

# Demand for business land in the Nelson and Tasman shared urban environment

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From today's economy to  
future needs

June 2020



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# Key points

## The Nelson-Tasman shared urban area is set to grow

### Nelson-Tasman shared area continues to grow creating demand for business land to 2050

- The Nelson and Tasman urban environment is closely integrated. Commuting flows define the region as a single labour market that jointly determines growth for each local council.
- Expect this shared urban environment to continue to grow at medium growth rates, contingent on population drivers and the underlying export-orientated economy.
- Recent growth has been rapid – the region’s population grew 9.7 percent in the last five years. Our analysis expects the shared urban environment to now require about 40.6 hectares of additional business land to enable future growth.

### The economy is changing slowly from industrial activity to commercial enterprises

- Like elsewhere in New Zealand, the economic shape of the Nelson-Tasman shared urban area is changing over time. Expect more commercial and service activities to develop and industrial activity to be increase a little (see Figure 1).

FIGURE 1 DEMAND FOR LAND IS SHIFTING WITHIN THE NELSON-TASMAN URBAN AREA

	Short run 1-3 years	Medium run 4-9 years	Long run 10-30 years	Total 1-30 years
Commercial	3.6 hectares	6.5 hectares	19.7 hectares	29.7 hectares
Industrial	-10.2 hectares	8.0 hectares	13.0 hectares	10.8 hectares
Total	-6.6 hectares	14.5 hectares	32.7 hectares	40.6 hectares

- But the pace of growth is uncertain and timeframe long. Demand could range from 16.7 hectares to 69.8 hectares – an 80 percent confidence interval – by 2050.
- Both councils have a role to play in best accommodating growth within the shared urban environment.
- Planning is crucial – for example we show an alternative for accommodating commercial growth by intensifying and show that applying the buffer recommended in the NPS-UD to demand suggests accommodating 49.1 hectares of demand (see Appendix 3).

### Population growth will continue to drive economic growth in the region

- Our estimates for demand for business land assume population growth reflected in the Long-Term Plans of Nelson and Tasman councils.
- There is considerable uncertainty around population growth, not just for Nelson and Tasman but for New Zealand’s regions in general.
- The population forecasts have a different profile to Statistics New Zealand’s latest subregional population forecasts but the endpoint by 2050 is very similar.

### Demand for business land reflects the composition of employment growth

- We forecast demand for business land by assessing how many people will be employed in broad sectors of the economy. Then we assess demand for floorspace per worker and translate this to demand for business land.
- Employment growth (see Figure 2) will outpace growth in land demand (see Figure 3). The footprint of the fast-growing commercial sector is smaller than for industrial activity that is flat or falling.



FIGURE 2 EXPECT STEADY EMPLOYMENT GROWTH ACROSS THE SHARED URBAN AREA

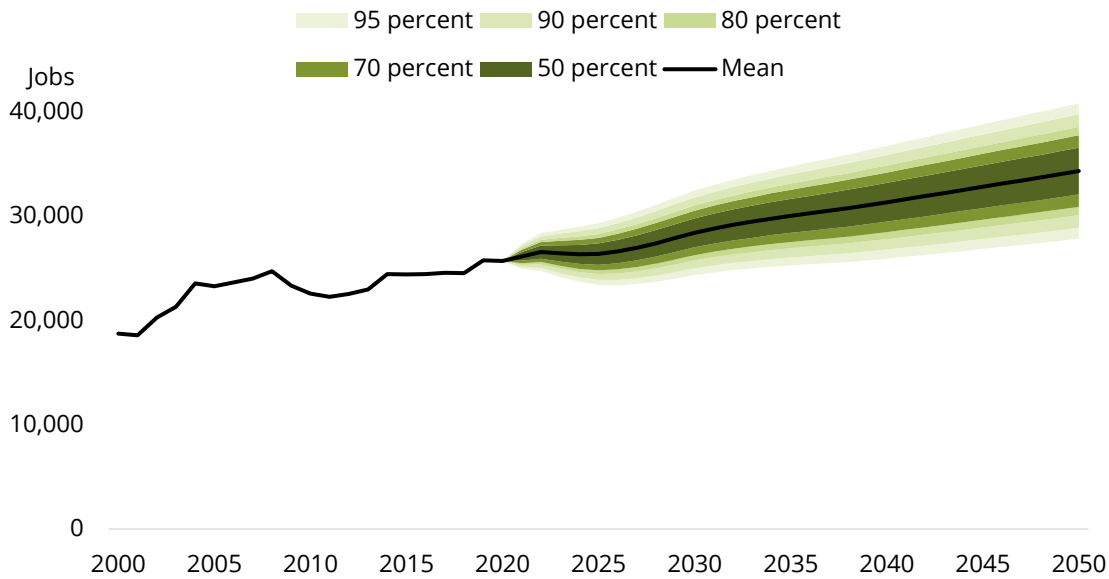
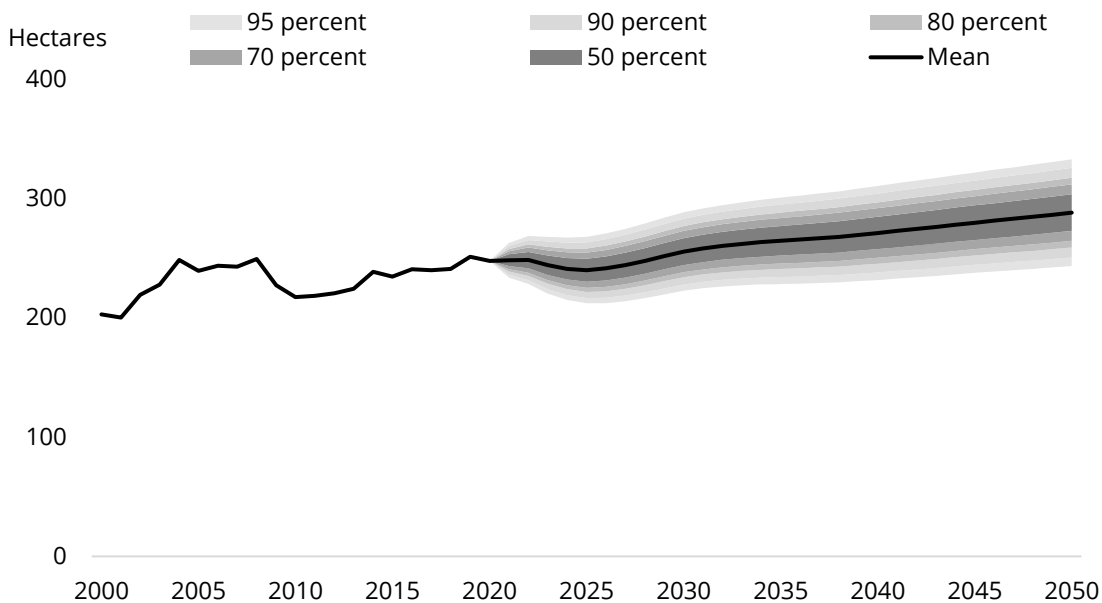


FIGURE 3 THE SHIFT TOWARDS SERVICES MODERATES DEMAND FOR LAND A LITTLE BY 2050



**Our estimates use trends in economic activity to assess likely future demand.**

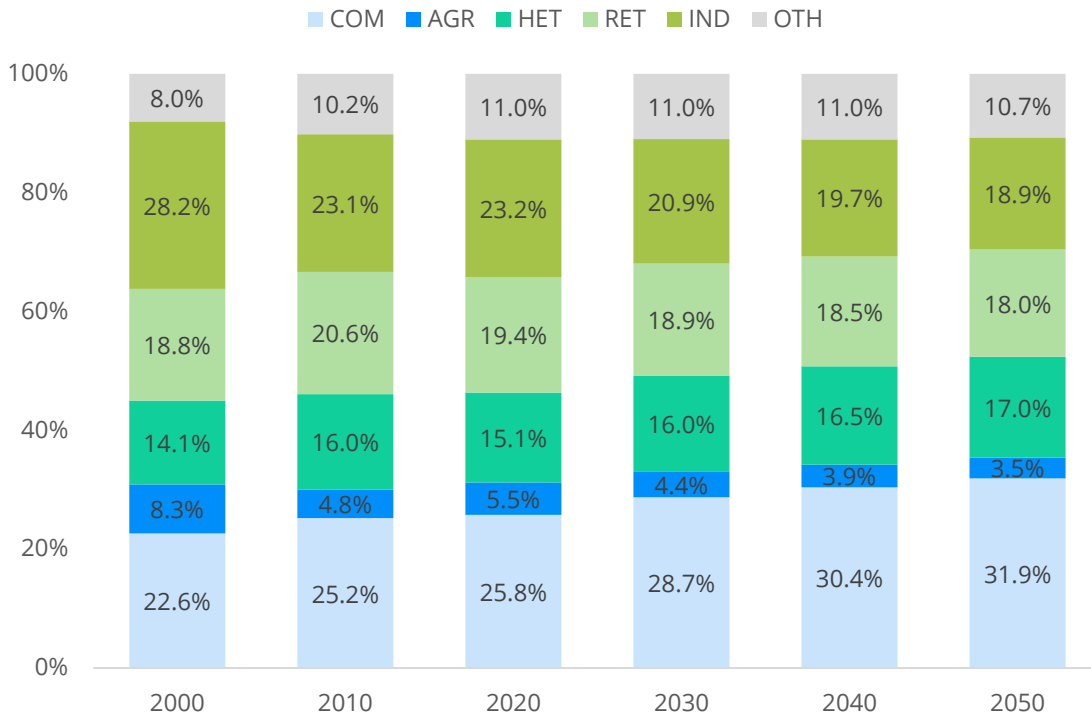
- Our modelling uses trends in the shape of the economy to understand how the economy is likely to evolve over time and to estimate the location of demand across the region.
- But there are many structural changes in the economy – such as the impact of the ageing population, working from home, the impact of an emerging tech sector and other trends in rural and urban land uses – that have uncertain employment impacts.
- When these emerging trends are already impacting on the economy (such as population ageing) our methods indirectly pick-up some of these impacts. Where the data is yet to show impacts (such as working from home) our methods will not pick up these changes. So, we present a range to show some of the uncertainties and discuss some of the main influences of uncertainty in the report.



**Shift towards commercial activity reduces demand for business land**

- Over time, the Nelson-Tasman shared urban environment has been slowly shifting towards commercial and services activity over the past twenty years (see Figure 4).
- We expect this trend to intensify with reductions in industrial activity and demand for business land from agricultural employment also set to decline as a share of the economy.

FIGURE 4 COMMERCIAL AN INCREASING SHARE OF NELSON-TASMAN SHARED URBAN AREA





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## Context

This report helps both Nelson City Council and Tasman District Council assesses demand for business land 3, 10 and 30 years from today, responding to the requirements of the National Policy Statement on Urban Development. The report is intended to enable both councils to plan.

Our assessment focuses on the shared Nelson-Tasman urban environment that comprises Nelson City –the city itself and all suburbs extending to Hira and Cable Bay and the urban areas within Tasman District – Richmond including Hope, Brightwater, Wakefield, Mapua and Motueka. We provide additional separate discussion of (i) Nelson City, (ii) Tasman's urban area and (iii) the remaining areas in the Tasman District – such that the whole of Tasman's business land needs is assessed.



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# 1. Overview

## **Our aims**

The purpose of this report is to quantify demand for business land for Nelson and Tasman local councils to provide the evidence base for planning with and across the region. Both regions are closely integrated, and act as a single economy. Therefore, our analysis uses the joint Nelson-Tasman urban environment as the basis for our analysis.

To quantify business land demand, our approach focuses on firms and the land demands of different sectors of the economy. So that our forecasts are consistent with the population forecasts used in the Long Term Plans for each council, we synch our estimates of economic activity to these underlying population forecasts. Our methods support assessment of business land demand for Housing and Business Assessments as required under the National Policy Statement on Urban Development.

The report begins with a brief outline of the local economy, the key drivers and sectoral composition before assessing the future shape of the economy in section 3. Then we translate future economic activity to demand for business floorspace across the region before translating this floorspace estimate to demand for business land.

## **Structural change and economic uncertainty**

There are many structural changes to the economy that affect the Nelson-Tasman urban-environment and in some cases the New Zealand economy more broadly. Where these trends are already impacting on the economy (the ageing of the labour force for example or the shift away from industrial activity towards services) our method implicitly picks up much of these trends.

But some factors that are impacting on the economy, such as working from home and the rapidly growing technology sector, are not so easily embedded in our analysis. Other known features of the future local economy, such as the Waimea Community Dam, need to be considered so our report picks out the key features and provides a qualitative discussion as well as presenting a range of key forecasts that incorporates these uncertainties about the future shape of the economy.

## **The location of business demand**

Our analysis treats the Nelson-Tasman urban environment as the growth engine – allowing firms to move to locations that best supports their operations. The extent of integration makes a strong case for councils to collaborate to work out how best to enable growth within the shared urban environment.

We also provide discussion of the development of the two areas within the shared urban environment: - Nelson City and Tasman's urban area – before discussing the remaining areas in the Tasman District, such that the whole of Tasman's business land needs is assessed. We provide a breakdown of likely growth – if policy is left unchanged – for each local council and then separate out the rural Tasman area from the urban Tasman area. More granular spatial analysis is contingent on the decisions of individual businesses and the role of planners and councils within local communities.

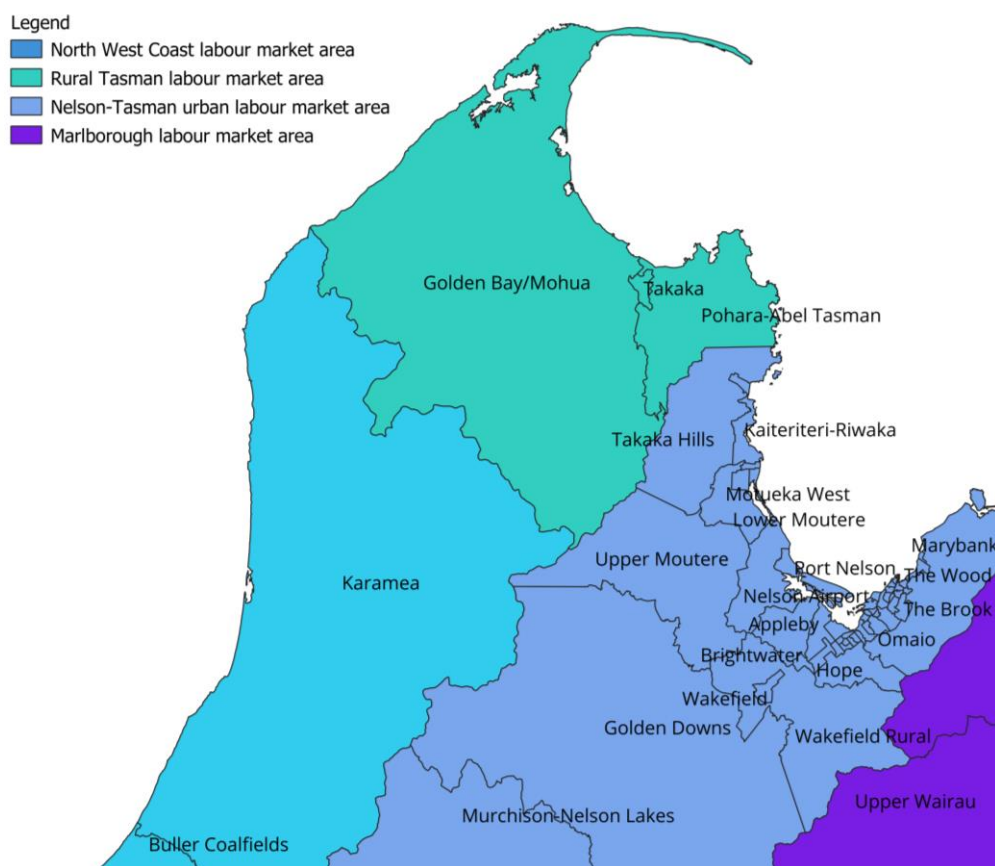


## 2. Nelson-Tasman economy

### 2.1 An integrated economy

Nelson-Tasman is well-integrated. Using origin-destination flows from the 2018 census we confirm the region forms a contiguous labour market area, where firms and workers move across council boundaries relatively easily. Figure 5 shows the outputs from this analysis identified labour market areas based on the commuter data.<sup>1</sup>

FIGURE 5: COMMUTER TRIPS SHOW NELSON-TASMAN IS AN INTEGRATED LABOUR MARKET AREA



Rather than conducting analysis at a local council level, we need to assess employee activity and demand for business land growth across the shared Nelson-Tasman urban environment before digging into the spatial characteristics of where that demand might fall.

So we base our analysis on the shared Nelson-Tasman urban environment that combines the Nelson City – including the city itself and all suburbs extending to Hira and Cable Bay, as well as the urban areas within Tasman District – Richmond including Hope, Brightwater, Wakefield, Mapua and Motueka.

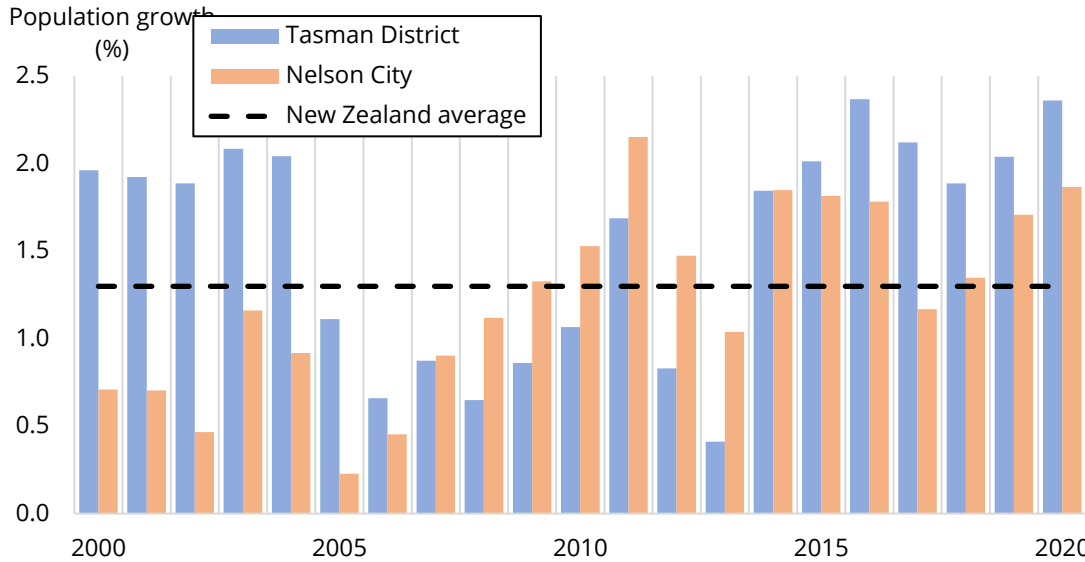
<sup>1</sup> We use the method of Davies and Maré (2020) who use the Louvain algorithm,<sup>1</sup> - that allocates origin-destination travel flows to labour market areas that have common features.



## 2.2 Drivers of growth

Population growth has been critical to recent economic growth in the region (see Figure 6).

FIGURE 6: POPULATION GROWTH OUTPACING LONG-TERM NEW ZEALAND AVERAGE

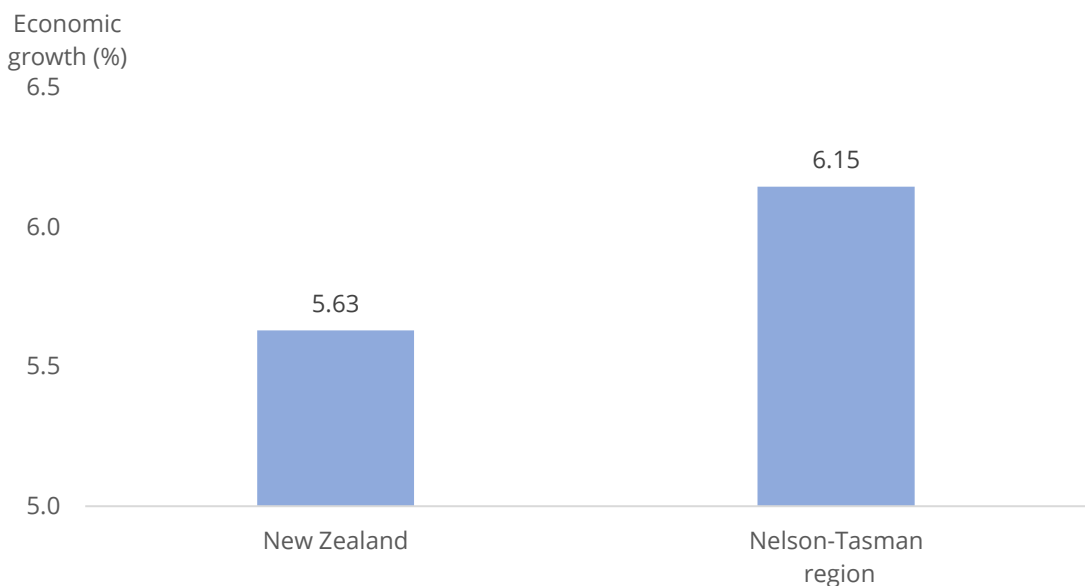


Like elsewhere, COVID and associated public health response has impacted on economic growth. More recent data points to better employment outcomes than expected in the second quarter of 2020. Wage growth is modest with many still seeking a larger number of hours than are on offer from employers.

Supply chains are also fragile and shipping costs are accelerating. The region's reliance on exports could still be affected. The recovery is also uneven. For some exporters and commodities that can reach international markets, returns can prove high although prices for inputs to production are rising.

Nelson-Tasman has posted strong growth. Over the five years to March 2020, the region outstripped growth in the national economy (see Figure 7).

FIGURE 7: NELSON-TASMAN REGION GROWING FASTER THAN NATIONAL AVERAGE





## 2.3 Sectoral composition

Particularly for the urban environment of Tasman, construction activity has added to the traditional agricultural base that includes forestry, horticulture exports, wine, and food manufacturing. Hop-growing and honey have further expanded the mix of high value goods for export and domestic consumption. For most New Zealand regions manufacturing activity has been declining, but the urban environment of Tasman has added over 450 manufacturing jobs over the 20 years between 2000 and 2020.

Much of this activity has been in dairy and food manufacturing rather than hard manufacturing. To support population growth in the Tasman urban environment, construction employment has been strong over the past five years. Heavy and civil engineering has also supported employment growth.

For Nelson City, the port and fishing activity continue to provide over 1,300 employment opportunities and a boost to local incomes. Manufacturing and food manufacturing has declined despite many new business start-ups developing in recent years.

Nelson continues to grow its services sector with commercial activity up 8 percent over the past four years. Local administration in the region has doubled over the past twenty years and health care and social assistance have grown modestly.

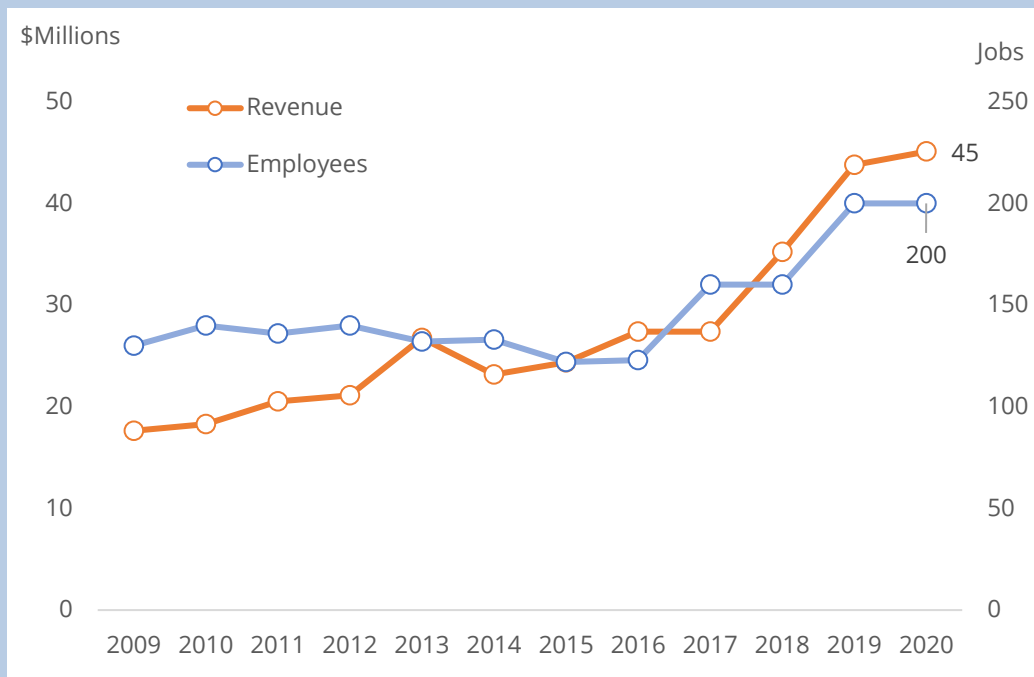
In recent years, the research and tech sector has further diversified Nelson City's economic profile. Demand for education and scientific research services is strong (see Box A). In 2015, NZIER estimated the ICT sector alone provided \$123 million to the Nelson economy.



## Box A: A closer look at the tech research sector

One of the big success stories of the region has been the growth of the Cawthron Institute, that provides research science services for primary industries and aquaculture. The Institute has a long history and in recent years has brought many jobs to the region (see Figure 8). The Institute is a large employer and now has about 200 staff.

FIGURE 8: CAWTHRON INSTITUTE BRINGING REVENUE AND JOBS TO THE ECONOMY



When a region can bring highly-skilled and specialised staff, two things happen. First, the number of workers and average wages of those workers increase. These workers demand local goods and services that support additional employment in the region. Second, knowledge spillovers can occur, increasing the productivity of other workers in the region.

With the Cawthron Institute, both effects are true. Additional workers are increasing demand for goods and services (including housing). Even in 2015, NZIER estimated the impact of the Institute brought \$14 million in value to the local economy and created 91 additional jobs through supporting jobs.

Moreover, the Institute appears to be creating additional benefits in terms of spillovers. Institute staff have helped establish the development of two local high-tech companies and learning and training programmes at the Nelson Marlborough Institute of Technology.

But tech success in the region extends beyond the Cawthron Institute. In 2019, there were 1,119 high tech jobs in the Nelson-Tasman region. These are fast-growing firms that bring incomes and jobs to the region. In 2019 the sector grew revenues by 10.2 percent, and 271 new jobs were created in the region. Expect the sector to continue to drive growth in coming years. These high-tech jobs typically have lower demand for floorspace than other industrial and manufacturing jobs.



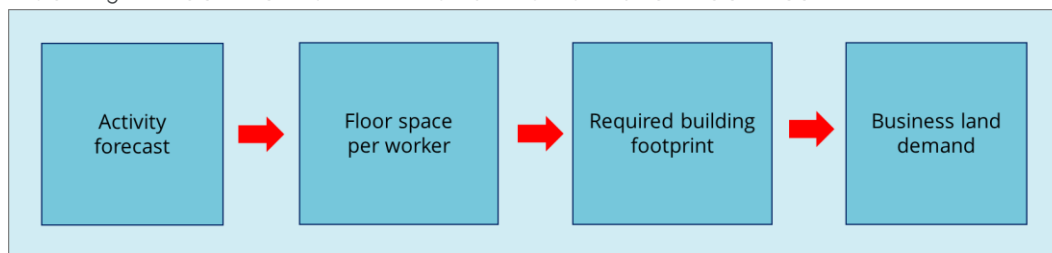
# 3. The future economy

## 3.1 Our modelling approach

To understand future demand for business land in the Nelson-Tasman urban environment, we build a picture from the supply-side of the economy. We start by projecting economic activity across the region. Rather than work with aggregate economic activity like GDP, we prefer to use employee demand as the base unit that generates demand for business land.

With estimates of the future employee demand in hand, we then generate demand for floorspace based on benchmarks for floorspace needs by each sector of the economy. Finally, we turn demand for floorspace into demand for business land by thinking about the likely shape of how floorspace translates into land demand for different sectors of the economy. Figure 9 shows the staged method we adopt to forecast business land demand.

FIGURE 9: WE USE A STAGED APPROACH TO FORECAST BUSINESS LAND DEMAND



Our forecasts should be interpreted as potentials for economic activity. There are several structural changes that the forecasts do not directly consider. These include:

- Direct changes to the structure of the economy that are partially captured in our model such as the impacts of longer commute times and other productivity shifts across the shared urban environment.
- Indirect changes in economic structure that have already occurred and are implicitly incorporated in our model, such as population ageing.
- Future structural changes that are yet to impact on the forecasts, for example, the Waimea Community Dam.

So rather than produce forecasts with just a single number, we display confidence intervals or ranges for economic activity, floorspace and demand for business land and examine future structural changes qualitatively (see box C for example).



## 3.2 Population growth matters

### Underlying population projections

Our business land forecasts should align with the population projections used by Nelson and Tasman in their Long Term Plans to ensure a consistent basis across planning decisions.

We show Nelson's population forecasts against Statistics New Zealand's subnational forecasts in Figure 10 and Tasman's population forecast against Statistics New Zealand's subnational forecasts in Figure 11. Towards the end of the projection in 2050, both sets of LTP forecasts are close to Statistics New Zealand's 'High' projection, albeit with stronger growth anticipated in the Tasman District relative to Statistics New Zealand's forecasts. These LTP projections will be used to underpin the business land demand forecasts.

Statistics New Zealand's medium-term population projections have tended to under-predict the national population in recent years. Among other factors, Statistics New Zealand's population projections miss a structural trend in inward migration that suggests Statistics New Zealand will continue to under-predict the population. So, it makes sense to adopt a population track close to the 'High' projection rather than the 'Medium' projection.

It is worth noting the LTP forecast for Nelson includes an extended period where population growth is low because of the impact of COVID-19. The impacts of COVID-19 are yet to play out. New Zealand's low prevalence of COVID-19 could spur migration to New Zealand with flow on impacts to the Nelson-Tasman region, however, opening of the borders could also result in additional migration out of the region.

But New Zealand's fiscal position has been hit by the need to provide support to firms and households. Policies choices to shore up the balance sheet might make New Zealand less attractive than elsewhere, easing population growth in New Zealand's regions.

FIGURE 10 NELSON'S LTP FORECAST IS CLOSE TO STATISTICS NEW ZEALAND BY 2050  
Population forecast comparison Statistics New Zealand vs Long Term Plan: Nelson

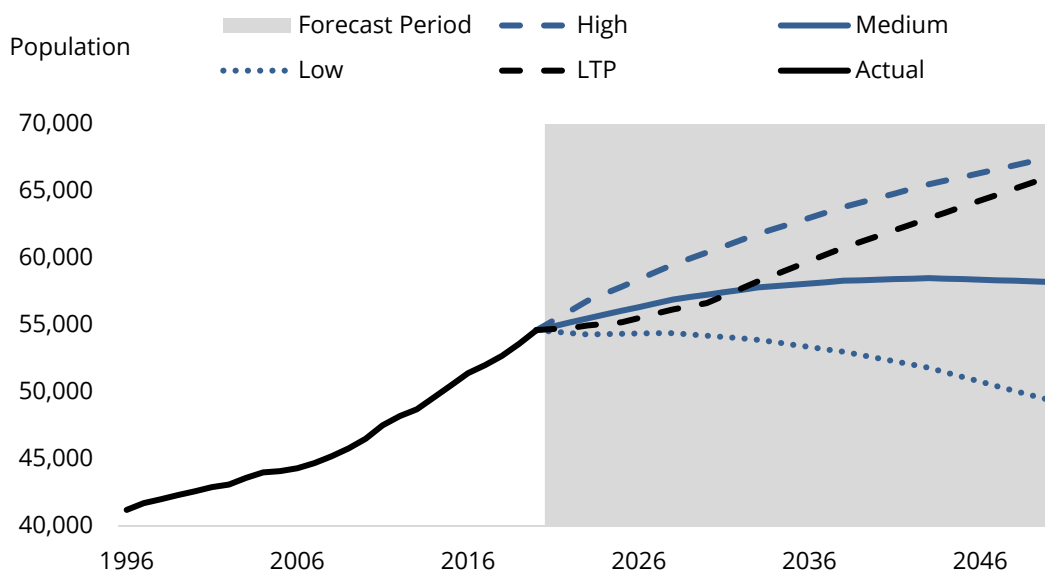
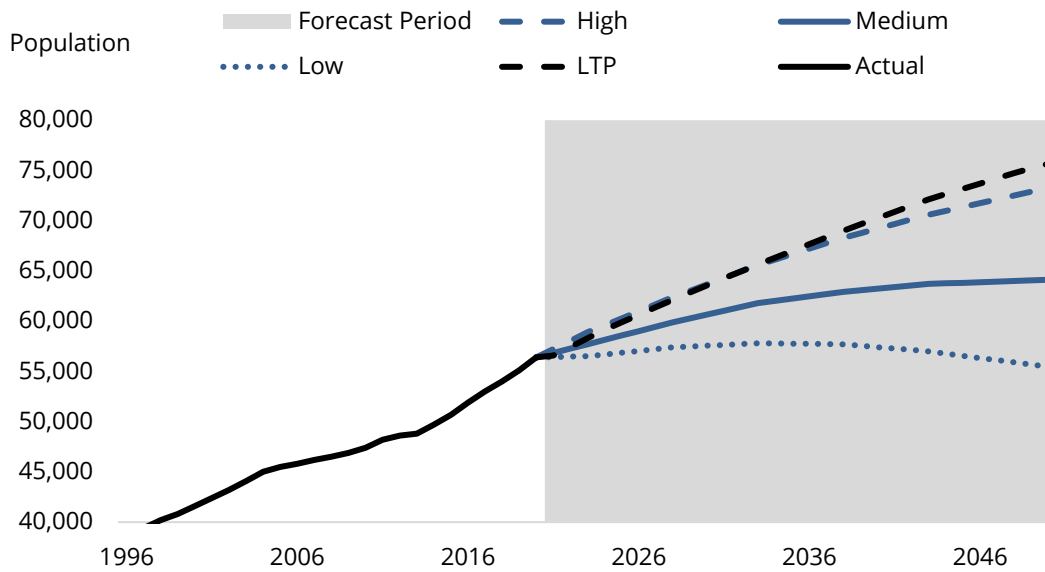




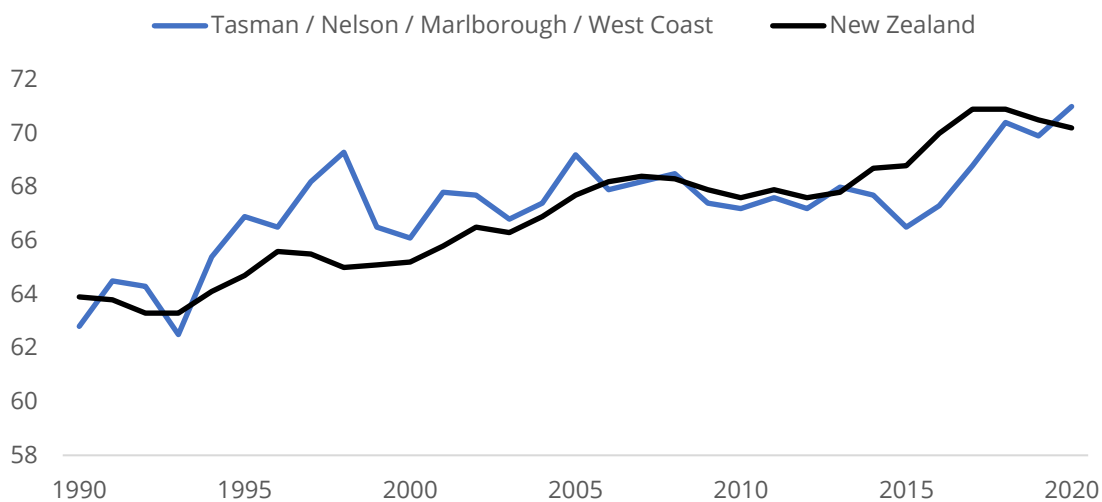
FIGURE 11 TASMAN'S LTP FORECAST IS VERY CLOSE TO STATISTICS NEW ZEALAND'S Population forecast comparison Statistics New Zealand vs Long-Term Plan: Tasman



**Labour force participation matters**

As the Nelson-Tasman population ages, we expect a modest decline in the labour force that will reduce demand for business land. Rather than simply using the population forecasts within the Long Term Plans to underpin employee growth we adjust for the decline in labour force participation, using New Zealand Treasury's estimates of labour force participation that are laid out in the 2020 BEFU.<sup>2</sup> Figure 12 shows that labour force participation in Nelson-Tasman region is likely to be close to labour force participation in New Zealand based on available data estimates for the joint Tasman-Nelson-Marlborough-West Coast region.

FIGURE 12 TASMAN-NELSON AREA'S PARTICIPATION RATE CLOSE TO NEW ZEALAND'S Labour force participation rate (%)



Source: Statistics New Zealand

<sup>2</sup> See <https://www.treasury.govt.nz/publications/efu/budget-economic-and-fiscal-update-2020>





### **Population ageing could reduce the pace of population growth**

The forecasts show growth rates to 2050 that are lower than the rates of growth Nelson and Tasman have experienced in recent years. These high rates of growth, from firms with high demand for land to support booming businesses, are juxtaposed with slow growth in future years. Population growth, and thus our land demand forecasts, slow for two factors.

First, Statistics New Zealand forecasts use a much lower forecast for international and domestic migration than the region has experienced in recent years. This suggests upside risk and the possibility the regional population could be higher than expected.

Second, like elsewhere, an ageing population (see Box B) is reducing the size of the labour force. This means demand for business land is lower than otherwise required.



## Box B: The impact of the region's ageing population

### Economic impacts

That New Zealand is ageing should come as no surprise. The fraction of people over 65 is becoming a large share of the population as a whole – a trend that is expected to continue to about 2050. Although the pace of change is occurring relatively slowly, the scale of change is unprecedented and is expected to lead to deep and profound changes to the economy and society.

Three separate factors underpin the ageing of New Zealand population: (i) increases in longevity and (ii) a declining fertility rate and (iii) large cohort effects from the baby boom that occurred after WWII. The impacts will be far fewer young people for every person over 65.

With fewer people in the work force expect workers to be able to command higher wages. Higher wages will temper the extent to which labour force participation declines with older workers tempted to continue to work for higher returns. With many more people trying to save, expect real interest rates to reduce a little. This also incentivizes older workers to remain the labour force for longer.

### Regional impacts

New Zealand is also ageing unevenly. Regional differences (see Figure 13 and Figure 14) help determine how Nelson and Tasman will age.

FIGURE 13 FERTILITY RATES ARE CLOSE TO NEW ZEALAND AVERAGE

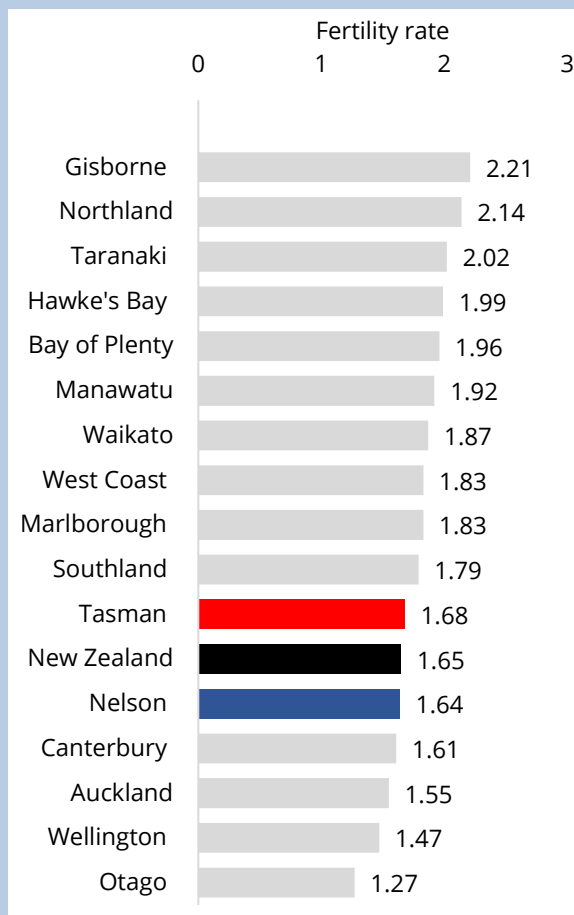
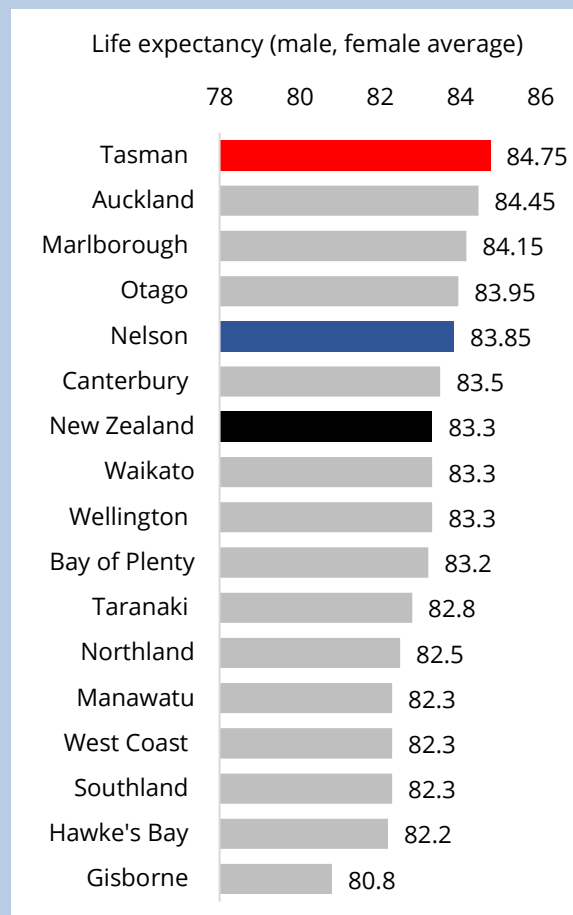


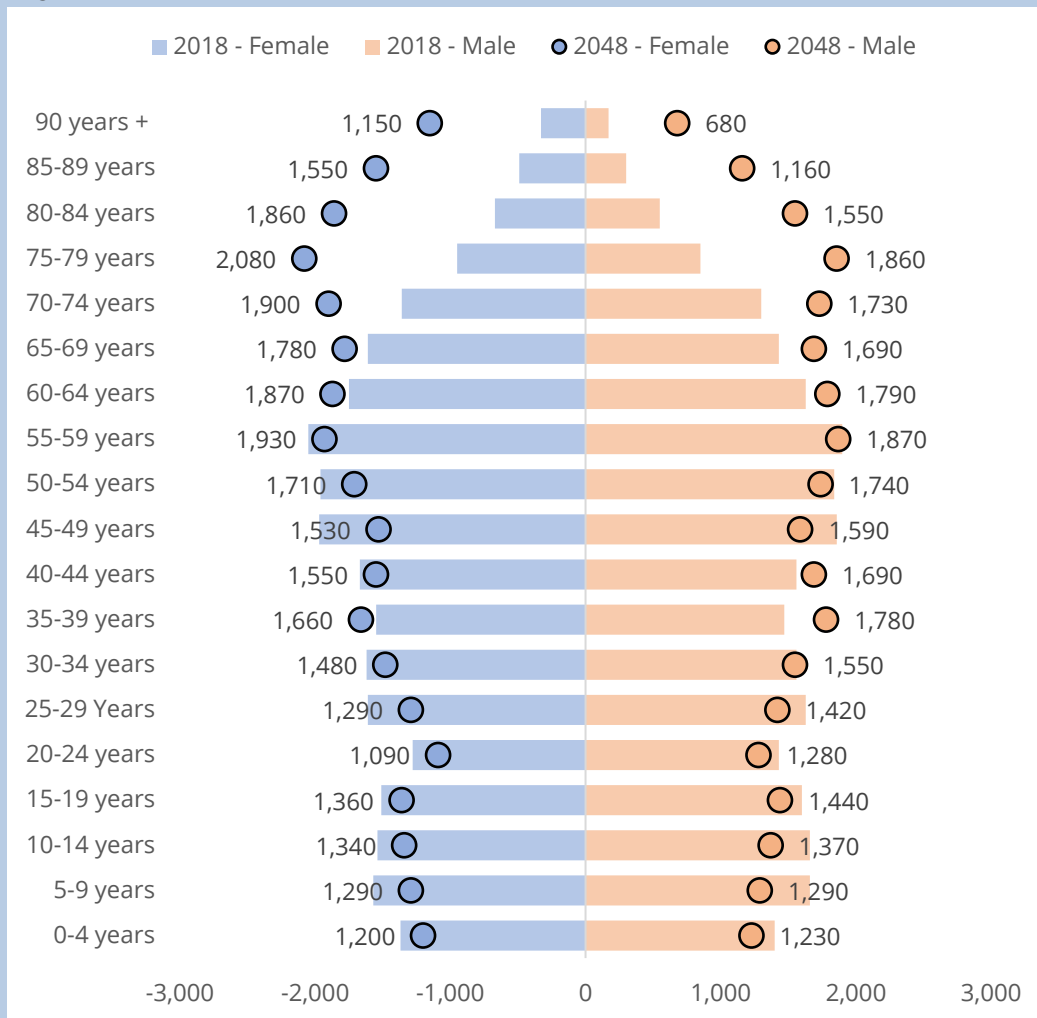
FIGURE 14 LIFE EXPECTANCY RELATIVELY HIGH FOR THE TASMAN REGION





But a smaller labour force requires less business land. To give a sense of the extent of population ageing, Figure 15 shows the change in the number of people by sex across 2018-2048 for Nelson City. Figure 16 shows the scale of change for Tasman District.

FIGURE 15 AGEING FLATTENS NELSON'S POPULATION PYRAMIDS

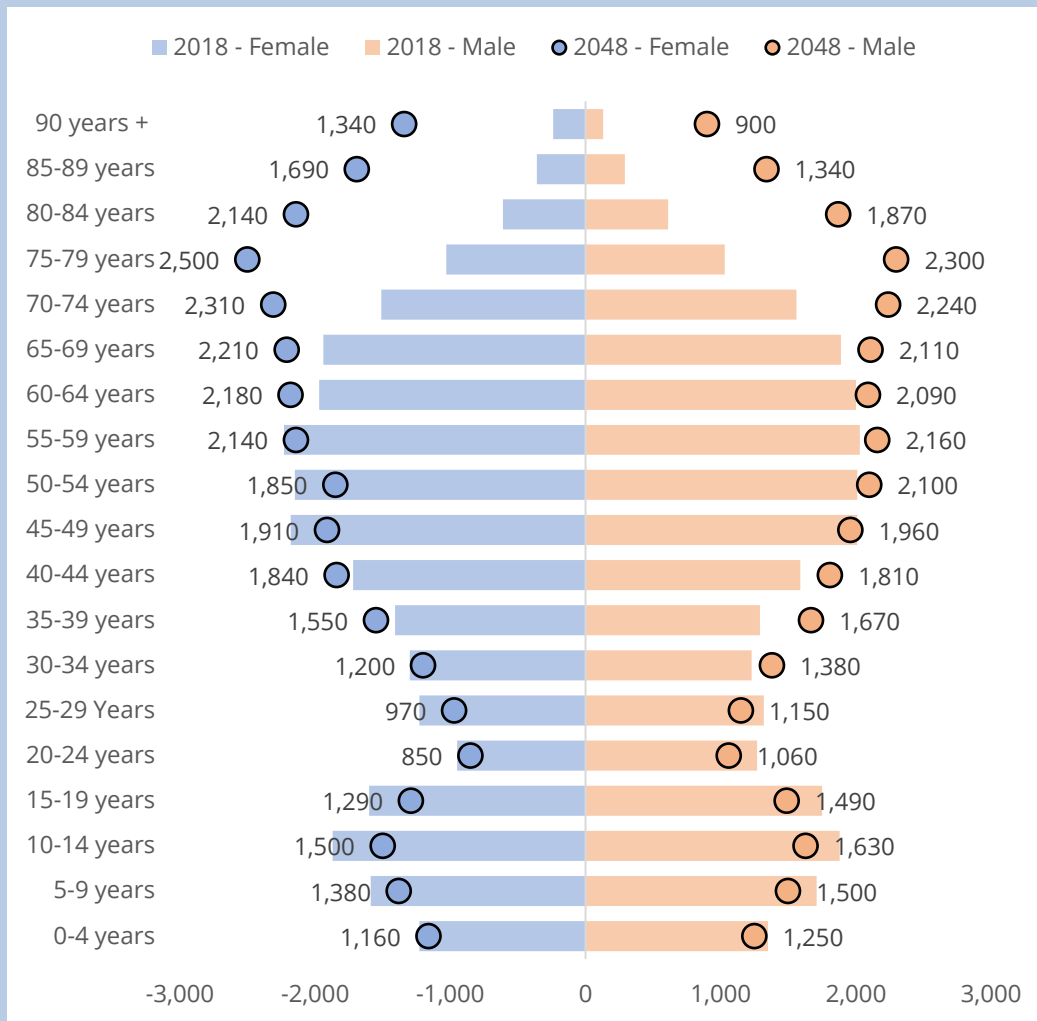


Some regions show the impact of in-flows of older cohorts at the same time as opportunities in urban areas offshore are hollowing out younger cohorts. This amplifies the impact on regional labour markets and will shift regional patterns of demand.

But demographic projections are not a life sentence. Policy will also impact on demographic outcomes for New Zealand. The extent to which migration policy, and New Zealand's migration settings relative to other countries, will help determine the rate at which New Zealand ages. Support for parents will also influence the extent to which declines in fertility are arrested over time.



FIGURE 16 EXPECT MANY MORE PEOPLE AT OLDER COHORTS IN TASMAN DISTRICT



**Social impacts**

One of the benefits of longevity is better health as New Zealanders age. New Zealanders report overall health and mental health are not limiting factors as we age. Instead, physical health limits the roles that New Zealanders can undertake.

So, one of the key challenges is redesigning roles and workplaces to continue to support older New Zealanders to work if they choose. Modelling suggests that we should expect later retirement decisions – workers enjoying more years in retirement in absolute terms, but we are likely to keep the fraction of our life spent working roughly the same over time. So, for every additional year of life expectancy, expect an additional 7-8 months spent working.

**Demand for goods and services will change**

Some trends are obvious. While health is improving as we age, the fertility shock or baby-boom lifts the fraction of older New Zealanders over the next thirty years. This will lift demand for health care workers, a trend that will only rise as incomes grow over time. Expect the cost of health care to rise and insurance costs to move up too.

But some changes will be nuanced. People retiring today are much different to not just the previous generation, but differences in technology adoption and access to wealth help shape differences in preferences across cohorts rather than generations.



### 3.3 Future economic activity

We break down our estimates of economic activity into six key categories – (i) Agriculture, (ii) Commercial, (iii) Health, Education and Training, (iv) Industrial, (v) Other and (vi) Retail.

We show each forecast of future economic activity alongside a range of confidence intervals that can be used if councils want to use an approach to zoning that allows for above average growth in business land demand.

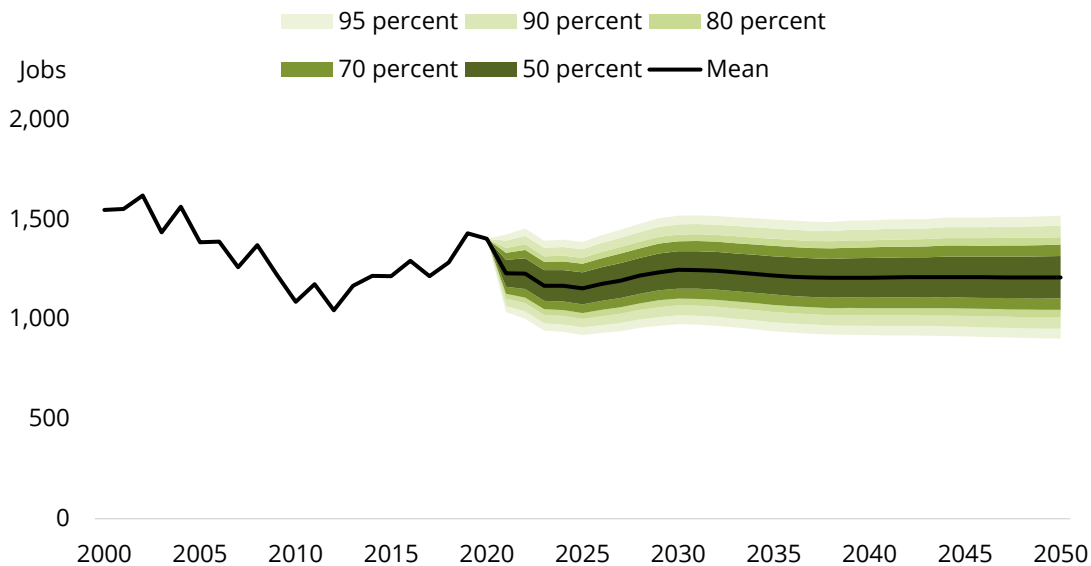
#### Agriculture

Figure 17 shows that our modelling suggests to expect a small decline in the total number of agricultural sector jobs by 2050 in the shared Nelson-Tasman urban environment.<sup>3</sup> Total jobs fall by 194 over the forecast period. Driven by the pick-up in agriculture sector employment since 2012, our analysis suggests a very small lift in agricultural sector growth in Nelson –jobs growth averages 0.1 percent a year to 2050.

Tasman has shed about 675 jobs or 20 percent of the jobs that were in the agriculture sector in 2000 in the twenty years to 2020. Our modelling suggests this trend moderates a little over the forecast period. but the total number of jobs falls by the same amount over the thirty years we forecast to 2050.

There is some upside risk to our quantitative model-based forecasts that rely on the trends in the shape of the economy to persist over time. The impact of Waimea Community Dam should lift the number of agricultural jobs in the region. Recent resource consent applications for cool stores could also suggest a little more agricultural activity in the region than our central forecast suggests (see Box B).

FIGURE 17 EXPECT A SMALL DECLINE IN AGRICULTURAL EMPLOYMENT BY 2050



<sup>3</sup> This is the shared Nelson-Tasman urban environment that comprises Nelson City –the city itself and all suburbs extending to Hira and Cable Bay and the urban areas within Tasman District – Richmond including Hope, Brightwater, Wakefield, Mapua and Motueka.



## Box C: Trends in rural industrial land use

We construct our forecasts from observed trends in economic activity. We refrain from making ad-hoc adjustments to reflect likely changes to the structure of the economy but instead discuss specific factors and present ranges that pick up future changes to the underlying structure of the economy,

Since industrial activity typically requires a large footprint for each worker, small changes in industrial activity can have large impacts on overall requirements for business land. Two changes in economic structure that are yet to have much impact on employment data, are the growing demand for cool stores and the future impact of the Waimea Community Dam.

### Growing demand for coolhouses

The majority of New Zealand's fruit and vegetables are exported chilled.<sup>4</sup> Demand for fruit has been strong over the past eight years, growing 7 percent on average each year (Figure 18).

FIGURE 18 EXPORTS OF CHILLED PRODUCE LIKE APPLES ARE GROWING  
New Zealand Apple exports, kilograms



And this demand has translated to increased capacity in terms of cool stores. Rising standards associated with the storage of food for human consumption and the premium placed on quality also push up capital investment.

The Tasman economy base relies heavily on the export of food and food products. So perhaps not unsurprisingly, several applications for resource consent have been made to council recently, including from the hops industry (New Zealand Hops Ltd, for example), apples and pears (Wratten Orchards) and kiwifruit (Inglis Packers Limited).

Our forecasts allow for demand from the agricultural sector to boost demand for land. We assume that about half the workers in the agriculture sector are associated with business land while half the workforce

<sup>4</sup> About 45 percent of New Zealand's exports are food or food products and about 60 percent of food exports are refrigerated.



is associated with rural land. We include cool stores as part of our assessment of industrial land that includes warehousing activity.

### Potential impacts of the Waimea Community Dam

The Waimea Community Dam should be expected to have both direct and indirect impacts on the Nelson-Tasman economy. The dam will increase yields (see Figure 19), so expect the need for greater capacity to process an increased volume of product. This increases demand for business land.

FIGURE 19 WAIMEA COMMUNITY DAM SHOULD INCREASE YIELDS IN THE REGION

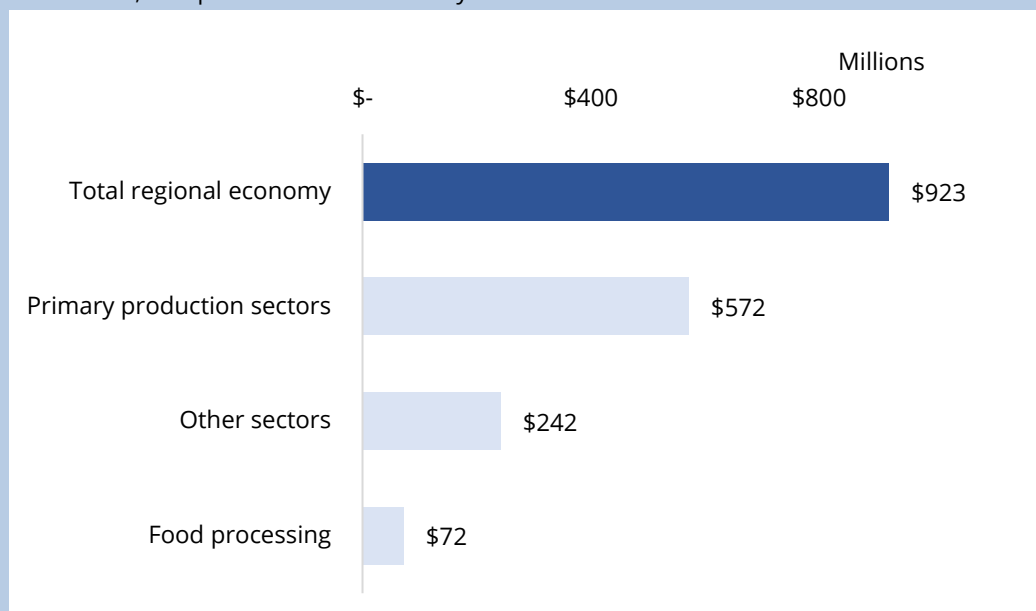
Units	Without dam			With dam		
	Yield/ha	Price \$/unit	Gross margin	Yield/ha	Price \$/unit	Gross margin
Pasture Stock	6.5	10	663	12	102	1,225
Apples TCE	3,500	23	27,898	3,750	23	33,523
Kiwifruit Trays	11,500	9	24,575	12,000	9	28,975
Grapes Tonnes	8.5	1,700	487	9	1,800	1,337
Berries Tonnes	18	1,200	12,800	20	2,000	16,800

Source: NZIER (2014),

The Waimea Community Dam will also have indirect impacts that increase output for not just the primary sector, but supporting sectors such as the food processing sector that benefit from the better availability of input goods in the region.

These indirect impacts are substantial and amount to a little under half the \$923 million boost to the regional economy (see Figure 20). This matters since the dam provides some upside risk to the business land forecasts that do not include any explicit account of the Waimea Community Dam.

FIGURE 20 WAIMEA COMMUNITY DAM BOOSTS PRIMARY SECTOR AND THE WIDER ECONOMY NZ\$ in 2013 terms; and present values over 25 years on 2013 base.

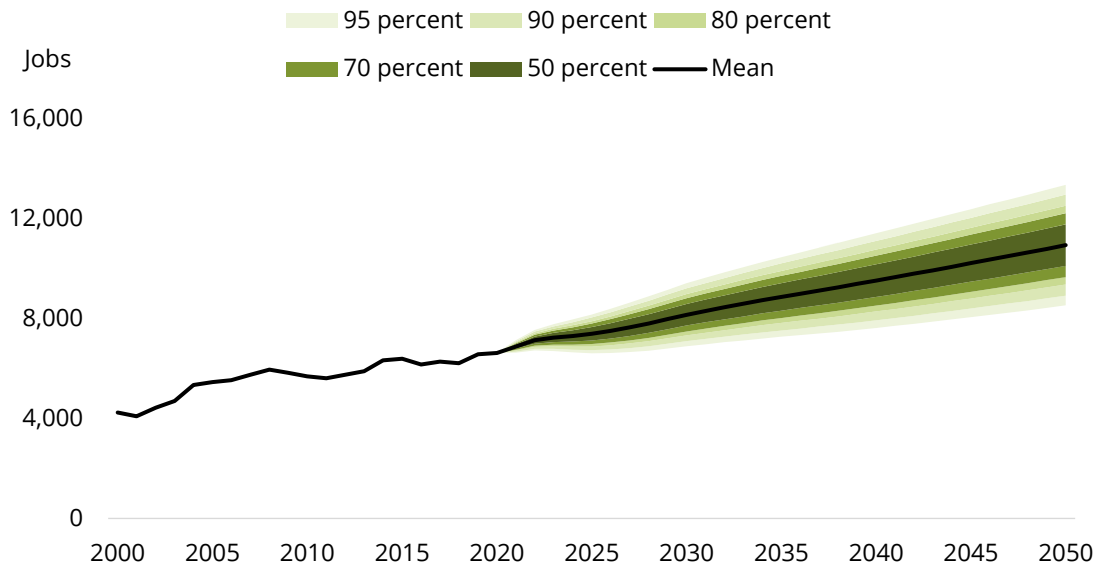




## Commercial

Expect the commercial sector to post strong growth over the next thirty years, creating over 6,700 new jobs in the shared urban environment (see Figure 21). We expect the commercial sector to outpace every other sector we examine and grow at 1.7 percent (CAGR) to 2050. This pace of growth is a little more moderate than the 2.3 percent growth the sector has enjoyed over the past twenty years.

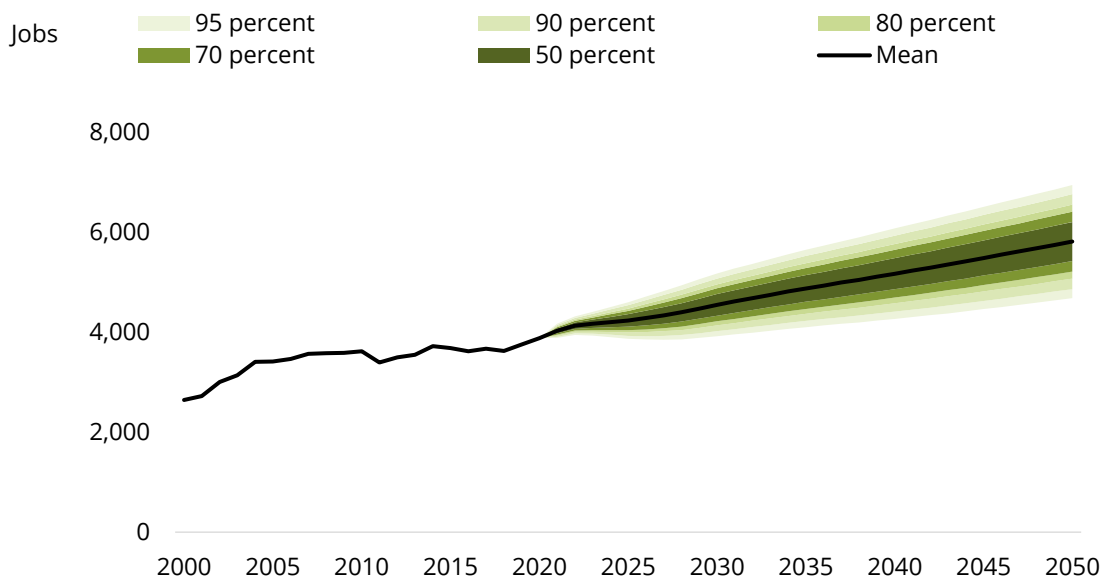
FIGURE 21 COMMERCIAL SECTOR SET FOR STRONG GROWTH IN SHARED URBAN AREA



## Health, Education and Training

Our central forecasts suggest a growth rate of 1.35% but by 2050 a range of outputs are possible. Health, Education and Training jobs could lie between 5,223 and 6,563 by 2050 (see Figure 22). The Health, Education and Training sector covers a broad range of public and private sector job types. Even within the health sector jobs have different profiles from in-home aged care workers to hospital and emergency staff.

FIGURE 22 HEALTH, EDUCATION AND TRAINING TO ADD JOBS BY 2050



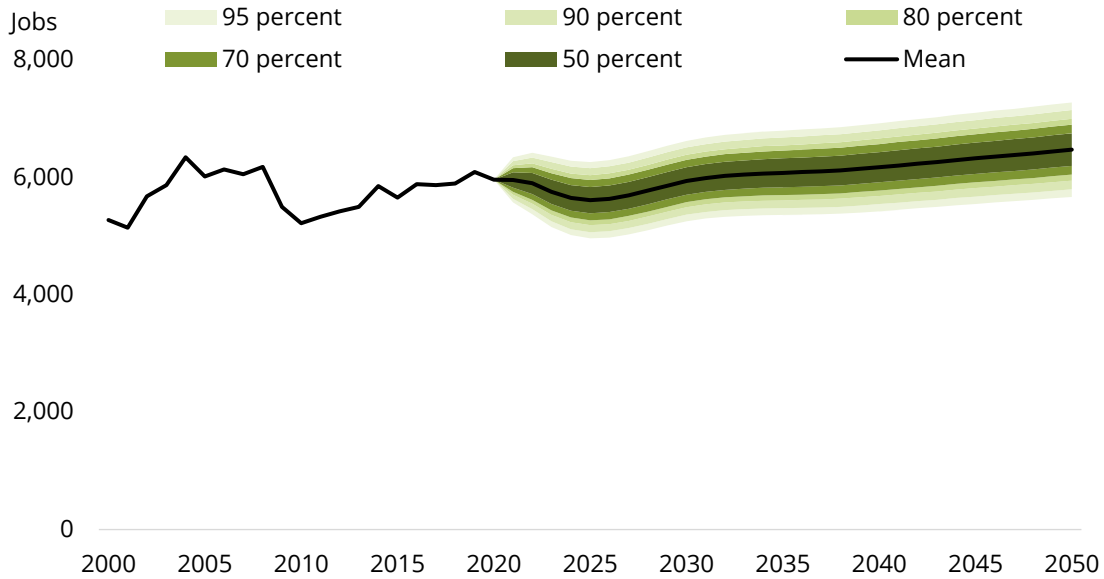




## Industrial

Industrial activity is expected to slow in the near-term with jobs numbers flat for the next ten years. Industrial activity is declining for most New Zealand regions. The shared Nelson-Tasman urban environment grows at 0.23 percent a year between now and 2050.

FIGURE 23 INDUSTRIAL SECTOR POSTS SLOW GROWTH TO 2050

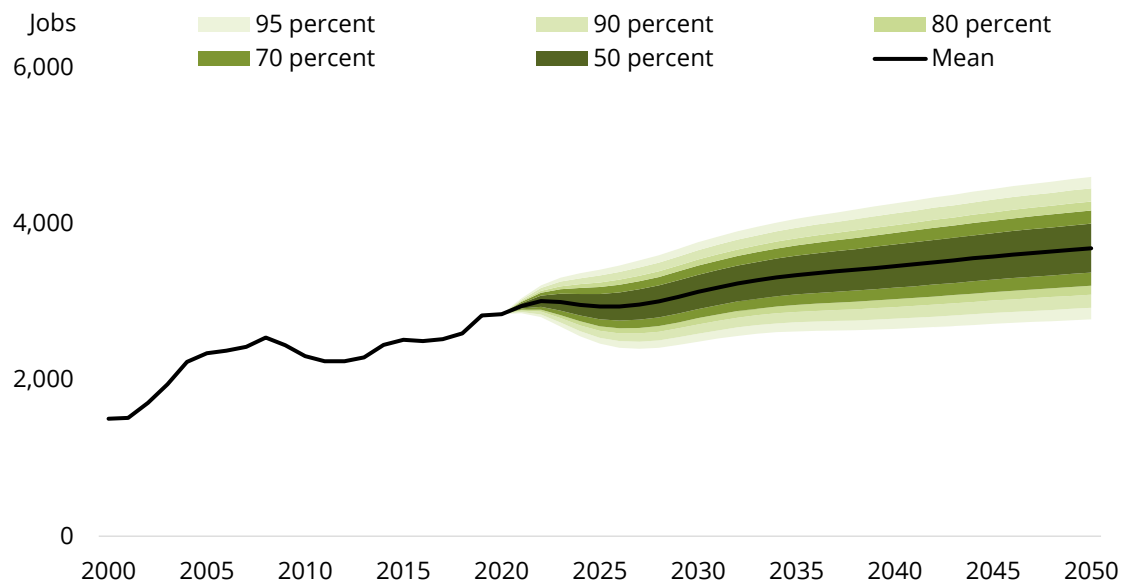


## Other

To capture the full range of employment with the region, we need to capture other jobs that do not neatly fall into other categories. 'Other' includes, for example, local government, mining, and many artists.

While diverse, at an aggregate level, these jobs generate demand for business land, so we step through the same methods for other sectors and present the forecasts for the other sector in Figure 24. This grab bag sector grows by 0.9% a year to 2050.

FIGURE 24 THE COLLECTION OF 'OTHER' JOBS 'SET TO GROW TO 2050

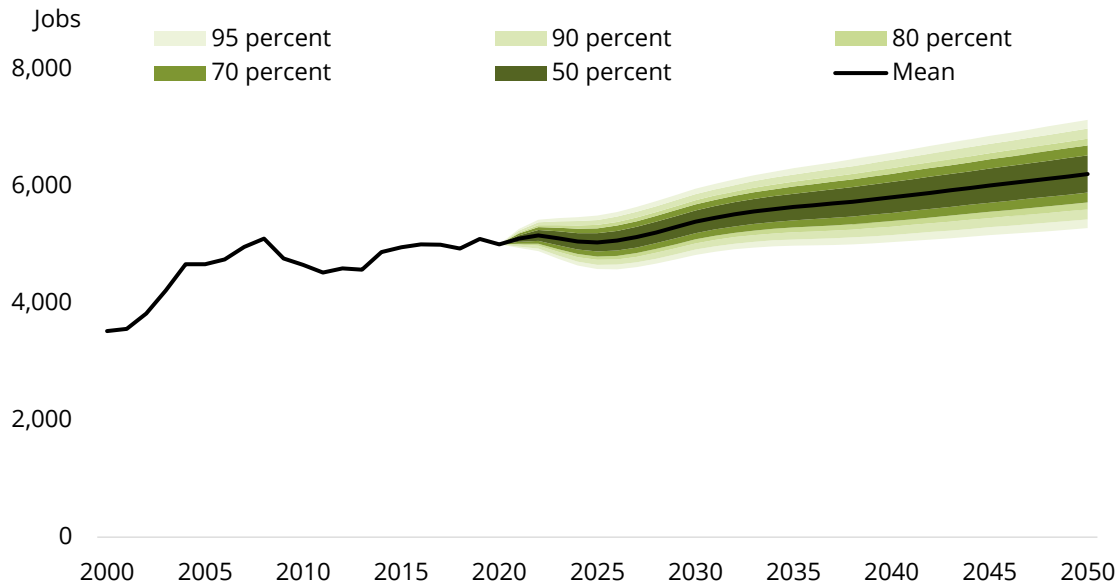




## Retail

The retail sector provides a tale of two cities – no growth in Nelson City but strong growth in Tasman District – if past trends continue. In aggregate (see Figure 25), we expect retail jobs to grow 0.7 percent on average each year – much lower than the 1.97 percent growth experienced between 2000 and 2020.

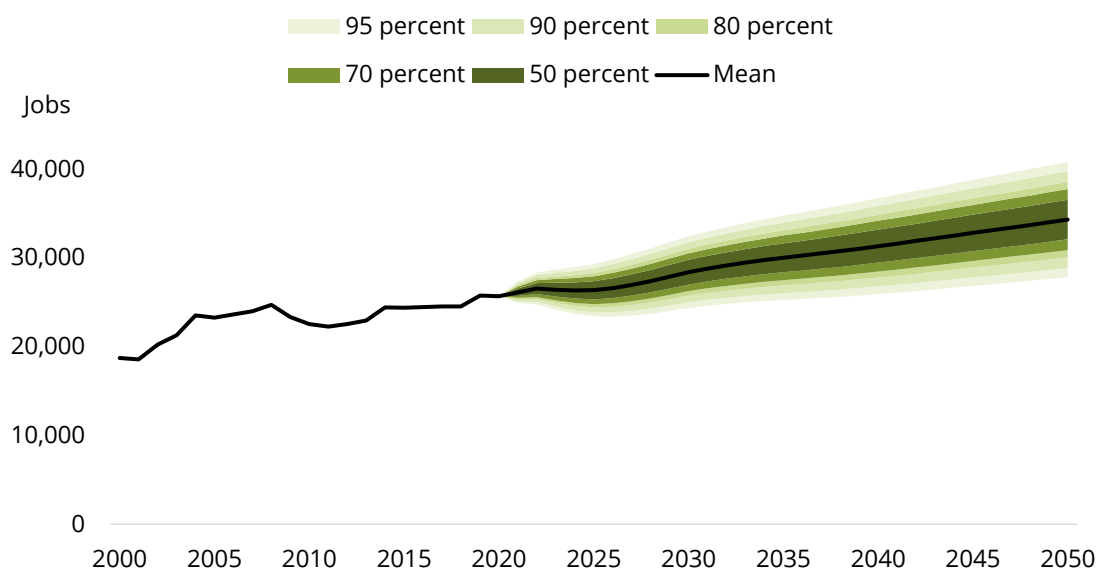
FIGURE 25 RETAIL EMPLOYMENT TO GROW 0.7 PERCENT TO 2050



## Total

In aggregate, summing over each sector suggests jobs growth of about one percent on average each year to 2050, adding over 15,000 jobs. This is a little weaker than history. Over the past twenty years, employment in the shared urban area grew 1.6 percent each year to 2020.

FIGURE 26 NELSON-TASMAN SHARED AREA EMPLOYMENT GROWTH ABOUT 1% A YEAR TO 2050





# 4. Business land demand

## 4.1 Mapping Activity to Floorspace

### Our approach

To project future business demand for land we need to connect our activity projections to business land use. As an intermediate step, we first map activity back to estimates of floor space demand and then map floor space demand to land demand.

Mapping economic activity to floor space demand means taking our forecasts of employment for the region and applying a forecast for the footprint, or floorspace, per worker. Since there is no consistent time series for footprint per worker, we use information from many sources to calibrate our projection. These include:

- over a specific period, the ratio of consents, by activity in the Nelson-Tasman urban environment, to the growth of employees – a signal of the capacity required to house additional workers.
- explicit guidance on likely bounds from the National Policy Statement on Urban Development Capacity. These are expectations rather than standards.
- sector reports, for example the Government Property Group's Crown Office Estate Report and local commercial real estate reports.
- sense checking estimates against trends, where we do have consistent data over time, such as international trends in office space per worker.

Since there is limited data on footprint per worker, the assumptions we work with contain some uncertainty. However, the estimates are better than relying on the ranges supplied by the NPS-UDC, as these ranges miss local factors and trends over time.

### Calibrating the footprint of economic activity

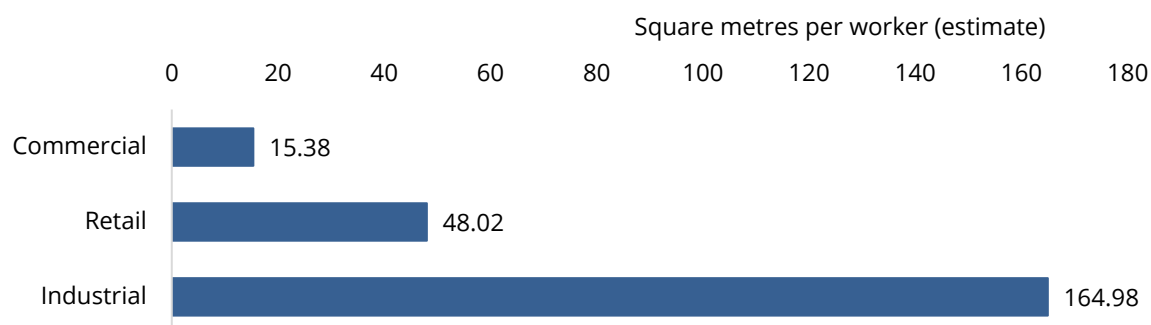
Recall we work with six categories of economic activity – agriculture, commercial, HET (Health, Education and Training), industrial, a catch-all 'other' category and retail. Since we have no lengthy time series data on office space per worker, we use several data sources to calibrate our assumptions.

We first look at the history of consented office floor space using data from Statistics New Zealand. We compare consented floorspace in selected sectors to growth in additional workers in each sector as a guide to the floorspace needed to accommodate each additional worker in the future. This is straight forward for commercial activity (that we match to consents for commercial buildings), industrial activity (that we match to consents for factories, industrial and storage buildings) and retail (that we match to consents for shops, restaurants and bars) but is difficult for Health, Education and Training, other activities and agriculture activity, since there is no clear match in terms of building consents.

Figure 27 shows that on this basis each commercial worker would use about 15 square metres of floorspace, retail workers 28 square metres and industrial workers 164 square metres.



FIGURE 27 WE USE CONSENT DATA AS ONE GUIDE TO FLOORSPACE PER WORKER



Source: Statistics New Zealand, Sense Partners calculations

But other guidance is possible. For example, the Government Property Group provides an estimate of office space per government worker as a target range of 12-16 square metres. That range is likely to be dominated by Wellington office workers who work at higher densities when space is at a premium. Government guidance suggests a range of 15 to 20 square metres for office workers. So we adopt the middle of the range of 17.5 square metres as our benchmark for commercial workers. Increased working from home and adoption of new communication technologies suggests downside risk to this benchmark.

The NPS-UDC also suggests a range of 100 to 170 square metres for industrial workers. Our consents data suggests 165 square metres but we lower this to 100 square metres – below the middle of the range suggested by the NPS-UDC. This adjustment reflects a belief that the underlying footprint of industrial land is shifting towards smaller lots as the nature of industrial activity is moving away from heavy industrial activities towards food manufacturing and other activities that require less floorspace (see box D). Land use is becoming more efficient over time for major users.

The NPS -UDC also suggests a range of 30 – 50 square metres for retail and we also use the central estimate of this measure as our benchmark for translating retail jobs to demand for retail floorspace. Many trends are changing in urban industrial land use and we discuss these trends in box D and summarise our benchmarks in Figure 28 below. Then we show floorspace demand by sector in Figure 30 to Figure 35.

FIGURE 28 OUR BENCHMARKS TO TRANSLATE EMPLOYMENT TO FLOORSPACE

Sector	Floorspace per worker	Comment
Agriculture	50	Every other Agricultural worker generates floorspace demand of 100sqm
Commercial	17.5	Consistent with NPS-UDC guidance
Health, Education, Training	25	A diverse sector – likely to be an average across a range of numbers
Industrial	100	Consistent with NPS-UDC guidance and local consent information
Other	30	A diverse sector – likely to be an average across a range of numbers
Retail	40	Consistent with NPS-UDC guidance

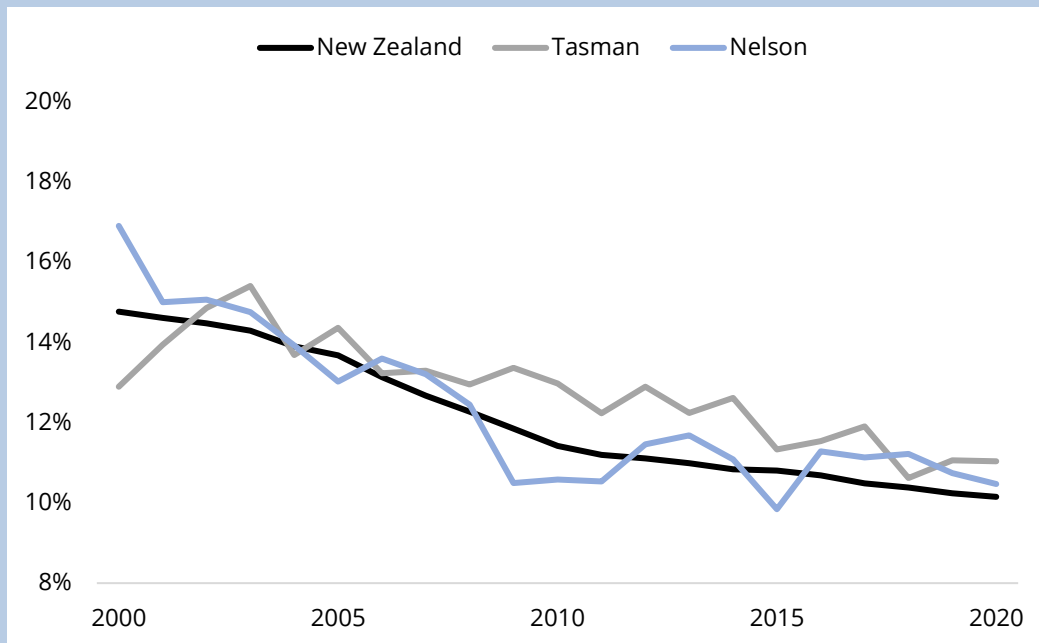


## Box D: Trends in urban industrial land use

### Shift away from Manufacturing towards a services economy

Trends are also driving the economic composition of urban activity. For decades, manufacturing activity has decreased (see Figure 29) as a share of the Nelson and Tasman economies along with the rest of New Zealand.

FIGURE 29 MANUFACTURING SHRINKING AS A SHARE OF NELSON-TASMAN ECONOMY



Since the footprint of manufacturing is larger than commercial activity, this shift reduces demand for business land overall. But there are limits. Not all industrial land is well-suited to commercial activity. Locations close to transport infrastructure and customer base continue to attract a premium. So, the type of business land that is needed remains important.

### Retail disruption

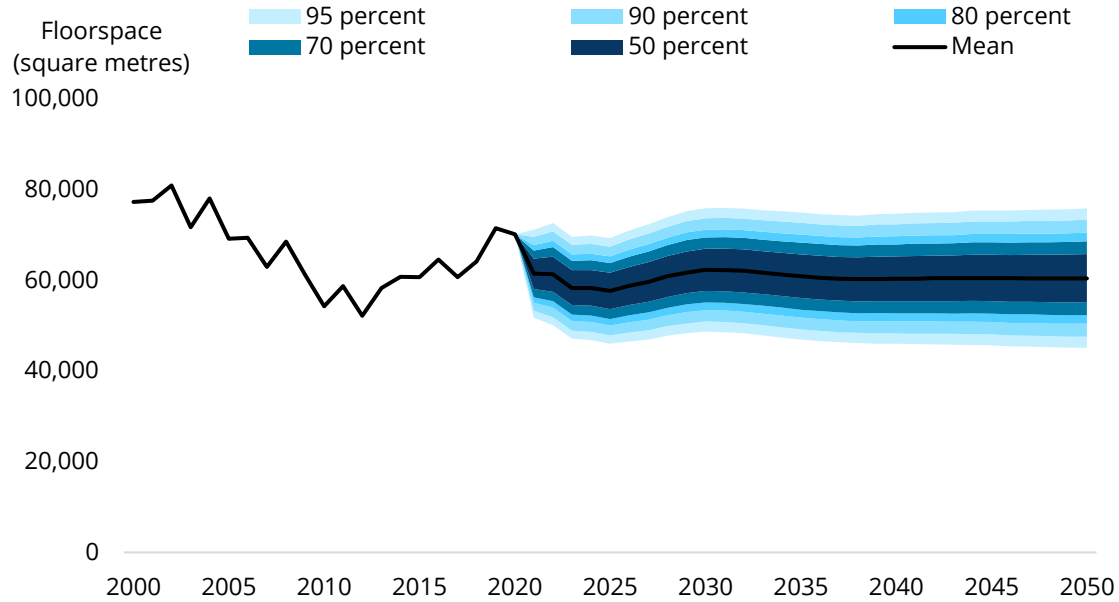
Right now, retail takes up a large footprint across the Nelson-Tasman region. But traditional in-store shopping is under pressure from on-line options. Many factors, including convenience, access to a wider range of products, the ease of comparing prices and improved logistics, challenge the value consumers derive from in-store experiences compared to on-line options.

On-line is a small fraction of total retail expenditure but is growing rapidly while bricks and mortar retail is flat or declining slightly. Growth in on-line might be expected to limit marginal growth in the retail sector, reducing overall demand for business land and transforming the type of land required, towards logistics and away from retail space *per se*. This suggests some downside risk to demand for traditional land for retail purposes offset by increasing needs for warehousing and logistics facilities.



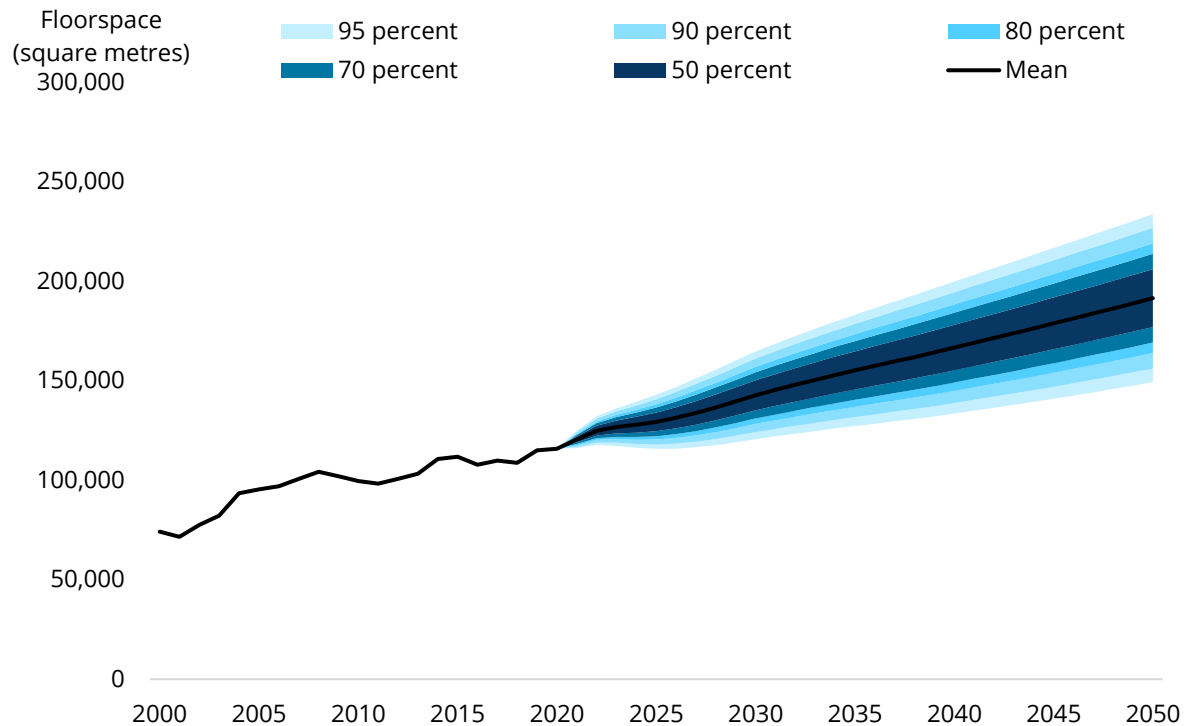
## Agriculture

FIGURE 30 AGRICULTURE WORKER SPACE DECLINES BY 0.6% ON AVERAGE EACH YEAR



## Commercial

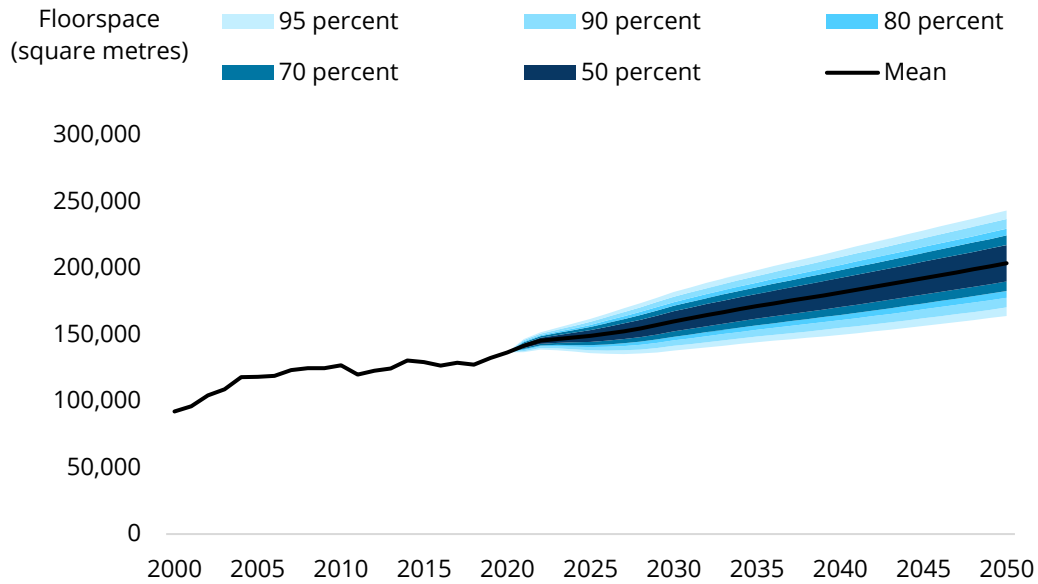
FIGURE 31 THE LOWEST ELEMENT OF THE RANGE SUGGESTS STRONG COMMERCIAL GROWTH





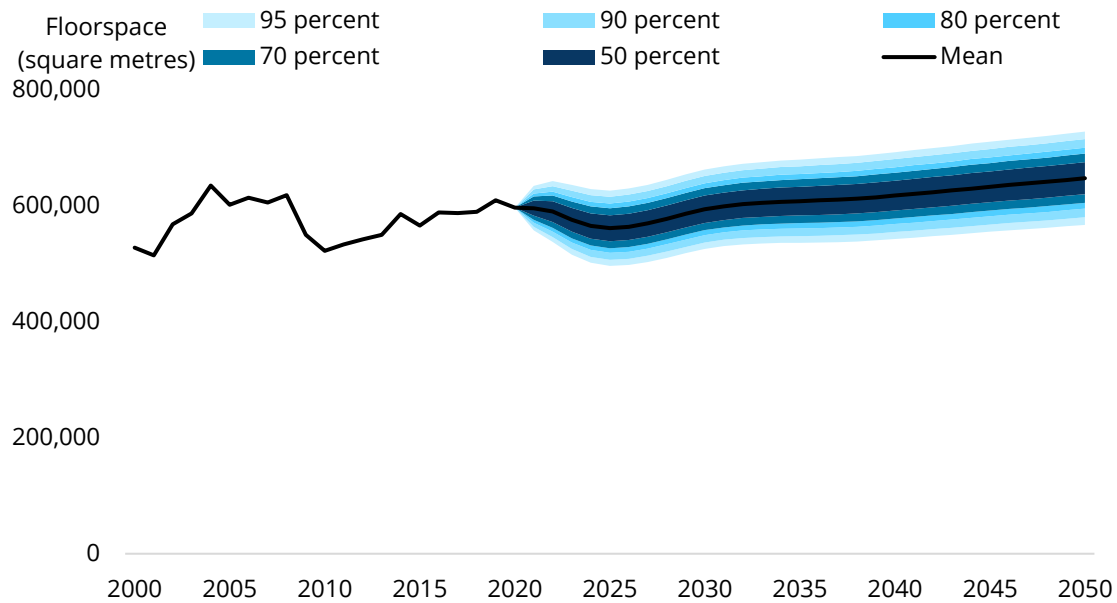
## Health, Education and Training

FIGURE 32 HEALTH, EDUCATION AND TRAINING GENERATES DEMAND FOR FLOORSPACE



## Industrial

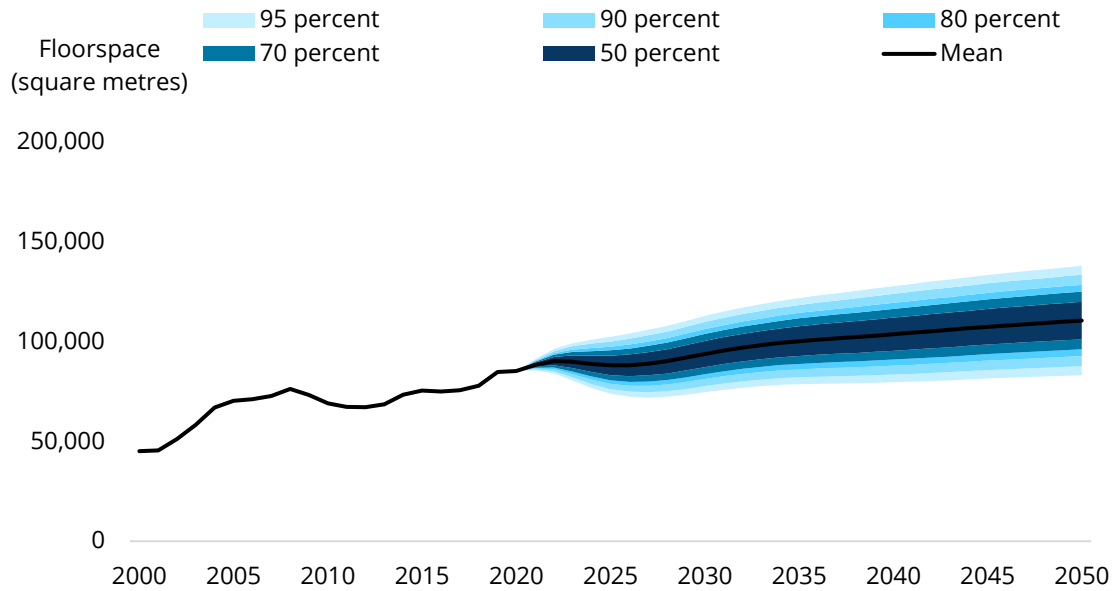
FIGURE 33 INDUSTRIAL DEMAND FLAT FOR SEVERAL YEARS





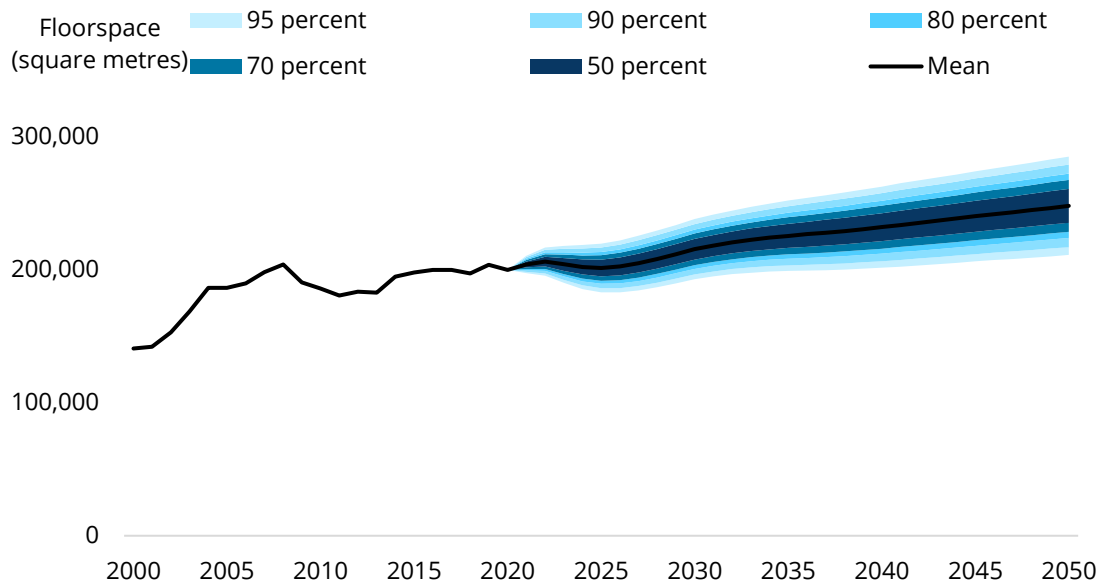
## Other

FIGURE 34 OTHER LOOKING SET FOR MODERATE-STRONG GROWTH



## Retail

FIGURE 35 RETAIL NEVER REALLY RECOVERS FROM THE GFC AND FACES HEADWINDS



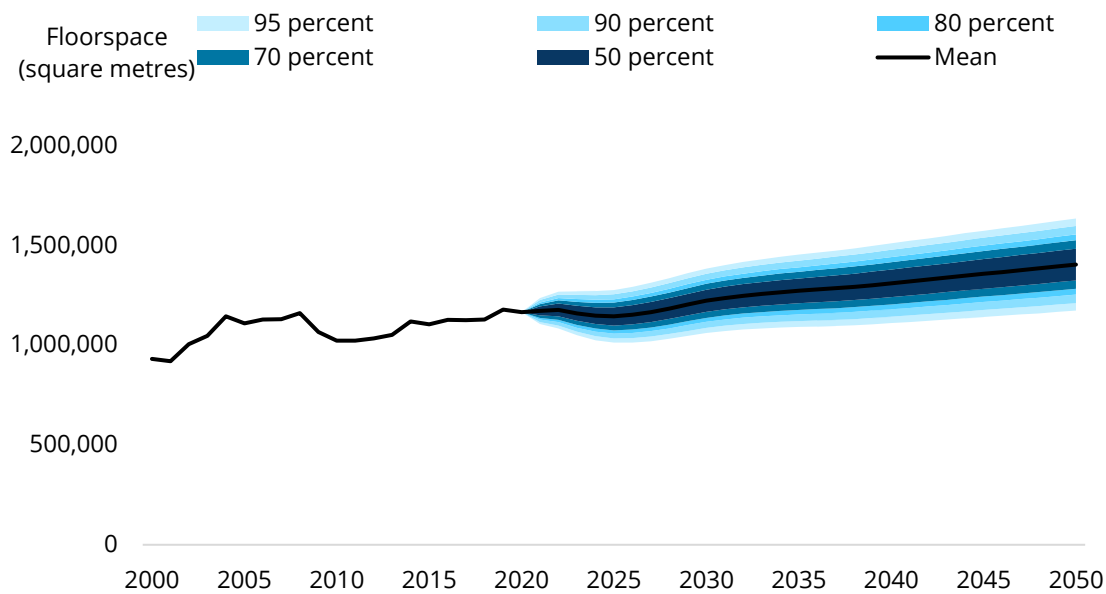




## Total

We sum across the six sectors to show total demand for business floorspace in Figure 36. Floorspace demand reflects both the pace of growth and the shifts in the structure of the economy. In aggregate, we expect floorspace growth to average 0.5% to 2050, just slightly less than the underlying 0.6% increase in employment growth over the period.

FIGURE 36 STRUCTURAL SHIFT MODERATES FLOORSPACE DEMAND



## 4.2 From floorspace to land

To move from floorspace demand to demand for business land, we assess Floor-to-Area (FAR) ratios for each sector. We apply the same floor-to-area ratios for both Nelson City and the Tasman urban environment.

To make our assessment we examine typical footprints in sales data, the ratio of floor to land areas for Nelson businesses based on survey data, estimates of unused land area based on the same survey data and a cross-check of our estimates based on scrutiny of a small sample of properties in Nelson's Bridge Street (see Appendix 2).<sup>5</sup>

Figure 37 shows our assessment. We use a floor-to-area ratio of 0.5 for agriculture, health, education and training and the other category. This floor-to-area for agriculture is consistent with cross checks of business sales information. The estimate for other and health, education and training covers a range of heterogenous business models. It is likely to be too low for health services businesses operating in the city centre but a little high for larger health and training facilities.

Since demand for industrial floorspace comprises a large fraction of overall business floorspace demand in the region, total demand is sensitive to the choice of FAR for the industrial sector. We are also aware of under used space across businesses in Nelson and Tasman (see Figure 38). 22% of Tasman's zoned

<sup>5</sup> We use this information as a cross check on the assumptions for Floor to Area ratios that we apply across the shared urban area rather than specifying differences for Tasman and Nelson.



business land is vacant. There is also some evidence of lower FARs based on looking at sales data but overtime, we expect intensity of land use to increase a little so work with a floor-to-area ratio of 0.4.

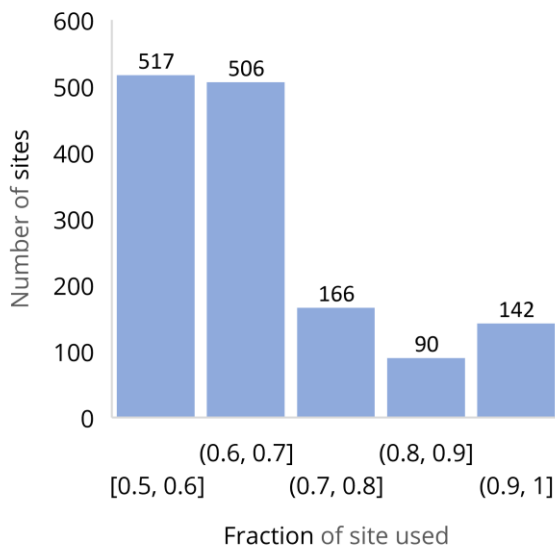
Finally, we adopt a FAR for retail of 0.5 which averages across retail operates in the city centre and large scale, big box retail. Figure 39 to Figure 40 show the floorspace estimates by sector for the shared urban environment.

FIGURE 37 OUR BENCHMARKS TO TRANSLATE FLOORSFACE TO BUSINESS LAND

Sector	FAR ratio	Comment
Agriculture	0.5	Consistent with cross-checks of large warehouse facilities
Commercial	1.4	Consistent with our Bridge Street cross-check and estimates of unused land
Health, Education, Training	0.5	A diverse sector – likely to an average across a range of numbers
Industrial	0.4	Consistent with NPS-UDC guidance and local consent information
Other	0.5	A diverse sector – likely to an average across a range of numbers
Retail	0.5	Consistent with NPS-UDC guidance

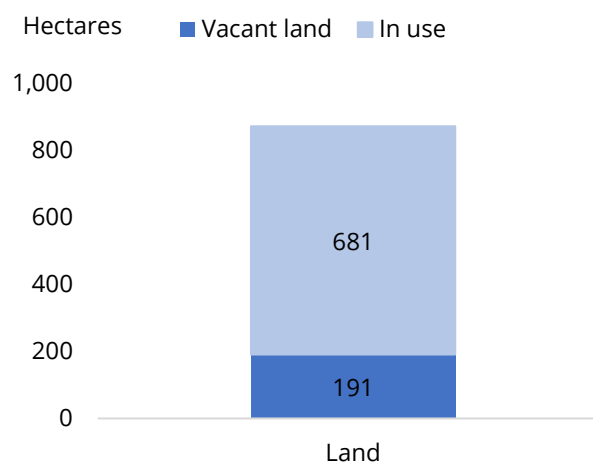
FIGURE 38 INTENSITY OF SITE USE AND VACANT LAND MATTERS FOR ASSESSING CAPACITY

Panel A: Nelson has sites that have spare land



Source: Nelson city council study

Panel B: Tasman has some vacant land

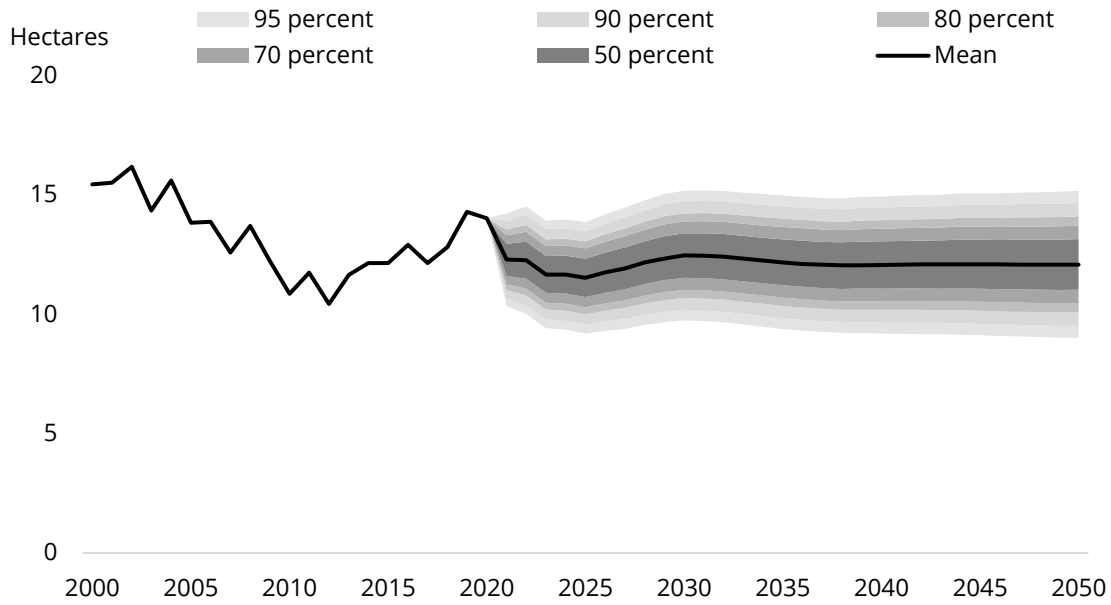


Source: Tasman District study



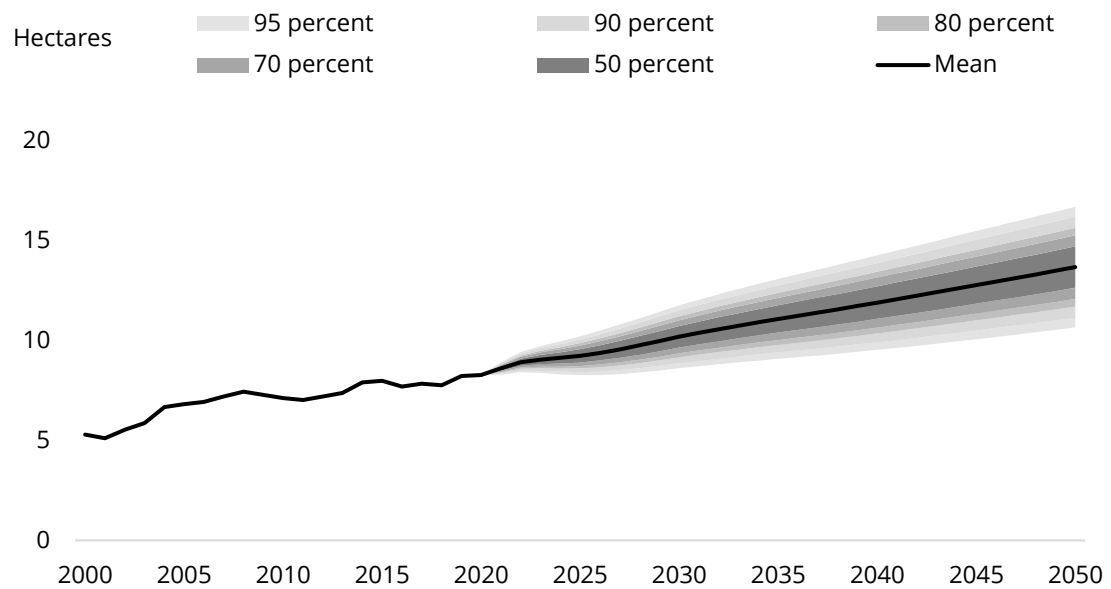
## Agriculture

FIGURE 39 BUSINESS LAND DEMAND FOR AGRICULTURE DECLINES A LITTLE EACH YEAR



## Commercial

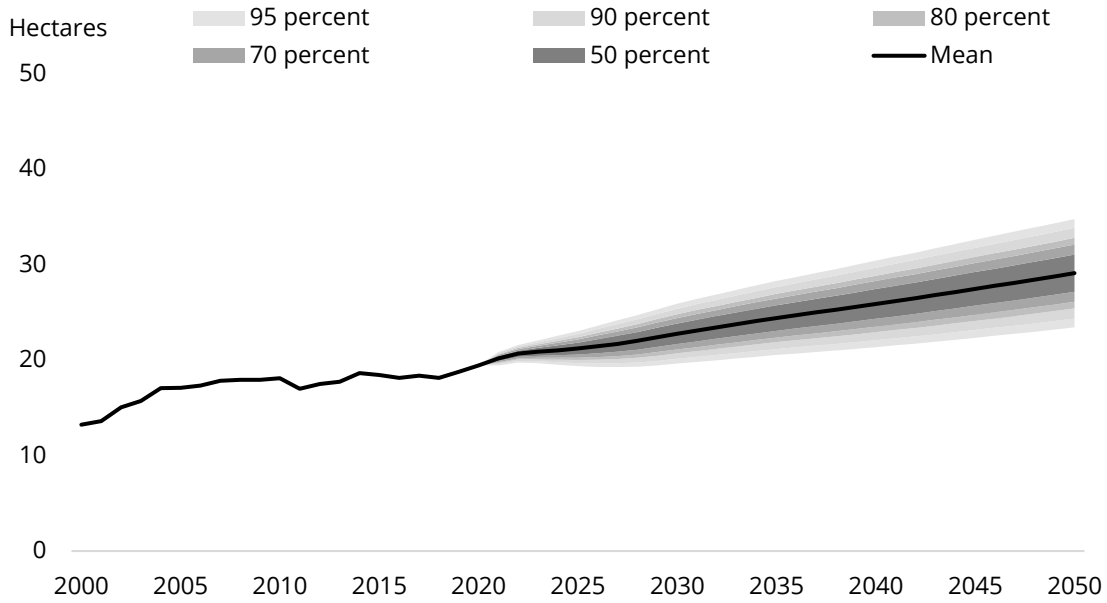
FIGURE 40 EXPECT DEMAND FOR LAND FOR COMMERCIAL ACTIVITY TO EXPAND





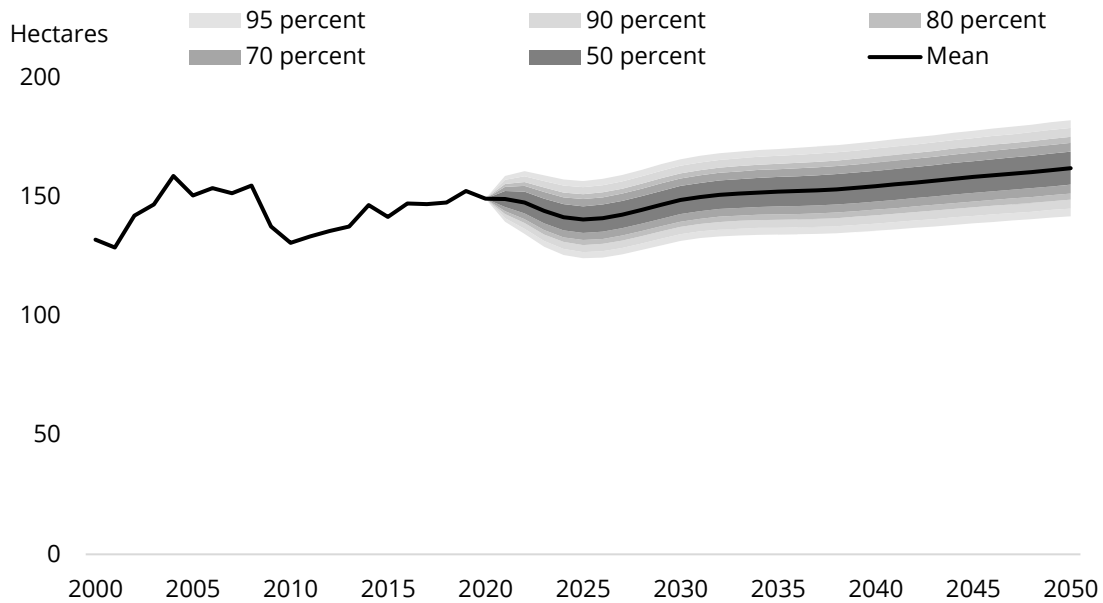
## Health, Education and Training

FIGURE 41 HEALTH, EDUCATION AND TRAINING PUSHES BUSINESS LAND DEMAND HIGHER



## Industrial

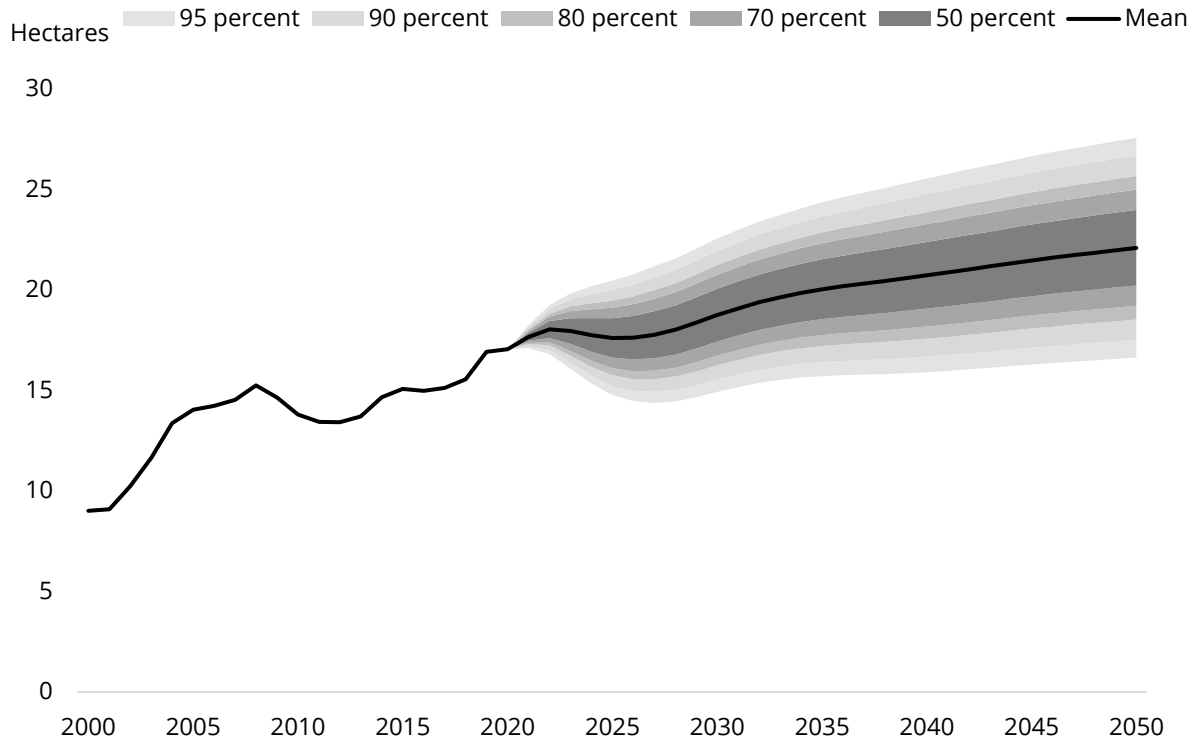
FIGURE 42 INDUSTRIAL DEMAND FLAT FOR YEARS THEN LIFTS A LITTLE FROM TASMAN GROWTH





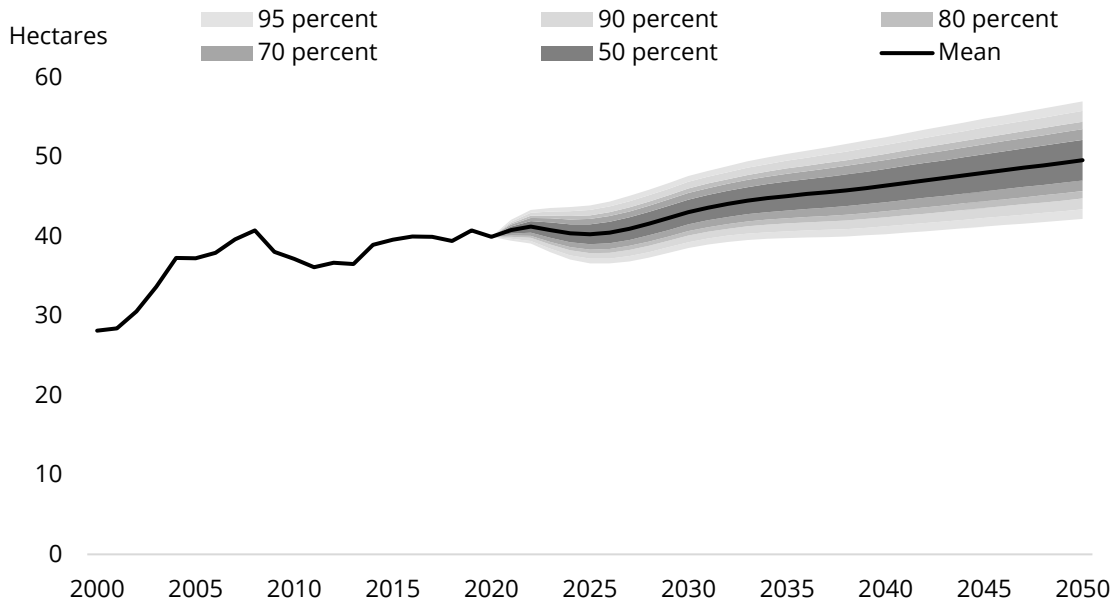
## Other

FIGURE 43 'OTHER' CATCH-ALL LIFTS DEMAND FOR BUSINESS LAND



## Retail

FIGURE 44 RECENT TRENDS SUGGEST SLUGGISH RETAIL DEMAND FOR BUSINESS LAND



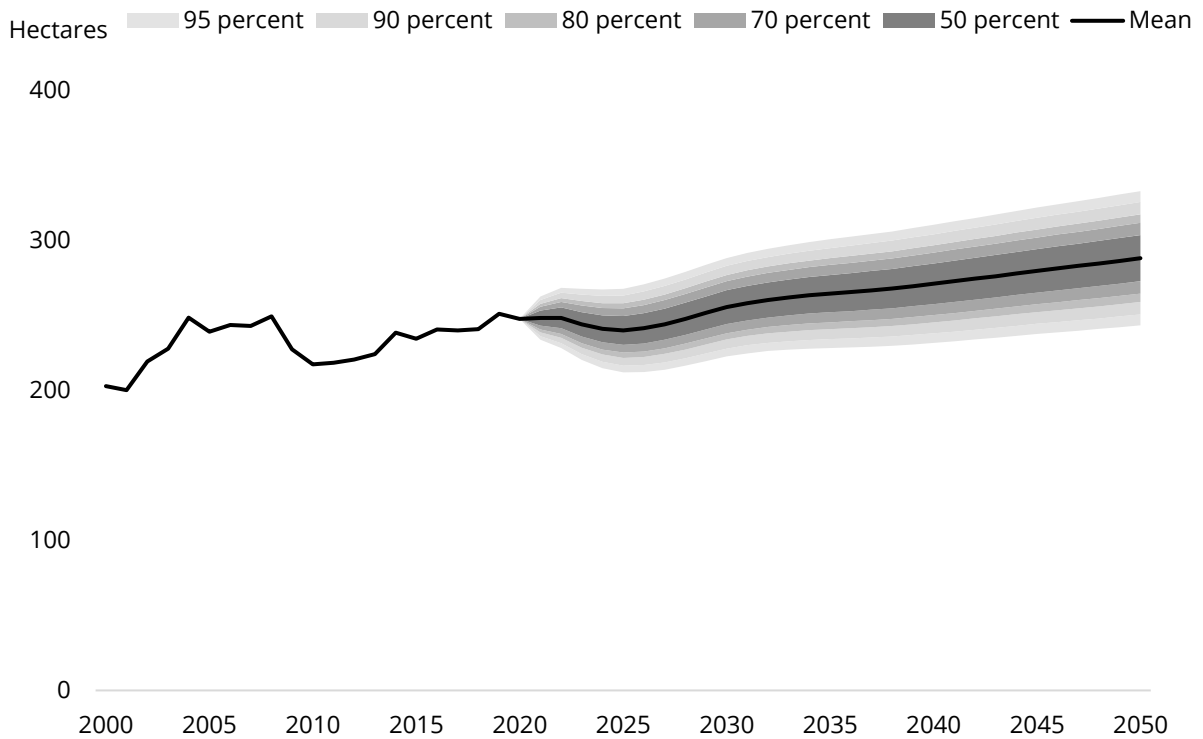


## Total

Figure 45 shows total demand for business land over history implied by our modelling and the forecast to 2050. Business land demand is set to grow but a little more moderately compared with history. Demand for business land grows at 0.51% over the forecast horizon, a little lower than the 1.0% growth in demand for business land implied over history. Growth in demand for business land is a little slower than demand over history that has average 1.0% each year.

While our modelling suggests growth over 58 hectares of business land, it is important to consider the extent of vacant and under-utilised business land across the region. Our work with survey and sales data suggests some vacant areas that could be used more efficiently. Our estimates could also be combined with measures of relative land prices between business and residential activity to better understand where land will be most needed in the future.

FIGURE 45 STRUCTURAL SHIFT MODERATES LAND DEMAND





## Commercial intensification scenario

The demand for business land we identify in the modelling suggests growth of 40.6 hectares of commercial land. But realised business land use will be contingent on plans, the form of developments and choice of individual developers. That means 40.6 hectares is far from set in stone. There are alternatives to meet our assessment of floorspace requirements from section 4.1.

To show this point, we specify an intensification scenario that gradually lifts the floor-to-area ratio across commercial land in Nelson City from an average of 1.4 to 2 over a thirty-year horizon. Figure 46 shows the assumption for the intensification scenario. Since the business stock evolves relatively slowly, the assumption shows a relatively aggressive shift in density, but we restrict the assumption to apply only to commercial sites in Nelson City, excluding retail and sites in the Tasman urban environment that might be less likely to support higher densities. Figure 47 shows the impacts on commercial land - a decrease of 2.4 hectares that reduces total demand for business land to about 38.2 hectares.

FIGURE 46 OUR SCENARIO INTENSIFIES BUSINESS LAND TO A FLOOR-TO-AREA RATIO OF 2

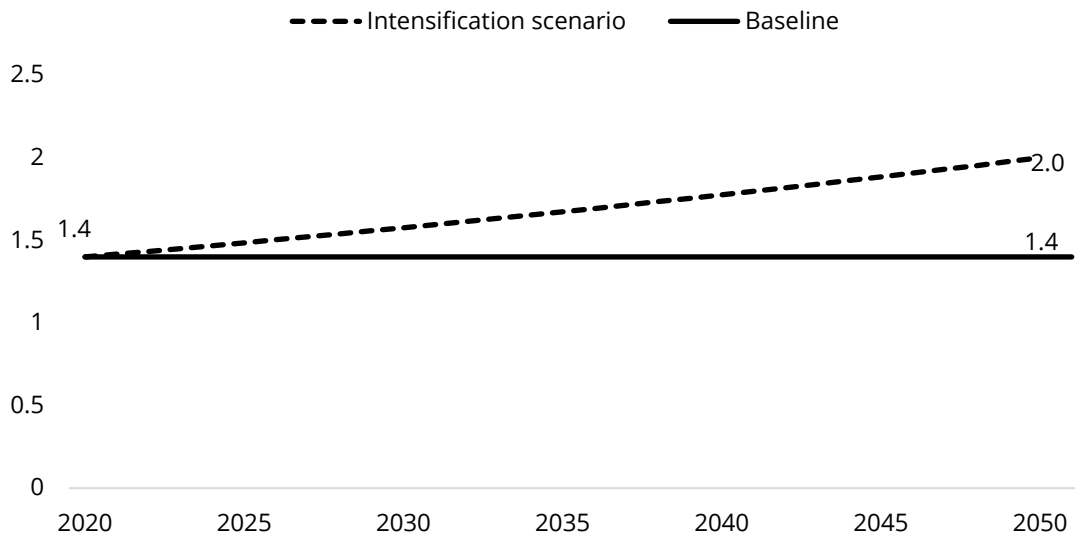
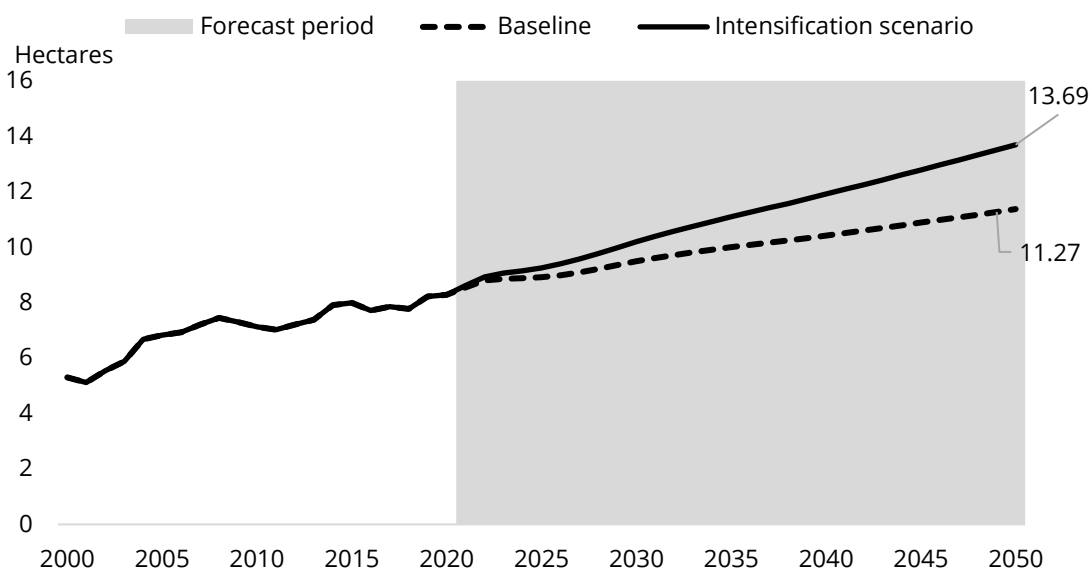


FIGURE 47 INTENSIFYING LAND USE WOULD REDUCE DEMAND FOR COMMERCIAL LAND A LITTLE

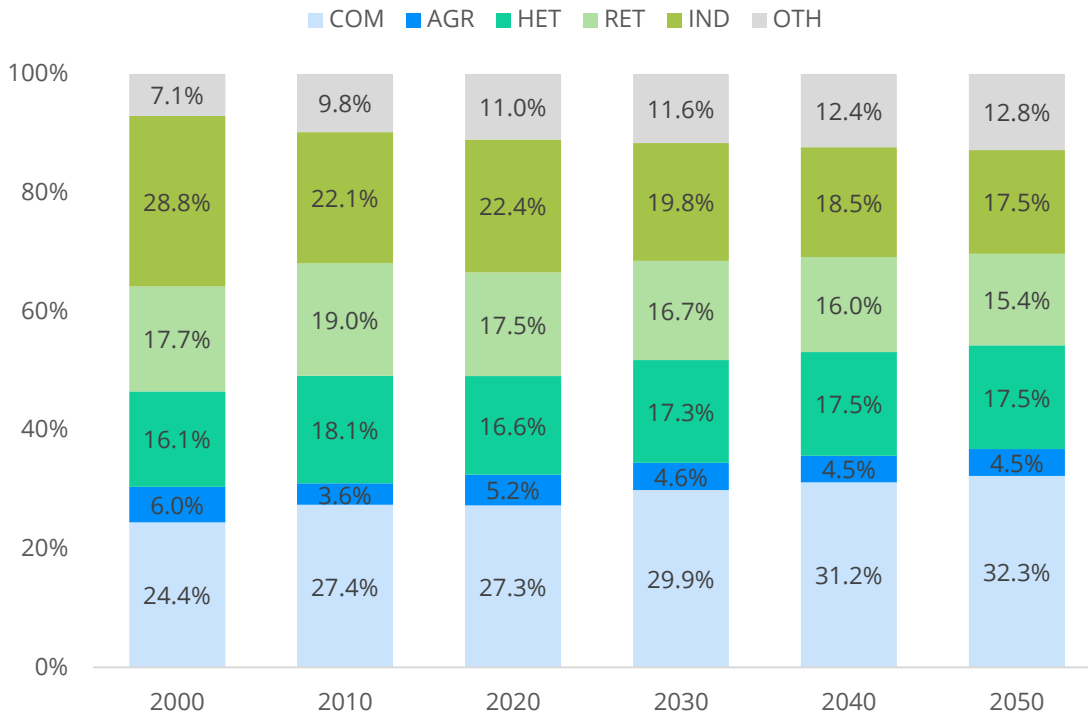




# 5. Nelson City

One of the key features of the forecasts is the continuing trend for demand for commercial land in Nelson City. Recent employment growth has been strong, and we expect demand for commercial activity to continue. Figure 48 shows commercial employment as a share of Nelson's economy.

FIGURE 48 NELSON CITY SET TO SEE STRONG GROWTH IN COMMERCIAL ACTIVITY



But industrial activity is expected to wane. Many of these industrial activities no longer need to be situated so close to the Nelson City consumer base. Increases in demand for other land uses, including residential uses, has pushed up the opportunity cost of retaining land for industrial purposes. Based on our estimates of employment activity, we expect demand for industrial land within Nelson City to decrease over time, freeing up a little land for other uses.

Figure 49 suggests an additional 12.4 hectares of commercial land is required in Nelson City while industrial demand declines by 5.9 hectares. But these demands are no fait accompli. Councils need to work collaboratively to reach the best way of accommodating competing demand for land use across the region. Figure 50, Figure 51 and Figure 52 map how economic activity maps to floorspace demand to land demand for Nelson City.

FIGURE 49 NELSON CITY'S LAND DEMAND A MODEST SHARE OF THE SHARED URBAN ENVIRONMENT

	Nelson City	Shared urban area
Commercial (and retail)	12.4 hectares	29.7 hectares
Industrial (includes some agriculture activity)	-5.9 hectares	10.8 hectares
Total	6.6 hectares	40.6 hectares





FIGURE 50 JOB GROWTH FOR NELSON WILL LIKELY PERSIST AT ABOUT 0.60 PERCENT A YEAR

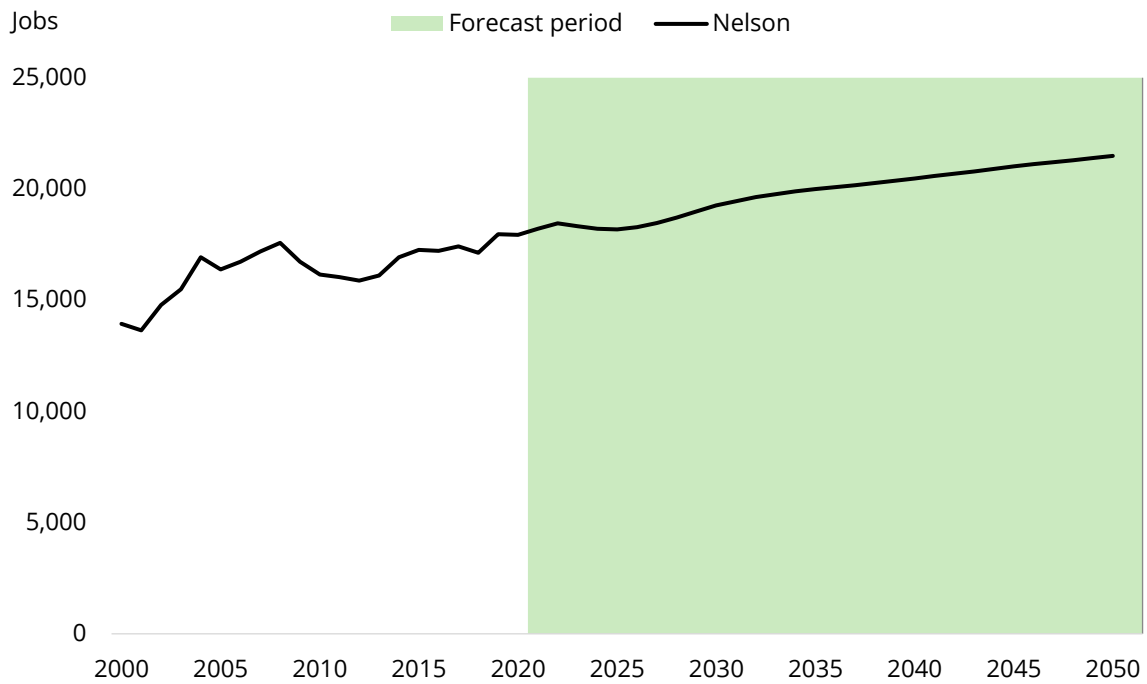


FIGURE 51 SHIFT TO SERVICES MODERATES GROWTH FOR FLOORSPACE

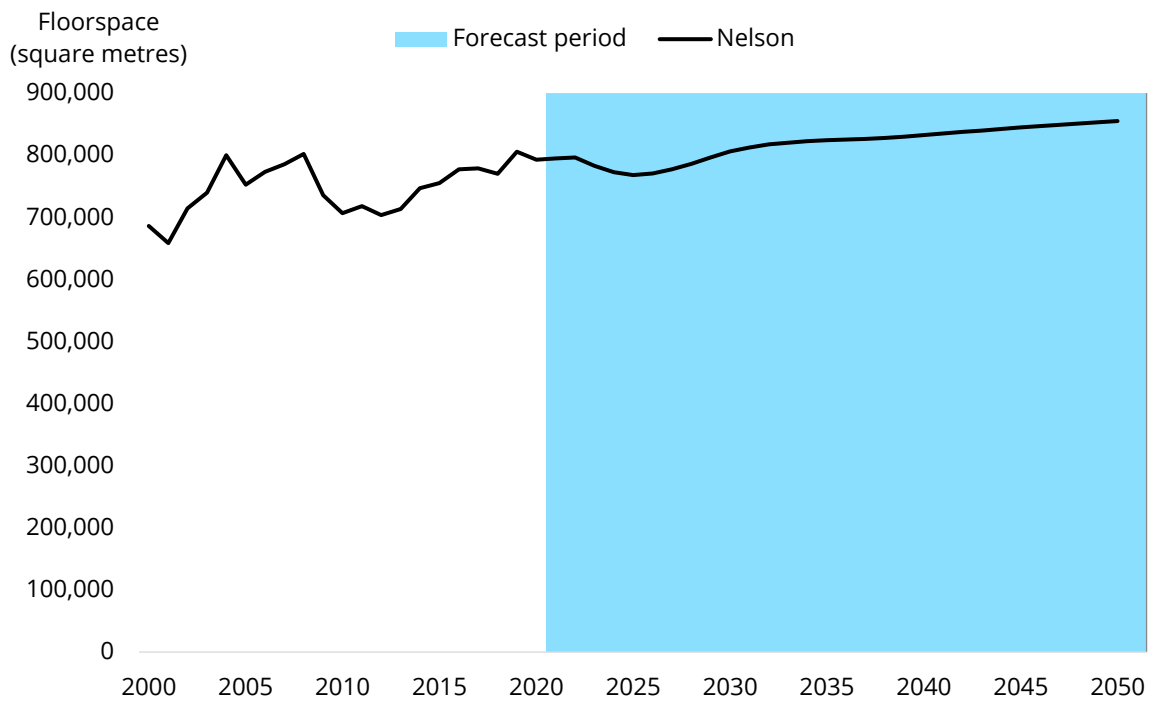
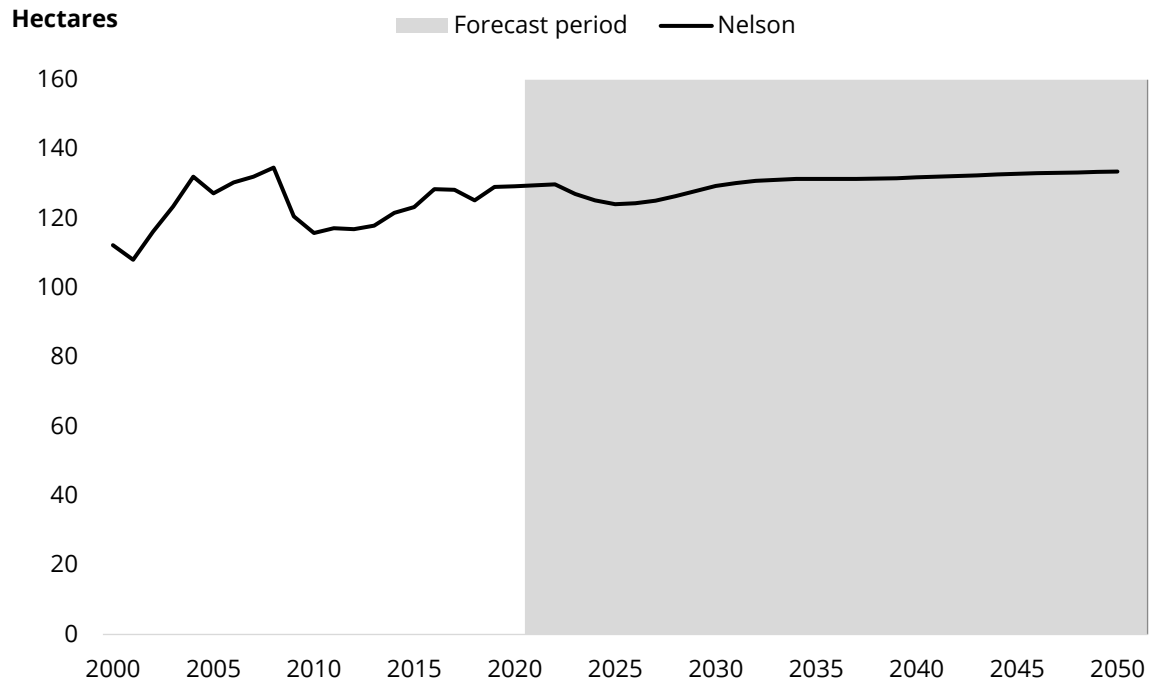




FIGURE 52 EXPECT MODERATE GROWTH IN DEMAND FOR BUSINESS LAND IN NELSON CITY





## 6. Tasman District

One of the key features of the forecasts is the continuing trend for demand for business land to likely be in Tasman District. Recent employment growth has been high, and we expect demand for activity to continue. Physical location, including close to the production base, customer base and connectivity, continues to make the location appeal to a wide range of businesses.

We separate out Tasman's urban environment – that includes Richmond including Hope, Brightwater, Wakefield, Mapua and Motueka, from separate forecasts for the remainder of Tasman District that we refer to as Tasman's rural area.

Figure 53 shows our assessment for Tasman's urban environment and the Tasman rural area alongside the forecasts for Nelson City and the shared urban area. We expect the Tasman urban area to demand an additional 34 hectares of land the rural Tasman area and an additional 18.1 hectares by 2050.

FIGURE 53 TASMAN'S URBAN AND RURAL AREAS EXPECT TO GROW STRONGLY

	Nelson City	Tasman urban environment	Shared urban environment of Nelson-Tasman	Tasman rural area
Commercial (and retail)	12.4 hectares	17.3 hectares	29.7 hectares	15.1 hectares
Industrial (includes some agriculture activity)	-5.9 hectares	16.7 hectares	10.8 hectares	3.0 hectares
Total	6.6 hectares	34.0 hectares	40.6 hectares	18.1 hectares

### 6.1 Urban Tasman

Tasman's urban environment is undergoing significant change. The past twenty years have seen an increase in the share of the economy used for commercial and health, education, and training employment. Expect more health workers in the local economy. The share of employment devoted to industrial activities has declined a little. Agriculture's share of employment declines sharply by 2050.

These trends are expected to persist over the forecast period to 2050. Commercial activity is expected to increase to 3 in 10 jobs by 2050 (see Figure 54).

But Figure 54 shows the shape of the economy only. Since Tasman's urban environment is growing rapidly, within each sector declining shares can be consistent with modest increases in employment over the forecast period. Total job growth average 1.7 percent CAGR (compound average growth rate), each year to 2050. The combination of strong job growth and a shift toward services employment produces a robust outlook for demand for business floorspace in the area.

Figure 56 shows demand for floorspace persists, generating strong demand for business land in the Tasman urban environment.



FIGURE 54 SHIFT FROM AGRICULTURE TO COMMERCIAL JOBS CLEAR FOR URBAN TASMAN

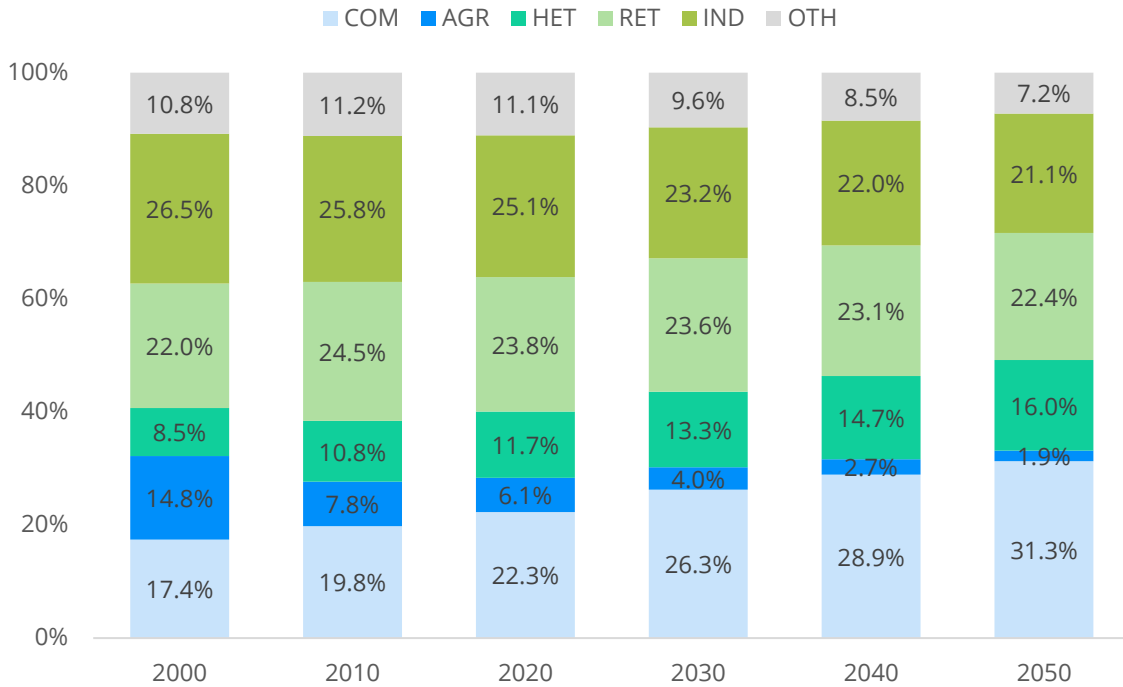


FIGURE 55 EXPECT A FAST PACE OF JOB GROWTH IN URBAN TASMAN OF ABOUT 1.7% EACH YEAR

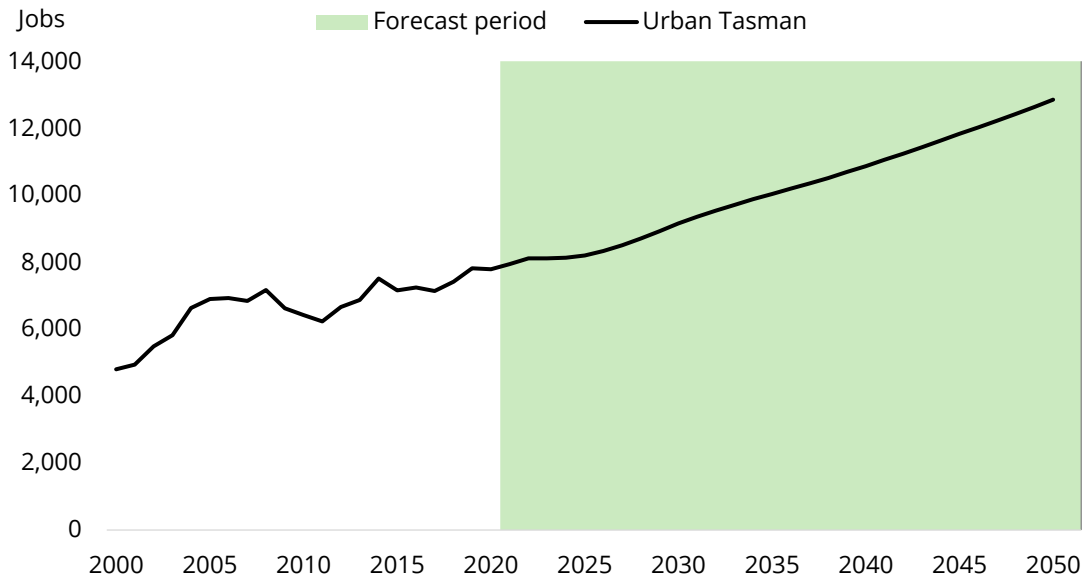




FIGURE 56 DEMAND FOR FLOORSPACE IN THE URBAN TASMAN AREA WILL PERSIST

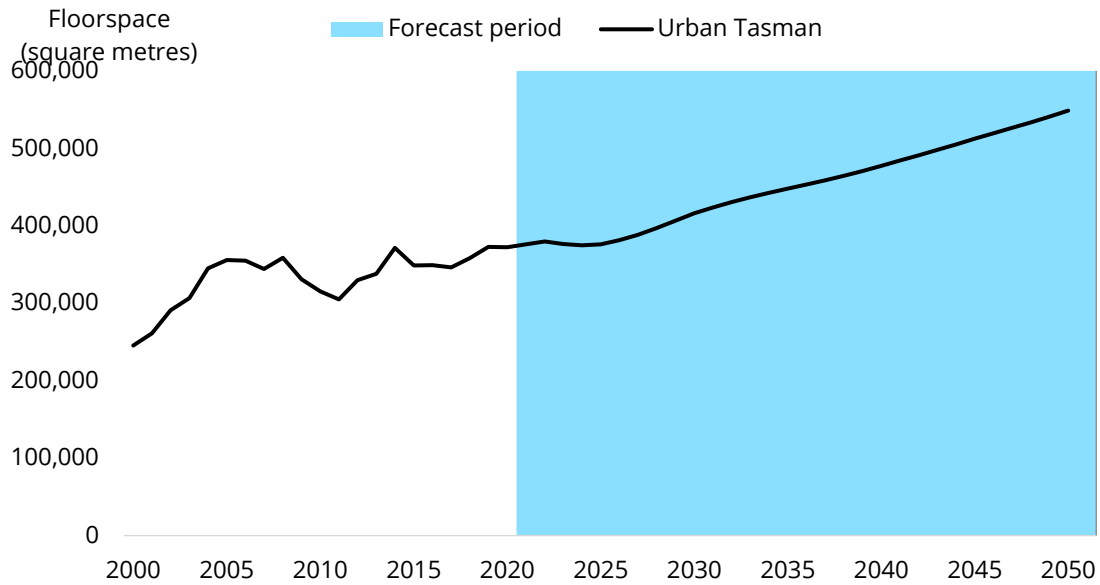
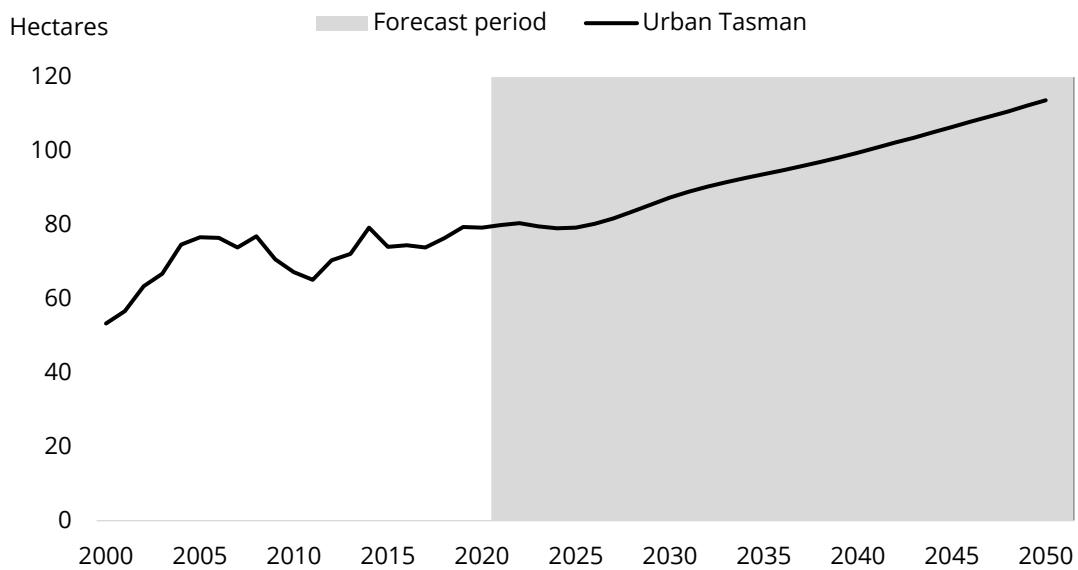


FIGURE 57 GROWTH FOR BUSINESS LAND TO GROW AT ABOUT 1.2% FOR URBAN TASMAN AREA





## 6.2 Rural Tasman

We separate out Tasman's rural area and produce separate employment forecasts for this region.

Figure 58 shows that the shape of Tasman's rural area is changing dramatically. Twenty years ago one-in-three jobs in this region were related to agriculture. By 2020 only one-in-five jobs were directly related to agriculture. Instead, commercial and health, education and training jobs have become a larger share of the economy.

We expect these trends to continue over time, with modest increases in services employment taking precedence over agricultural employment.

Total jobs growth in Tasman's rural area is expected to remain solid, increasing at about 1 percent CAGR (compound average growth rate) each year to 2050.

Since commercial employment requires less floor space, the shift towards services mitigates the growth in demand for floorspace. We expect total demand for floorspace to stand at about 442,000 square metres by the end of the forecast period.

This creates solid demand for business land – we anticipate demand for business land in Tasman's rural area to need an additional 18.1 hectares. The majority of that demand is from commercial activity rather than industrial activity.

FIGURE 58 RURAL TASMAN ALSO SHIFTING TOWARDS COMMERCIAL JOBS

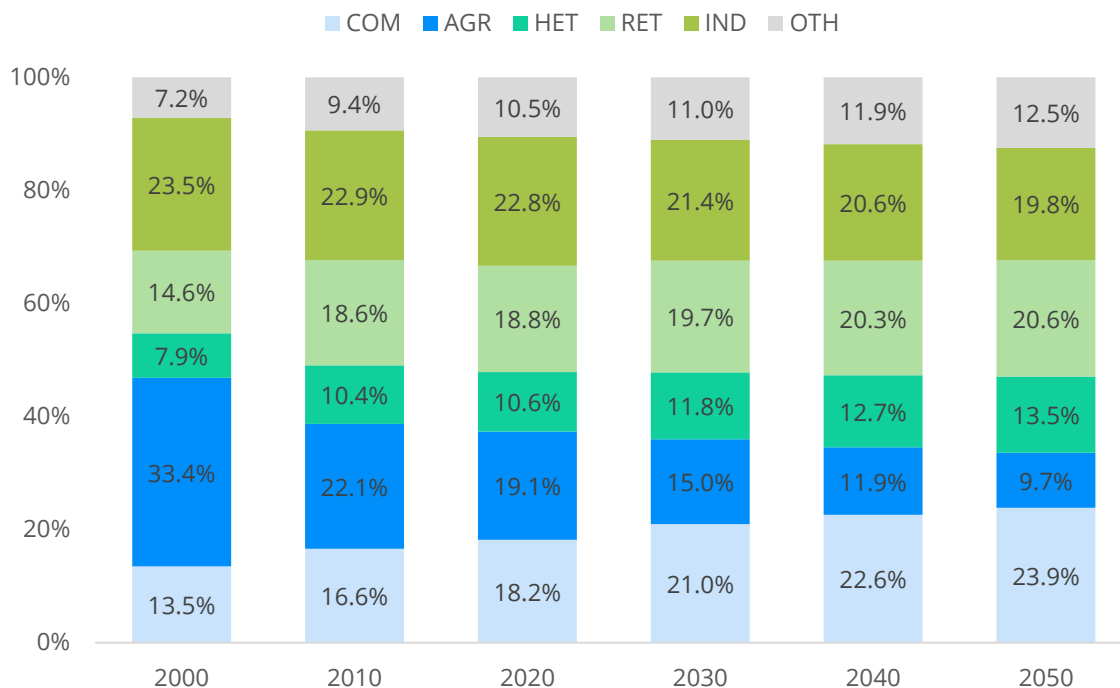




FIGURE 59 TOTAL JOBS IN RURAL TASMAN GROW AT ABOUT 1% EACH YEAR

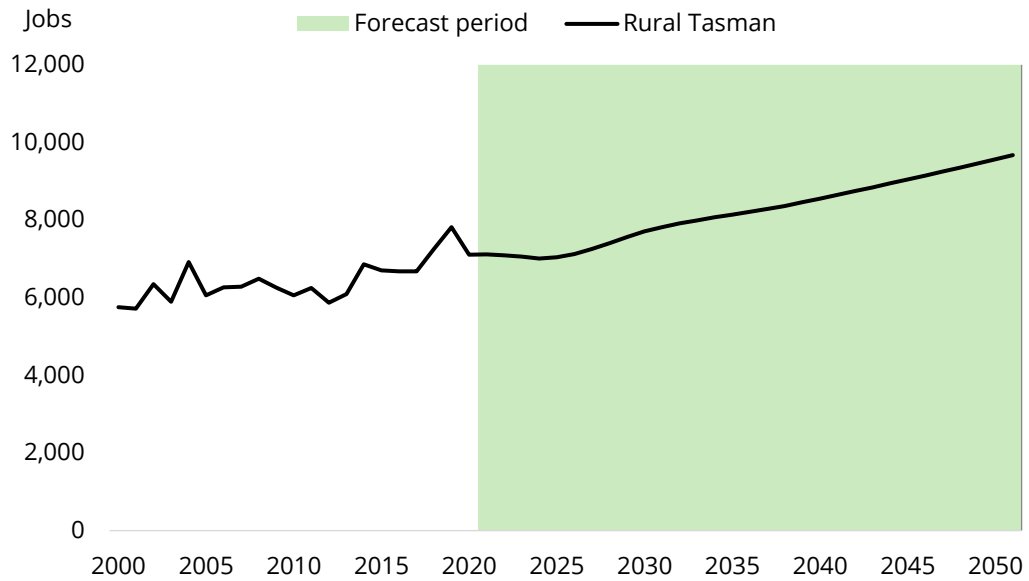


FIGURE 60 EXPECT MODEST GROWTH IN DEMAND FOR FLOORSPACE IN RURAL TASMAN

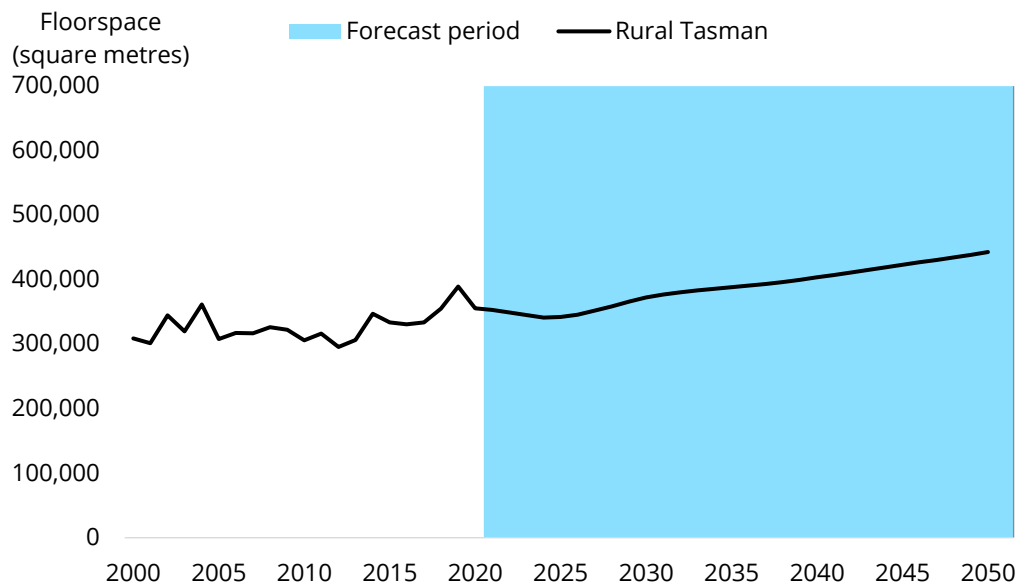
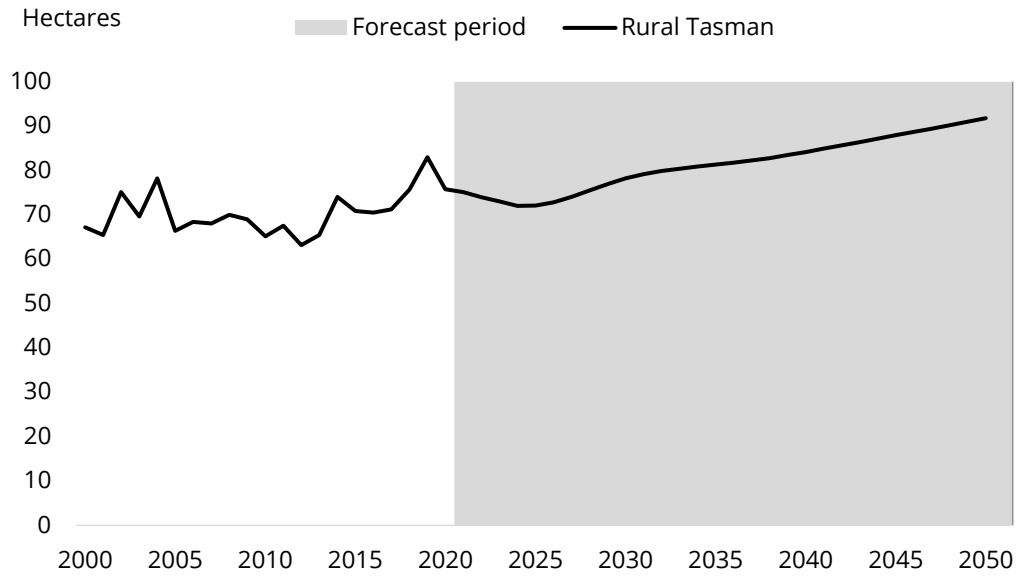




FIGURE 61 DEMAND FOR BUSINESS LAND IN THE RURAL TASMAN WILL GROW







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## Appendix 1: The activity model

VAR models are a standard economic model that typically work with a small number of variables to uncover the structure of the economy and to produce forecasts of key variables.

One of the key benefits of how we will use our VAR model is there is no need to impose restrictions on the model. Aside from assuming linear interactions, the dynamic interactions across variables are left unrestricted. More technically, we can represent the VAR as:

$$x_t = F_{x_{t-1}} + u_t$$

where  $x_t$  is a vector of industry share data derived from yearly employment count data from Statistics New Zealand's business demography database, so the  $t$  subscript represents a year.

More precisely, we bundle together health, education and training employment and then construct industrial, commercial, agriculture, and retail categories, grouping all remaining employment into an "other" category. Figure 62 shows the map from ANZSIC categories to our industry groupings. So for our VAR model,  $x_t$  includes the following variables:

$$x_t = [h_t, i_t, c_t, ag_t, r_t, o_t]$$

where  $h_t$  is health, education, and training,  $i_t$  is industrial employment,  $c_t$  is commercial,  $ag_t$  is government employment,  $r_t$  is retail employment and  $o_t$  is "other" employment.

In principle,  $x_t$  could be expanded to include lags of our employment variables such that our industry employment variables could be related to not just last year's values but values from two years ago. When we test the fit of using additional lags, we find that a model with a single lag provides the best trade-off between matching the data and overfitting the data. Moreover, we include a constant and a trend in our model.

Before including the variables in the model, we test the order of integration of each series to check the variables are stationary using Augmented Dickey-Fuller statistics.



FIGURE 62: MAP FROM ANZSIC 2006 TO OUR INDUSTRY CATEGORIES

Industry	Health and Education	Industrial	Commercial	Agriculture	Retail	Other	FTEs 2020
A Agriculture, Forestry and Fishing		0.1		0.9			2,415
B Mining		0.1				0.9	12
C Manufacturing		1					4,613
D Electricity, Gas, Water & Waste		0.3				0.7	127
E Construction		0.3				0.7	2,888
F Wholesale Trade		1					1,737
G Retail Trade					1		5,088
H Accommodation and Food Services			0.15		0.85		3,117
I Transport, Postal and Warehousing		1					1,745
J Information Media & Telecommunications			1				251
K Financial and Insurance Services			1				490
L Rental, Hiring and Real Estate Services			1				568
M Professional Scientific & Tech			1				2,710
N Administrative and Support Services			1				2,028
O Public Admin. and Safety						1	1,549
P Education and Training	0.75		0.25				2,773
Q Health Care and Social Assistance	0.75		0.25				5,263
R Arts and Recreation Services			0.25			0.75	787
S Other Services						1	1,691

Source: Statistics New Zealand, Sense Partners

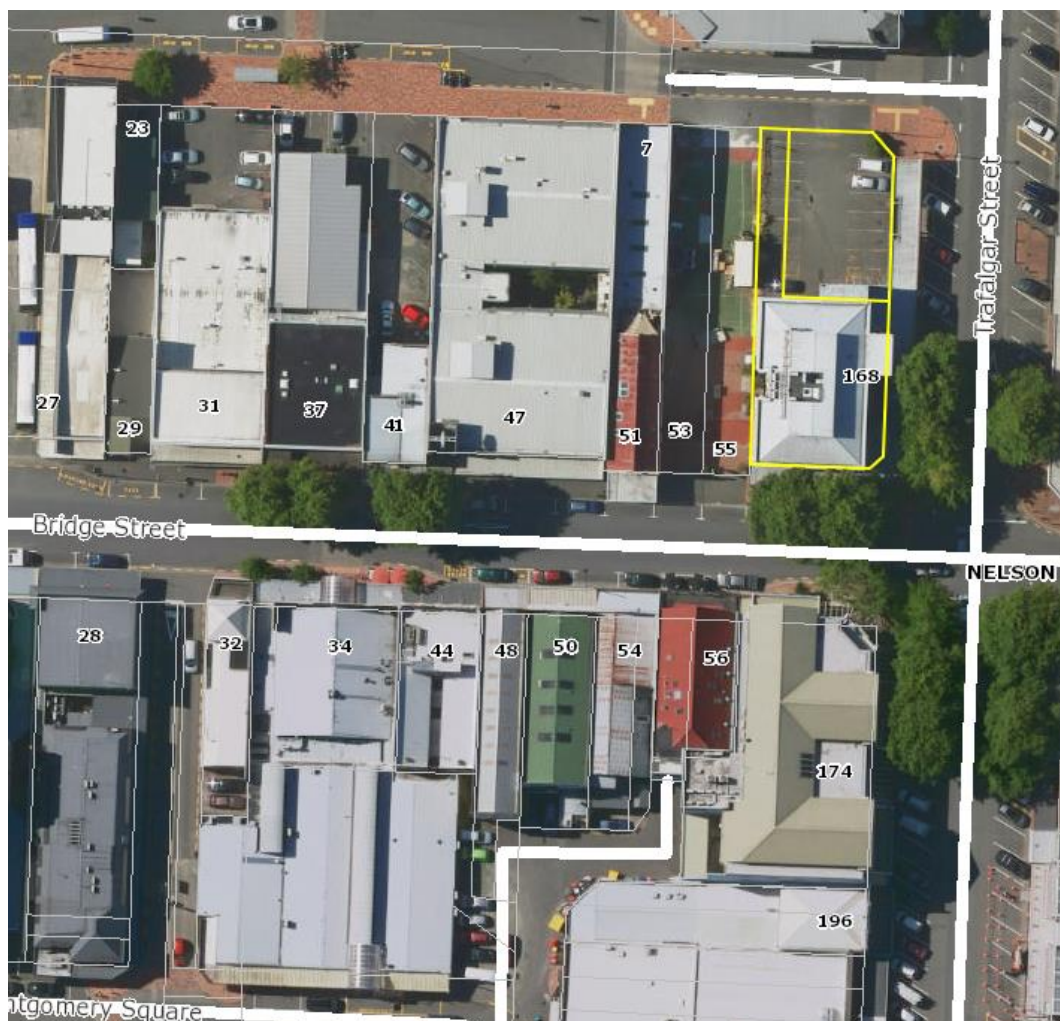


## Appendix 2: Bridge St case study

To test our assumptions on how floorspace demand is transformed into demand for land space we took a closer look at a number of commercial properties in Bridge Street – a property in the heart of Nelson’s central business district.

Figure 63 shows the difficulty in averaging across such a wide number of different property types. Many properties still much of the plot area (number 47 for example), but others have large spaces of unused land or land used for car parking (number 41 for example). Moreover, upon investigation, many of the properties contain both residential and commercial activities (see Figure 64).

FIGURE 63 WE USE NELSON'S BRIDGE ST TO INFORM OUR FLOOR-TO-AREA-RATIO



To make an appropriate assumption we sum the implied commercial floorspace over the Bridget street properties based on a conservative estimate of the number of commercial floors and a generous estimate of the number of commercial floors. Then we compare these floorspace estimates to the land area of the parcels in Bridge St. Figure 64 shows these calculations.



FIGURE 64 SUMMARY STATISTICS FOR BRIDGE ST. CASE STUDY

Address	ha	Sqm	\$/sqm	Floors		Square metres		\$sqm <sup>2</sup>
				Cautious	Generous	Cautious	Generous	
174 Trafalgar	0.075	747	\$5,301	3	3.5	2,241	2,615	\$1,515
56 Bridge St	0.021	212	\$2,052	2	2.5	424	530	\$821
52/54 Bridge	0.023	229	\$1,747	2	2	458	458	\$873
50 Bridge St	0.029	289	\$1,592	2	2	578	578	\$796
48 Bridge St	0.020	197	\$1,675	2	2	394	394	\$838
44 Bridge St	0.023	228	\$1,952	1	1	228	228	\$1,952
34 Bridge St	0.144	1437	\$995	1	1.5	1,437	2,156	\$663
32 Bridge St	0.017	173	\$1,474	1	1	173	173	\$1,474
168 Trafalgar	0.078	783	\$3,206	1.5	1.5	1,175	1,175	\$2,137
51 Bridge St	0.033	325	\$1,123	1.5	1.5	488	488	\$749
47 Bridge St	0.106	1063	\$1,223	2	2	2,126	2,126	\$611
41 Bridge St	0.037	374	\$1,217	0.3	0.6	112	224	\$2,028
37 Bridge St	0.061	607	\$1,137	1	2	607	1,214	\$568
31 Bridge St	0.067	670	\$1,090	1	1	670	670	\$1,090
29 Bridge St	0.015	149	\$1,107	1	1	149	149	\$1,107
27 Bridge St	0.070	697	\$904	1	1.5	697	1,046	\$603
<b>Total</b>		<b>8,180</b>				<b>11,956</b>	<b>14,222</b>	
<b>Floor-to-area ratio</b>						<b>1.46</b>	<b>1.74</b>	

Our estimates for Bridge street support a floor-to-area ratio between 1.46 and 1.74 for Bridge Street. Given locations just outside the CBD are likely to support lower floor-to-area ratios, we work with 1.4 as a baseline estimate for the Nelson-Tasman shared urban area.



## Appendix 3: NPS-UD Buffer

We show our estimates of business land demand alongside business land demand with the buffer recommended by the NPS-UD guidance. The buffer suggests accommodating 49.1 hectares of business land demand.

FIGURE 65: ESTIMATED BUSINESS LAND DEMAND WITH NPS-UD BUFFER

	Short run 1-3 years	Medium run 4-9 years	Long run 10-30 years	Total 1-30 years
<b>Panel A: Estimated business demand</b>				
Commercial	3.6 hectares	6.5 hectares	19.7 hectares	29.7 hectares
Industrial	-10.2 hectares	8.0 hectares	13.0 hectares	10.8 hectares
Total	-6.6 hectares	14.5 hectares	32.7 hectares	40.6 hectares
<b>Panel B: Business demand with buffer</b>				
Commercial	4.3 hectares	7.8 hectares	22.7 hectares	34.7 hectares
Industrial	-10.2 hectares	9.6 hectares	14.9 hectares	14.4 hectares
Total	-5.9 hectares	17.3 hectares	37.6 hectares	49.1 hectares

We show our estimates of business land demand alongside business land demand with the buffer recommended by the NPS-UD guidance. The buffer suggests accommodating 49.1 hectares of business land demand.



FIGURE 66: ESTIMATED BUSINESS LAND DEMAND WITH NPS-UD BUFFER: NELSON

	Short run 1-3 years	Medium run 4-9 years	Long run 10-30 years	Total 1-30 years
<b>Panel A: Estimated business demand</b>				
Commercial	2.0 hectares	3.1 hectares	7.4 hectares	12.4 hectares
Industrial	-8.3 hectares	3.0 hectares	-0.6 hectares	-5.9 hectares
Total	-6.4 hectares	6.1 hectares	6.8 hectares	6.6 hectares
<b>Panel B: Business demand with buffer</b>				
Commercial	2.4 hectares	3.7 hectares	8.5 hectares	14.6 hectares
Industrial	-8.3 hectares	3.7 hectares	-0.7 hectares	-5.4 hectares
Total	-6.0 hectares	7.3 hectares	7.9 hectares	9.2 hectares

FIGURE 67: ESTIMATED BUSINESS LAND DEMAND NPS-UD BUFFER: URBAN TASMAN

	Short run 1-3 years	Medium run 4-9 years	Long run 10-30 years	Total 1-30 years
<b>Panel A: Estimated business demand</b>				
Commercial	1.6 hectares	3.4 hectares	12.3 hectares	17.3 hectares
Industrial	-1.8 hectares	4.9 hectares	13.6 hectares	16.7 hectares
Total	-0.2 hectares	8.3 hectares	25.9 hectares	34.0 hectares
<b>Panel B: Business demand with buffer</b>				
Commercial	1.9 hectares	4.1 hectares	14.1 hectares	20.1 hectares
Industrial	-1.8 hectares	5.9 hectares	15.6 hectares	19.7 hectares
Total	0.1 hectares	10.0 hectares	29.7 hectares	39.9 hectares