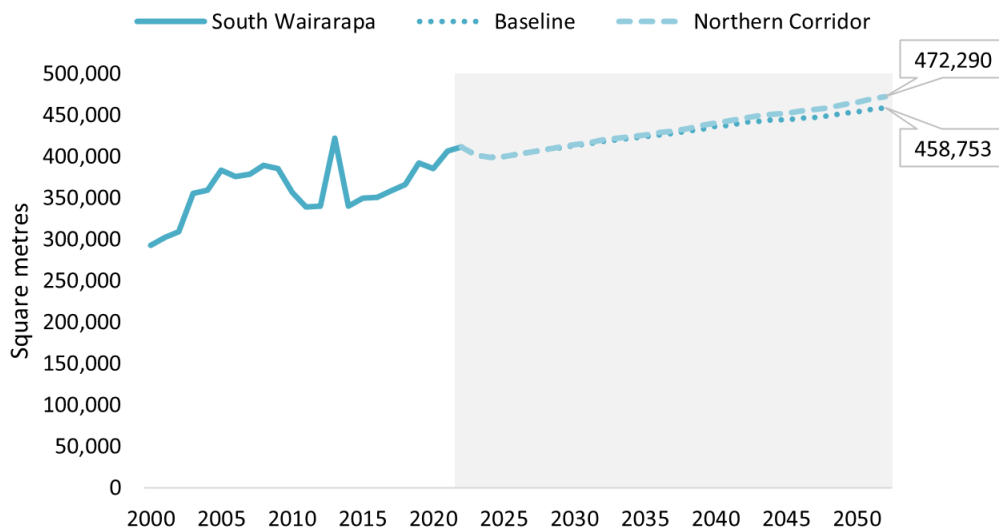
Source: Sense Partners



Impacts on land demand are modest

The changes in economic activity noted above are translated into changes in demand for land on a proportional basis (i.e., a 1% increase in GDP is treated as a 1% increase in demand.) As such, the increases in land demand in the Wairarapa are modest. The largest gain is in South Wairarapa, graphed in Figure 63 below as an example.

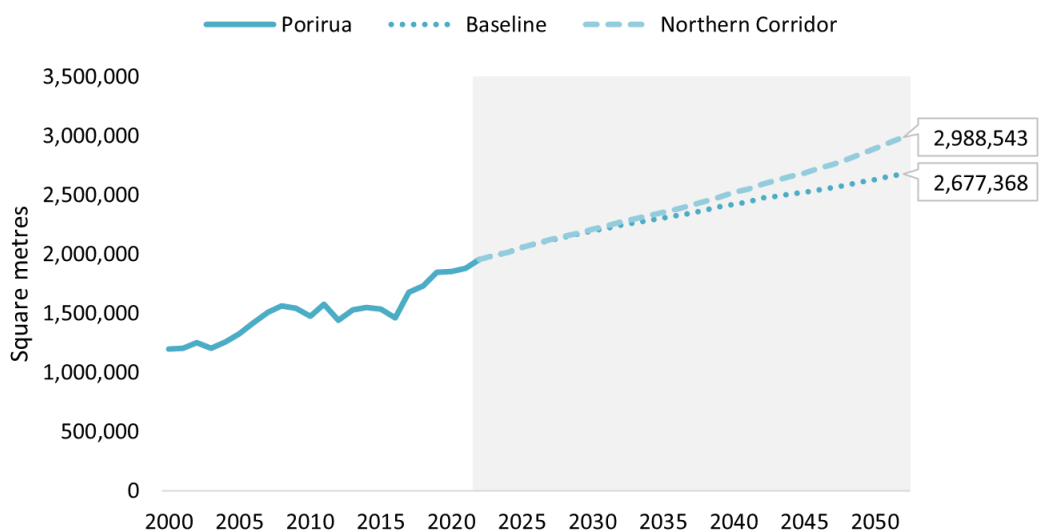
FIGURE 63: THE BENEFIT TO THE WAIRARAPA IS SMALL
Projected land demand, South Wairarapa



Source: Sense Partners

The largest increases in land demand occur in Porirua and Lower Hutt.

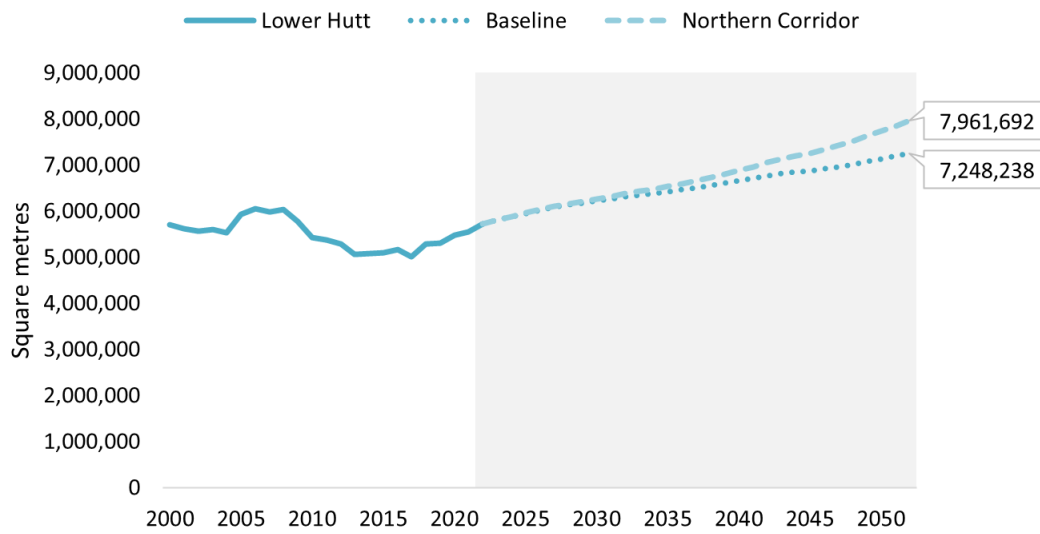
FIGURE 64: PORIRUA WILL EXPERIENCE A MEASURABLE INCREASE IN DEMAND
Projected land demand, Porirua



Source: Sense Partners



FIGURE 65: LOWER HUTT HAS THE MOST TO GAIN FROM THE IMPROVEMENTS
Projected land demand, Lower Hutt



Source: Sense Partners



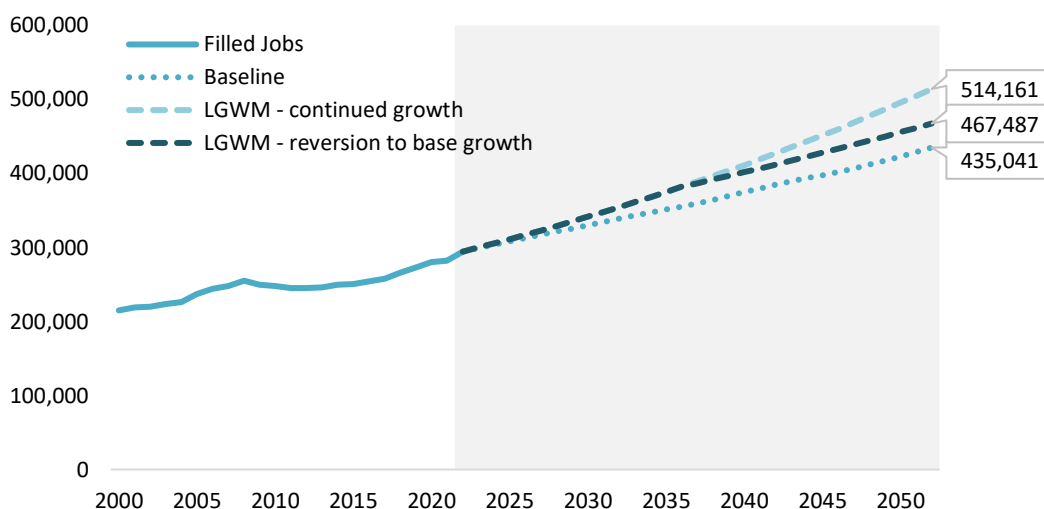
5.5. Mass Rapid Transit in Wellington City

We use existing estimates of job growth to estimate demand

Modelling done by the Let’s Get Wellington Moving has resulted in estimates of employment growth arising from the project. For consistency, we adopt these employment estimates directly, and apply them to land demand using the same floorspace per worker and land coverage ratios used throughout the report. The estimates indicate between 22,000 and 31,000 additional jobs by 2036. We opt for a middle path of 26,500 jobs. The estimates indicate that 12.7% of these additional jobs will locate in Kapiti Coast, Porirua, Lower Hutt, and Upper Hutt. The remainder, 87.3%, are expected to concentrate in Wellington City.

There are two projection scenarios we can take from this, depending on how jobs growth is extrapolated beyond the modelled year, 2036. One is to retain the higher growth rate implied between 2022 and 2036. This results in a total of 514,000 jobs by 2052 and increase of 79,000 jobs. The second scenario is to revert to baseline growth rate after 2036, resulting in 467,500 jobs by 2052, an increase of 32,500. Note that using the same growth *rate*, applied to a higher 2036 figure, means slightly faster jobs growth. This is why jobs by 2052 are higher than the expected 26,500 uplift in 2036.

FIGURE 66:
Projected employment, Wellington Region including Horowhenua



Source: Sense Partners

The impact on business land demand is shown in Table 18 below.

TABLE 18: TRANSPORT IMPACT BY SECTOR, REGION WIDE

	COM	EDU	GOV	HEA	IND	OTH	RET
Baseline + Transport 1	29	47	16	81	369	59	122
Transport 2	33	53	19	88	458	64	139
Increase	4	5	3	6	88	5	17

Source: Sense Partners



6. Population growth scenarios

6.1. Population forecast uncertainty

Population growth is hard to project with certainty

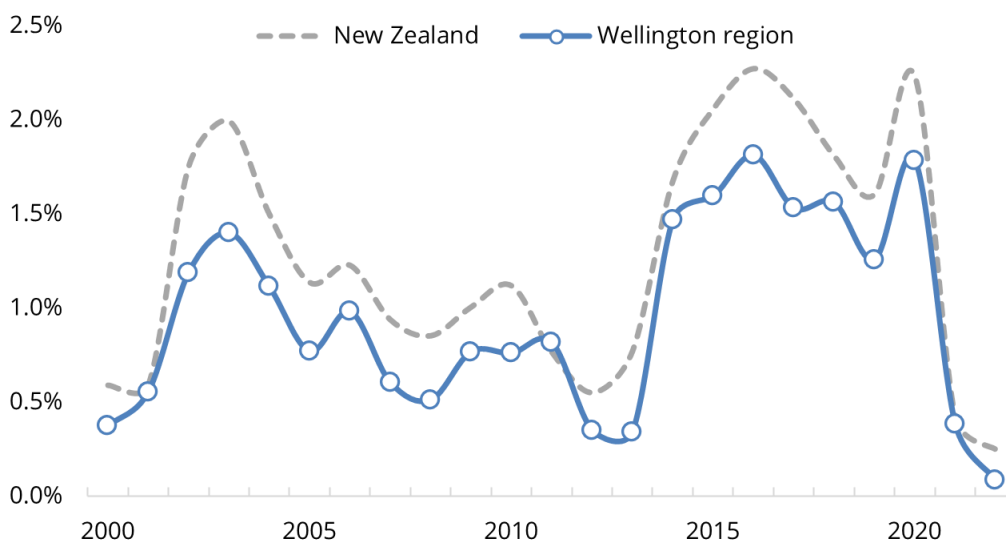
Population growth can be split into natural growth and migration. Natural growth, made up of births and deaths, tends to change slowly over time. With the exception of catastrophic events, like war or famine, the natural rate of population growth is steady in the short and medium term. Projecting natural population change can be done with more certainty.

Migration, on the other hand, can be volatile and change unexpectedly. Migration is driven by a complex set of push-pull factors. Pull factors include the attractiveness of the Wellington region as a place to live and work. These pull factors are relative. Good job opportunities, to be a pull factor, must be good relative to other parts of New Zealand, and indeed other parts of the world.

Push factors can include the inverse of pull factors, such as a lack of job opportunities elsewhere. They tend to be origin specific, and thus far beyond the influence of policy makers in New Zealand. Many push factors will be gradual over time, such as long-term economic decline. In these cases, their influence on migration could be gradual and therefore more predictable, much like natural change.

However, push factors can come in the form of events, such as sudden economic collapse, or an outbreak of conflict. These can be difficult to foresee with certainty, and even then, the horizon of certainty may only be short. A prime example is the COVID pandemic, which has crashed rates of migration.

FIGURE 67: GROWTH ACROSS THE REGION HAS LAGGED NZ AS A WHOLE
Population growth, Wellington Region including Horowhenua



Source: Statistics New Zealand



6.2. Alternate scenarios

Scenarios can help us understand the impact of uncertainty

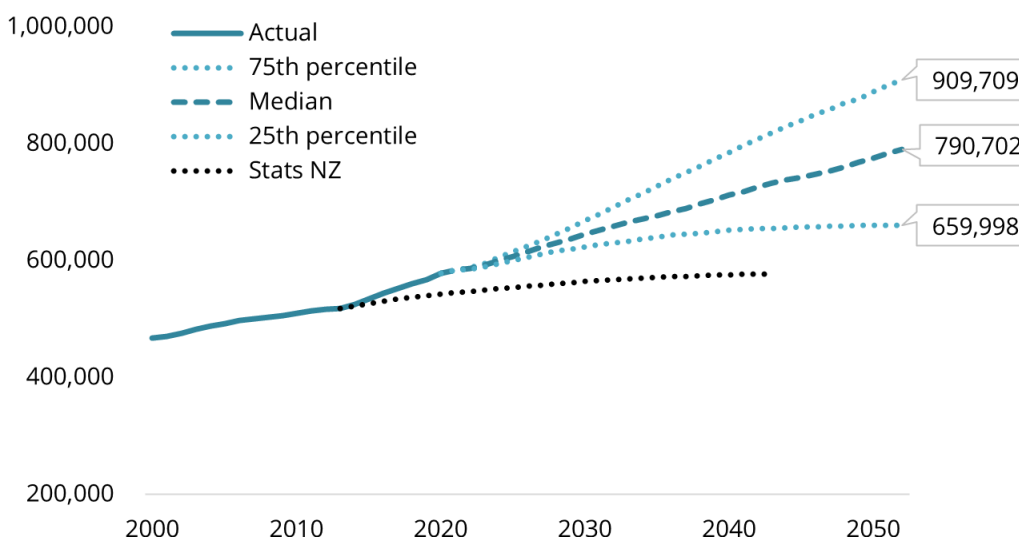
Understanding likely population growth means understanding the complex interaction between the many pull and push factors that drive migration. This has to be reconciled with a relative lack of influence over migration. Push factors are typically beyond the influence of local policy makers. Pull factors can be much more directly influenced, particularly things like housing supply and affordability. But their effectiveness remains relative to what is happening elsewhere. It can be hard to compete with a better climate, for example.

Given the level of uncertainty, and the relative lack of control, over population growth, we must take a scenario approach. The population projection used in the last business land demand assessment (2017) was the Statistics New Zealand Census 2013 projection. This is shown as the black line in Figure 68 below.

A New Zealand wide surge in migration, beginning around 2014, was not reflected in these population projections. As a result, the actual population growth has exceeded those projections. The main projection used in this report may be just as prone to being wrong. This is particularly so given the ongoing effects of the COVID pandemic, and a high level of uncertainty as to how migration will bounce out of the pandemic.

We assess the impact of two alternate population projections on business land demand. Both are derived from the Sense Partners demographic model producing the core projection. For a high growth scenario, we use our 75th percentile projection. This results in a population that is 15% higher by 2052. For a low scenario, we use our 25th percentile projection. This projects a 16.5% lower population by 2052.

FIGURE 68: WE USE A HIGH AND LOW POPULATION SCENARIO
Projected population growth scenarios



Source: Sense Partners

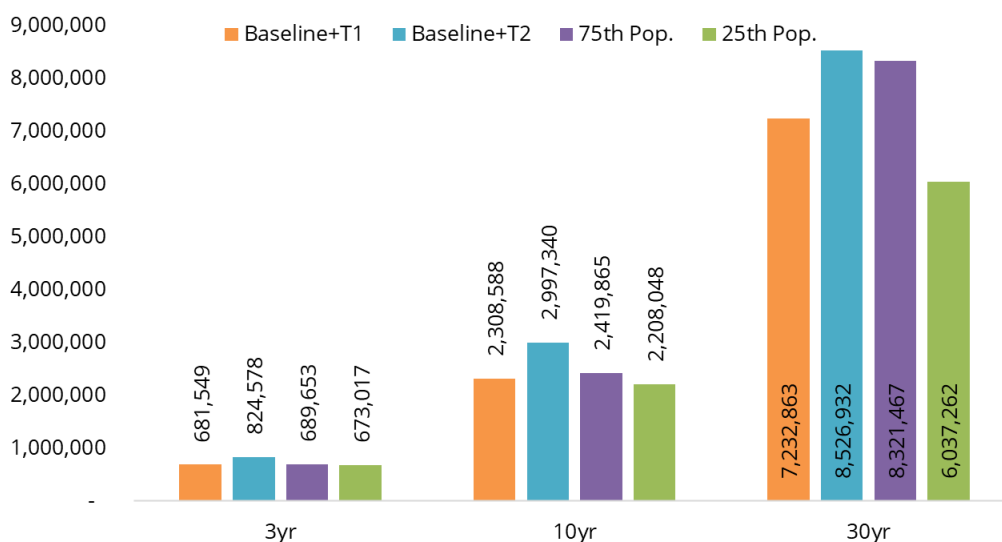


6.3. Impact on land demand

Land demand may change at a different pace to the population

Figure 69 below shows the impact of both population growth scenarios on land demand. We model the impact by holding the relative industry shares constant over each scenario. This means that land demand rises in proportion to population growth. The graph also shows the impact of the second transport scenario (Baseline+T2).

FIGURE 69: CHANGES IN POPULATION MAY SHIFT DEMAND IN THE LONG TERM
Projected business land demand



Source: Sense Partners

As noted above, population growth will respond to pull factors. Those pull factors may come in the form of industry specific job opportunities. For example, a surge in the creative sector may be a pull factor that causes a higher population growth. As a result, the share of demand between industries may change, with more emphasis on the types of facilities used in the creative sector. These may include more land intensive activities, such as film studios.

If population growth is driven by higher demand in more land intensive sectors, then land demand will growth faster than overall population growth. On the other hand, growth in sectors that can take place in higher density urban areas may mean demand for land rises slower than population growth.

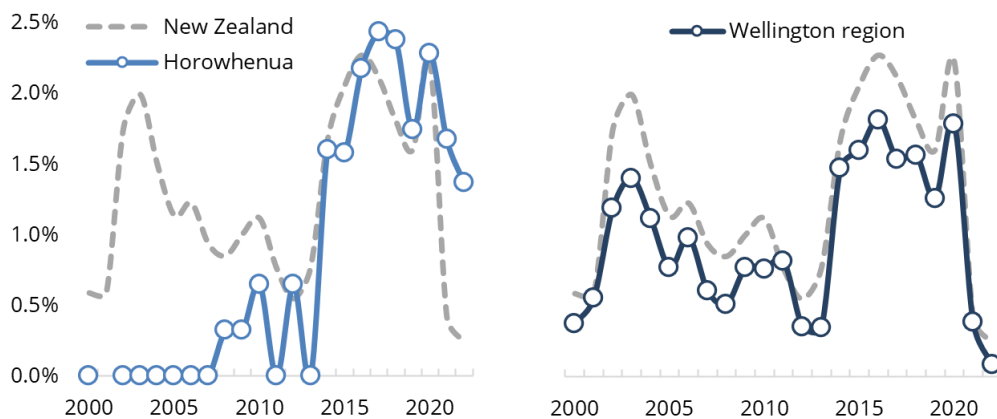


Appendix 1: Results for Horowhenua District

Horowhenua is sustaining higher population growth

In 2014, a nationwide boost in inward migration helped to reverse a recent history of sluggish population growth in Horowhenua. Since then, the area has been growing faster than the Wellington region (including Horowhenua) average. In particular, it has maintained strong growth even during the COVID pandemic induced fall in population growth.

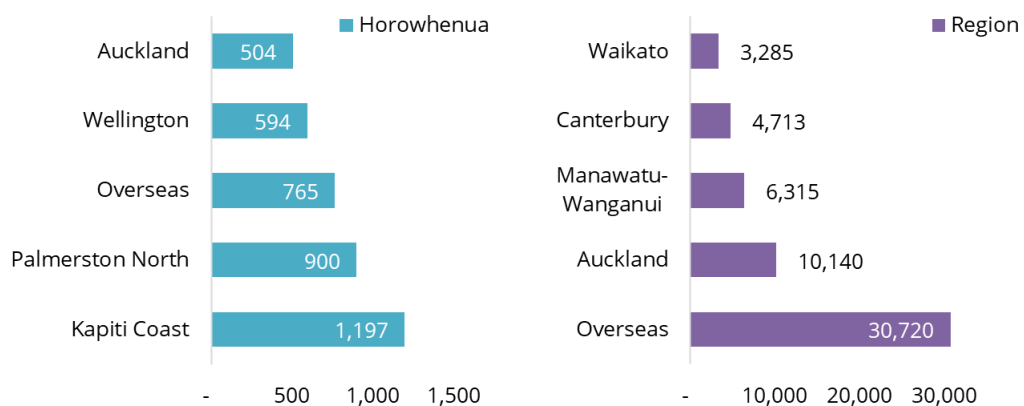
FIGURE 70: HOROWHENUA IS NOW GROWING FASTER THAN THE REGION AVERAGE
Population growth compared to NZ wide trend. Wellington region includes Horowhenua



Source: Statistics New Zealand

Many of those coming to Horowhenua have come from those nearest neighbours, Kāpiti Coast and Palmerston North. However, overseas migrants and those from Auckland and Wellington are also among the top 5 groups. In part, there is a degree of displacement occurring. Migrants into the region from overseas are mostly bound for Wellington City (62%). This population growth is bidding up property prices and rents, encouraging residents to search elsewhere. The ability of work from home is also an important factor.

FIGURE 71: MOST MIGRANTS TO HOROWHENUA COME FROM NEARBY
Place of usual residence 5 years ago, 2018 census. Top 5 outside locality.



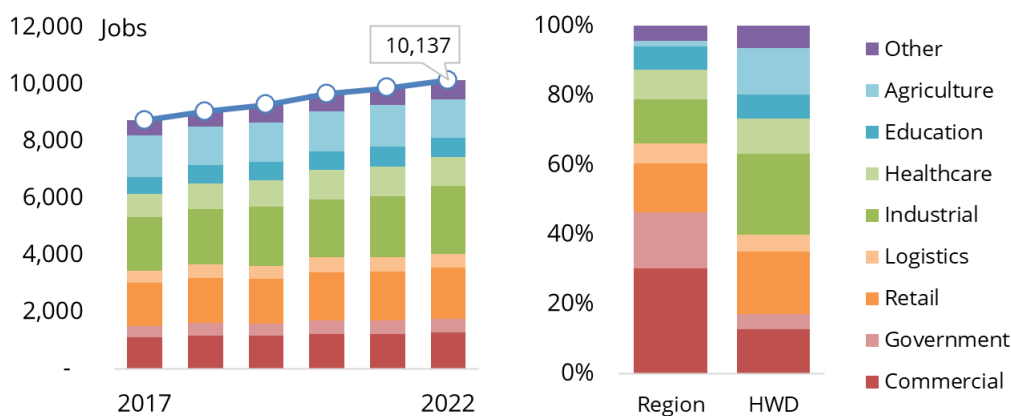
Source: Statistics New Zealand



It is likely this crowding out effect is the dominant driver of population growth around the middle of the decade. However, the opening up of the Northern Corridor, discussed below, has recently made the area more accessible. This accessibility means a rural lifestyle can be achieved with less of the isolation it once entailed. This is likely a contributor to the sustained growth during the pandemic.

As overseas migration largely ceased during 2021, the incentives of more affordable living in Horowhenua remained. Job opportunities in the region are also a likely attractor, with filled jobs growing 16.2% between 2017 and 2022. Growth has been across all sectors, though most notably in the industrial sector. Food processing, measured as part of the industrial sector here, has taken advantage of improved connectivity to build on local agriculture. Likewise, manufacturing and construction businesses are able to take advantage of cheaper land to service much of the Lower North Island.

FIGURE 72: AGRICULTURE PLAYS A LARGER ROLE IN THE LOCAL ECONOMY
Filled jobs by sector 2017-2022 (left), and sector share comparison 2022 (right)



Source: Statistics New Zealand

The Northern Corridor will boost demand in Horowhenua

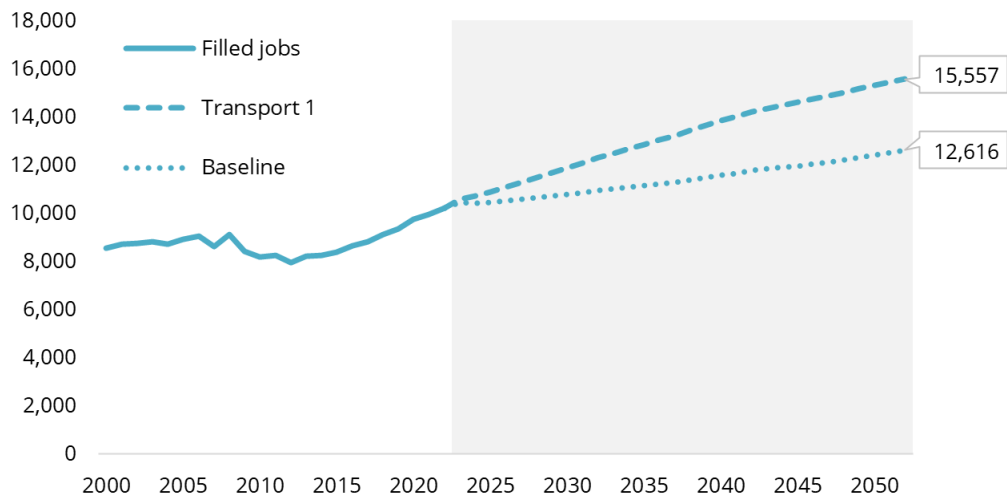
The Northern Corridor is the largest transport project in the region. Upon completion of the final Ōtaki to North of Levin segment, it will provide a continuous expressway connection from Horowhenua through to Wellington City. This improvement in connectivity means that businesses in Horowhenua can more effectively service markets across the Lower North Island.

We have estimated the economic impact of a package of transport projects, including rail network investment, Riverlink, and Northern Corridor. Combined, we expect these projects will increase employment in Horowhenua by a further 24% by 2052. The bulk of this contribution will come from the Northern Corridor.

We expect that the strong signals of growth reported in the past year are the result of the opening of key segments of the Northern Corridor. In addition, the anticipation of future expansions of the corridor will be starting to drive demand. This includes both the near-term opening of the under-construction Peka Peka to Ōtaki segment, as well as the expected Ōtaki to North of Levin segment.



FIGURE 73: THE NORTHERN CORRIDOR IS OPENING UP THE REGION
Impact of transport improvements on employment activity, Horowhenua

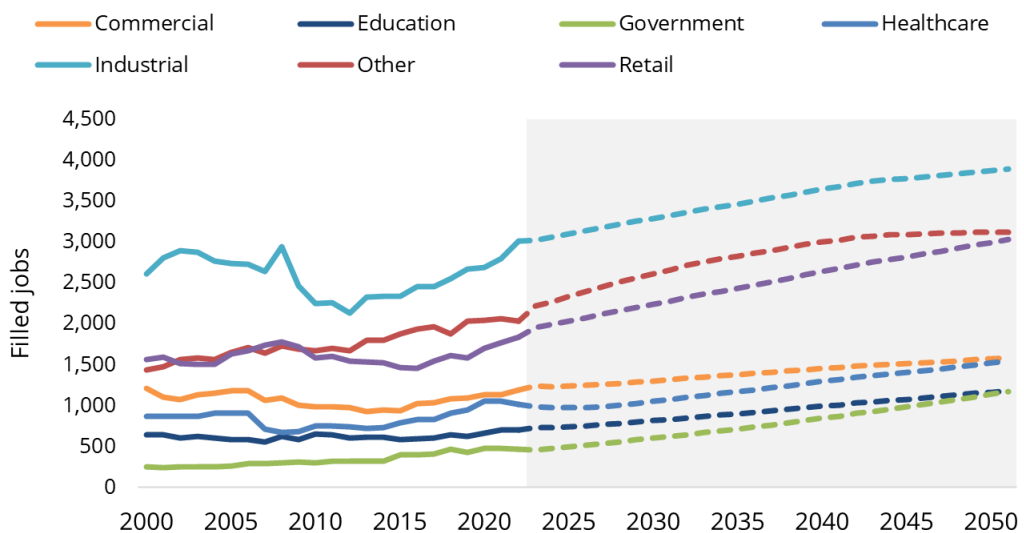


Source: Sense Partners

Employment growth projections are concentrated in three sectors

Our employment projections for Horowhenua are shown in Figure 74 below. These include our baseline projections and an adjustment for the impact of key transport projects. The transport projects considered in this projection are the Northern Corridor, Riverlink, and Rail Network Investment. Let's Get Wellington Moving has been assessed separately, though as Figure 73 above shows, the impact is small.

FIGURE 74: THE INDUSTRIAL SECTOR REMAINS THE LARGEST IN HOROWHENUA
Employment projections by sector, Horowhenua



Source: Sense Partners

The largest three sectors, and the biggest gains, are in industrial, retail, and our "other" category. This latter category includes agricultural employment. Industrial employment



includes food processing and manufacturing. The common growth across agriculture and industrial employment speaks to the symbiotic relationship between the two.

However, industrial employment is expected beyond food processing. Horowhenua's improved connectivity, paired with more affordable land, will attract manufacturing, construction, and logistics businesses. Retail growth can be attributed to expected population growth. The sector provides essential support services to residents, as well as access to goods and services that residents enjoy.

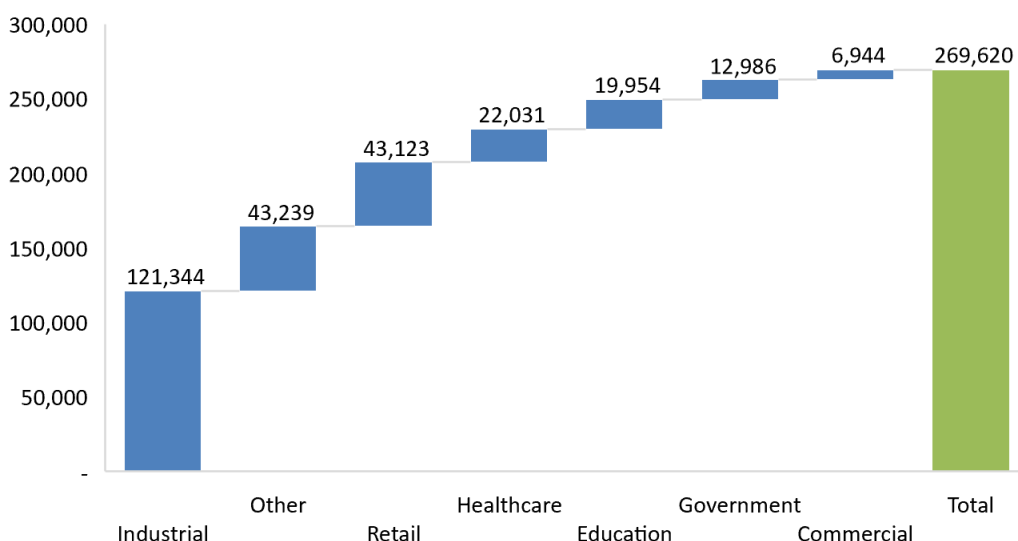
Floorspace and land demand projections

In line with employment projections, the growth in floorspace demand is highest in the industrial, "other", and retail sectors. The "other" sector includes agriculture and some utilities. The latter will be needed to service a growing population, so will also grow in floorspace.

Industrial is typically a more floorspace intensive activity. The more prominent use of machinery changes the relationship between workers and floorspace. This is particularly so in comparison to something like the retail or commercial sectors. The industrial sector also includes warehousing and logistics.

Horowhenua has an advantage over areas like Wellington City and the Hutt Valley in that it has access to more of the flat greenfield land suited to industrial uses. A big question lies over the impact of the National Policy Statement for Highly Productive Land¹⁵. This may prevent Horowhenua from taking advantage of favourable geography, reducing the capacity to accommodate industrial growth.

FIGURE 75: FLOORSPACE DEMAND CORRESPONDS TO EMPLOYMENT GROWTH
Floorspace projections by sector, 2022-2052, Horowhenua

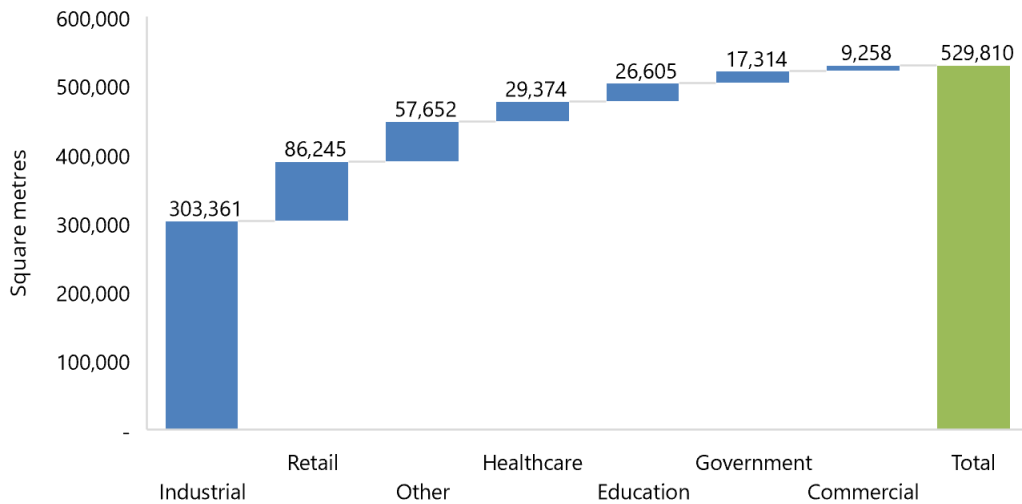


Source: Sense Partners

¹⁵ Ministry for the Environment (2022) *National Policy Statement for Highly Productive Land*.
<https://environment.govt.nz/publications/national-policy-statement-for-highly-productive-land/>



FIGURE 76: LAND DEMAND IS HIGHEST IN SPACE-INTENSIVE INDUSTRIAL ACTIVITY
Land demand projections by sector, 2022-2052, Horowhenua



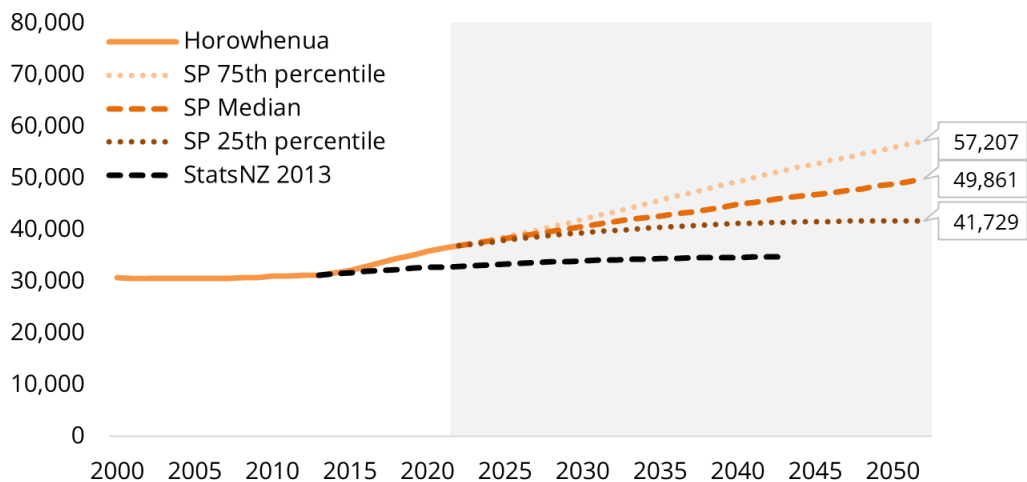
Source: Sense Partners

We estimate the impact of higher and lower population growth

The previous business land demand forecast, completed in 2017, used population projections from the Statistics New Zealand 2013 census. These projections underestimated population growth by a significant amount. This is largely due to the unpredictable nature of overseas migration, a surge of which occurred around 2014.

To help understand the impact of variations in population growth, we estimate the impact of two alternate growth scenarios. We use a 75th percentile scenario and a 25th percentile scenario derived from the same demographic model used to estimate the base projection.

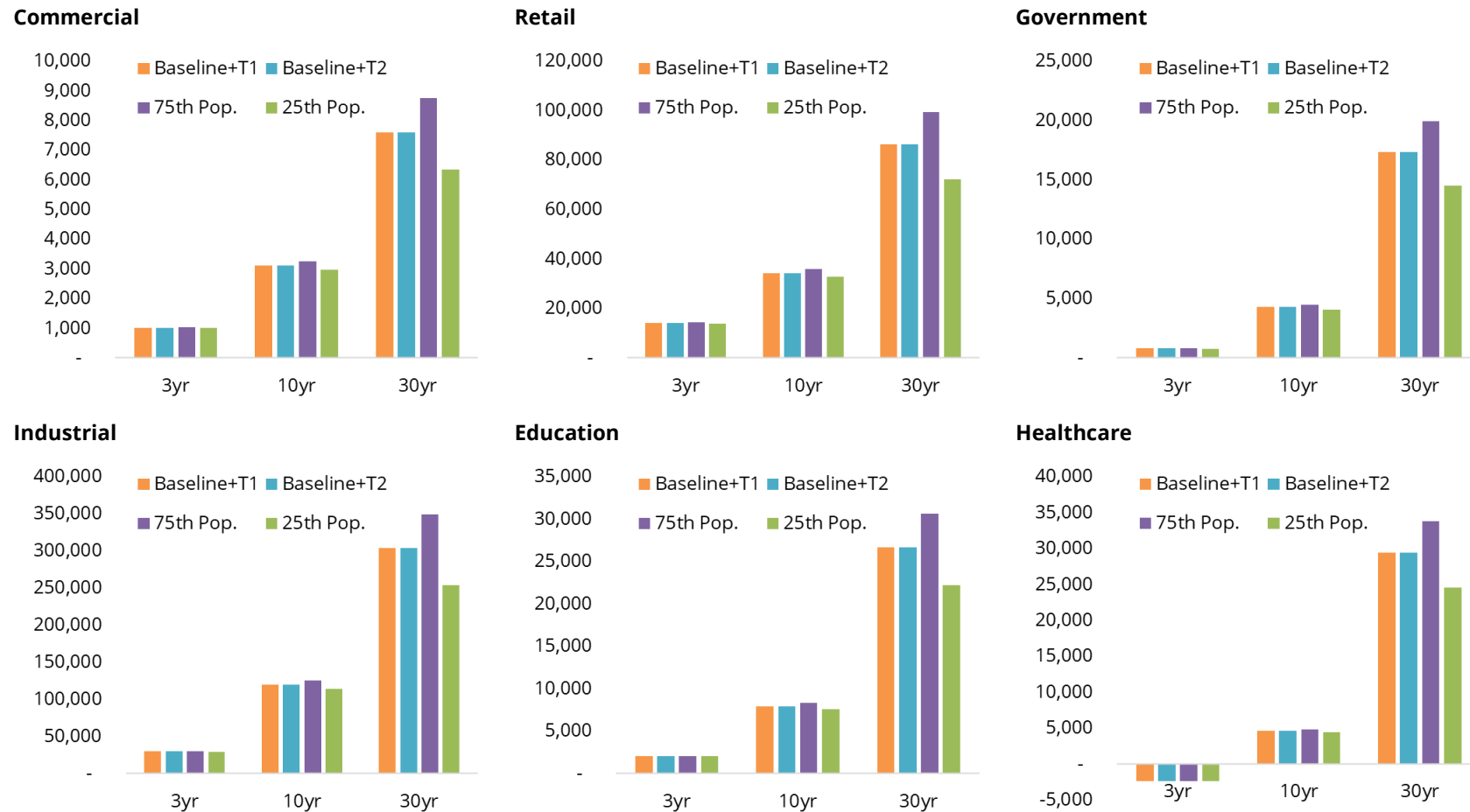
FIGURE 77: PREVIOUS PROJECTIONS UNDERESTIMATED GROWTH IN HOROWHENUA
Median, 75th, and 25th percentile population projections, Horowhenua



Source: Sense Partners



FIGURE 78: ADDITIONAL LAND DEMAND IS HIGHEST IN THE INDUSTRIAL SECTOR
Land demand projections, by sector, periods from 2022, Horowhenua.



Source: Sense Partners

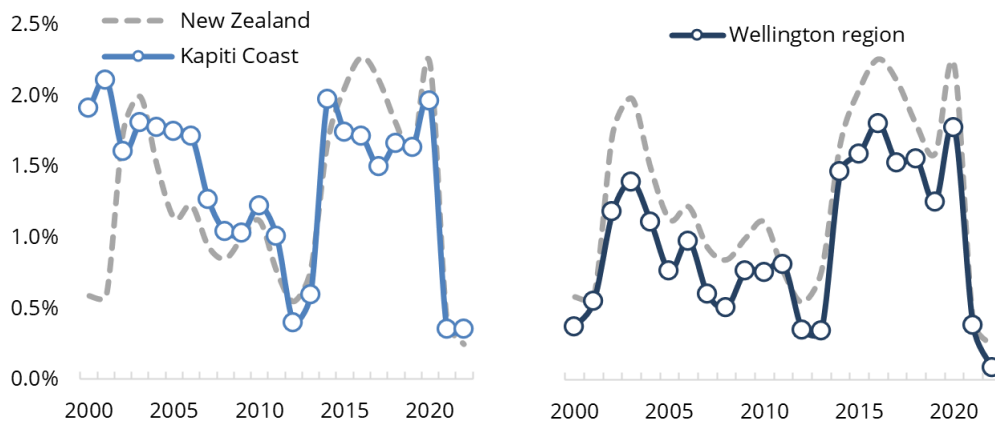


Appendix 2: Results for Kāpiti Coast District

Older generations are being joined by more families

Kāpiti Coast has long been a popular destination for those seeking a quieter lifestyle, proximity to the ocean, and lower housing costs. This has tended to skew toward older generations, such as those in their later career stages and retirees. For much of the past 22 years, the growth rate in Kāpiti has tracked close to New Zealand’s growth rate.

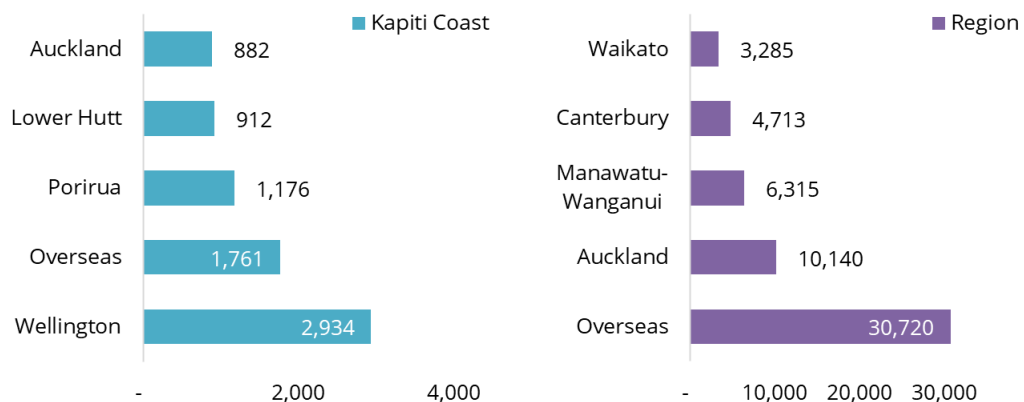
FIGURE 79: RECENT GROWTH IN KĀPITI IS LARGELY LINE WITH REGION AVERAGES
Population growth compared to NZ wide trend.



Source: Statistics New Zealand

The dominant source of migrants into Kāpiti Coast is Wellington City. This conforms to the pattern of older generations moving to the area shortly before or upon retirement. However, the proportion of migrants arriving from overseas is considerable. In addition, many fall in the broad mid-career category (36 – 50 years old). The nationwide surge in migration, starting in 2014, has seen population growth across all demographics pick up in Kāpiti. The area is becoming a more desirable location for all generations.

FIGURE 80: KĀPITI SOAKS UP BOTH WELLINGTON CITY AND OVERSEAS MIGRANTS
Place of usual residence 5 years ago, 2018 census. Top 5 outside locality.



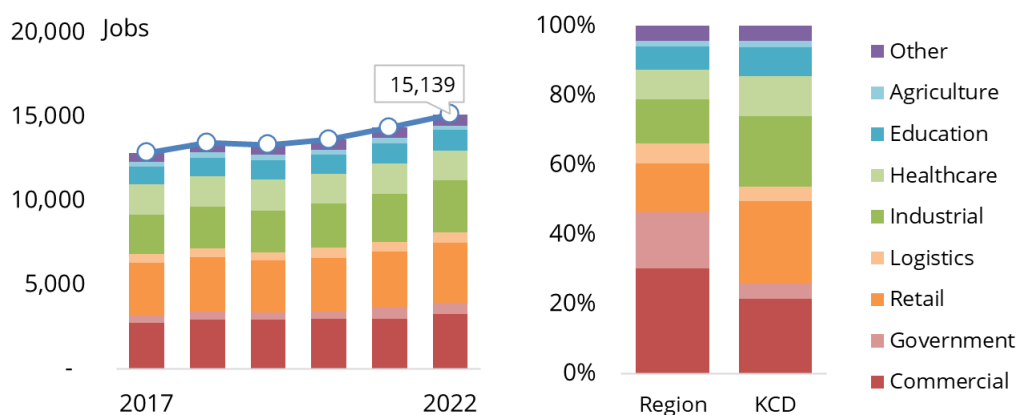
Source: Statistics New Zealand



Lower cost housing is a pull factor, but so too are the growing number of jobs locally. Jobs in the industrial sector have grown 32% since 2017, and those in the commercial sector have grown 19%. Not only are more people coming to Kāpiti, but more employers are locating in the district as well.

A particular feature of Kāpiti's local economy is a higher proportion of retail jobs than the regionwide average. This reflects a high share of commuters into Wellington, who may still do a large portion of their shopping locally. With the potential for sustained remote-working patterns, some of the retail shopping lost to the Wellington City lunch hour may be drawn back to Kāpiti.

FIGURE 81: KĀPITI RETAIL SERVES A COMMUTER AND RETIRED POPULATION
Filled jobs by sector 2017-2022 (left), and sector share comparison 2022 (right)



Source: Statistics New Zealand

Connectivity will encourage businesses to locate in Kāpiti

Kāpiti Coast's well-known role as a popular retirement area may be in for a shakeup. The opening of the Northern Corridor, particularly Transmission Gully, has massively improved connectivity across the region. This will be reinforced by investment in the rail network. This places Kāpiti in a prime position to access the wider region, north and south.

The likely outcome of this is an increase in demand for industrial activities. These are typically more space intensive than other activities, and so have the greatest incentive to seek more affordable and plentiful land up the coast. This is exacerbated by the constrained geography in existing industrial areas, like the Hutt Valley and Porirua.

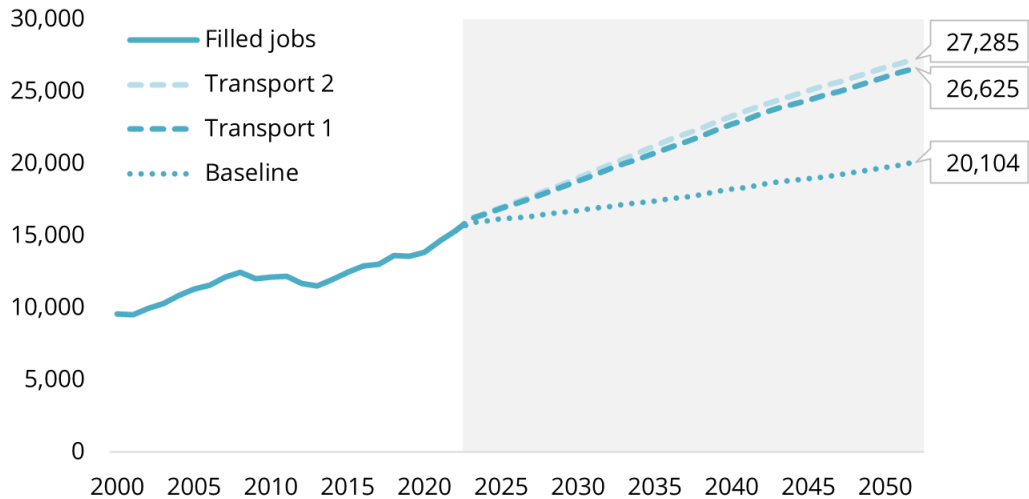
The evolution of a new industrial employment centre up the coast will, in turn, attract new residents. This, along with an increase in Wellington City bound lifestyle commuters, will drive demand for services such as retail and education. We expect ongoing competition between residential activity and business activity for plan enabled land. This is likely to bid up land prices and blunt industrial demand.

Overall, we estimate an increase in employment of 33% by 2052 compared to our baseline projection. This will trigger a proportional rise in demand for business land. Further potential



transport improvements in the form of Let's Get Wellington Moving (our Transport 2 scenario), will positively impact economic activity.

FIGURE 82: KĀPITI COAST IS SET TO BENEFIT FROM THE NORTHERN CORRIDOR
Impact of transport improvements on employment activity, Kāpiti Coast

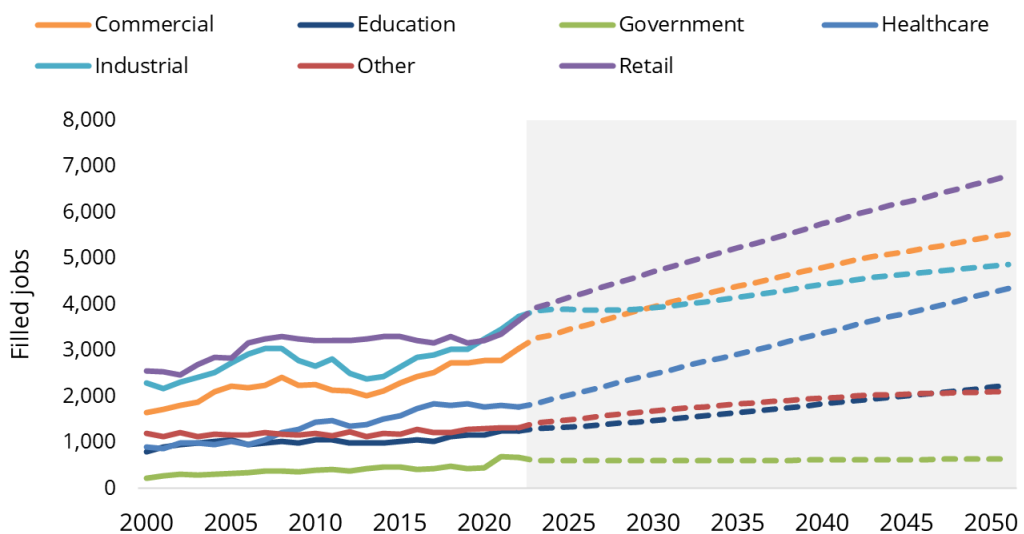


Source: Sense Partners

Employment growth is strongest in the retail sector

Our employment projections for Kāpiti Coast are shown in Figure 83 below. These include our baseline projections and an adjustment for the impact of key transport projects. The transport projects considered in this projection are the Northern Corridor, Riverlink, and Rail Network Investment. Let's Get Wellington Moving has been assessed separately, though as Figure 82 above shows, the impact is small.

FIGURE 83: OLDER GENERATIONS BOOST DEMAND FOR HEALTHCARE IN KĀPITI
Employment projections by sector, Kāpiti Coast



Source: Sense Partners



The growth in the healthcare sector is an offshoot of the older population in Kāpiti Coast. While we expect more and younger families will choose to live in the area, the factors attracting those families apply equally to older generations. These include proximity to the beaches and other natural amenities, relatively more affordable land than Wellington city, and improved transport links.

As a result, we expect population growth to remain predominantly older in character. The presence of commuter families and retired households are the main driver behind expected growth in retail. In addition, wider adoption of working-from-home may lead to some retail spend being brought back to Kāpiti from Wellington City.

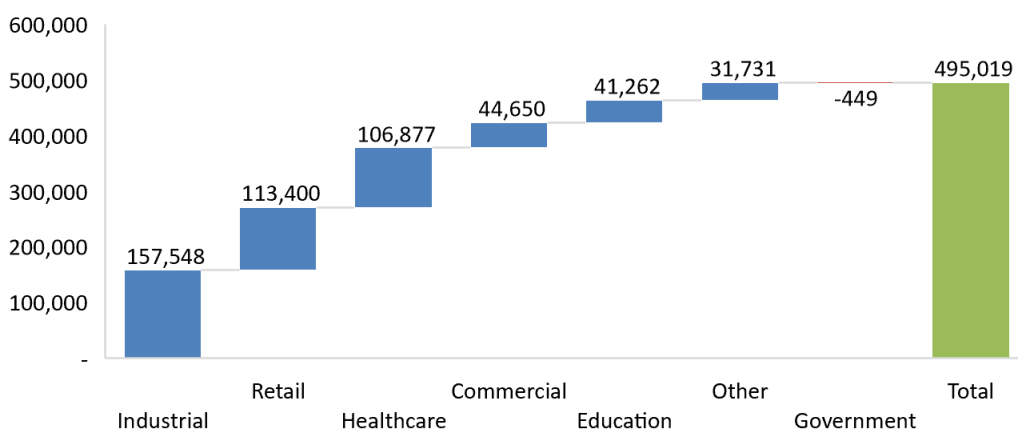
To adjust for the impact of improved transport links, our projection of industrial demand is higher. However, this adjustment may remain conservative, as it builds off a baseline which projected sluggish growth in the sector. The key will be the level of competition between industrial activity and other uses.

Residential growth, and associated growth in sectors like retail, may bid up prices beyond those amenable to industry. Improved links to Horowhenua may also attract industrial growth away from Kāpiti. In addition, policy changes arising from the National Policy Statement for Highly Productive Land may prevent the uptake of further greenfields, exacerbating the problem.

Floorspace and land demand projections

Due to the space intensive nature of industrial activity, it remains the largest source of floorspace demand. This is despite relatively low growth in employment. We also hold the floorspace per employer constant, an assumption which may change over time if more labour efficient technology is adopted. Highly automated manufacturing, for example, could expand demand for floorspace and land considerably beyond that suggested by employment growth.

FIGURE 84: KĀPITI COAST DEMAND IS HIGHEST IN THE INDUSTRIAL SECTOR
Floorspace projections by sector, 2022-2052, Kāpiti Coast



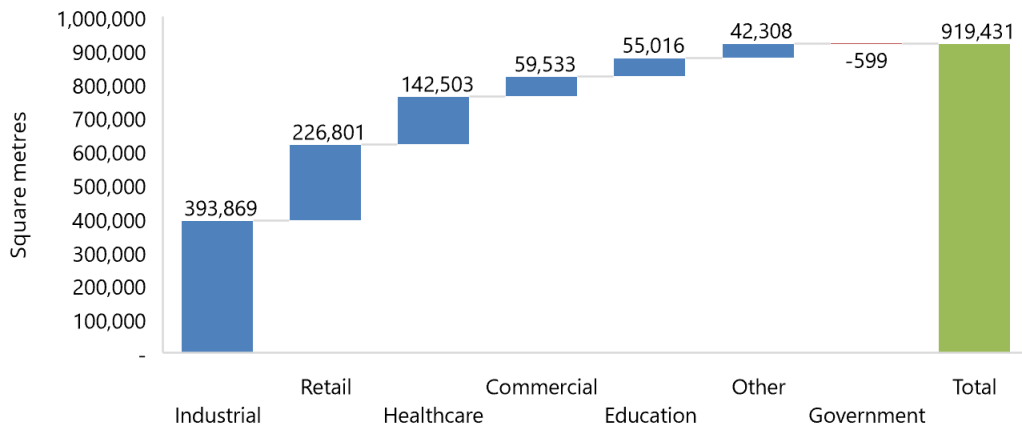
Source: Sense Partners

As noted above, the main concern for industrial activity will be the degree of competition from other land uses. Our projections indicate the strongest competition will come from retail and



healthcare. Naturally, residential activity is likely to be the main competitor, as it is this activity that enables population growth.

FIGURE 85: INDUSTRY FACES STIFF COMPETITION FROM RETAIL AND HEALTHCARE
Land demand projections by sector, 2022-2052, Kāpiti Coast



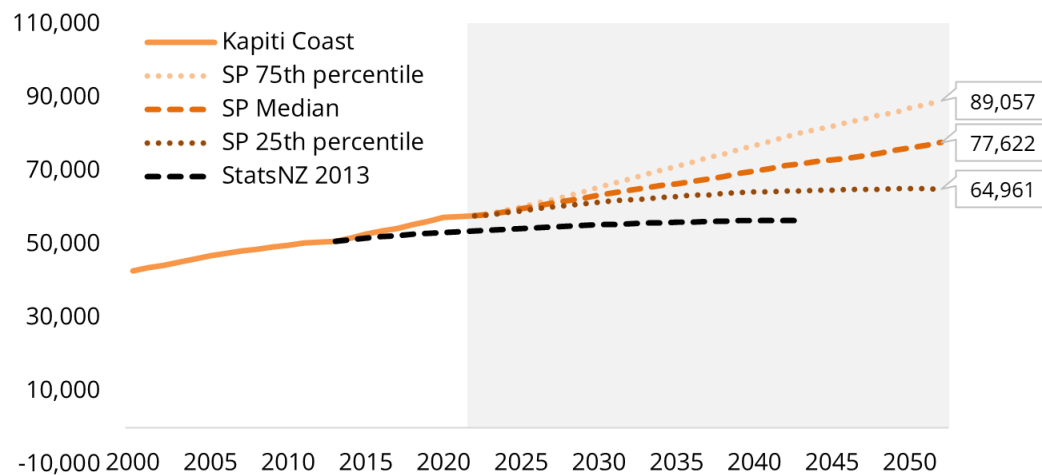
Source: Sense Partners

We estimate the impact of higher and lower population growth

The previous business land demand forecast, completed in 2017, used population projections from the Statistics New Zealand 2013 census. These projections underestimated population growth by a significant amount. This is largely due to the unpredictable nature of overseas migration, a surge of which occurred around 2014.

To help understand the impact of variations in population growth, we estimate the impact of two alternate growth scenarios. We use a 75th percentile scenario and a 25th percentile scenario derived from the same demographic model used to estimate the base projection.

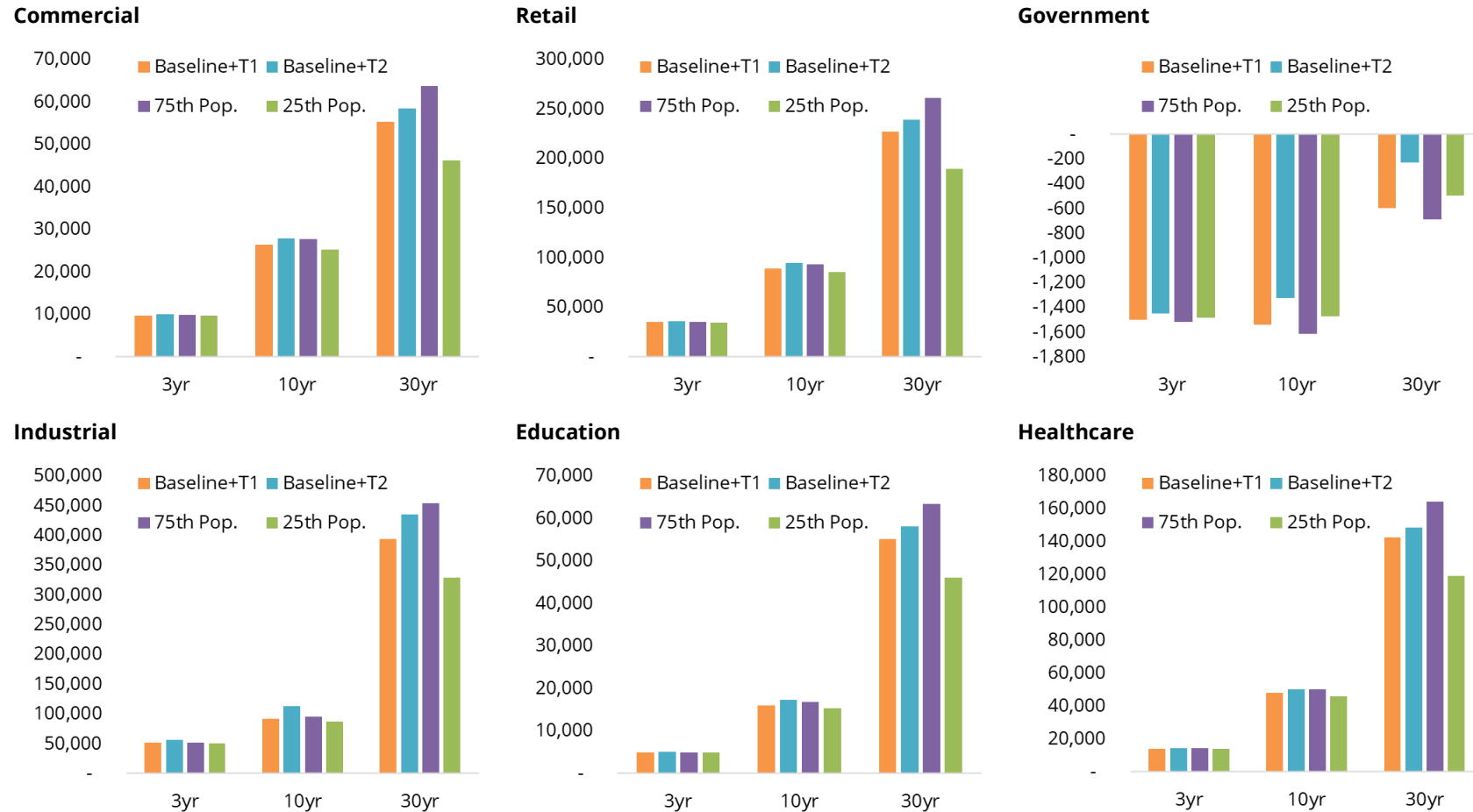
FIGURE 86: PREVIOUS PROJECTIONS UNDERESTIMATED GROWTH IN KĀPITI COAST
Median, 75th, and 25th percentile population projections, Kāpiti Coast



Source: Sense Partners



FIGURE 87: INDUSTRIAL, RETAIL, AND HEALTHCARE SECTORS DOMINATE DEMAND
Land demand projections, by sector, periods from 2022, Kāpiti Coast



Source: Sense Partners

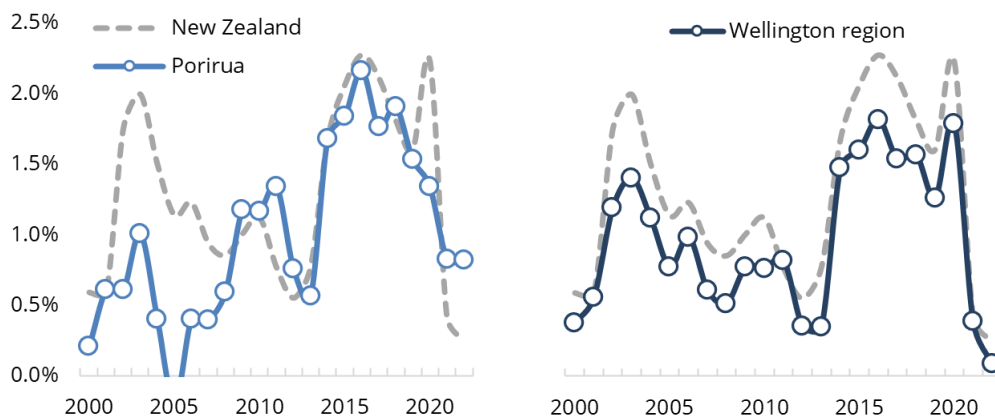


Appendix 3: Results for Porirua City

Porirua's population growth is oriented toward commuters

The nationwide immigration surge starting in 2014 has boosted population growth in Porirua. However, the city had already been growing at the national average for many years and since 2007 has consistently outpaced growth across the Wellington region. This reflects Porirua being closely linked into Wellington city via road and rail, providing a good source of more affordable homes for commuters.

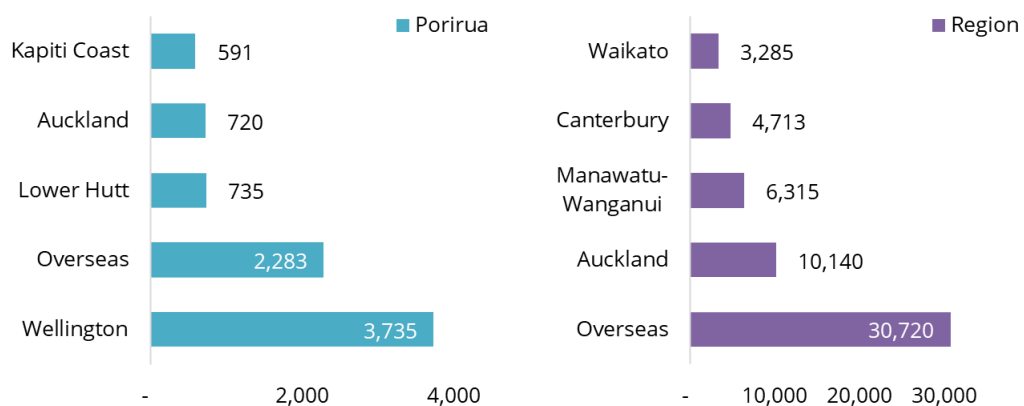
FIGURE 88: PORIRUA'S POPULATION GROWTH HAS BEEN COMPARATIVELY RESILIENT
Population growth compared to NZ wide trend.



Source: Statistics New Zealand

This is reflected in migration statistics, which show Wellington City is the most common origin of new arrivals into Porirua. Many of the international migrants heading into the city also make the leap to Porirua quite quickly. Again, this reflects the fact that Porirua and Wellington City do operate as a cohesive urban area. Some of this movement will be due to capacity constraints on homes within Wellington, creating a knock-on effect seen right up the coast.

FIGURE 89: A KNOCK-ON EFFECT IS SENDING WELLINGTONIANS TO PORIRUA
Place of usual residence 5 years ago, 2018 census. Top 5 outside locality.



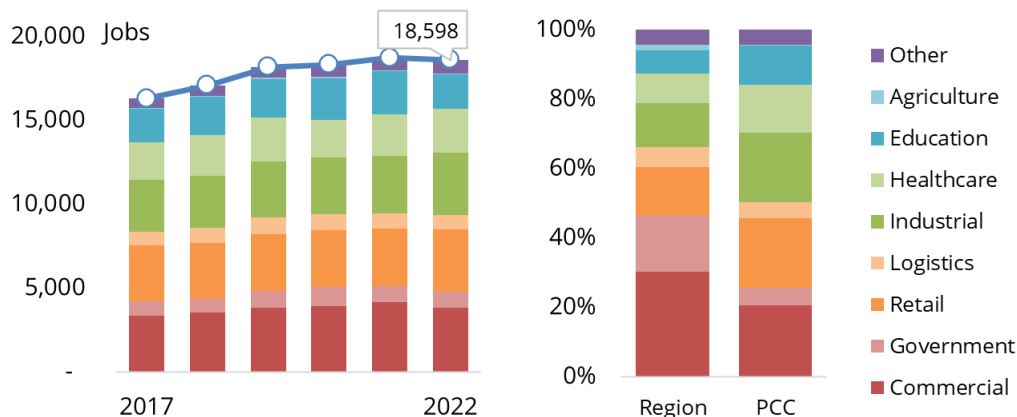
Source: Statistics New Zealand



In a similar manner to Kāpiti Coast, the higher commuter population has raised demand for local retail, healthcare, and education beyond the regional average share. These sectors provide essential services to residents, and so accompany population growth. The industrial sector has also taken advantage of Porirua’s central location in the region, and the city is one of the region’s hubs of manufacturing.

Growth in total jobs filled has been relatively muted over the past four years, growing only 2.3% since 2019. It is possible that capacity constraints are already starting to bite, particularly given the fierce competition from the residential sector for scarce land. Much of the past population growth is also likely to be oriented toward Wellington City commuters. As a result, population may not be as much of a driver of employment growth in some sectors.

FIGURE 90: PORIRUA IS ONE OF THE REGION'S INDUSTRIAL HUBS
Filled jobs by sector 2017-2022 (left), and sector share comparison 2022 (right)



Source: Statistics New Zealand

Porirua is at the intersection of north-south and east-west links

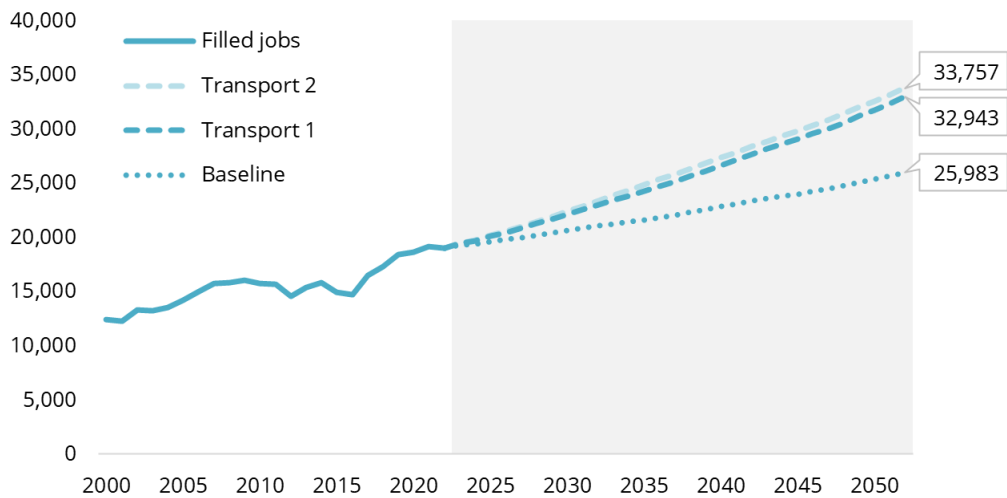
Porirua sits at the southern terminus of the Northern Corridor and is well serviced by the regional rail network. In addition, the only economically meaningful east-west link in the region north of Ngauranga Gorge, SH58, intersects Transmission Gully at Porirua. Te Ahu a Turanga, the Manawatū-Tararua highway, is too far north to be an economically meaningful east-west link for the Wellington region.

This confluence of transport infrastructure places Porirua in a unique position in terms of region-wide accessibility. For companies servicing the whole region, particularly logistics businesses, Porirua may prove to be the optimal location. As a result of this, we expect that demand for business land will be some 28% higher by 2052.

It is important to note that our transport estimates do not consider any improvements to SH58. The safety improvements currently underway will, no doubt, prove their worth. However, their scale is unlikely to trigger a measurable economic impact using the methods employed in this report. If there were large capacity improvements in future, then land demand would lift accordingly.



FIGURE 91: ACCESSIBILITY IMPROVEMENTS BOOST DEMAND
Impact of transport improvements on employment activity, Porirua

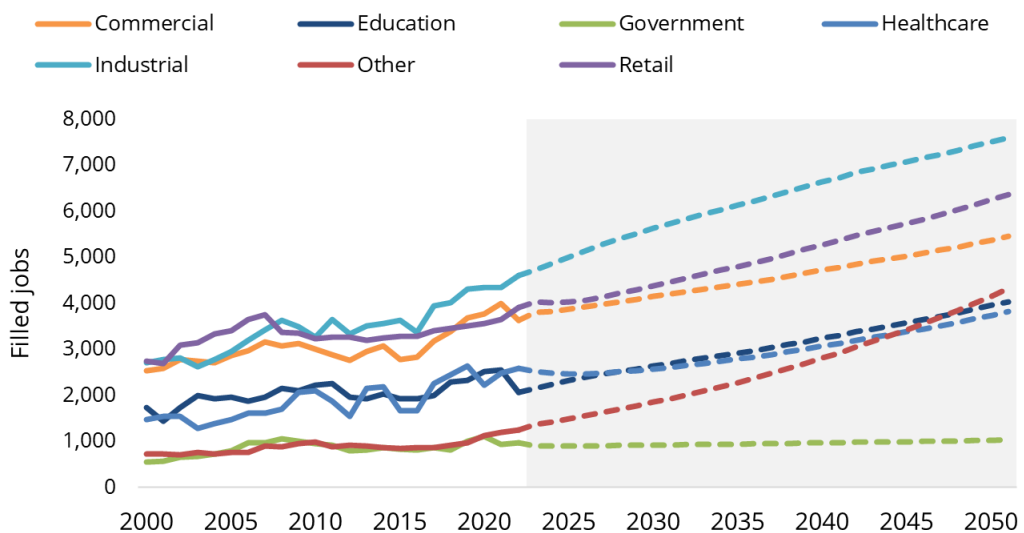


Source: Sense partners

Strong increases in jobs may be a challenge to accommodate

Our employment projections for Porirua are shown in Figure 92 below. These include our baseline projections and an adjustment for the impact of key transport projects. The transport projects considered in this projection are the Northern Corridor, Riverlink, and Rail Network Investment. Let's Get Wellington Moving has been assessed separately, though as Figure 91 above shows, the impact is small.

FIGURE 92: INDUSTRIAL GROWTH REMAINS STEADY INTO THE FUTURE
Employment projections by sector, Porirua



Source: Sense Partners

We project that almost all sectors will experience significant growth in demand out to 2052. Healthcare, education, and retail growth will be driven largely by strong population growth. An



important dynamic likely to arise is competition between residential activity and these supporting sectors on one hand, and industrial activity on the other. Residential activity and related sectors cannot be easily accommodated on the same land as industry. This is unlike commercial activity, which can occupy higher density above retail, for example.

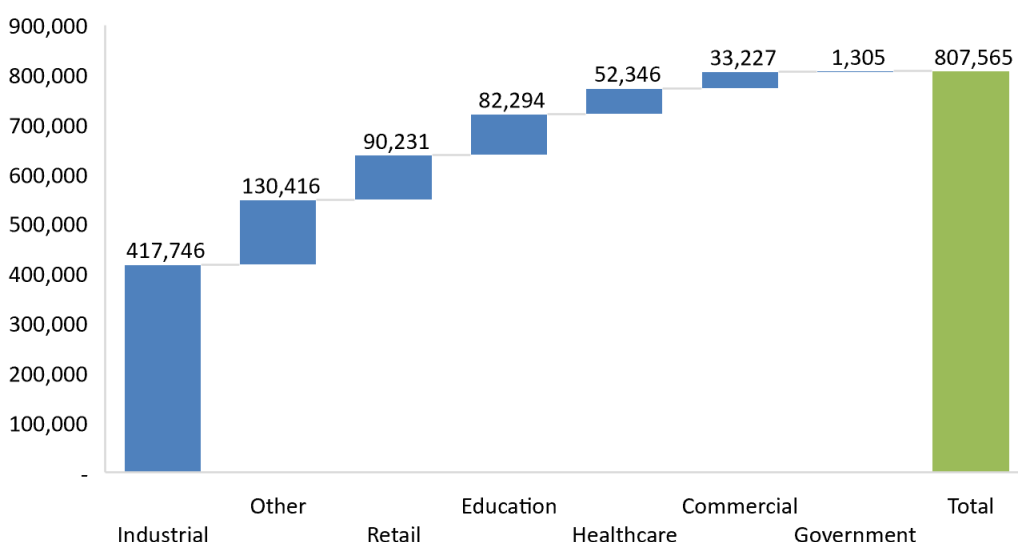
The challenging geography surrounding Porirua, and limits to transport system capacity within the area, will place strong limits on how much growth can be accommodated. The competition between residential activity, residential supporting sectors (retail, etc), and industrial activity will need to be carefully managed. It is possible that much of the expected demand may not be able to be accommodated in Porirua due to geography, regardless of planning constraints.

Even if planning constraints were totally lifted, geography may make new industrial land cost prohibitive. Most sectors, such as commercial, could overcome this by building up, or adopting a terraced built form. Industrial activity, much of it involving heavy machinery, can be extremely costly and complex to attempt over multiple floors. It can also be impracticable in a terraced footprint. As a result, most industrial activity will seek out large, flat spaces. Turning hills into flat land is a cost few businesses will be willing to take on.

Floorspace and land demand projections

Strong employment growth in industry, which is both a floorspace and land intensive activity, is the key driver behind the growth in demand. As noted above, managing the competition between sectors in geographically confined space may prove challenging. Some of this industrial demand may be pushed further north, where geographic constraints are less binding. The cost of infrastructure servicing is also often a key constraint to developing greenfield business land under current funding and financing options.

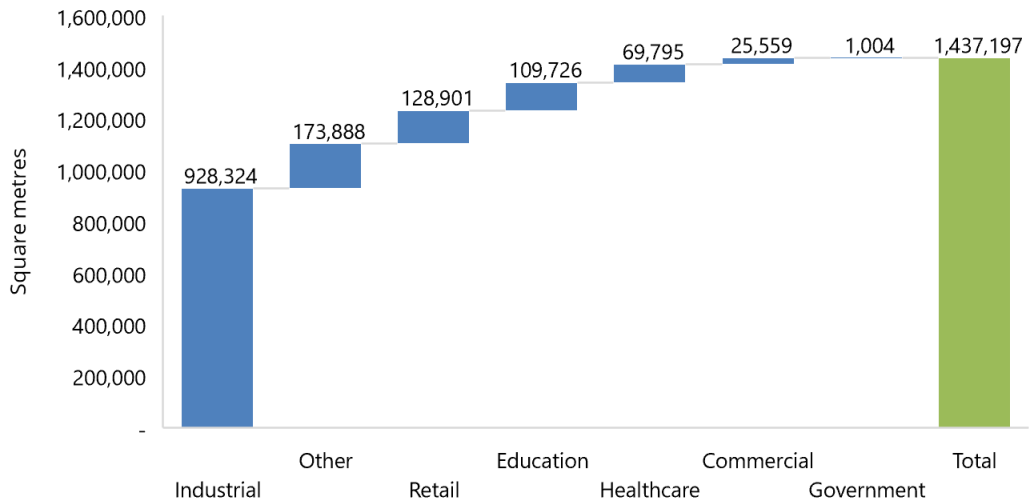
FIGURE 93: INDUSTRY IS THE MAIN DRIVER OF LAND DEMAND GROWTH
Floorspace projections by sector, 2022-2052, Porirua



Source: Sense Partners



FIGURE 94: ACCOMMODATING INDUSTRIAL DEMAND WILL BE A CHALLENGE
Land demand projections by sector, 2022-2052, Porirua



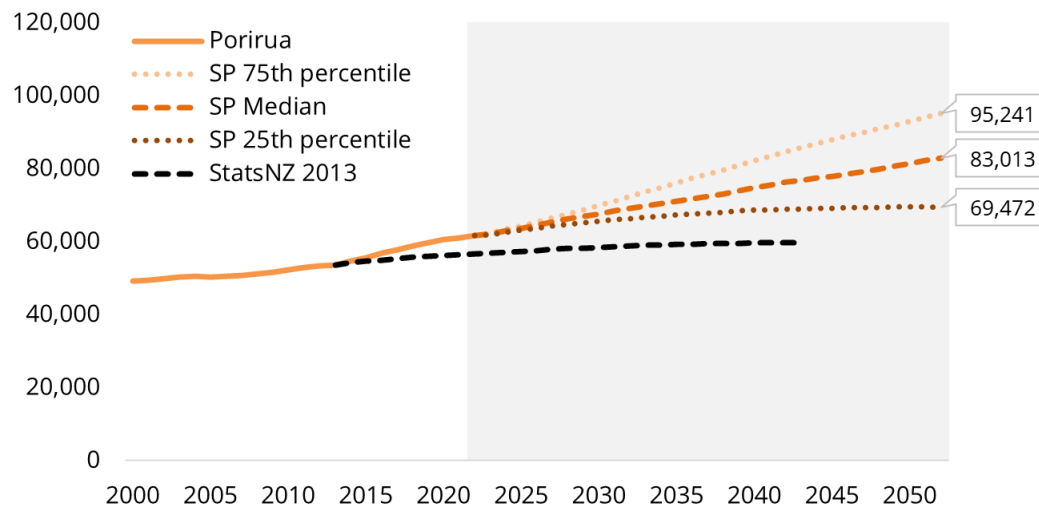
Source: Sense Partners

We estimate the impact of higher and lower population growth

The previous business land demand forecast, completed in 2017, used population projections from the Statistics New Zealand 2013 census. These projections underestimated population growth by a significant amount. This is largely due to the unpredictable nature of overseas migration, a surge of which occurred around 2014.

To help understand the impact of variations in population growth, we estimate the impact of two alternate growth scenarios. We use a 75th percentile scenario and a 25th percentile scenario derived from the same demographic model used to estimate the base projection.

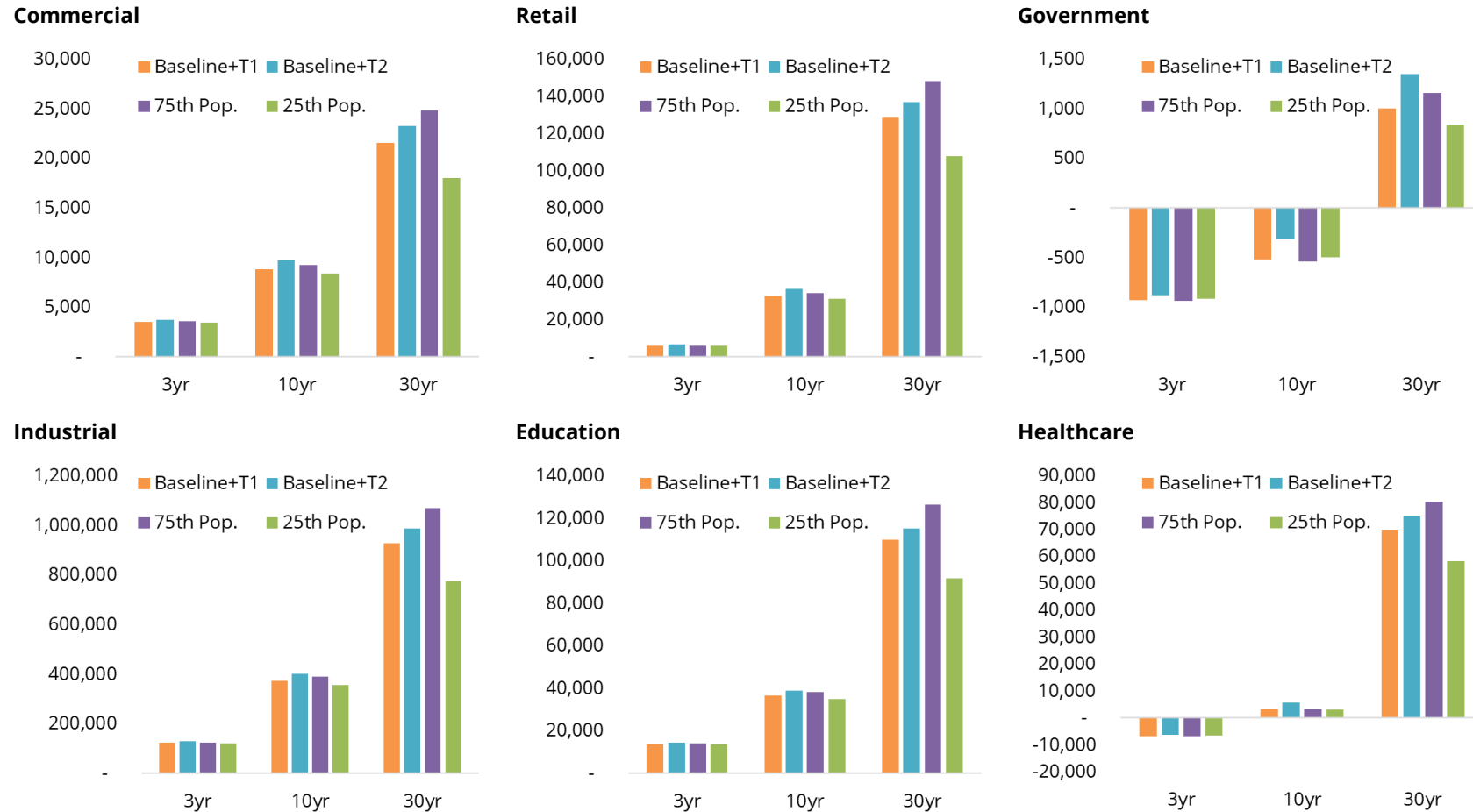
FIGURE 95: PREVIOUS PROJECTIONS UNDERESTIMATED GROWTH IN PORIRUA
Median, 75th, and 25th percentile population projections, Porirua



Source: Sense Partners



FIGURE 96: INDUSTRIAL DEMAND IS LEADING THE WAY IN PORIRUA
Land demand projections, by sector, periods from 2022, Porirua



Source: Sense Partners



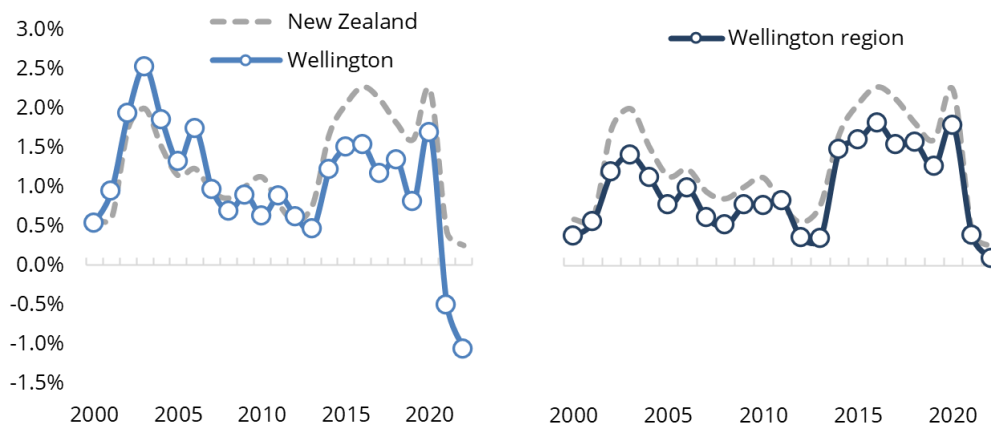
Appendix 4: Results for Wellington City

Wellington City is an attractor of overseas migrants

Wellington City's population growth across the past two decades can be split into two episodes. The first is of strong but falling growth, in line with nationwide rates, prior to 2014. Since the 2014 immigration surge, the City's growth rate has lagged that of both the nation and the region.

The surge in population growth coincided with capacity constraints in housing. As a result, much of the region wide population growth has been displaced outwards. This helps explain the higher growth rates in areas like Porirua and Upper Hutt.

FIGURE 97: WELLINGTON CITY'S POPULATION IS SHRINKING
Population growth compared to NZ wide trend.



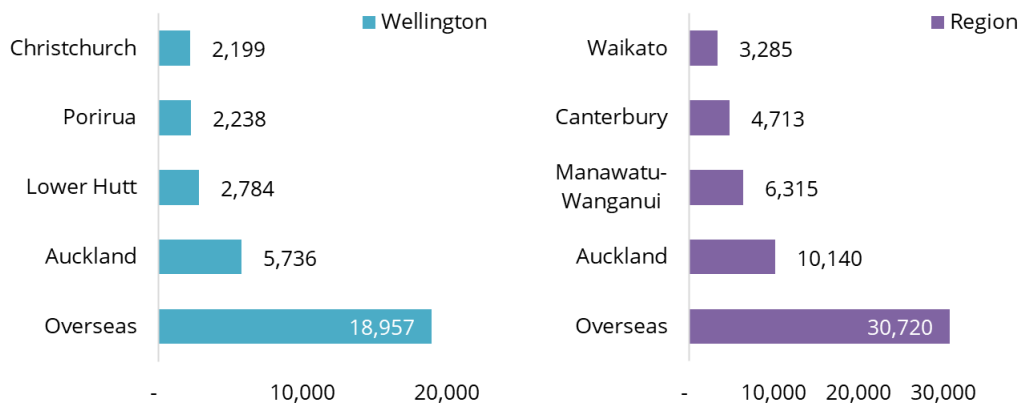
Source: Statistics New Zealand

The primary source of migrants into Wellington is foreign countries, followed by Auckland. The City is an attractor of migration. For other parts of the region, such as Porirua and Kāpiti Coast, it is Wellington City that is the main source. This indicates a knock-on effect. As migrants arrive in the City, housing constraints mean prices rise. This incentivises other residents to search further out for more affordable living, such as Kāpiti Coast. This in turn pushes residents of Kāpiti (for example) further north into Horowhenua.

This is not the sole driver behind intra-regional migration. People move up the coast and over to the Wairarapa for amenity values – such as a rural lifestyle or to be closer to the beach. This is demonstrated by the fact that most outer areas have maintained robust population growth despite the collapse in immigration. Wellington City's population has shrunk a cumulative 1.6% since the start of the pandemic, as those moving outward are no longer being replaced by new migrants.



FIGURE 98: OVERSEAS MIGRANTS ARE THE LARGEST SOURCE OF GROWTH
Place of usual residence 5 years ago, 2018 census. Top 5 outside locality.



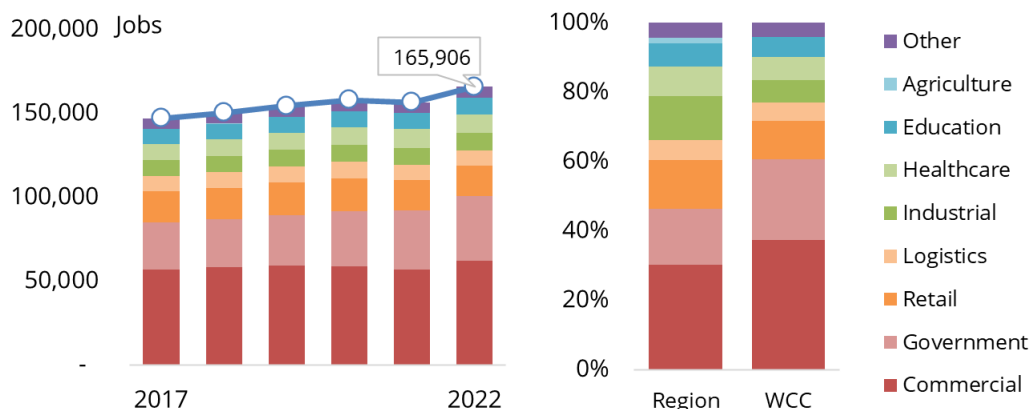
Source: Statistics New Zealand

Wellington City's economy is dominated by the commercial and government sectors. This is the expected outcome of Central Government being concentrated in the city. Many of the commercial services that support central government will also locate within Wellington city. Central Government is relatively price insensitive, meaning they are willing to pay what it takes to outcompete other sectors for office space.

Those parts of the commercial sector which service Central Government, such as lawyers or accountants, can also compete for expensive office space. They can pass the cost on to Central Government through the fees charged for their services. Limited remaining commercial space means tough competition for other parts of the commercial sector, such as the tech sector.

Those sectors which directly support residents, such as education and healthcare, have a smaller share of total employment. This is because many of the government and commercial sector workers commute in from other parts of the region.

FIGURE 99: GOVERNMENT AND COMMERCIAL SECTORS DOMINATE EMPLOYMENT
Filled jobs by sector 2017-2022 (left), and sector share comparison 2022 (right)



Source: Statistics New Zealand



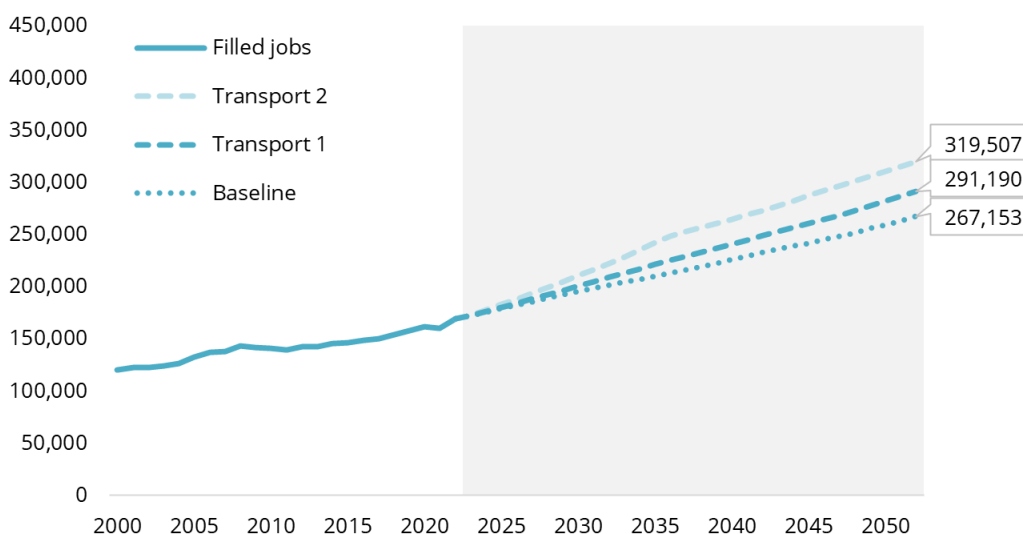
The transport network is oriented toward Wellington

We adjust our baseline projections for the impact of two sets of transport projects. The first set, shown as Transport 1 in Figure 100 below, includes the Northern Corridor, Riverlink, and Rail Network Investment. The Wellington region transport network largely centres on Wellington City. This is particularly true for the passenger rail network but is also true to a large extent for the road network.

As a result, all of the projects assessed help to strengthen regionwide connections into Wellington. The benefit of a project like the Northern Corridor is concentrated along the route itself, in places like Kāpiti and Porirua. This applies to Riverlink in the Hutt Valley as well. However, they do all contribute toward improving connections into Wellington, and so do have a measurable impact on the city.

Transport 2, graphed below, shows the impact of a Mass Rapid Transit system implemented as part of the Let's Get Wellington Moving programme. As discussed in detail in section 5.5 of this report, the project is expected to generate employment and accommodate higher population growth. This, alongside a reduction in the cost of moving about the city, will generate a boost in economic activity. In turn, an increase in the floorspace demanded by businesses.

FIGURE 100: MRT WILL HAVE A STRONG, BUT LONG-TERM IMPACT ON DEMAND
Impact of transport improvements on employment activity, Wellington City



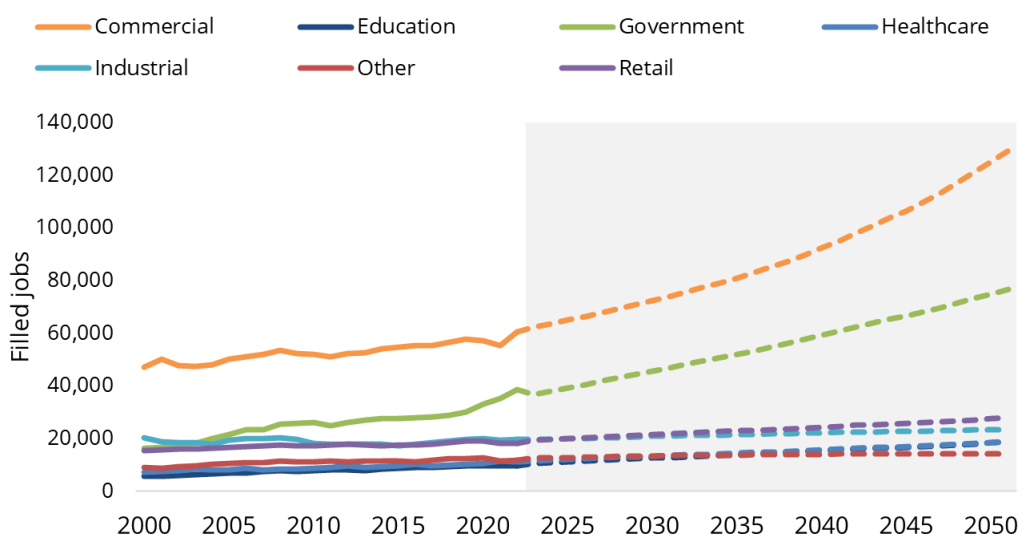
Source: Sense Partners

Commercial and Government sectors extend their dominance

Our employment projections for Wellington City are shown in Figure 101 below. These include our baseline projections and an adjustment for the impact of key transport projects. The transport projects considered in this projection are the Northern Corridor, Riverlink, and Rail Network Investment. Let's Get Wellington Moving has been assessed separately, and as Figure 100 above shows, the impact is substantial.



FIGURE 101: GOVERNMENT SECTOR GROWTH DRIVES COMMERCIAL SECTOR GROWTH
Employment projections by sector, Wellington City



Source: Sense Partners

We project that employment growth will be strongest in the already dominant commercial and government sectors. These sectors are readily able to take advantage of higher density within the geographic constraints of Wellington City. The constrained rise in population-oriented services is reflective of population growth. Over the past 8 years, population growth in Wellington city has been lower than elsewhere in the region. We expect this is a spatial movement of growth out to areas with more affordable housing.

More recently, the population in Wellington has fallen a cumulative 1.6% since the start of the Pandemic. Given that Wellington attracts a high level of overseas migrants, we conclude that it is the border closures which have caused this. The core of highly paid jobs in central government and the commercial sector will remain an attractive prospect for overseas migrants. If and when immigration settings return to a pre-pandemic level, we expect that population growth in Wellington city will resume its pre pandemic trend.

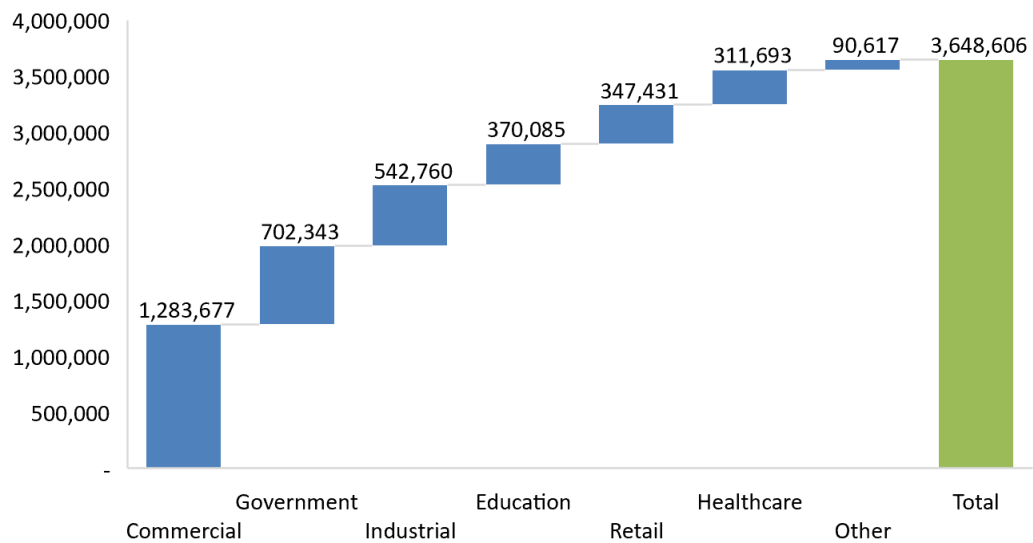
Floorspace and land demand projections

Floorspace growth in the industrial sector is higher than the growth in employment may suggest. This is as a result of the more space intensive nature of the activities in this sector. In particular, logistics and warehousing are space intensive activities likely to see growth.

The higher density in Wellington city means that commercial and government sector floorspace growth does not translate into equivalent land demand growth. The industrial sector is constrained in how much density it can achieve, largely due to the nature of these activities. Retail also can't achieve as high a density as the commercial sector. With few exceptions, retail tends to concentrate at street level.

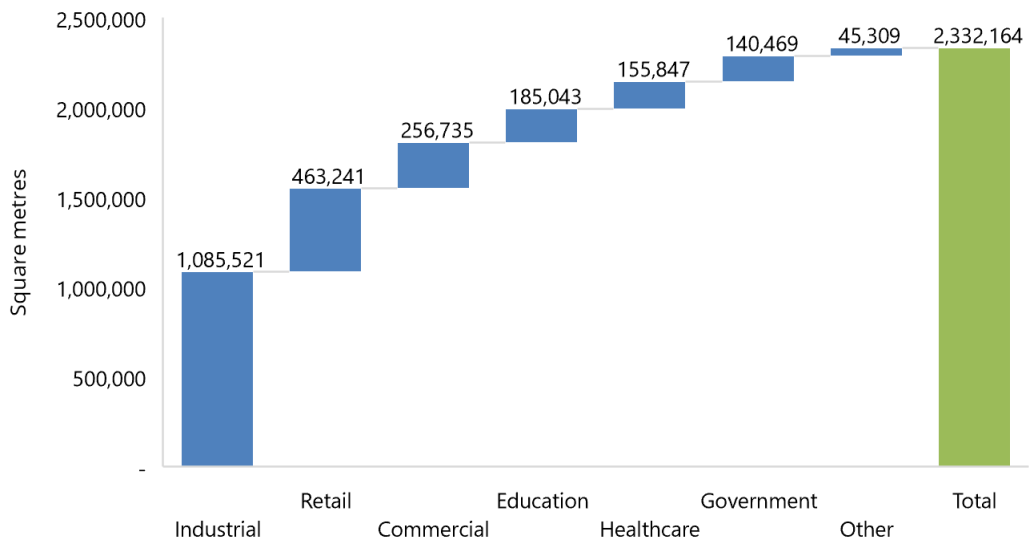


FIGURE 102: COMMERCIAL AND GOVERNMENT SECTORS DRIVE FLOORSPACE DEMAND
Floorspace projections by sector, 2022-2052, Wellington City



Source: Sense Partners

FIGURE 103: ACCOMMODATING INDUSTRIAL DEMAND WILL BE CHALLENGING
Land demand projections by sector, 2022-2052, Wellington City



Source: Sense Partners

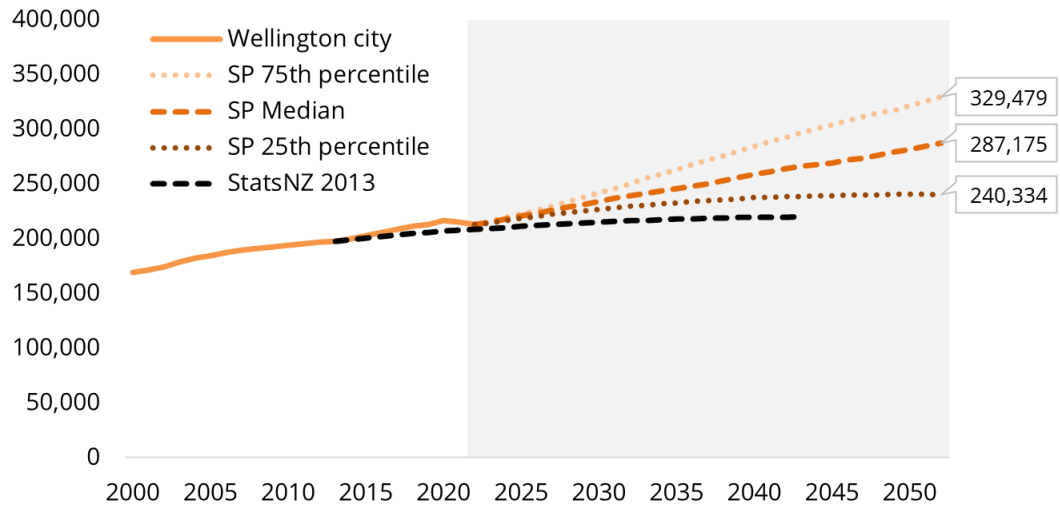
We estimate the impact of higher and lower population growth

The previous business land demand forecast, completed in 2017, used population projections from the Statistics New Zealand 2013 census. These projections underestimated population growth across the region by a significant amount. Within Wellington city, they have proven closer to the mark in recent years. However, our projections suggest the shortfall will worsen.



To help understand the impact of variations in population growth, we estimate the impact of two alternate growth scenarios. We use a 75th percentile scenario and a 25th percentile scenario derived from the same demographic model used to estimate the base projection.

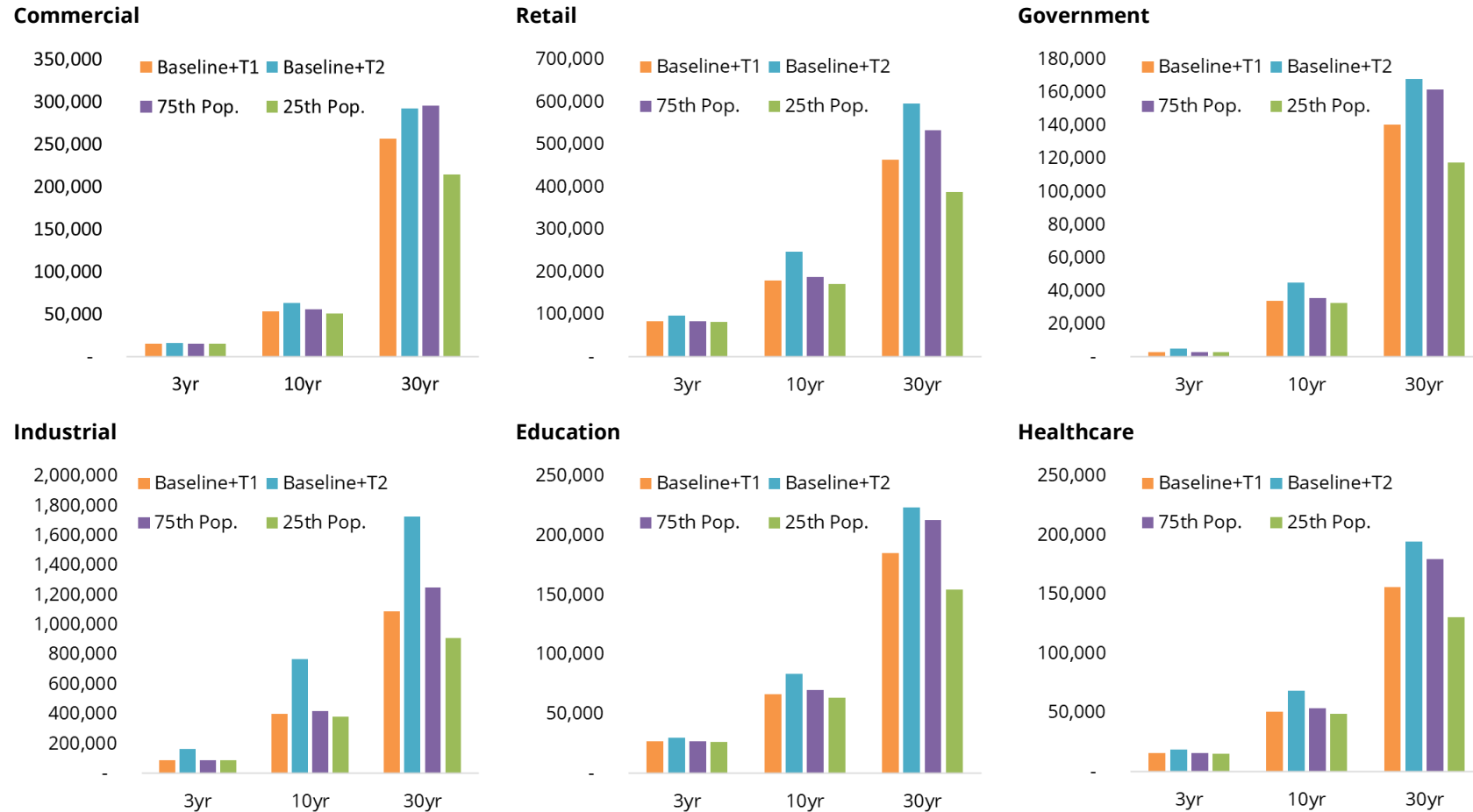
FIGURE 104: PREVIOUS PROJECTIONS WERE CLOSER TO THE MARK IN WELLINGTON
Median, 75th, and 25th percentile population projections, Wellington City



Source: Sense Partners



FIGURE 105: COMMERCIAL AND GOVERNMENT DOMINATE BASELINE PROJECTIONS
Land demand projections, by sector, periods from 2022, Wellington City



Source: Sense Partners

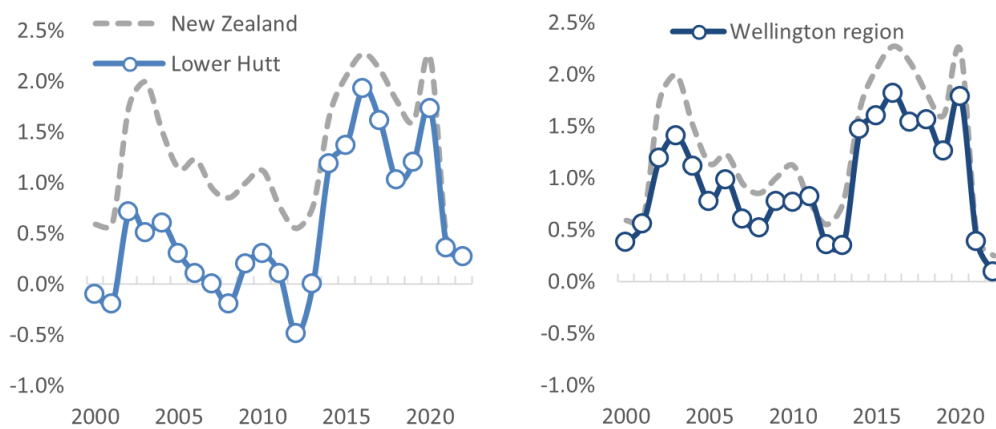


Appendix 5: Results for Lower Hutt City

Lower Hutt is a hub of industry

Lower Hutt has typically had lower than nationwide average population growth. However, much like all parts of the region, growth picked up around the 2014 immigration surge. In addition, Lower Hutt has been growing faster than Wellington city, and has retained positive growth rates through the pandemic. This is part of a pattern of a sprawl in the population, with a greater share of the region's population living further out from the urban core.

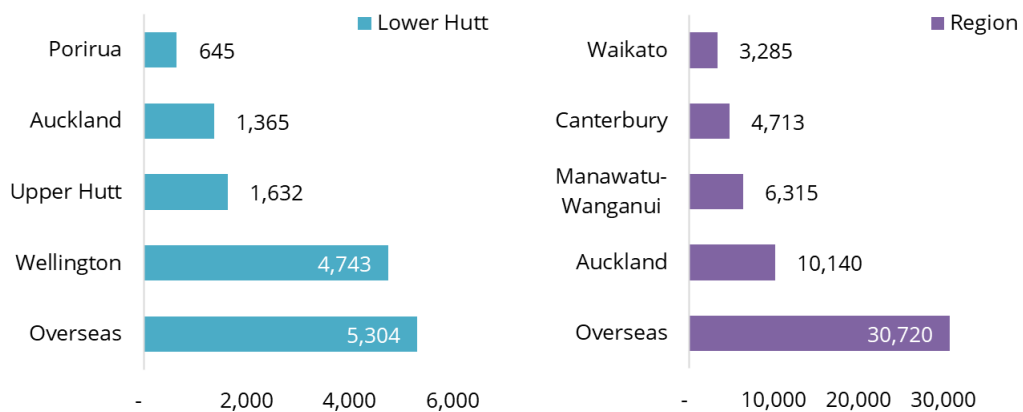
FIGURE 106: POPULATION GROWTH HAS PICKED UP SINCE 2014
Population growth compared to NZ wide trend.



Source: Statistics New Zealand

Looking at the origin of new arrivals to Lower Hutt, we can see that a large portion are from Wellington City. Most parts of the wider region exhibit a knock-on pattern. Arrivals into Wellington City essentially crowd out locals into neighbouring areas, in turn prompting some to move further. However, Lower Hutt is an attractor of migrants in its own right, and overseas migrants make up the largest portion of new arrivals.

FIGURE 107: OVERSEAS MIGRANTS ARE THE LARGEST GROUP OF ARRIVALS
Place of usual residence 5 years ago, 2018 census. Top 5 outside locality.

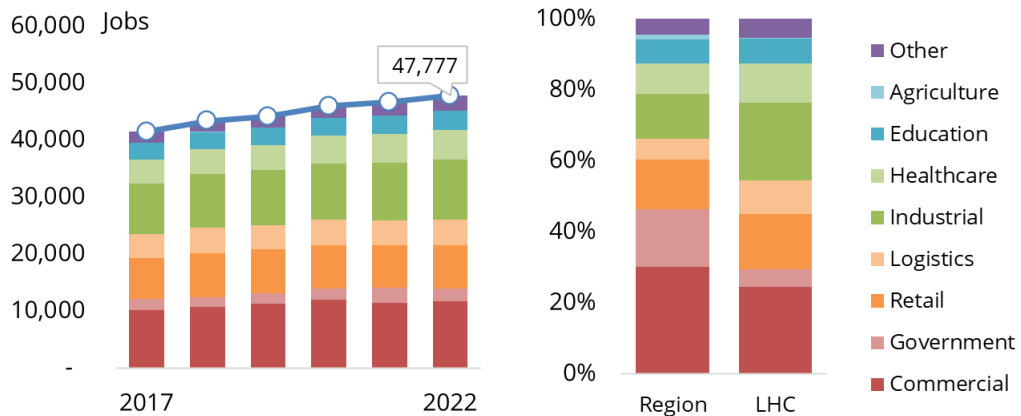


Source: Statistics New Zealand



Lower Hutt is a hub of industrial sector activity, largely thanks to the industrial zone at Seaview. This gives the area one of the largest concentrations of industrial employment in the region. The largest employer by numbers is actually the commercial sector (11,648 jobs compared to 10,492 in industry). Many of these commercial sector jobs will be providing support services to those industrial firms, and so are a part of that industrial ecosystem.

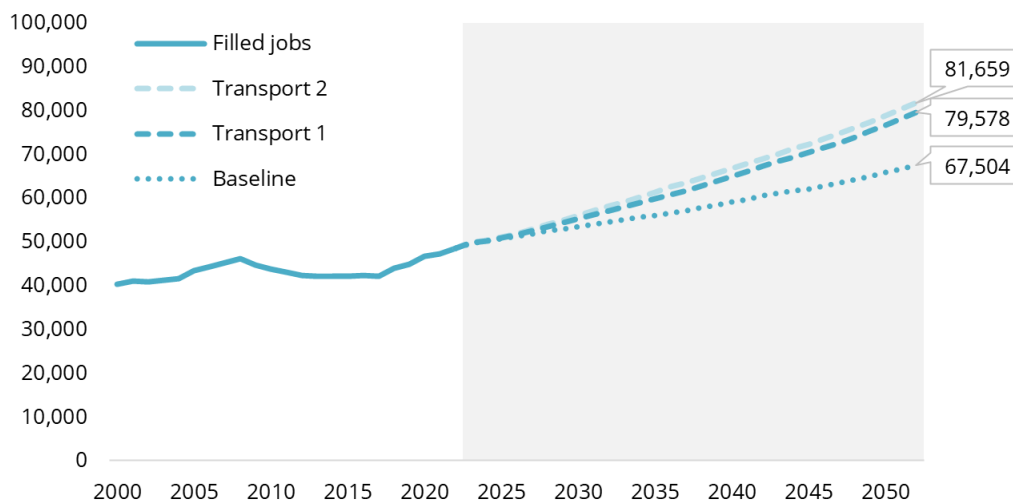
FIGURE 108: LOWER HUTT HAS THE HIGHEST NUMBER OF INDUSTRIAL JOBS
Filled jobs by sector 2017-2022 (left), and sector share comparison 2022 (right)



Source: Statistics New Zealand

Riverlink will provide a solid boost to growth

FIGURE 109: RIVERLINK AND OTHER PROJECTS MAY BOOST EMPLOYMENT 19%
Impact of transport improvements on employment activity, Lower Hutt



Source: Sense Partners

The biggest transport investment boost to Lower Hutt is the Riverlink project. This will improve journey times through to Wellington for a subset of trips. Key benefits will include urban regeneration and floor protection, neither of which are estimated in this adjustment. This implies that the estimated impact is likely conservative, and the resulting increase in economic activity may be greater.

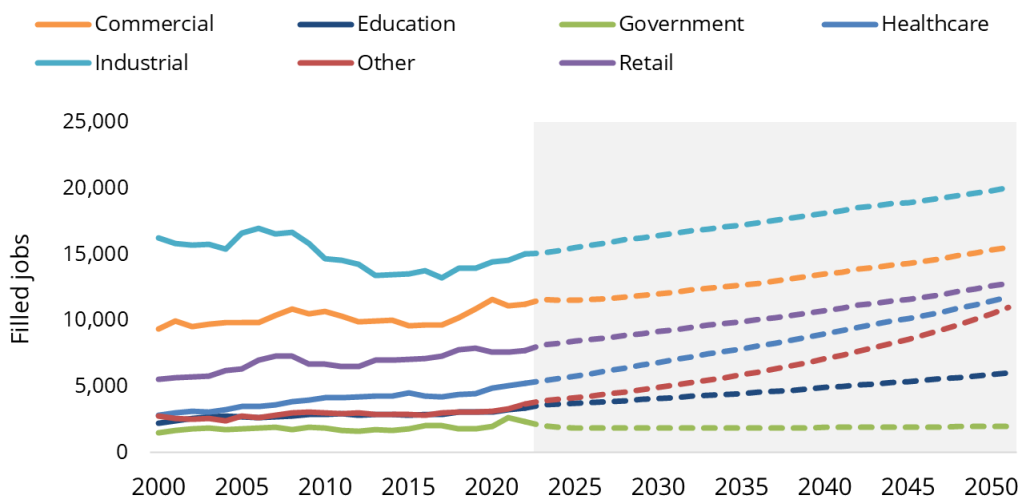


Other projects, such as Rail Network Investment, will promote economic activity. The Northern Corridor, while not directly serving Lower Hutt, will nevertheless provide a boost. Journeys north from Lower Hutt are likely to use most of the Northern Corridor via SH58. The resulting benefit of these transport projects (Transport 1 scenario in Figure 111 above) is a 19% increase in total employment by 2052.

Steady growth across each sector

Our employment projections for Lower Hutt are shown in Figure 110 below. These include our baseline projections and an adjustment for the impact of key transport projects. The transport projects considered in this projection are the Northern Corridor, Riverlink, and Rail Network Investment. Let's Get Wellington Moving has been assessed separately, though as Figure 109 above shows, the impact is relatively small.

FIGURE 110: INDUSTRIAL EMPLOYMENT EXPECTED TO RETURN TO MODEST GROWTH
Employment projections by sector, Lower Hutt



Source: Sense Partners

Lower Hutt is an industrial hub for the region. However, employment over the past 22 years has been relatively flat. This is likely caused by two forces. One is the adoption of more labour-efficient methods of production, such as automation. The other is the impact of land constraints, which is likely already binding.

Our baseline projection has been adjusted upward to reflect the impact of improved transport connections. The improved connections make Lower Hutt a better place to do business. However, if land constraints are already binding, then it will be a challenge to accommodate the growth in industrial activity. This is because industrial activity is not amenable to higher density beyond increasing ground floor site coverage. Placing heavy machinery on higher floors can be cost prohibitive.

Other sectors are likely to grow in line with the population. Population growth has been robust, and sectors like retail provide essential and desirable services for residents. If



residential activity can be sustained throughout the forecast horizon, then growth in these support sectors will be equally strong.

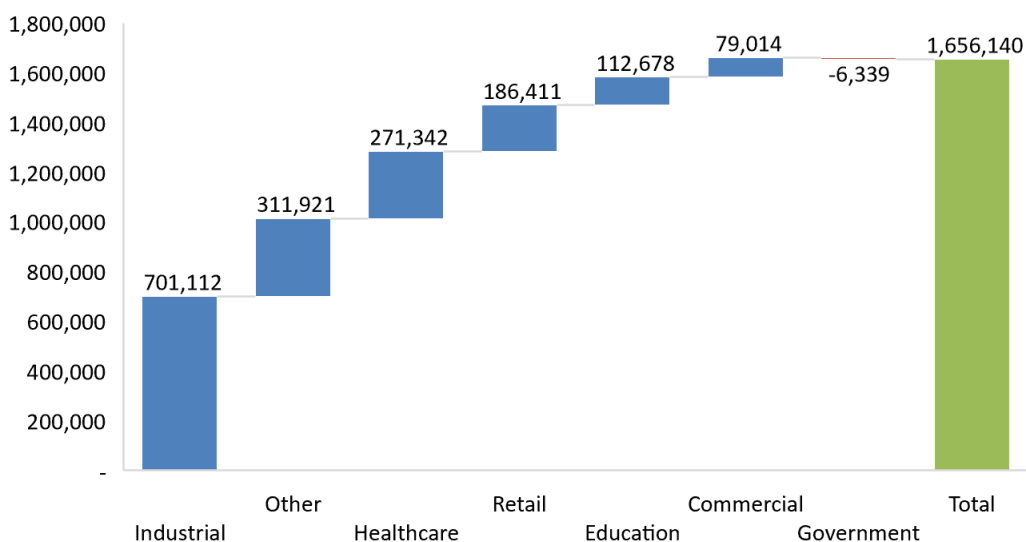
Government employment is proving an exception in our projections. Employment in this sector stays relatively flat over the 30-year period. Of course, this could change if future Governments in Wellington decide to relocate parts of the civil service. Greater concentration of the military in Trentham Military Camp is an example of the types of decision that could change this projection. Forecasting policy decisions more than a few years is impossible, and this projection should be viewed in that light.

Floorspace and land demand projections

Demand for floorspace and land largely reflect the underlying employment growth projections. One approach to accommodating demand within geographic constraints is to allow greater density. This is something already being progressed through the Intensification Planning Instrument, and other plan changes.

Sectors like retail, commercial, and healthcare, are able to operate in higher density areas without much difficulty. Changes to density rules may mean that much of the floorspace demand in these sectors can be accommodated on the existing footprint (depending on capacity assessments). However, higher density does mean higher cost, so some demand may be priced out.

FIGURE 111: INDUSTRY IS THE LARGEST GROWING SECTOR OVER 30 YEARS
Floorspace projections by sector, 2022-2052, Lower Hutt

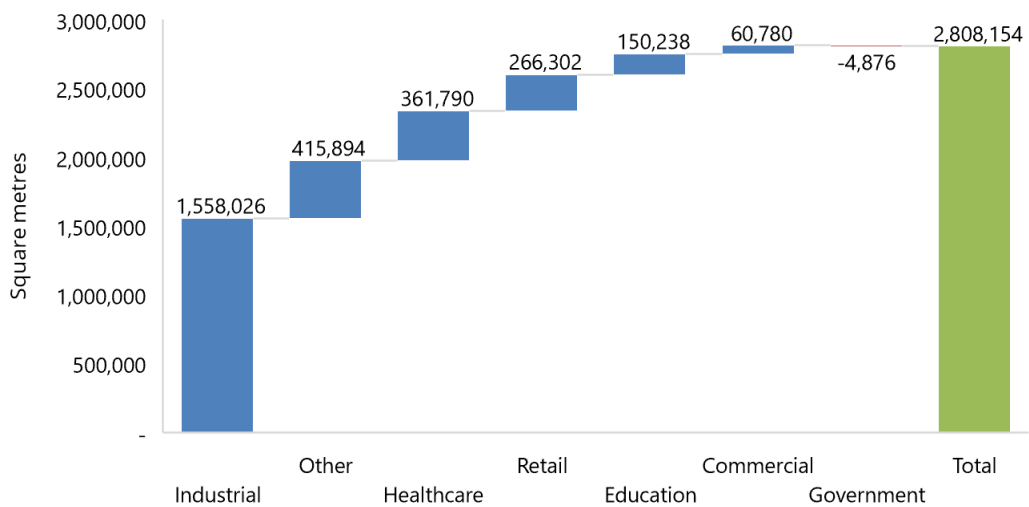


Source: Sense Partners

Industrial activity is harder to accommodate through higher density. The main barrier is cost, which is a major factor in activities that consume so much floorspace. Even in the absence of planning controls, geographic constraints may mean this industrial demand cannot be accommodated. As prices rise, industry may relocate elsewhere in the region.



FIGURE 112: LARGE INDUSTRIAL FOOTPRINTS DRIVE DEMAND FOR LAND
Land demand projections by sector, 2022-2052, Lower Hutt



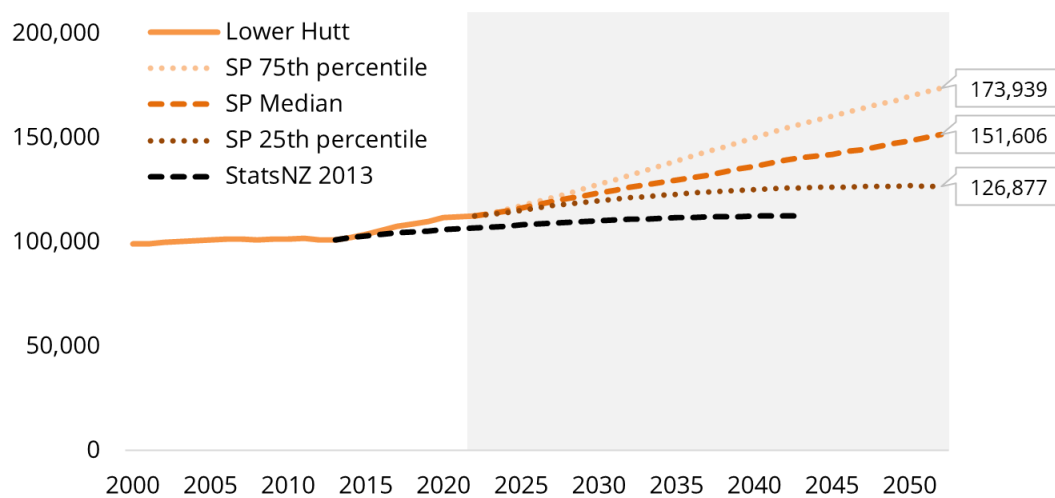
Source: Sense Partners

We estimate the impact of higher and lower population growth

The previous business land demand forecast, completed in 2017, used population projections from the Statistics New Zealand 2013 census. These projections underestimated population growth by a significant amount. This is largely due to the unpredictable nature of overseas migration, a surge of which occurred around 2014.

To help understand the impact of variations in population growth, we estimate the impact of two alternate growth scenarios. We use a 75th percentile scenario and a 25th percentile scenario derived from the same demographic model used to estimate the base projection.

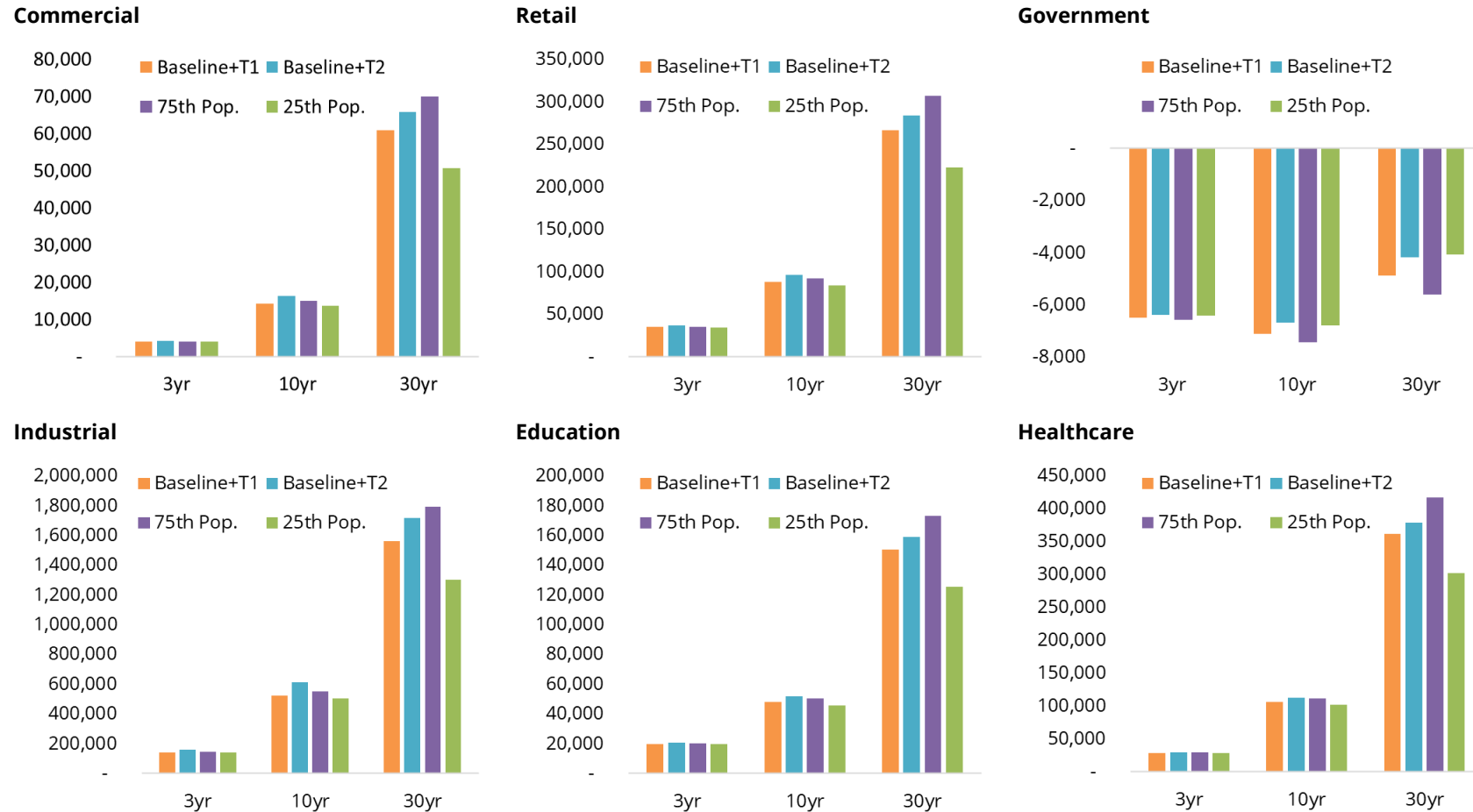
FIGURE 113: PREVIOUS PROJECTIONS UNDERESTIMATED GROWTH IN LOWER HUTT
Median, 75th, and 25th percentile population projections, Lower Hutt



Source: Sense Partners



FIGURE 114: BUSINESS LAND DEMAND FORECASTS: 3-YEAR, 10-YEAR AND 30-YEAR
Land demand projections, by sector, periods from 2022, Lower Hutt



Source: Sense Partners



Appendix 6: Results for Upper Hutt City

Qualitative data suggest different paths for business land right now

Upper Hutt City Council has seen consistent increase in demand for greenfield land for industrial purposes including a mix of large and small scale operations, some of which are for food distribution purposes.

In contrast, retail demand is waning, consistent with weaker demand for bricks and mortar offerings and increased preferences for online shopping. Services are filling vacant retail spaces including services that would not traditionally be seen in the city centre. So occupancy remains high despite a decline in retail presence.

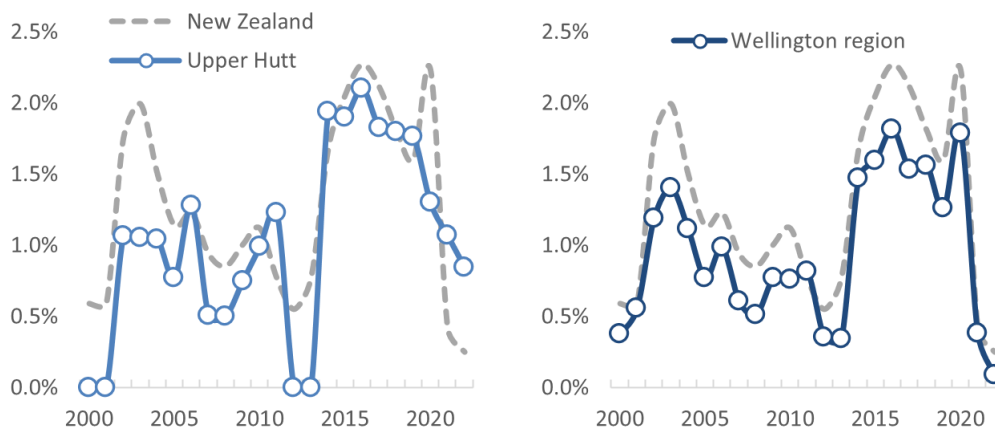
Government continues to drive elements of business land demand in Upper Hutt. This includes some institutions moving operational activity out of central Wellington, such as Corrections establishing a national hub for all training. In addition, as our previous report identifies, business land demand in Upper Hutt UHCC is associated with reducing the hazard risk profile - including both seismic and coastal.

Population growth remains a key underlying driver

Upper Hutt's population growth has tracked above the regional average for much of the last 7 years. This reflects the dispersion of the region's population away from the urban core at Wellington.

FIGURE 115: POPULATION GROWTH IN UPPER HUTT IS ROBUST

Population growth compared to NZ wide trend.

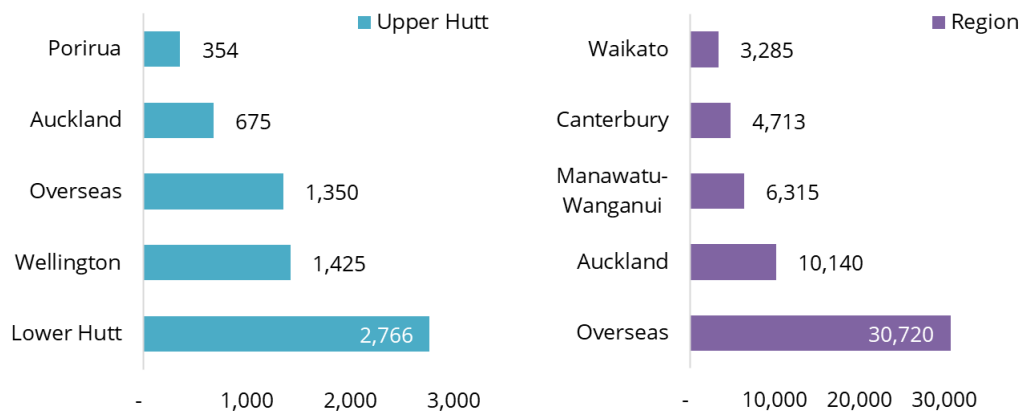


Source: Statistics New Zealand

Population dispersion is reflected in the data on migration sources. The largest source of migrants into the region are from overseas. These predominantly end up in Wellington City. Through a crowding-out effect, they push Wellington City residents into neighbouring areas. This in turn has a knock-on effect throughout the region. Migrants into both Wellington and Lower Hutt are pushing residents north into Upper Hutt.



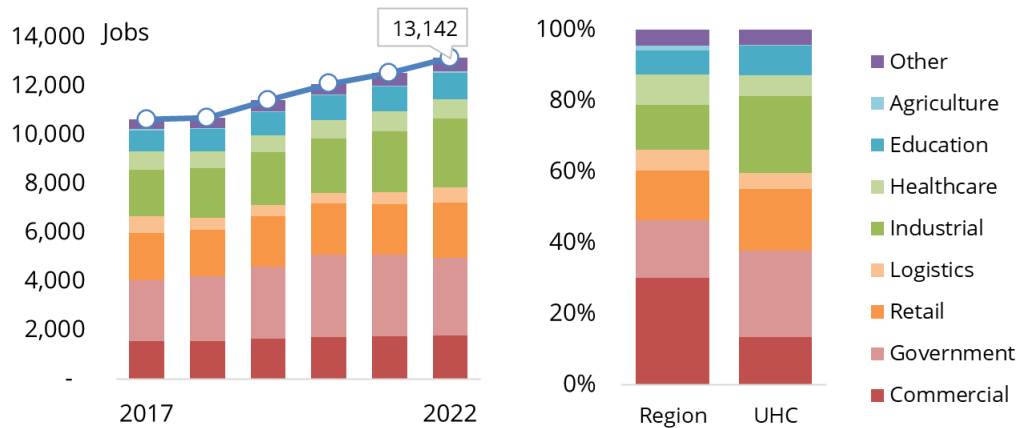
FIGURE 116: MIGRANTS ARE PUSHED NORTH FROM UPPER HUTT
Place of usual residence 5 years ago, 2018 census. Top 5 outside locality.



Source: Statistics New Zealand

Government employment, at 3,200 jobs, is the largest single group of jobs in Upper Hutt. Nearly half of these employees, 1,550, are members of the New Zealand Defence Force, operating out of Trentham Military Camp. A further 740 are employed by the Department of Corrections, based at Rimutaka prison. These jobs are less likely to respond to market fundamentals, and more likely to be the result of Central Government policy decisions.

FIGURE 117: GOVERNMENT IS A MAJOR EMPLOYER IN UPPER HUTT
Filled jobs by sector 2017-2022 (left), and sector share comparison 2022 (right)



Source: Statistics New Zealand

Upper Hutt has seen consistent increases since 2018 in industrial greenfield land demand – mix of large- and small scale-operations. These projects are typically developer precincts on-sold to small operators.

We expect to see some increase in short term accommodation demand to support major development activity in the Blue Mountains Campus, Lane St Studios and the New Zealand Campus for Innovation and Sport.



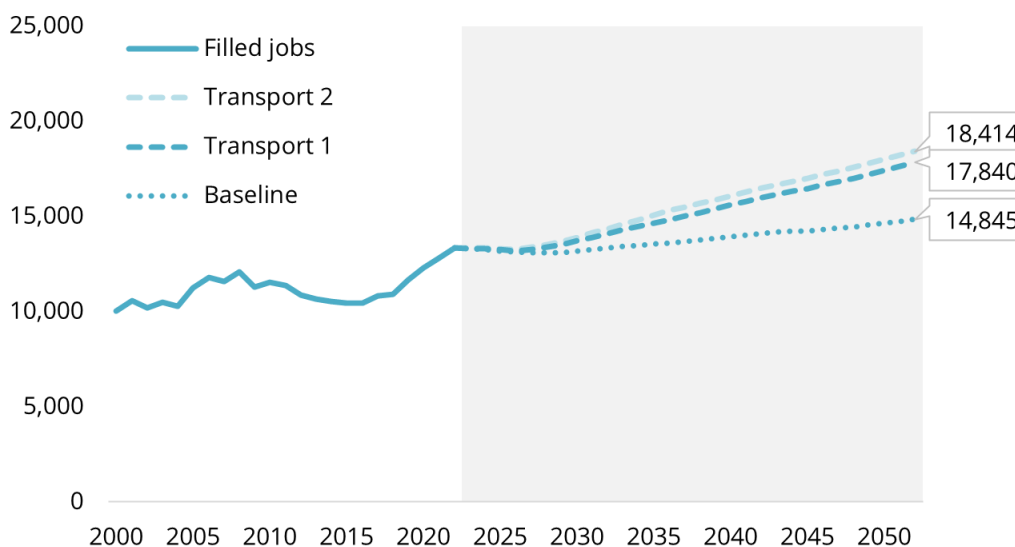
Transport improvements turn flatline into growth

The biggest transport investment boost to Upper Hutt is the Riverlink project. While this project is located in Lower Hutt, the improvements will benefit all trips along SH2 that run through the Melling interchange. All trips from Upper Hutt to Wellington, and many to Lower Hutt, will likely run through the interchange.

These links benefit businesses located in Wellington that access workers from Upper Hutt who now face lower commute times. Conversely, businesses located in Upper Hutt, are more attractive and convenient than previously. Lane St Studios, located in Wallaceville, is one example.

Other projects, such as Rail Network Investment, will promote economic activity. The Northern Corridor, while not directly serving Upper Hutt, will nevertheless provide a boost. Journeys north from Upper Hutt are likely to use most of the Northern Corridor via SH58. The resulting benefit of these transport projects (Transport 1 scenario in Figure 120 below) is a 21% increase in total employment by 2052. In the absence of these projects, employment would only grow 11% over 30 years. Instead, it will grow 35%.

FIGURE 118: TRANSPORT INVESTMENT IS BOOSTING ECONOMIC ACTIVITY
Impact of transport improvements on employment activity, Upper Hutt



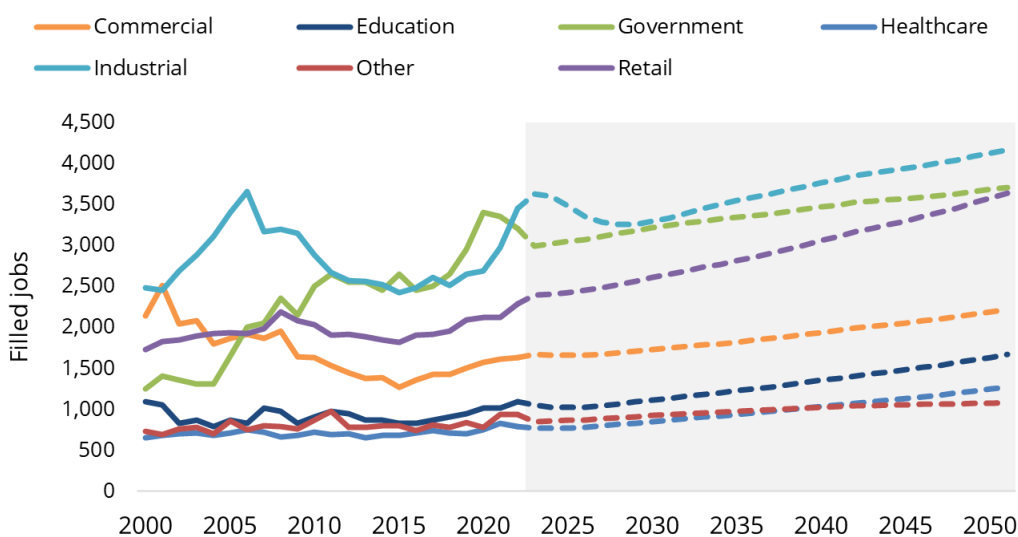
Source: Sense Partners

Industrial employment may be stronger in the near-term

Our employment projections for Upper Hutt are shown in Figure 119 below. These include our baseline projections and an adjustment for the impact of key transport projects. The transport projects considered in this projection are the Northern Corridor, Riverlink, and Rail Network Investment. Let's Get Wellington Moving has been assessed separately, though as Figure 210 above shows, the impact is small.



FIGURE 119: INDUSTRIAL JOBS HAVE POSTED A STRONG RETURN TO PRE-GFC HIGHS
Employment projections by sector, Upper Hutt



Source: Sense Partners

The model has detected a cyclical trend in industrial sector employment and is projecting this forward. This is why a modest, short-term fall in employment is being projected. It is possible that economic conditions over the next year may prove challenging for the industrial sector, though it is not a given.

Upper Hutt is further away from the urban core of Wellington, and major north-south transport links. If there were a downturn, businesses across the region would be impacted. However, businesses may take advantage of new property vacancies in, for example, Lower Hutt, to be closer to the action. A smaller regional pool of employment would concentrate in Wellington, Lower Hutt, and Porirua. Because of this, Upper Hutt's industrial land demand would be most affected by an economic downturn.

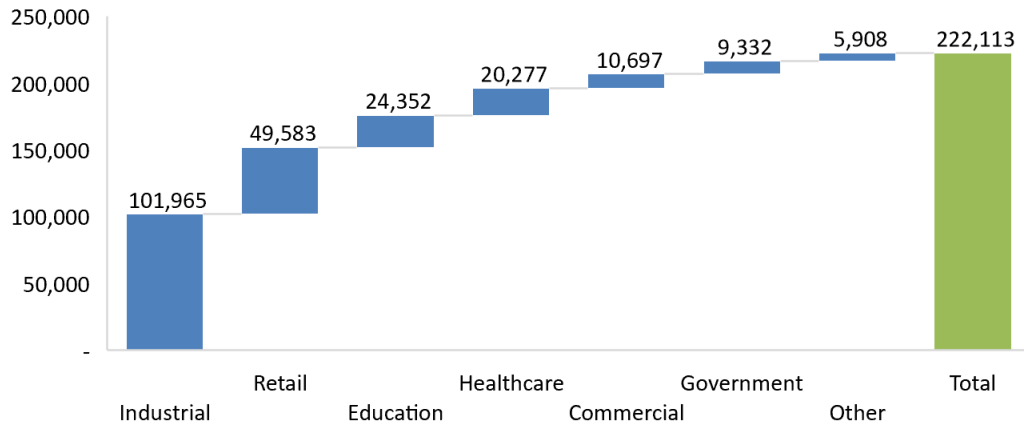
Another factor impacting industry is the relative attractiveness of Kāpiti Coast and Horowhenua. These districts are growing, have relatively ample flat land that is easy to build on, and enjoy a much-improved transport network along the Northern Corridor. This gives these districts good connectivity both north and south. The fall in industrial employment may be due to future demand relocating toward the coast.



Floorspace and land demand projections

FIGURE 120: INDUSTRIAL DEMAND LEADS THE WAY BY 2052

Floorspace projections by sector, 2022-2052, Upper Hutt



Source: Sense Partners

Despite some near-term uncertainty, demand over the longer term will remain dominated by the industrial sector. Industry is space intensive and land hungry. This may pose an issue in the constrained geography of Upper Hutt, particularly if new greenfields are ruled out.

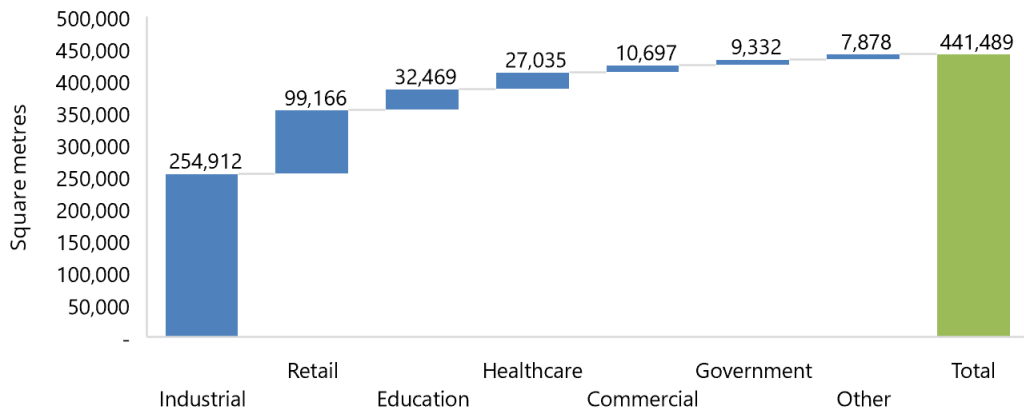
Depending on assessments of existing capacity, we may see competition for scarce land. On the one hand is residential demand, and business activity that is compatible with residential uses. And on the other hand, industrial uses which must typically be separated from residential activity.

It will be relatively easier to accommodate demand in sectors like retail and commercial. This is because those activities can be collocated with residential activity, with little negative consequence. For example, a building may have retail on lower floors, and residential units on upper floors.

Industry, on the other hand, typically involves negative externalities, such as air pollution, that require it be separated from residential uses. Even in the absence of planning, demand for compensation for negative externalities would push industrial activity away. As a result, when there is very high demand for residential land, it will be harder to simultaneously cater to industrial uses.



FIGURE 121: LAND-HUNGRY INDUSTRY WILL BE CHALLENGING TO ACCOMODATE
Land demand projections by sector, 2022-2052, Upper Hutt



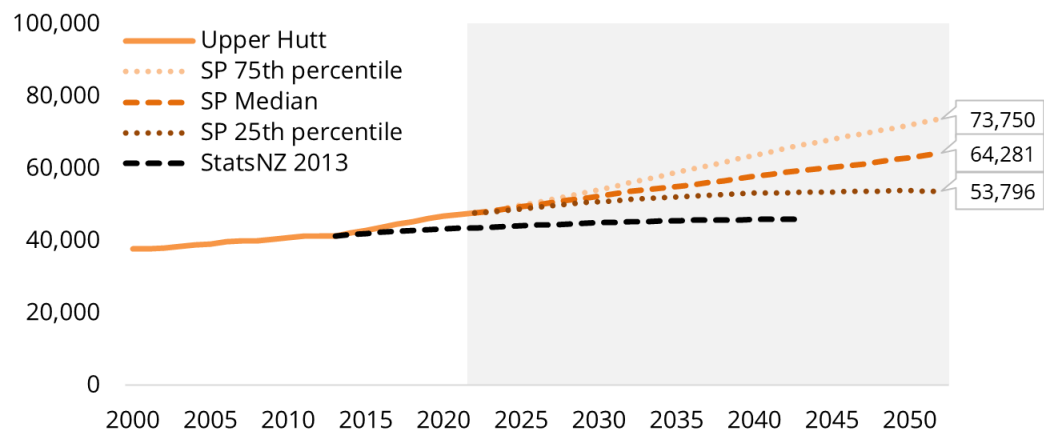
Source: Sense Partners

We estimate the impact of higher and lower population growth

The previous business land demand forecast, completed in 2017, used population projections from the Statistics New Zealand 2013 census. These projections underestimated population growth by a significant amount. This is largely due to the unpredictable nature of overseas migration, a surge of which occurred around 2014.

To help understand the impact of variations in population growth, we estimate the impact of two alternate growth scenarios. We use a 75th percentile scenario and a 25th percentile scenario derived from the same demographic model used to estimate the base projection.

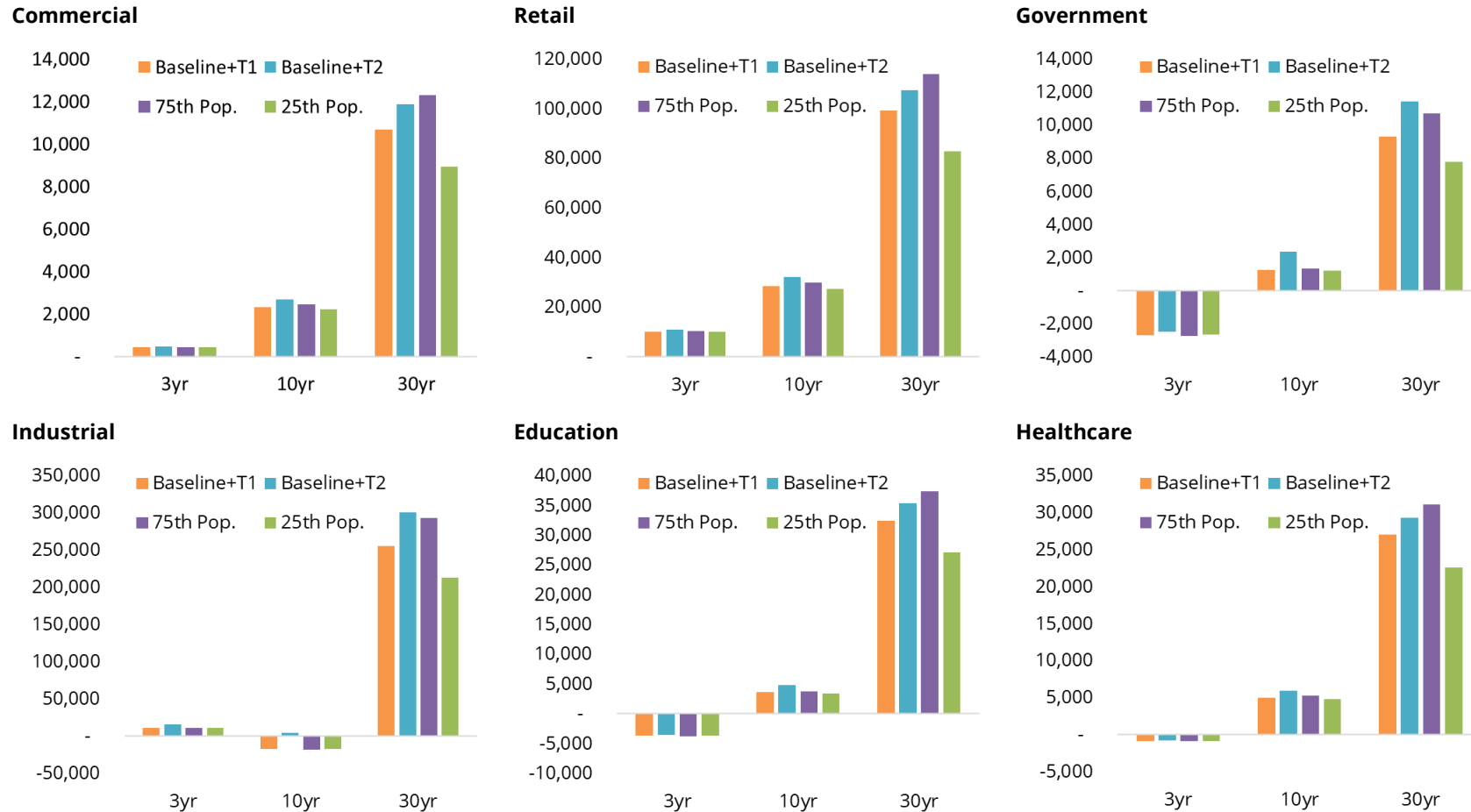
FIGURE 122: PREVIOUS PROJECTIONS UNDERESTIMATED GROWTH IN UPPER HUTT
Median, 75th, and 25th percentile population projections, Upper Hutt



Source: Sense Partners



FIGURE 123: INDUSTRIAL DEMAND IS PRIMARILY LONG TERM
Land demand projections, by sector, periods from 2022, Upper Hutt



Source: Sense Partners

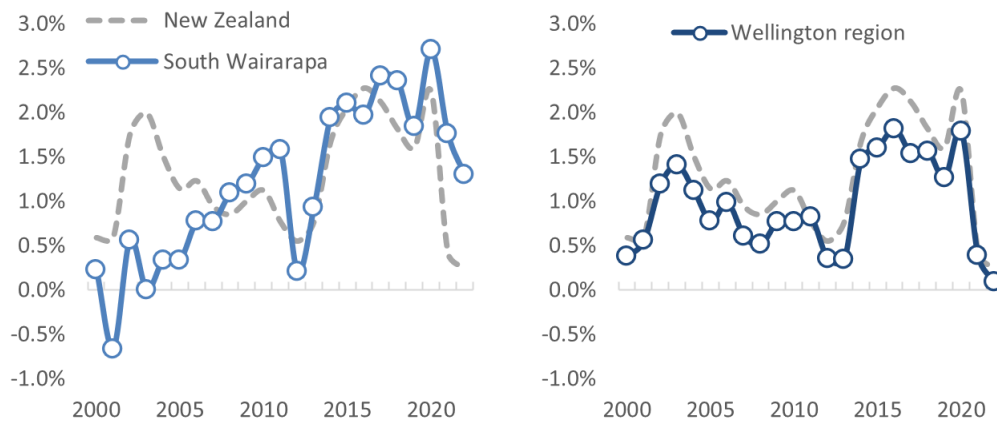


Appendix 7: Results for South Wairarapa District

Tourism is a big driver of growth in South Wairarapa

South Wairarapa’s population growth has been steadily picking up steam over the past two decades, with only temporary disruption. Throughout the COVID pandemic, growth has dipped, but remains strongly positive.

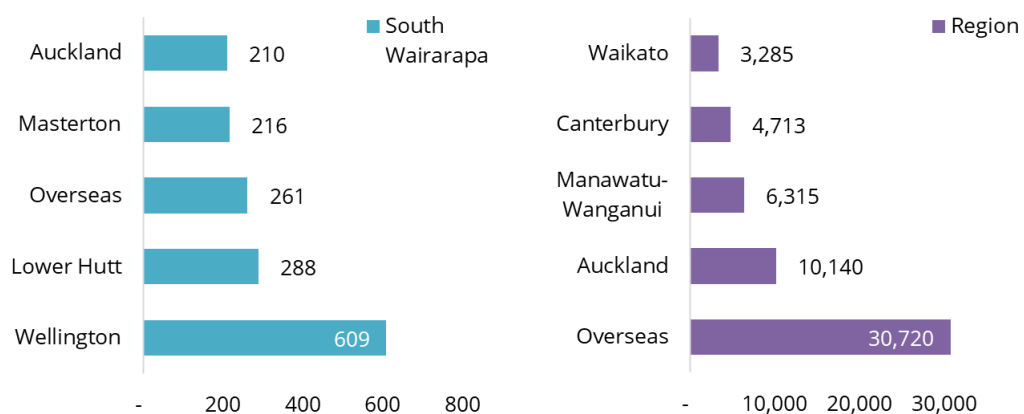
FIGURE 124: SOUTH WAIRARAPA IS GROWING ROBUSTLY
Population growth compared to NZ wide trend.



Source: Statistics New Zealand

Most areas receive the bulk of their migrants from their immediate neighbours. South Wairarapa is a hotspot for new arrivals direct from Wellington and overseas. This reflects the popularity of the area as a retirement destination, as well as the rural lifestyle. This is compounded by the attractiveness of the hospitality industry in the district.

FIGURE 125: MOST MIGRANTS COME FROM OUTSIDE THE WAIRARAPA
Place of usual residence 5 years ago, 2018 census. Top 5 outside locality.



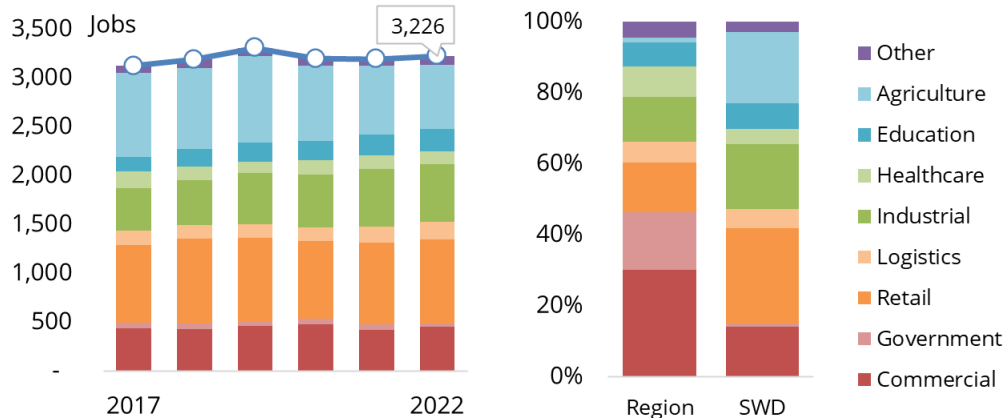
Source: Statistics New Zealand

The dominant employer in South Wairarapa is the retail sector. This includes accommodation and hospitality and reflects the dominant role of tourism in the local economy. A second



dominant driver is agriculture, which accounts for a fifth of the district’s jobs. Many of the industrial sector jobs located in the district are food processors, who built on the strength of local agriculture.

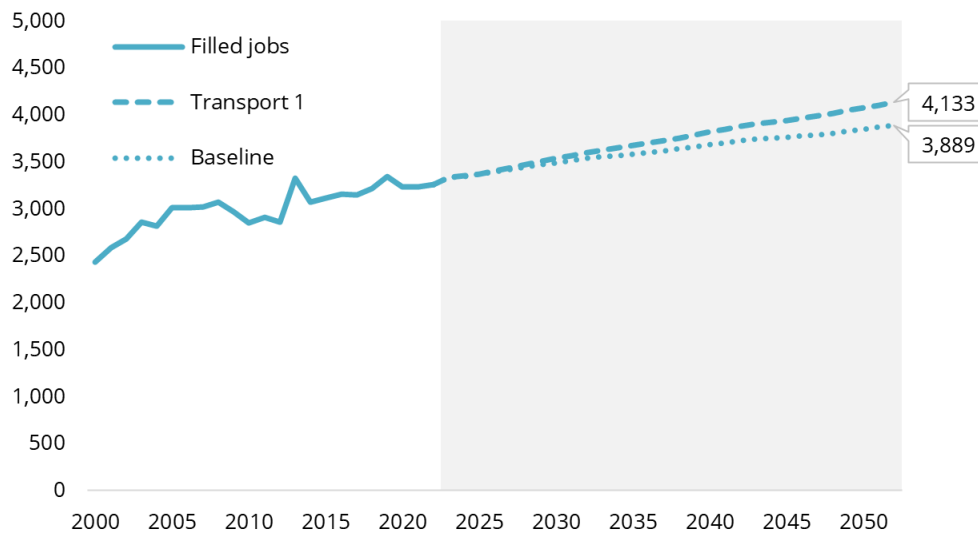
FIGURE 126: TOURISM, PART OF RETAIL, IS A PROMINENT SECTOR
Filled jobs by sector 2017-2022 (left), and sector share comparison 2022 (right)



Source: Statistics New Zealand

Transport investment wider economic benefits are modest

FIGURE 127: TRANSPORT IMPROVEMENTS WILL HAVE A MODEST EFFECT
Impact of transport improvements on employment activity, South Wairarapa



Source: Sense Partners

Transport improvements assessed will have a positive impact on economic activity in South Wairarapa, and indeed the Wairarapa as a whole. The estimated benefit is typically stronger in South Wairarapa due its being slightly closer to the Hutt Valley and Wellington. However, the Rimutaka ranges remain a considerable barrier to accessing the wider Wellington Region.



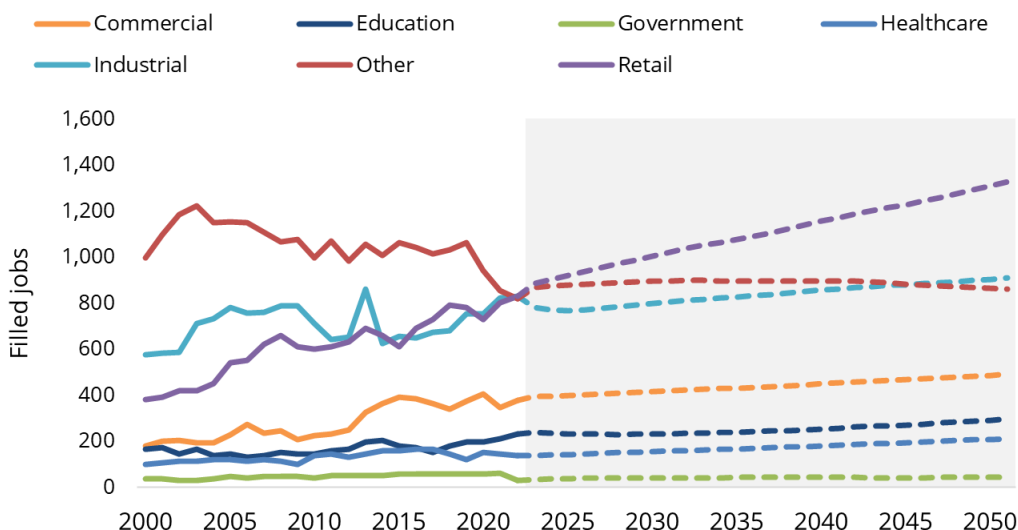
Rail network investment, while delivering significant travel time reductions between Wellington and the Wairarapa, is still hobbled by low frequency. In addition, only one township in South Wairarapa - Featherston - is directly serviced by rail. There is some distance (~6km) between Greytown and the station at Woodside, which is a barrier to access. Martinborough has no rail access at all.

The benefit to Wairarapa arising from the Let's Get Wellington Moving project (Transport 2) is entirely due to a small secondary economic boost across the region.

Tourism is driving retail sector demand

Our employment projections for South Wairarapa are shown in Figure 128 below. These include our baseline projections and an adjustment for the impact of key transport projects. The transport projects considered in this projection are the Northern Corridor, Riverlink, and Rail Network Investment. Let's Get Wellington Moving has been assessed separately, though as Figure 127 above shows, the impact is small.

FIGURE 128: RETAIL STRONGER BUT MODEL SUGGESTS FEWER AGRICULTURAL JOBS
Employment projections by sector, South Wairarapa



Source: Sense Partners

The retail sector includes hospitality and accommodation services. The strong past growth, projected forward, reflects the role of tourism in the local economy of South Wairarapa. In particular, Martinborough and its wine industry are a key attractor of tourists. Other sectors will see very modest growth in demand over time, driven by population growth.

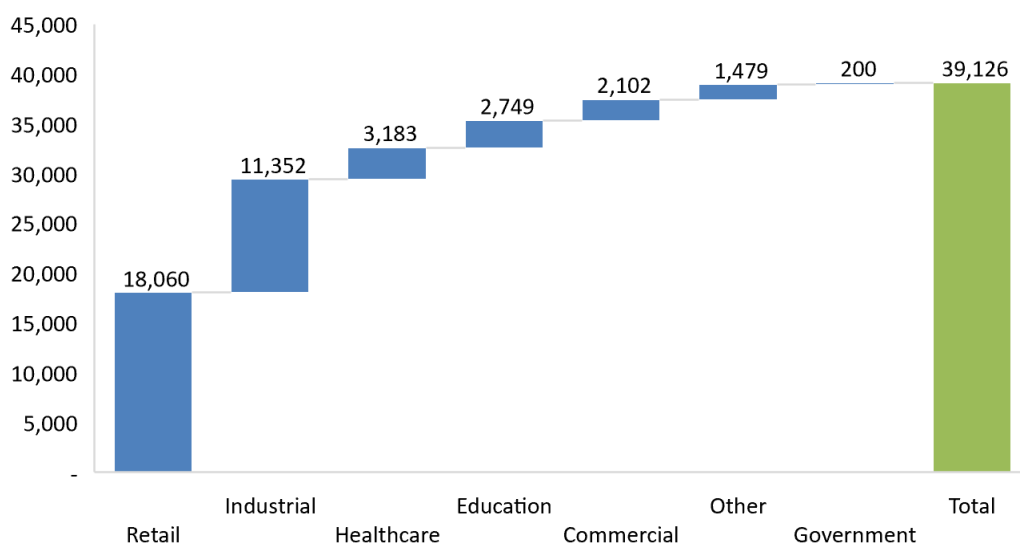
Floorspace and land demand projections

Because of the strength of tourism in the local economy, retail is the largest source of demand for floorspace in our projections. Industrial employment growth is modest, but due to the space intensive nature of these activities, the demand for land is considerably higher.



FIGURE 129: TOURISM LEADS THE WAY IN FLOORSPACE DEMAND

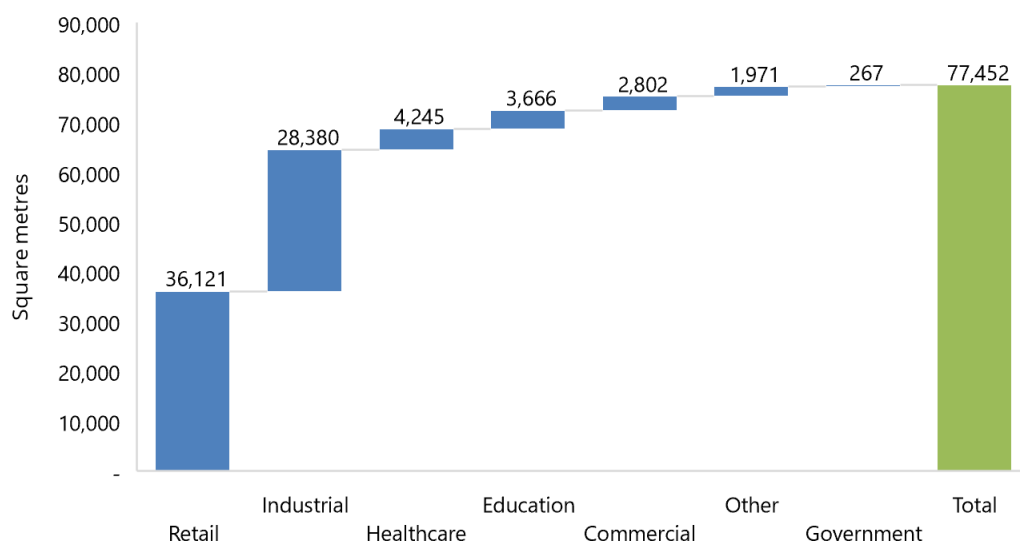
Floorspace projections by sector, 2022-2052, South Wairarapa



Source: Sense Partners

FIGURE 130: THIS FLOWS ON INTO LAND DEMAND

Land demand projections by sector, 2022-2052, South Wairarapa



Source: Sense Partners

We estimate the impact of higher and lower population growth

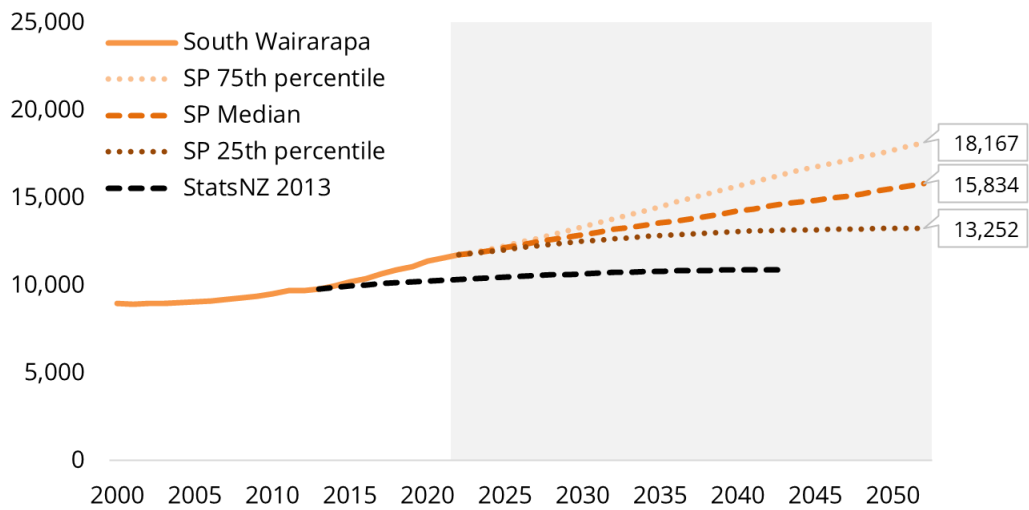
The previous business land demand forecast, completed in 2017, used population projections from the Statistics New Zealand 2013 census. These projections underestimated population growth by a significant amount. This is largely due to the unpredictable nature of overseas migration, a surge of which occurred around 2014.



To help understand the impact of variations in population growth, we estimate the impact of two alternate growth scenarios. We use a 75th percentile scenario and a 25th percentile scenario derived from the same demographic model used to estimate the base projection.

FIGURE 131: PREVIOUS PROJECTIONS UNDERESTIMATED GROWTH IN SOUTH WAIRARAPA

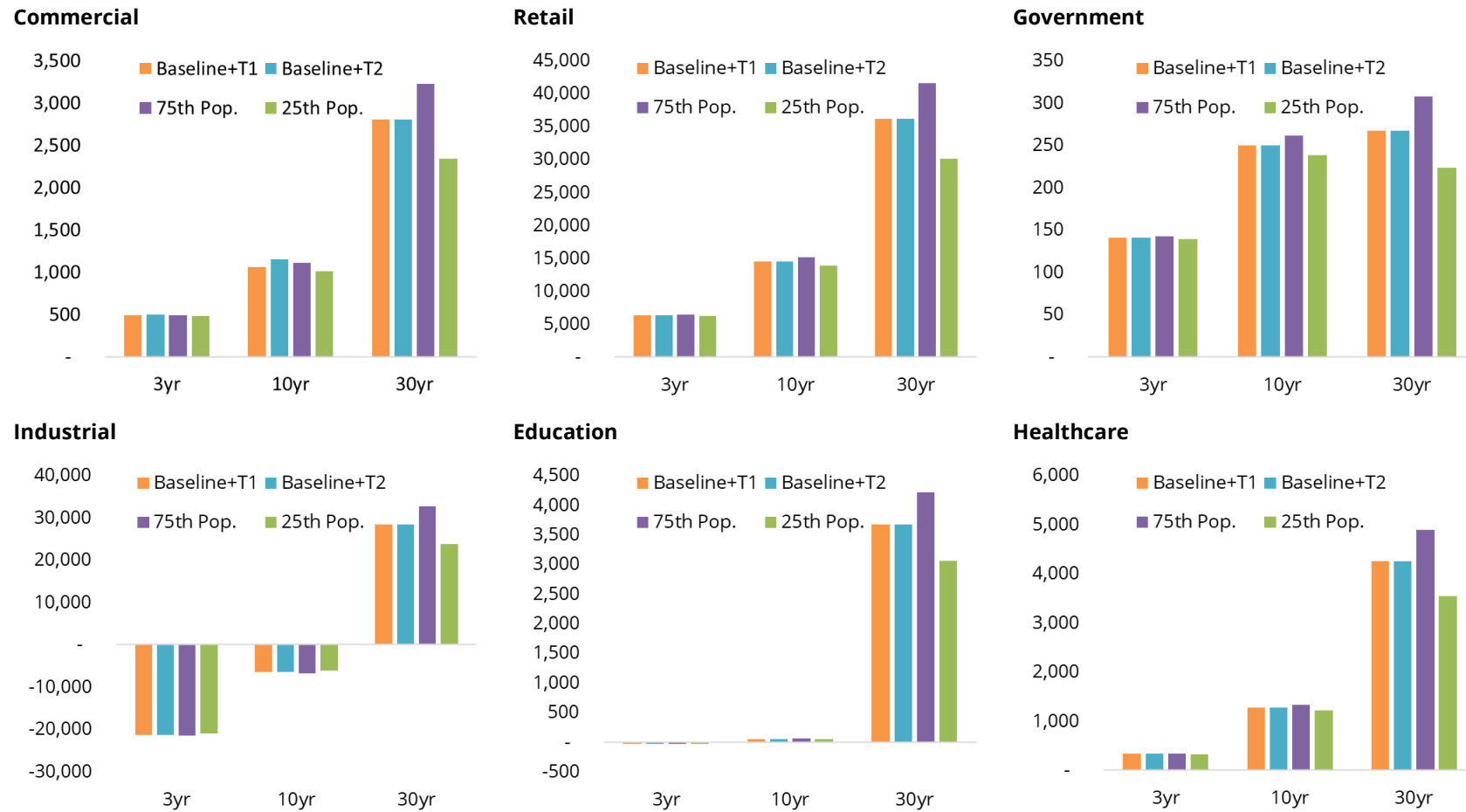
Median, 75th, and 25th percentile population projections, South Wairarapa



Source: Sense Partners



FIGURE 132: INDUSTRIAL SECTOR DEMAND IS BEING ABSORBED BY CARTERTON OVER THE NEAR TERM
Land demand projections, by sector, periods from 2022, South Wairarapa



Source: Sense Partners

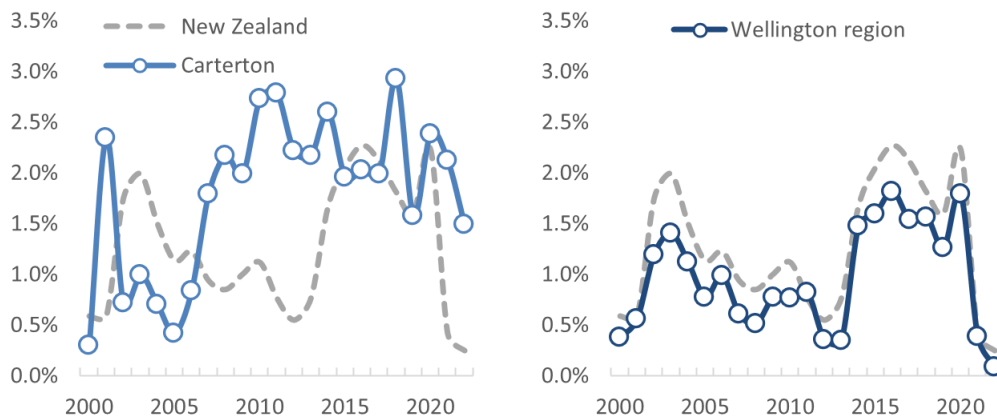


Appendix 8: Results for Carterton District

Carterton is a hub of industry for the Wairarapa

Carterton has enjoyed robust population growth over the past 15 years, typically exceeding national and regionwide averages. Growth has remained resilient in the face of the pandemic, reflecting the enduring attraction of the area’s rural lifestyle. Growth is dominated by later career and retirement cohorts (55 years plus).

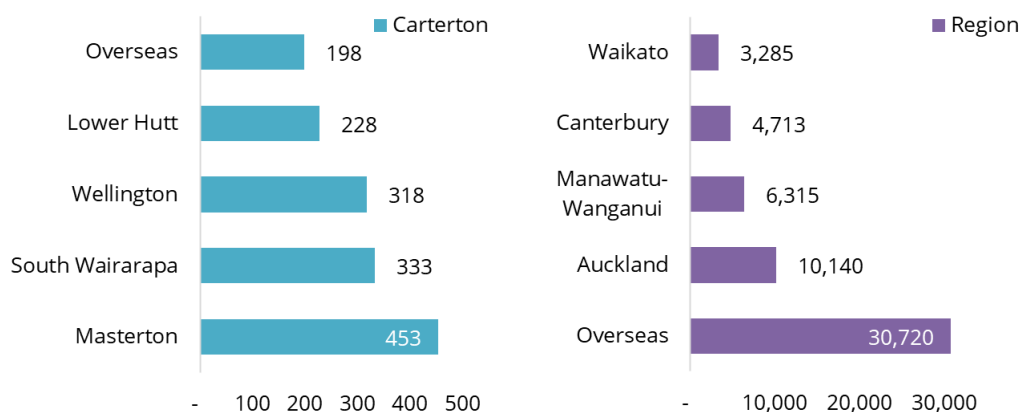
FIGURE 133: CARTERTON'S POPULATION GROWTH IS STRONG AND RESILIENT
Population growth compared to NZ wide trend.



Source: Statistics New Zealand

The largest sources of migrants are immediate neighbours, Masterton and South Wairarapa. This reflects a degree of movement within the Wairarapa. It is possible that this is due to displacement caused by migrants from Wellington bidding up prices in South Wairarapa. Just as likely, this reflects people seeking out more affordable land or following slight variations in local climate.

FIGURE 134: THERE IS A DEGREE OF MOVEMENT AROUND THE WAIRARAPA
Place of usual residence 5 years ago, 2018 census. Top 5 outside locality.

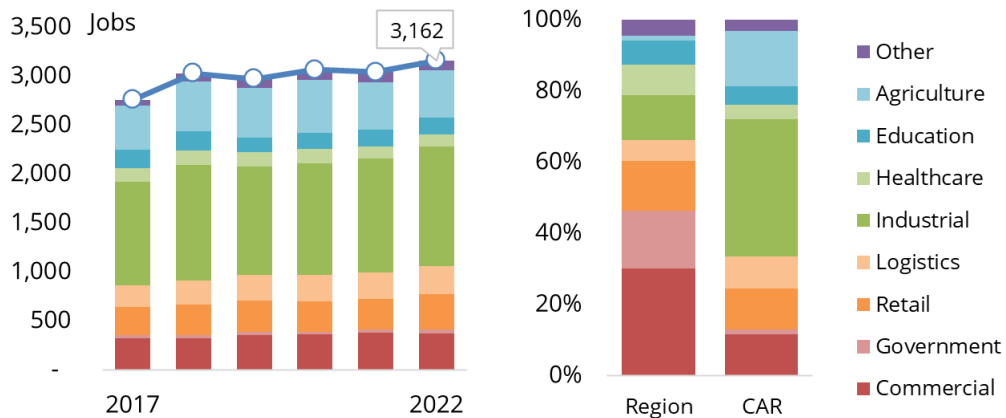


Source: Statistics New Zealand



The dominance of retirement age households in population growth means that there has not been quite as strong employment growth. The local economy is dominated by the industrial sector. This includes food processing industries, which build off the local agricultural economy. However, Carterton is a hub of industrial activity for the entire Wairarapa. As a result of this concentration, the share of industry in the district's employment is far higher than the region average.

FIGURE 135: CARTERTON IS A HUB OF INDUSTRY FOR THE WAIRARAPA
Filled jobs by sector 2017-2022 (left), and sector share comparison 2022 (right)

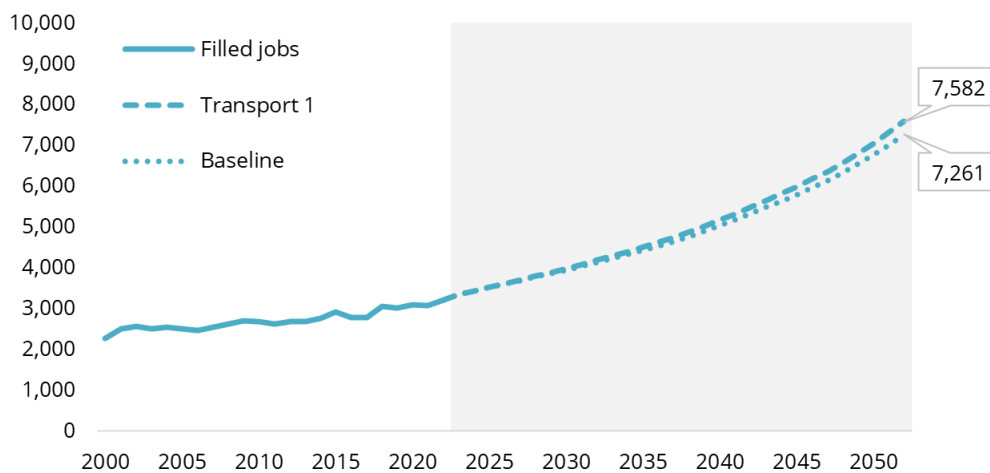


Source: Statistics New Zealand

Transport improvements will have modest impacts

Transport improvements assessed will have a positive impact on economic activity in Carterton, and indeed the Wairarapa as a whole. However, the Rimutaka ranges remain a considerable barrier to accessing the wider Wellington Region. Rail network investment, while delivering significant travel time reductions between Wellington and the Wairarapa, is still hobbled by low frequency.

FIGURE 136: RAIL INVESTMENT WILL DRIVE SOME MODEST ECONOMIC ACTIVITY
Impact of transport improvements on employment activity, Carterton



Source: Sense Partners

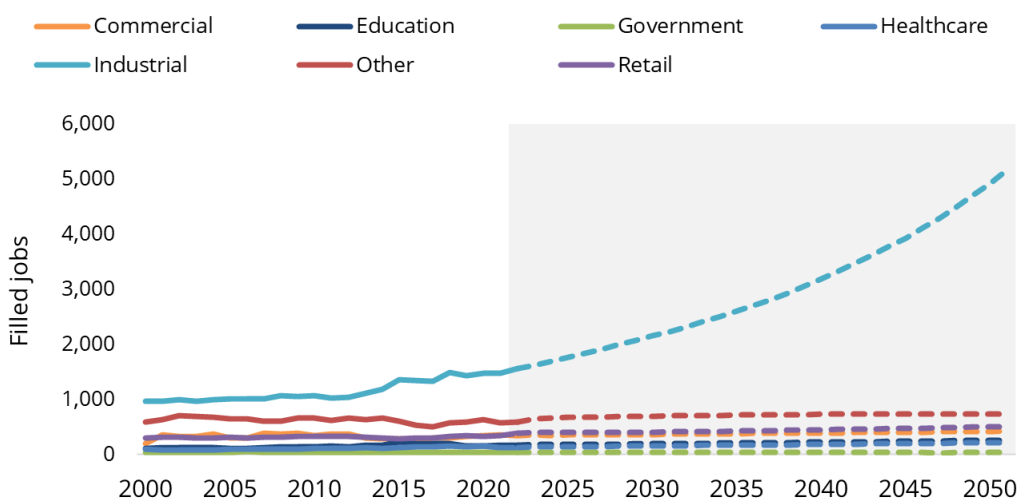


The benefit to Wairarapa arising from the Let's Get Wellington Moving project (Transport 2) is entirely due to a small secondary economic boost across the region.

Industrial sector employment growth is concentrating in Carterton

Our employment projections for Carterton are shown in Figure 137 below. These include our baseline projections and an adjustment for the impact of key transport projects. The transport projects considered in this projection are the Northern Corridor, Riverlink, and Rail Network Investment. Let's Get Wellington Moving has been assessed separately, though as Figure 136 above shows, the impact is small.

FIGURE 137: INDUSTRY IS GOING FROM STRENGTH TO STRENGTH
Employment projections by sector, Carterton



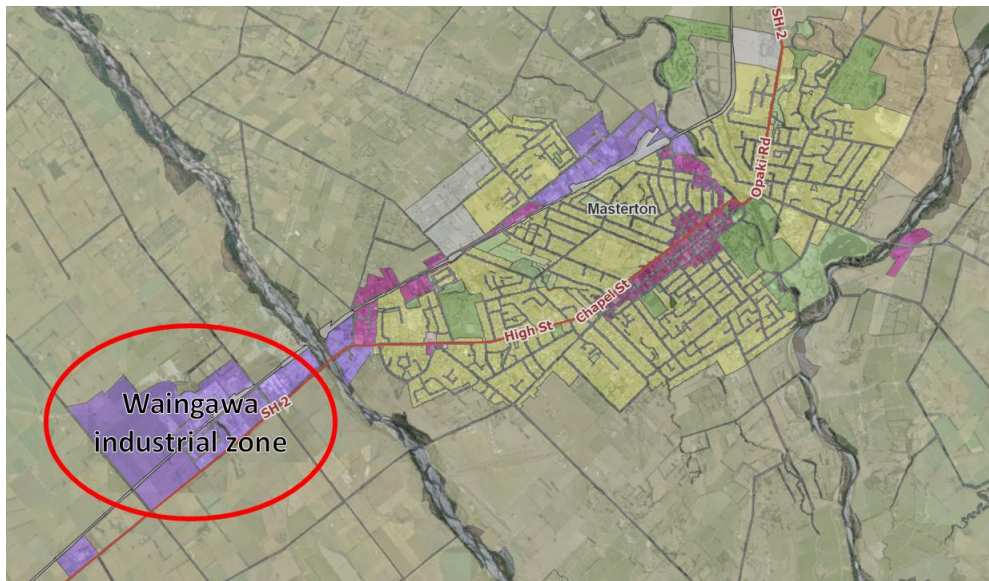
Source: Sense Partners

The strongest growth is in the industrial sector. Normally, we would expect a lift in industrial jobs to trigger growth in other sectors. New jobs typically attract new residents, who need access to retail, healthcare, and education, among other things. Commercial sector jobs, such as lawyers or accountants, service industrial businesses as well as local residents.

This conventional relationship does not hold in Carterton. The reason is that the bulk of the district's industrial land is in Waingawa, which is adjacent to the Masterton urban area. This means that much of the flow on growth is likely to be felt strongest in Masterton, rather than Carterton.



FIGURE 138: WAINGAWA INDUSTRIAL ZONE IS ADJACENT TO MASTERTON
Spatial plan of Masterton and Waingawa industrial zone

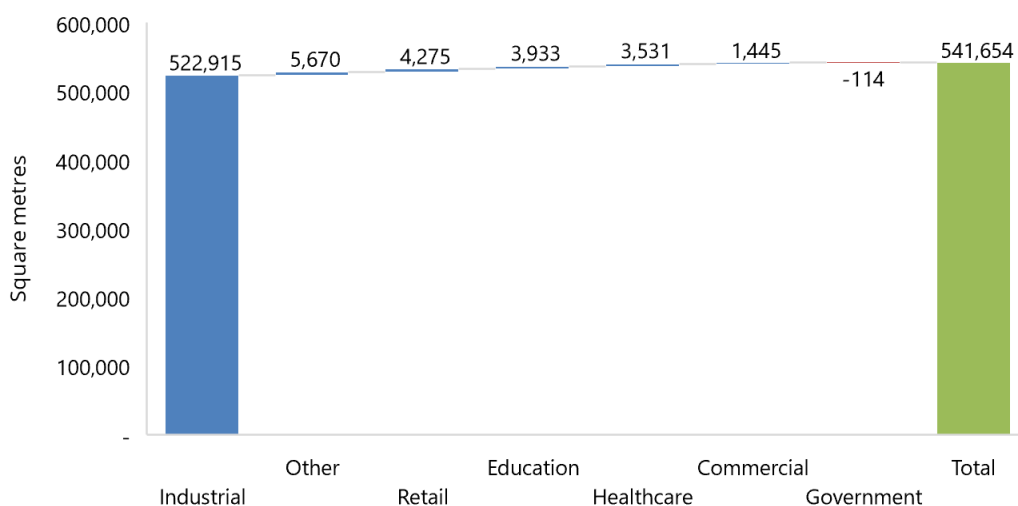


Source: Draft Wairarapa Combined District Plan

Floorspace and land demand projections

The high level of industrial growth in Carterton is the result of absorbing industrial demand from across the Wairarapa, particularly Masterton. Because of the spatial location of industrial land, flow on growth in other sectors, like retail, is likely to occur in Masterton.

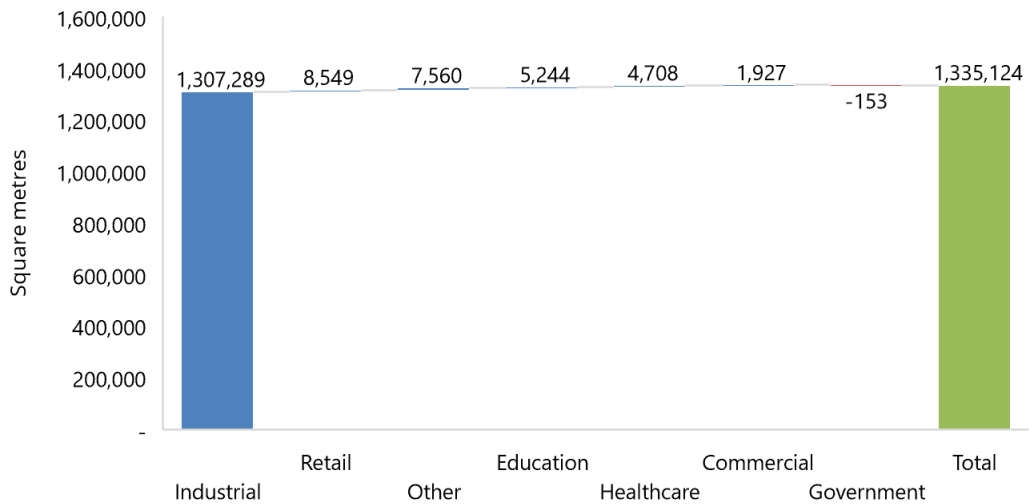
FIGURE 139: CARTERTON SOAKS UP WAIRARAPA'S INDUSTRIAL DEMAND
Floorspace projections by sector, 2022-2052, Carterton



Source: Sense Partners



FIGURE 140: INDUSTRY IS A LAND INTENSIVE ACTIVITY
Land demand projections by sector, 2022-2052, Carterton



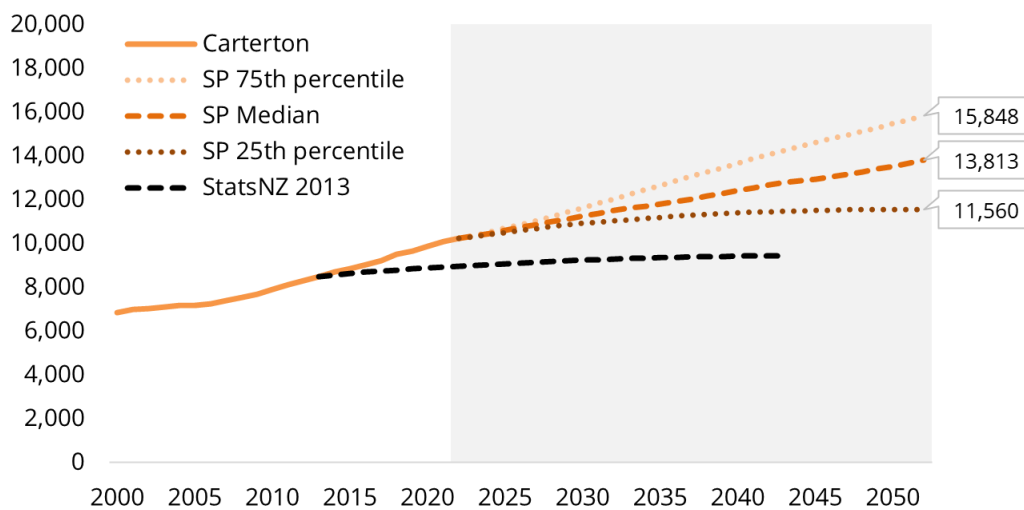
Source: Sense Partners

We estimate the impact of higher and lower population growth

The previous business land demand forecast, completed in 2017, used population projections from the Statistics New Zealand 2013 census. These projections underestimated population growth by a significant amount. This is largely due to the unpredictable nature of overseas migration, a surge of which occurred around 2014.

To help understand the impact of variations in population growth, we estimate the impact of two alternate growth scenarios. We use a 75th percentile scenario and a 25th percentile scenario derived from the same demographic model used to estimate the base projection.

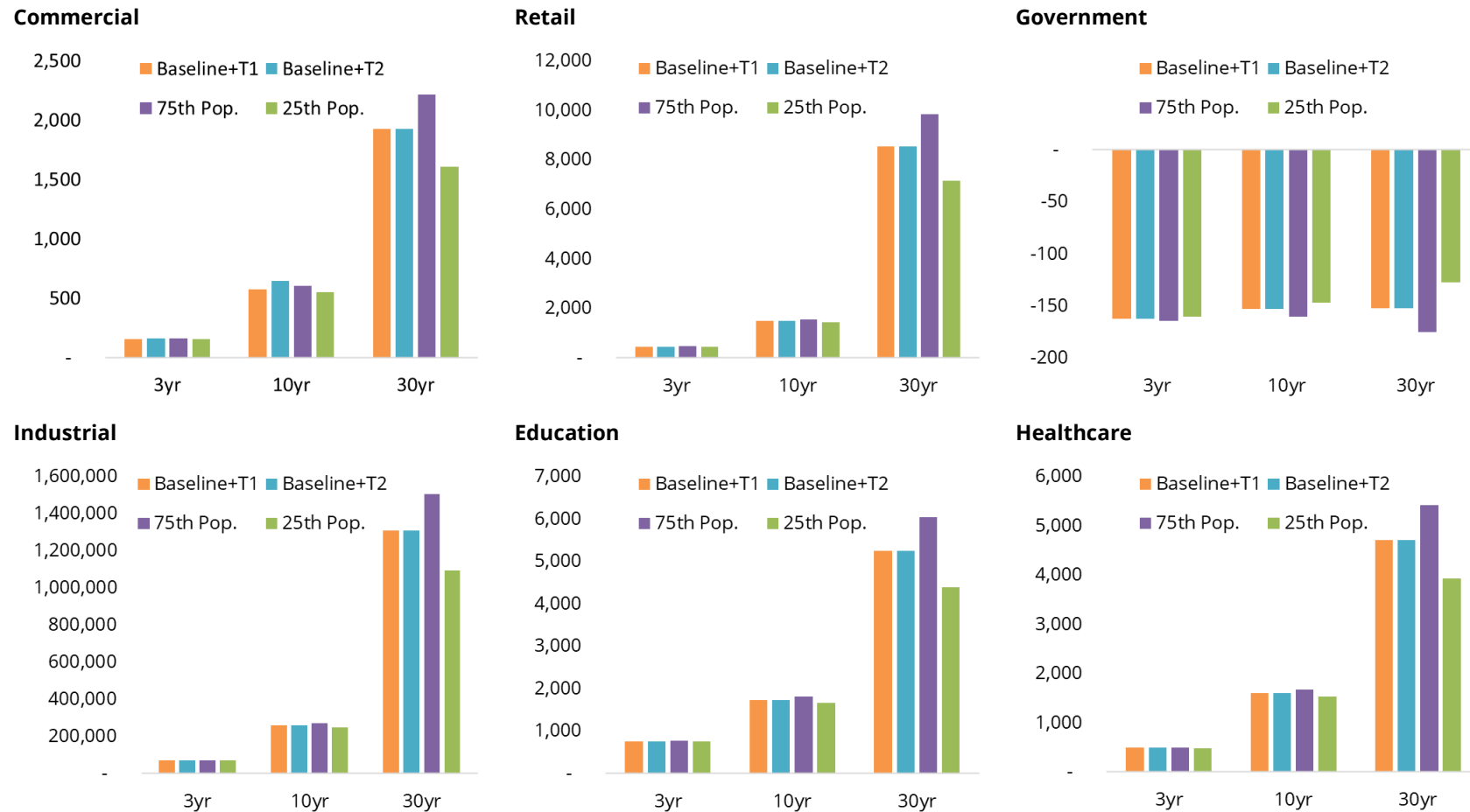
FIGURE 141: PREVIOUS PROJECTIONS UNDERESTIMATED GROWTH IN CARTERTON
Median, 75th, and 25th percentile population projections, Carterton



Source: Sense Partners



FIGURE 142: THE INDUSTRIAL SECTOR WILL DEMAND A MUCH LARGER PARCEL OF LAND IN FUTURE
Land demand projections, by sector, periods from 2022, Carterton



Source: Sense Partners

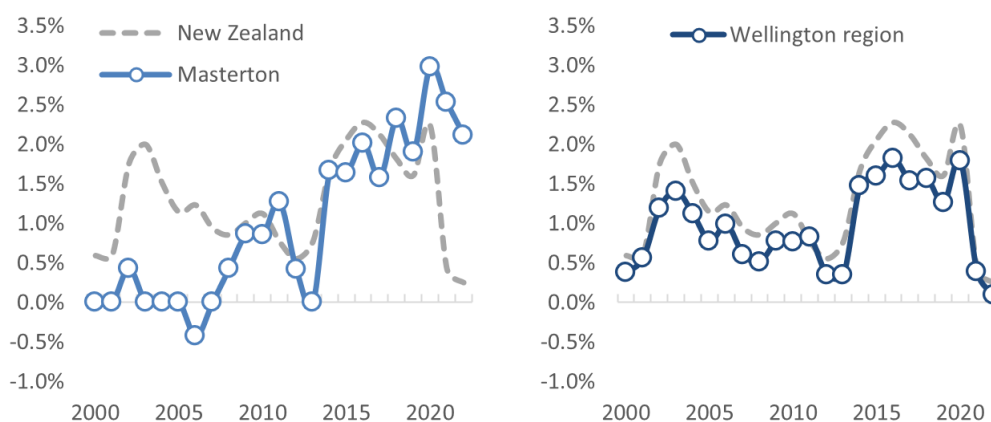


Appendix 9: Results for Masterton District

Masterton is the fastest growing district in the Wellington region

Since around 2009, Masterton’s previously sluggish growth has picked up to mirror the nationwide average. In more recent years, Masterton has ranked as the fastest growing district in the region, followed closely by Horowhenua. While the COVID pandemic has dented growth, it remains far above region and national rates. This reflects the enduring popularity of the district as a retirement zone, and the growing number of retirement age people across New Zealand.

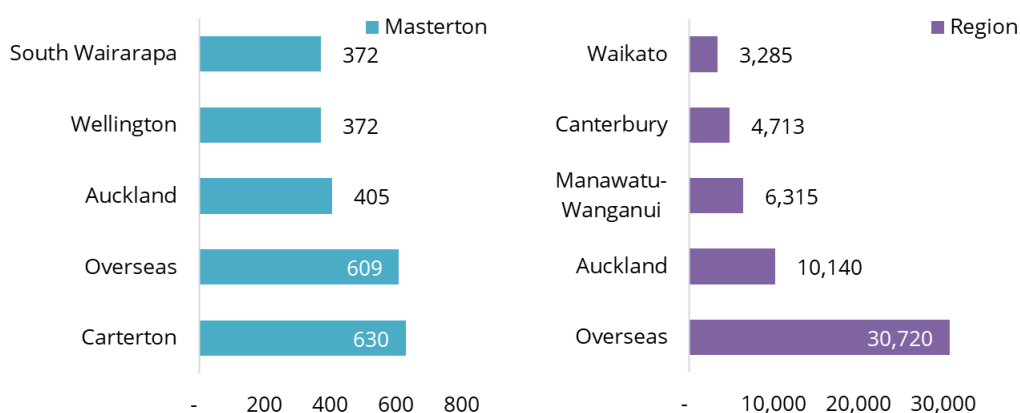
FIGURE 143: MASTERTON IS THE FASTEST GROWING DISTRICT IN THE REGION
Population growth compared to NZ wide trend.



Source: Statistics New Zealand

Masterton is absorbing new migrants from within other parts of Wairarapa as well as further abroad. An interesting feature is the prominent role of overseas migrants, very nearly the largest group. This reflects the popularity of the area’s balance between rural lifestyle and urban amenities in the township.

FIGURE 144: MASTERTON IS ATTRACTING OVERSEAS MIGRANTS
Place of usual residence 5 years ago, 2018 census. Top 5 outside locality.

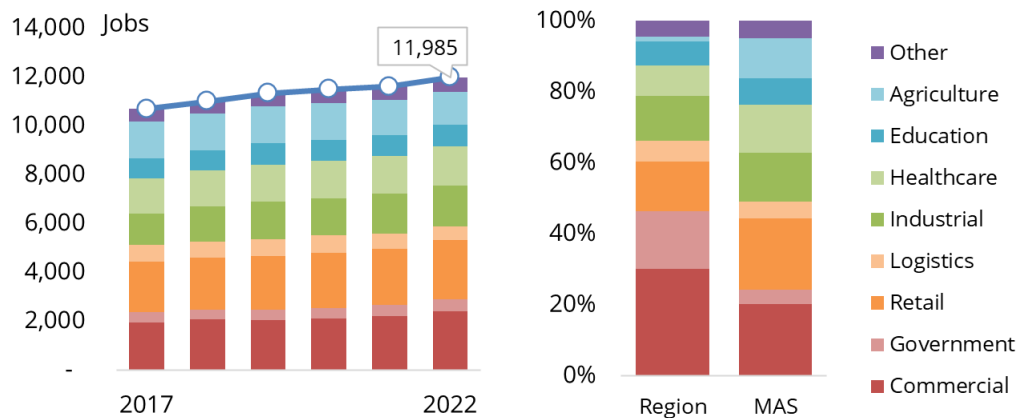


Source: Statistics New Zealand



Masterton acts as a services town for the Wairarapa. This is reflected in the higher share of commercial jobs compared to Carterton and South Wairarapa. The relative proximity between the three districts, and the easy-going travel between them, means that Masterton is readily able to serve the whole Wairarapa.

FIGURE 145: MASTERTON IS A SERVICES TOWN FOR THE WAIRARAPA
Filled jobs by sector 2017-2022 (left), and sector share comparison 2022 (right)



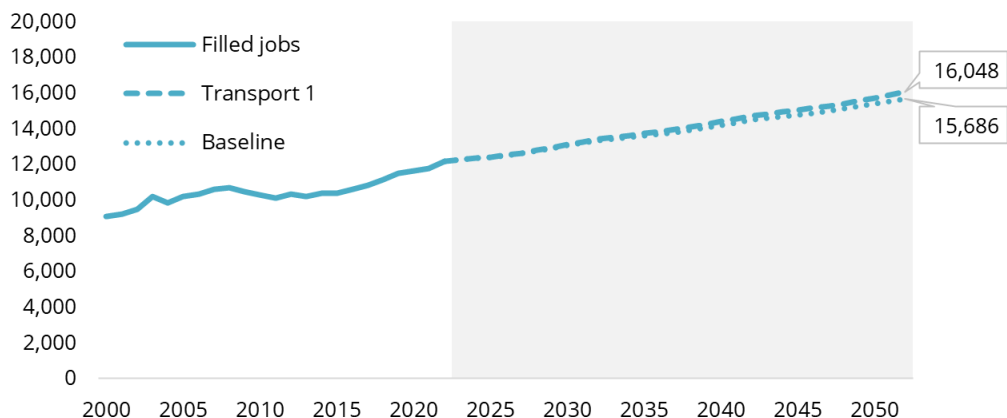
Source: Statistics New Zealand

Transport improvements will have small impacts

Transport improvements assessed will have a positive impact on economic activity in Masterton, and indeed the Wairarapa as a whole. However, the Rimutaka ranges remain a considerable barrier to accessing the wider Wellington Region. Rail network investment, while delivering significant travel time reductions between Wellington and the Wairarapa, is still hobbled by low frequency.

As a result, the benefit from planned projects is likely to be limited. The benefit to Wairarapa arising from the Let's Get Wellington Moving project (Transport 2) is entirely due to a small secondary economic boost across the region.

FIGURE 146: IMPACTS OF PLANNED TRANSPORT IMPROVEMENTS ARE LOW
Impact of transport improvements on employment activity, Masterton



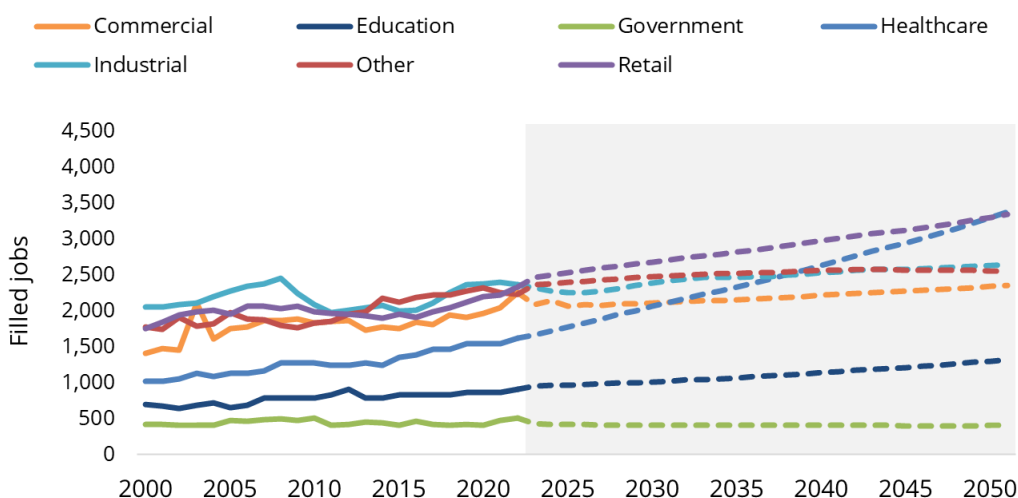
Source: Sense Partners



Masterton and Carterton become ever more tightly linked

Our employment projections for Masterton are shown in Figure 147 below. These include our baseline projections and an adjustment for the impact of key transport projects. The transport projects considered in this projection are the Northern Corridor, Riverlink, and Rail Network Investment. Let's Get Wellington Moving has been assessed separately, though as Figure 146 above shows, the impact is small.

FIGURE 147: EMPLOYMENT IS GROWING ACROSS A WIDE RANGE OF SECTORS
Employment projections by sector, Masterton



Source: Sense Partners

Employment growth is strongest in sectors that service a growing population. This includes retail and healthcare. Education growth is slower because the past character of population growth has been toward older cohorts, particularly retirees. If there were to be a major change in transport links into the wider region in future, then we may begin to see more commuter families move into the area. This is similar to what is being seen in Kāpiti with the opening of Transmission Gully.

Industrial employment is being soaked up by Carterton. This is an artefact of district boundaries, as the Waingawa industrial area in Carterton district is right on Masterton's doorstep. This has triggered a fall in industrial employment in our projections. However, much of the flow on economic effect of Carterton's industry will be felt in Masterton. This includes population growth and a boost to retail and commercial services.

Floorspace and land demand projections

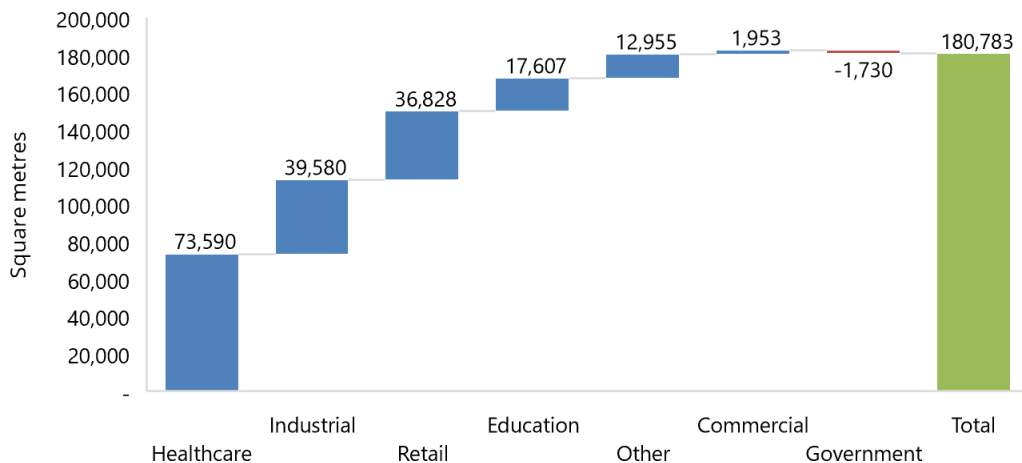
Demand for floorspace will be dominated by population related sectors, such as healthcare, retail, and education. There is an increase in industrial demand, however this is primarily longer term (30yrs). Figure 151 shows demand by sector split out into 3-, 10-, and 30-years periods. In the short term, we expect a fall in demand.

This is the result of industrial land in Waingawa, formally in Carterton district but adjacent to the Masterton urban area. This industrial land is able to soak up demand across the district in



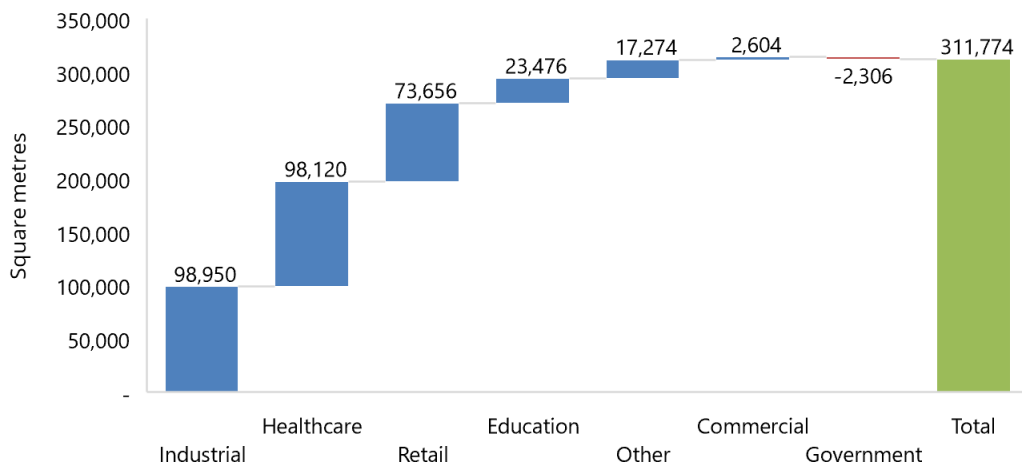
the near term. In the longer term, we expect demand will arise. However, land in Waingawa is essentially a perfect substitute for land in Masterton. Even in the long term, Masterton's industrial demand could be accommodated in Waingawa with few, if any, negative consequences to economic activity.

FIGURE 148: DEMAND FOR FLOORSPACE IS HIGHEST IN HEALTHCARE
Floorspace projections by sector, 2022-2052, Masterton



Source: Sense Partners

FIGURE 149: THERE IS LONG TERM INDUSTRIAL DEMAND FOR LAND
Land demand projections by sector, 2022-2052, Masterton



Source: Sense Partners

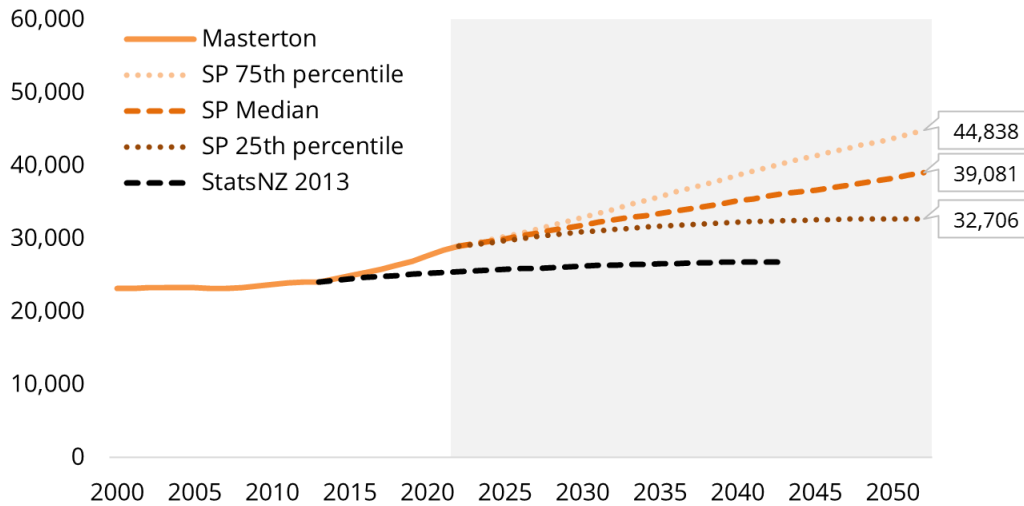
We estimate the impact of higher and lower population growth

The previous business land demand forecast, completed in 2017, used population projections from the Statistics New Zealand 2013 census. These projections underestimated population growth by a significant amount. This is largely due to the unpredictable nature of overseas migration, a surge of which occurred around 2014.



To help understand the impact of variations in population growth, we estimate the impact of two alternate growth scenarios. We use a 75th percentile scenario and a 25th percentile scenario derived from the same demographic model used to estimate the base projection.

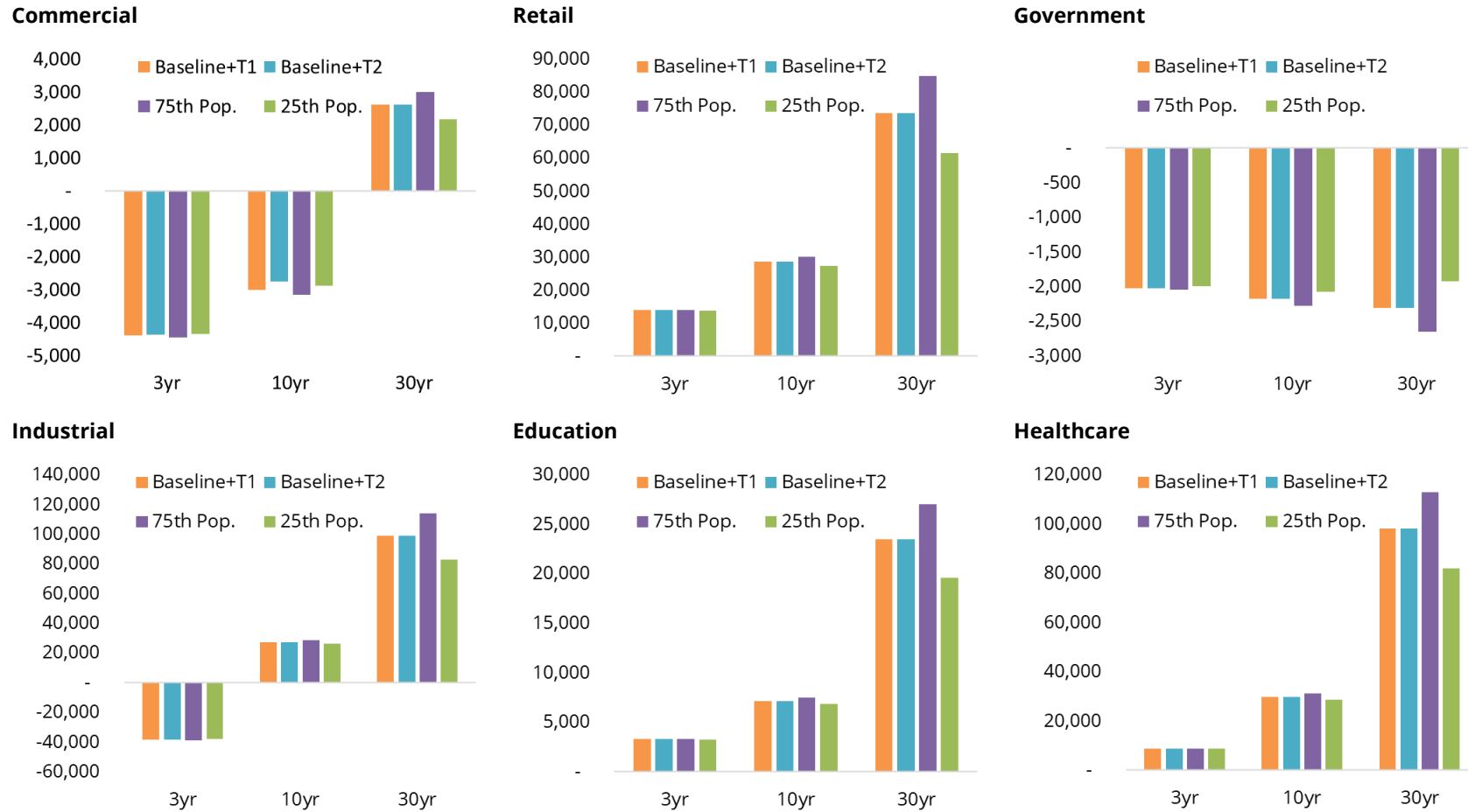
FIGURE 150: PREVIOUS PROJECTIONS UNDERESTIMATED GROWTH IN MASTERTON
Median, 75th, and 25th percentile population projections, Masterton



Source: Sense Partners



FIGURE 151: SOME SECTORS MAY SEE SHORT TERM DECLINES IN DEMAND
Land demand projections, by sector, periods from 2022, Masterton



Source: Sense Partners

2022

