Housing and Business Development Capacity Assessment for the Auckland Region

As required by the National Policy Statement on Urban Development 2020

September 2023

Research and Evaluation Unit (RIMU)

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Executive Summary

This report is the Housing and Business Development Capacity Assessment (HBA) for the Auckland region, as required by the National Policy Statement on Urban Development (New Zealand Government, 2022).

The HBA reports on the expected demand for, and currently enabled supply of, residential and business development capacity over the next 30 years to 2052.

Demand is based on Auckland Council's March 2023 Population Projections, with the Medium series considered most likely. This shows continued growth with demand of approximately 200,000 additional dwellings over the next 30 years. Total population is expected to be lower than previous projections suggested (for example in the 2020 HBA, Auckland 2050 and 2021-2031 LTP), as the pause in growth due to closed borders and increased internal migration over the covid period is not expected to be made up in the future. The rate of population growth is also projected to be slightly lower. Consequently, the demand for residential and business capacity will be slightly less than previously planned for. However, there is reasonable uncertainty in any projection and a range of scenarios is provided, reflecting the current high level of uncertainty (the High and Low scenarios are approximately +/-100k dwellings either side of the Medium respectively).

The supply assessment is based on the Auckland Unitary Plan Operative in Part (AUPOIP) (2016), in the short term,[1] Plan Change 78 as notified, which includes Auckland Council's proposed response to the Medium Density Residential Standards (MDRS), and Policy 3 of the NPS-UD in the Medium Term.[2] The long term includes the 'white out' upzoning in the Auckland Light Rail Corridor,[3] the current Auckland Plan 2050 and FULSS (2017), which times the staging and release of Future Urban Areas. New timings suggested by the Draft Future Development Strategy 2023 are also noted given that these timings largely incorporate and reflect the expected availability of bulk infrastructure that are also utilised in this assessment.

The increase in plan-enabled supply from PC78 proposals (implementing MDRS on most residentially zoned sites in the urban area, and an increase in intensification opportunities in walkable catchment of rapid transit and centres) is significant. A high proportion of the additional plan-enabled capacity is also feasible. The 2021 housing assessment (based on pre-PC78 AUPOIP capacity) confirmed, at least at the general quantum level, that the then-current AUP was likely to be sufficient, so a more enabling planning system (i.e., PC78) adds to this existing sufficiency – particularly of dwellings, and particularly in those higher demand locations where PC78/MDRS has upzoned relative to AUPOIP. When considered against a slightly reduced projected future demand, and continued supply of housing over the covid period when population growth was negative and the existing housing shortfall substantially reduced, sufficiency is unlikely to be negatively impacted in aggregate. This aggregate assessment masks current and expected

[1] Data is sourced from the Housing Assessment for the Auckland Region, July 2021, https://knowledgeauckland.org.nz/publications/housing-assessment-for-the-auckland-region-national-policy-statement-on-urban-development-2020/

[2] Plan Change 78: Intensification, notified 18 August 2022, https://www.aucklandcouncil.govt.nz/plans-projects-policies-reports-bylaws/our-plans-strategies/unitary-plan/auckland-unitary-plan-modifications/Pages/details.aspx?UnitaryPlanId=140

[3] Further variations have been signalled (for example in the ALR corridor once more certainty about route and stations is provided) and while the detail of any planning response (and the more direct interventions to catalyse development in the corridor) are unknown, it is considered unlikely that the eventual operative version of the AUP post PC78 hearings process would be any less enabling in aggregate than what has been proposed, even accounting for the potential for reduced enablement in particular locations given a renewed focus on natural hazards constraints, particularly flooding post the recent flooding events and subsequent process timeframe extensions to allow for a more considered, integrated response.

short-term feasibility challenges, and the ongoing challenge of providing infrastructure in locations that were not enabled prior to PC78 (and therefore not expected) to accommodate significant growth.

Similar to what was found in the 2021 Housing Assessment, below the aggregate/regional level, **a number of potential insufficiencies and challenges exist**. The challenges identified in the 2021 Housing Assessment around the **affordability** for low-income households in a market driven planning and assessment system remain, and may increase with strong rises in the costs of many other goods and services and interest rate rises. Interest rate rises are doubly impactful as they affect both mortgage repayment costs and the price and affordability of all large ticket items bought with debt – including the extremely expensive infrastructure required to service growth (some of which has not been previously planned for) and address existing level of service issues and future challenges.

Given both existing **infrastructure and infrastructure funding resources are scarce** and expected to remain so, choices about where to allocate them to best enable development will be required. Especially as the planning system provides more choice and is therefore less useful at giving direction on where and when development is likely to occur. We expect this reduction in the utility of land use planning for predicting development patterns to result in infrastructure spending being directed towards areas with existing high demand and a greater likelihood of take up. Conversely, this will also reduce the ability to support the creation of new areas that are less well located, have lower demand and where the likelihood of take-up is more speculative as these locations will now be competing with many better located and higher demand areas. This challenge may also extend to locations where housing need is high, but likely realisation rates are low.

We also find that there are **potential differences between housing demand and plan-enabled supply at a finer spatial level**, in two generalised locations under two different spatial demand assumptions. Firstly Stats NZ: if the distribution of demand is considered at the local board (LB) level, in accordance with the 2022 Stats NZ LB projections, there may be shortfalls in outlying areas (as greenfield land supply slows in response to funding challenges and the ability for demand to locate in more first choice locations), and that greenfield demand will be met in relatively more central existing urban areas where there is now more capacity. Secondly, land value: conversely, if demand is closer to the pattern indicated by land values, then there are likely shortfalls in areas close to the city centre and demand will be displaced and need to be met in existing urban areas slightly further out.

These quite different patterns of potential demand and the sufficiency and infrastructure issues they generate reflect high level trade-offs inherent in strategic land use planning.[4] Land use scenarios used to date for regional planning, and indicated to continue under PC78 as notified, indicate a development path somewhere between these two contrasting demand alternatives, which suggests **trade-offs remain between the financial constraints affecting bulk infrastructure on the fringe and regulatory constraints affecting plan enabled capacity nearer to the city centre**. This results in a pattern where growth (without addressing one or both of these issues) is likely to be largely focussed into the middle and outer suburbs where enabled supply is generally high, take up is market feasible (as demonstrated post AUP), there is proportionately more land available, and is not particularly constrained by infrastructure.

The **financial challenge for infrastructure provision** remains significant and, given that long-lived infrastructure is debt-funded, rising interest rates and reduced willingness to invest (due to council financial pressure to minimise rates increases as a burden on current households) will constrain uptake in some locations. Lower forecasted demand (relative to previous growth rates) will also increase the per

[4] Compare for example the first Auckland Plan 2012 target of a 70/40 split, the ~80/20 split seen in consenting since then, and the evolving views on intensification including that demonstrated by Resource Management (Enabling Housing Supply and Other Matters) Amendment Act 2021 and NPS-UD.

capita cost of already committed infrastructure and will inevitably (and appropriately) lead to changes through project rescoping and timing reconsideration.

The current cycle of interest rates, inputs cost increases, and house price declines also signal expected short-term feasibility challenges for developers. These challenges have been forecast for some time, and consenting numbers are now slowing, but they remain high relative to historic rates. Significant increased potential for supply could further decrease expected prices, putting additional pressure on feasibility of projects already at the margin – especially those reliant on price and cost levels seen near the peak in 2020-2021. However, this forecast short-term impact (like the rapid rise in prices over the preceding covid period) is more a function of macro-economic issues (inflation, interest rates, etc.) rather than a response to conditions arising from planning constraints or infrastructure provision.

We note that increased availability of developable land and abundant infrastructure is a necessary condition, but insufficient in and of itself, to induce profit motivated developers to address demand from very low-income households whose income is insufficient to cover build costs, let alone land. To address this segment of the housing market, many other supporting actions will be required.

In summary, the Auckland Region has more than sufficient "reasonably expected to be realised" housing capacity in aggregate to meet the forecasted demand (plus competitiveness margin). However, future population growth may not follow the same patterns as historic growth, especially now that brownfield development opportunities are more plentiful. How this growth eventuates will directly impact which sub-regional areas are likely to suffer from any potential shortage of capacity due to infrastructure constraints, which are expected to reduce over time particularly closer to the centre – these central areas are also expected to see more growth over time. And, as noted above, regardless of which spatial growth patterns materialise, it is unlikely that market-led development alone will address the demand of very low-income households without specific targeted action.

For business capacity, the story is quite similar. At this time, **Auckland has more than sufficient aggregate business capacity to accommodate projected growth in business and jobs over the short, medium, and long term**. However, as with housing capacity, there are some areas of the city and some activities that are projected to have shortages of business land to meet the currently estimated future needs. Intensification as the city continues to grow, and more central locations become more desirable, will affect the suitability of some areas for some existing uses. This could place pressure on businesses that require lots of land as central land, in particular, becomes more valuable. Specific business activities, particularly land extensive ones (light industry, large format retail) will need additional land provision to meet their specific suitability requirements practicably. These issues warrant monitoring to ensure a well-functioning economy and urban form.

Summary Tables

Overall housing demand vs. supply assessment

DEMAND							
March 2023 Series, Medium	*Housing Affordability Model 3G, Resident Households*	2022	569,950				Household Projections from StatsNZ March 2023 Population projections (medium)
		Short Term	589,310				
		Medium Term	640,860				
		Long Term	767,060				
			Net Additional Dwellings	**Required Competitiveness Margin**	**Housing Bottom Lines**	**Gross Housing Capacity Required**	
Housing Demand with Competitiveness Margin	*Housing Affordability Model 3G*	Short Term	19,400	3,880	23,280	593,000	Additional dwellings @ 1 per Household; Competitiveness Margin +20% to 2032, +15% to 2052 (NPS-UD)
		Medium Term	70,900	14,180	**85,080**	655,000	
		Long Term	197,100	29,570	226,670	797,000	
SUPPLY							
			Residential Zones	**Business Zones**	**Total Dwellings**		
Existing Dwellings	*AC 2022*		480,320	97,530	577,850		Existing – Auckland Council 2023
Plan-enabled Housing Development Capacity	*MDRS No QMs Exclude PC79, Net Dwelling Capacity*	2022	2,108,280	507,300	2,615,580		Net Additional Capacity enabled: Auckland Council 2023
Plan-enabled and Infrastructure Ready Housing Development Capacity	*Water and Wastewater and Transport, Net Dwelling Capacity*	Short Term	622,000	150,000	772,000		Capacity adjusted for estimated Infrastructure constraints (Sep 2023): -70% (2025), -32% (2032), -13% (2052)
		Medium Term	1,424,000	343,000	1,767,000		
		Long Term	1,833,000	441,000	2,274,000		
Plan-enabled, Infrastructure Ready and Feasible Housing Capacity	*ME Model, Net Dwelling Capacity*	Short Term	435,000	105,000	540,000		Capacity adjusted for estimated feasibility (Sep 2023): 70% (2025), 80.5% (2032), 87.5% (2052)
		Medium Term	1,146,000	276,000	1,422,000		
		Long Term	1,604,000	386,000	1,990,000		
Plan-enabled, Infrastructure Ready, Feasible and RER Housing Capacity	*ME Model, Net Dwelling Capacity*	Short Term	218,000	53,000	271,000		Feasible Capacity adjusted for estimated RER (Sep 2023): 50% (2025), 55% (2032), 60% (2052).
		Medium Term	630,000	152,000	782,000		
		Long Term	962,000	232,000	1,194,000		
SUFFICIENCY							
Housing Development Capacity (surplus/deficit)	*Plan-enabled, Infrastructure Ready, Feasible and RER Housing Capacity LESS Housing Bottom Line*	Short Term	247,720				Net Surplus / Deficit is RER capacity less projected Housing Bottom line in each period.
		Medium Term	696,920				
		Long Term	967,330				

Overall business demand vs. supply assessment

Business land demand and development capacity	For more detail see section:	Total FS and EM					Note
DEMAND							
					Floorspace (m^2x1000)	**Employment (MECx1000)**	
Estimated business demand **(AC March 2023 Medium projection)**	*Auckland Economy Growth Model 2023, not incl. competitiveness Margin*	Existing (2022)			28,920	670	From HBA modelling.
		Short term			29,950	702	From HBA modelling; allowing for employment growth and floorspace per person demand.
		Medium term			31,050	744	
		Long term			33,740	861	
			Additional FS Demand	**Required Competitiveness Margin**	**Total Additional FS Capacity Requirement**	**Additional Employment Demand**	
Additional business demand with Competitiveness Margin	*Auckland Economy Growth Model 2023*	Short term	1030	210	1,240	32	From HBA modelling of employment growth and floorspace demand; Competitiveness Margin added (NPS-UD)
		Medium term	2130	430	2,560	74	
		Long term	4820	720	5,540	191	
SUPPLY							
Plan enabled business land development capacity	*Auckland Economy Growth Model 2023 : Enabled Less Used*	Short term			120,930	6,160	From HBA modelling of net additional plan-enabled floorspace capacity (Auckland Council) for employment growth.
		Medium term			120,930	6,160	
		Long term			120,930	6,160	
Plan enabled and infrastructure ready business land development capacity	*Water and Wastewater and Transport*	Short term			35,700	1,820	Plan-enabled net additional floorspace capacity adjusted for estimated Infrastructure constraints (Sep 2023): -70% (2025), -32% (2032), -13% (2052)
		Medium term			81,700	4,160	
		Long term			105,100	5,350	
Plan enabled, infrastructure ready, and suitable business land development capacity	*Land Suitability @ 95%*	Short term			33,900	1,730	Plan-enabled additional capacity adjusted for Land Suitability (95%)
		Medium term			77,600	3,950	
		Long term			99,800	5,080	
SUFFICIENCY							
Business land development capacity surplus/deficit	*Plan-enabled, Infrastructure Ready, Feasible and RER Business Capacity LESS Business FS or MEC demand*	Short term			32,660	1,698	Net Surplus / Deficit = net additional plan-enabled capacity suitably located, less net additional floorspace demand, each period.
		Medium term			75,040	3,876	
		Long term			94,260	4,889	

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Glossary

Abbreviation	Description
ALR	Auckland Light Rail
AUPOIP	Auckland Unitary Plan Operative in Part
CEU	Auckland Council Chief Economist Unit
CFGS	Capacity for Growth Study
CPI	Consumer Price Index
FDS	Future Development Strategy
GFC	Global Financial Crisis
HBA	Housing and Business Assessment
LBA	Local Board Area
LG(AC)A	Local Government (Auckland Council) Act 2009
MDRS	Medium Density Residential Standards
MSM	Macro Strategic Model
NPS-UD	National Policy Statement on Urban Development
OCR	Official Cash Rate
PC78	Auckland Council Plan Change 78 (proposed)
RTN	Rapid Transit Network
RMA	Resource Management Act 1991
SAM	Serviceability and Affordability of Mortgages
TLA	Territorial Local Authority

5 Business Sufficiency Assessment

Auckland Council invited Tātaki Auckland Unlimited to provide a brief introduction to this section to provide context and lay out some of the challenges and opportunities facing Auckland's business sector.

Auckland Council commissioned Market Economics Consulting (ME) to complete the region's business sufficiency assessment. Key findings and our summary of the assessment are presented here in the main body of the report, while the details of the analysis can be found in the ME report, attached as Appendix 1.

5.1 Spatial and sectoral employment change in Auckland 2002-2022 and beyond

The HBA Business Assessment has a requirement for an "assessment of the expected patterns of growth and change, in terms of how additional business activity is likely to be distributed across Auckland's spatial economy, and its key elements – the city centre and other centres, business zones, and the wider economy, including home-based employment".

In addition to provision for accommodating employment, a range of social and environmental outcomes in relation to prosperity, access to opportunity and the need to dramatically reduce transport emissions are outlined in the Auckland Plan 2050 and Transport Emissions Reduction Pathway.

These additional outcomes require consideration of where employment is located in relation to the labour force in order to improve access to employment across the region, while also reducing the need for travel to and from work from both a quality of life and a transport emissions reduction perspective. It doesn't necessarily follow that quality employment opportunities will migrate towards the areas of labour market growth as the two have different locational requirements and restrictions on where certain land uses are permitted, creating a potential mismatch of labour supply and demand. Achieving this balance requires an adequate supply of suitable and appropriately zoned employment land in locations across the region where businesses across the range of sectors can succeed and grow.

The assessment below[50] outlines some of the changes evident in the patterns of growth in Auckland over the last 20 years, with particular note of the changes in the distribution of economic activity and demand for industrial zoned land, an important resource that is home to a significant share of the region's employment, that is required to locate in areas specifically designated for industrial activities.

Role of the Urban Economy

Cities are essential to nations and their competitiveness, wellbeing, creativity, inclusion and resilience. A competitive city makes citizens more productive, companies more innovative, and capital more efficient. These benefits help to attract new and future growth sectors and support their competitiveness, which helps move the city towards the goal for a sustainable, future proof, high wage economy that will benefit the region and its residents.

As cities grow, housing the population and their places of work in a way that retains the city's competitiveness is important for attracting and retaining investment and employment in the face of competition from alternative locations both at home and overseas. As the world opens up, following

[50] The assessment is based on work to date within an ongoing work programme. It is a perspective based on work undertaken to date. The assessment is provided in response to a request within a timeframe independent of the TAU work programme.

difficult economic conditions brought by the covid-19 pandemic, competition for talent, investment and visitors has renewed with comparator cities actively planning for how to house tomorrow's growth sectors in sustainable and connected employment precincts (Brisbane City Council, 2023; NSW Treasury, 2019).

Auckland's Economic Performance

The Auckland economy has grown over the last 20 years, in part to serve the increased demand for goods and services as the population of the region has grown. There are over 300,000 more jobs in the region now compared to 20 years ago and two thirds of that growth occurred over the last decade. Construction, professional services, healthcare, retail, and hospitality created most of the additional jobs over the last 10 years (Table 32). New sectors such as Foodtech, Fintech and Gaming have established in the region, although other new growth tech sectors like Healthtech and Greentech have been slower to establish than in other cities.[51]

Table 32. Regional employment growth trends by sector, 2012-2022

	Jobs (2022)[52]	Growth (2012-2022)	Sector Growth
Construction	71,700	38,000	113%
Prof, Scientific & Tech Services	92,100	27,500	43%
Healthcare & Social Assistance	86,100	23,400	37%
Retail Trade	81,400	20,700	34%
Accommodation & Food Services	55,400	12,800	30%
Admin & Support Services	49,900	10,800	28%
Public Administration & Safety	38,400	8,700	29%
Manufacturing	79,900	8,200	11%
Wholesale Trade	61,600	8,200	15%
Education & Training	65,000	7,600	13%
Financial & Insurance Services	32,900	6,100	23%
Transport, Postal & Warehousing	37,900	5,500	17%

The recent *State of the City: Tāmaki Makaurau Auckland's international performance*[53] report notes Auckland's relative underperformance, relative to comparable cities, in several areas that limit the region's competitiveness and attractiveness as a place for firms to locate.

Fewer inward investment projects and limited investment in the industrial property market is one area the report notes Auckland needs to improve. A less well-connected innovation ecosystem with lower R&D spending and less access to early-stage capital is another area. Connectivity issues due to a lack of efficient transport across the whole city, higher levels of car dependence, rising congestion and consequent lost work hours is also highlighted as a clear deficit.

Despite the Auckland economy's strong rebound post-pandemic (GDP growth of 4.5 per cent in 2022), business confidence is at an historic low, the NZIER Quarterly Survey of Business Opinion in Auckland for the June 2023 quarter shows a net 80.9 per cent of businesses expecting a worsening in the general

[51] State of the City: Tāmaki Makaurau Auckland's international performance
[52] Source: Stats NZ Business demography statistics
[53] Produced for Committee for Auckland, Tātaki Auckland Unlimited and Deloitte

business situation over the next three months, the lowest level of business confidence in Auckland in over 30 years.

Skills shortages have also been a prolonged issue in Auckland, the *Auckland Chamber of Commerce's July 2023 Business Confidence* notes that 54 per cent of businesses reported difficulties in finding skilled workers. Recent immigration policy changes are not considered to have alleviated skill shortages, and strong competition from cities such as Sydney, Melbourne and Brisbane is a draw for domestic talent.

Changing Workspace Demand

The State of the City report notes that talent / skilled workers increasingly demand better amenities, a secure work-life balance and exceptional experiences. Similarly, businesses in growing industries, particularly in newer technology driven industries, are drawn to areas that offer more modern facilities and higher levels of amenity. Sectors like Software & Data, E-commerce, Healthtech and Fintech currently lead the way in terms of new business start-ups[54] along with Foodtech, all of which Auckland has some capabilities in and could look to support further.

This preference for greater amenity in work environments is reflected in Auckland's commercial property market. Prime office and industrial space are in high demand relative to older secondary grade spaces (Brisbane City Council, 2023). Some industries are very locationally constrained (i.e., required to operate in areas zoned for industry), the growth of these sectors is reliant on the availability of sufficient light and heavy industrial land that is supported by appropriate infrastructure (roads, rail, air and sea port / inland port facilities).

Typically, manufacturing, wholesale trade, transport, postal and warehousing and parts of the construction sector require industrial zoned land and benefit from co-locating given the interdependencies these sectors have. A range of support services (construction services, professional services, employment services, security services, waste disposal, building cleaning and administrative support services) also benefit from co-locating in these areas alongside their customer base. Combined, these activities are likely to make up a third or more[55] of employment in the region and support an economic mix that provides opportunities for workers with a range of different skills and employment preferences.

Zoned industrial land is clearly an important resource that enables the regional economy to function. Business Demography[56] data suggests the 12 main industrial employment precincts in Auckland account for over a quarter of regional employment and over a quarter of employment growth over the last 20 years, this excludes smaller zoned industrial sites in the region and is a conservative estimate.

Commercial property intelligence[57] indicates Auckland currently has a shortage of industrial land, with demand for industrial premises at elevated levels, resulting in historically low vacancy rates. Vacancy rates have not exceeded 2.5 per cent since 2014 while prime grade industrial premises have a vacancy rate of just 0.5 per cent, which has remained unchanged since August 2022. The vast majority of prime industrial premises are found at Auckland Airport and East Tāmaki (Highbrook) as well as good amount at Manukau / Wiri. Other large employment precincts in the region, like North Harbour and Penrose, are very much dominated by secondary grade stock.

However, there are few un(der)developed sites in the region's older traditional industrial areas where secondary grade stock is predominant. Constraints on (re)development have intensified with the higher

[54] More descriptions can be found via https://www.startupblink.com/blog/startup-industries-and-vertical-insights/

[55] Based on Manufacturing, Wholesale, Logistics, Heavy Engineering sectors plus an estimated 1 in 3 jobs in support services co-locating with industrially focused sectors.

[56] Source: Stats NZ Business demography statistics

[57] Colliers Essentials - Auckland Industrial 1H 2023

interest rates, tighter financing conditions, and increasing building costs affecting project feasibility. Industrial floorspace consent issuance in the year to April 2023 was down by approximately 35 per cent from the previous year.[58] This places an upward pressure on rental costs and pressure to convert sites to higher value, non-industrial, activities that can afford to locate in high rental value areas.

Not all industrial precincts are changing in the same ways and different patterns in sectoral employment growth and regional distribution are evident, shifting the level of access to employment opportunities as well as the distribution of higher value added / higher wage activities. This creates both challenges and opportunities for transition and change.

The current pattern of sectoral employment growth shows a concentration of industrial employment growth in higher value-add sectors in a small number of employment areas in the region, typically newer employment areas, further out from the central city. Other areas, typically older and more central, see much lower rates of employment growth and a shift to lower value industries.

The move of industrial[59] sectors to newer areas like North Harbour, Auckland Airport, Botany Junction, Highbrook or Wiri (where the Inland Port established), where larger prime industrial sites are available, is evident (Table 33). Considerable effort has gone into attracting tenants to these areas. Despite the additional capacity delivered in these areas, demand remains very high with vacancy rates historically low as the new capacity has been quickly taken up. Auckland's most successful industrial areas in terms of growth over the last 20 years contain a large share of the region's prime grade stock and these areas are at capacity, with close to zero percent vacancies.

Table 33. Employment growth trends in selected industrial precincts, 2002-2022

	Employment (2022)[60]	Growth 2002-2022 (Jobs)	Growth %
East Tāmaki	32,300	16,000	98%
North Harbour	25,800	13,700	113%
Penrose	31,100	10,900	54%
Auckland Airport	24,500	10,500	75%
Wiri	18,500	9,600	108%
Mount Wellington Industrial	17,900	5,400	43%
Great South Road	16,400	4,180	34%
Glen Innes-Panmure	11,100	260	2%
Wairau Valley	10,900	300	3%
Rosebank Road	8,900	1,800	25%
Te Papapa	8,800	-600	-6%
Botany Junction	8,600	4,800	126%

The transition away from traditional industrial uses in some of the region's older areas (New Lynn, Mount Wellington, Rosebank Road, Te Papapa, Wairau Valley) is well underway as they begin to serve a different role in the regional economy with retail and administrative type office uses replacing industrial uses in some areas. As a result, for some industries, particularly those that need to be in light industrial zones with available prime grade premises, locational choice has become very limited.

[58] SNZ Building Consent data, Auckland Council analysis

[59] Based on Manufacturing, Wholesale, Logistics, Heavy Engineering sectors plus an estimated 1 in 3 jobs in support services co-locating with industrially focused sectors.

[60] Statistics NZ Business demography statistics (based on SA2 geographic areas)

The Future

To deliver a sustainable, future-proof, high wage economy requires a detailed appraisal of not just the quantity of employment land available. It needs to also consider the extent to which there is provision for a mix of sectors to locate in areas that meet their changing locational needs (location, infrastructure, amenity, quality of premises) as well as those of the sectors they benefit from co-locating with. This is needed to support their productivity, profitability and ability to grow. This requires a vision for employment precincts that meet the needs of range of current and future growth sectors across the region, so everyone has good access to good employment opportunities.

Striking a balance between managed transition of some areas to other higher density employment uses, the protection or consolidation of others who are home to sectors whose locational choices are constrained, and the provision for new industries that the region could attract and grow, is key. Knowing where and what types of transition can be supported and where it shouldn't, requires an open and honest appraisal of the value of the region's zoned industrial land, not simply from a 'quantity of land' perspective but from the perspective of how our employment areas support the generation of prosperity and opportunity for the region and its residents.

To address industrial land supply, a balance also needs to be found between enabling new greenfield capacity and improving efficiency in existing precincts. In addition, proposed large scale transport investment over the next two decades can support improved access to a broader range of employment, there will be a need for a curation of this to realise the right outcomes. Underpinning much of this will be our transition to a low carbon economy, with mitigation and adaptation measures influencing firm, worker and household behaviour. Auckland Council has a range of levers at its disposal to support this.

5.2 Demand for employment space

A summary of key findings of the Market Economics business assessment are outlined below. The full business assessment is provided as Appendix 1.

5.2.1 Employment projections

Regional employment projections are based on economic modelling of the Auckland economy, applying an input-output (I-O) model which projects economic activity in terms of output, value added, and employment by sector into the short, medium, and long term.

The I-O model takes account of the key drivers of growth in terms of expected growth in exports by sector, and regional population growth which increases local workforce and demand from Auckland households and businesses. Note that the I-O structure projects forward the current structure of the economy in response to changes in population and export volumes. It does not allow for shifts within the structure of the economy, including prices in response to changes in demand in the way that a computable general equilibrium (CGE) model would.

The key outputs of the I-O model are regional level projections of business units ('Business Units'[61]) and employment ('MECs'[62]) by sector, for the 19 Major ANZSIC sectors, and the 109 Industries (also ANZSIC

[61] Business Units or Geographic Units are defined by Statistic NZ as "A separate operating unit engaged in New Zealand in one, or predominately one, kind of economic activity from a single physical location or base"

[62] Modified Employment Count. This is a customised measure of employment which combines the Stats NZ Employee Count (EC) data with the Stats NZ Non-employee Working Proprietors, both at 6D-ANZSIC Level. These indicators together account for total employment in terms of the persons engaged in activity either as an employee or as a working proprietor (who is not also an employee).

based). These are projected forward annually from the 2022 base year, and cover 2025 (short term), 2032 (medium term) and 2052 (long term). The projected employment scenarios for the region are shown in Table 34. Projected growth by 2052 (30 years) would be 437,000 MECs in the High future (+47 per cent), 257,000 MECs in the Medium future (+27 per cent) and 103,000 MECs in the Low future (+11 per cent). The Very High future would see an increase of 541,000 MECs (+58 per cent) while the Very Low future would see an increase of only 83,000 MECs (+9 per cent).

The projected annual increases over the period range from 2,700 in the Very Low future to 14,600 in the High future and 18,000 in the Very High future. By way of comparison, over the 2001 to 2022 period, Auckland's employment grew by some 15,700 per year, while in the 2012 to 2022 period, average annual growth was some 20,100 MECs. Table 35 shows recent trends (2002-2022) and projected employment (2022-2052) under the medium growth scenario by the 19 ANZSIC sectors.

Table 34. Auckland regional employment projection scenarios.

Year	Very Low	Low	Medium	High	Very High
2018	885,000	885,000	885,000	885,000	885,000
2022	937,000	937,000	937,000	937,000	937,000
2023	946,000	958,000	963,000	967,000	1,001,000
2025	952,000	968,000	980,000	992,000	1,030,000
2028	960,000	982,000	1,006,000	1,030,000	1,074,000
2032	978,000	1,000,000	1,034,000	1,074,000	3,135,000
2038	998,000	1,021,000	1,081,000	1,165,000	1,246,000
2043	1,012,000	1,038,000	1,122,000	1,243,000	1,333,000
2048	1,015,000	1,040,000	1,166,000	1.320,000	1,419,000
2052	1,020,000	1,040,000	1,194,000	1,374,000	1,478,000
2053	1,022,000	1,041,000	1,205,000	1,395,000	1,502,000
2022-25	15,000	31,000	43,000	55,000	93,000
2022-25 %	2%	3%	5%	6%	10%
2022-32	41,000	63,000	97,000	137,000	198,000
2022-32 %	4%	7%	10%	15%	21%
2022-52	83,000	103,000	257,000	437,000	541,000
2022-52 %	9%	11%	27%	47%	58%

Source: Auckland Economy Growth Model 2023

Table 35. Auckland employment outlook by sector – medium growth to 2052.

Industry	2002	2016	2022	2025	2032	2052	2022-25	2022-32	2022-52	Growth 22-52 %	Share 2052 %
Primary	11,570	8,900	7,470	7,300	7,200	6,800	-170	-270	-670	-9%	-0.3%
Mining	340	330	410	500	500	600	90	90	190	46%	0.1%
Manufacturing	87,380	80,500	84,090	88,500	95,000	111,700	4,410	10,910	27,610	33%	10.7%
Utilities	3,240	4,490	6,160	6,400	6,900	6,900	240	740	740	12%	0.3%

Industry	2002	2016	2022	2025	2032	2052	2022-25	2022-32	2022-52	Growth 22-52 %	Share 2052 %
Construction	39,690	64,340	93,900	96,900	97,800	114,700	3,000	3,900	20,800	22%	8.1%
Wholesale Trade	53,550	59,180	64,600	66,000	69,700	81,300	1,400	5,100	16,700	26%	6.5%
Retail Trade	60,140	75,910	86,870	87,300	90,700	108,200	430	3,830	21,330	25%	8.3%
Hospitality	33,190	54,960	57,890	65,100	70,000	83,100	7,210	12,110	25,210	44%	9.8%
Transport & Storage	32,440	39,910	42,010	45,000	47,900	55,200	2,990	5,890	13,190	31%	5.1%
Information & Telecoms	20,800	22,170	21,740	24,800	26,400	30,700	3,060	4,660	8,960	41%	3.5%
Finance & Insurance	20,160	29,990	34,970	35,800	38,000	37,400	830	3,030	2,430	7%	0.9%
Property	14,580	18,450	21,830	22,800	24,400	28,400	970	2,570	6,570	30%	2.6%
Professional & Scientific	60,140	95,290	110,990	113,100	119,200	139,200	2,110	8,210	28,210	25%	11.0%
Admin & Support	36,400	53,970	58,460	64,200	68,400	80,000	5,740	9,940	21,540	37%	8.4%
Public Admin & Safety	21,880	32,780	38,640	39,900	39,800	46,400	1,260	1,160	7,760	20%	3.0%
Education & Training	44,270	62,560	66,740	70,800	76,300	91,400	4,060	9,560	24,660	37%	9.6%
Health & Social	46,620	75,200	91,690	94,700	102,700	108,600	3,010	11,010	16,910	18%	6.6%
Arts & Recreation	10,550	15,640	15,860	17,400	18,700	22,000	1,540	2,840	6,140	39%	2.4%
Other Services	21,590	28,110	32,290	32,700	34,500	40,900	410	2,210	8,610	27%	3.4%
Total	**618,500**	**822,700**	**936,600**	**979,000**	**1,034,000**	**1,194,000**	**43,000**	**97,000**	**257,000**	**27%**	**100%**

Source: Auckland Economy Growth Model 2023

5.2.2 Demand by location

For the next modelling step, which allocates the regional employment forecast across space, the 19 ANZSIC sectors are grouped into six 'mega-sectors' derived from analysis of the spatial patterns of each industry and evidence of co-location, in combination with the strength of functional inter-relationships among sectors. The mega-sectors are defined in Table 36.

Table 36. Mega-sector definitions by ANZSIC codes.

ANZSIC06 Divisions by mega-sector	Code Range
Primary	
A Agriculture, Forestry and Fishing	0100-0599
B Mining	0600-1099
Production	

ANZSIC06 Divisions by mega-sector		Code Range
C	Manufacturing	1100-2599
D	Electricity, Gas, Water and Waste Services	2600-2999
E	Construction	3000-3299
I	Transport, Postal and Warehousing	4600-5399
Trade and Hospitality		
F	Wholesale Trade	3300-3899
G	Retail Trade	3900-4399
H	Accommodation and Food Services	4400-4599
Services		
J	Information Media and Telecommunications	5400-6099
K	Financial and Insurance Services	6200-6499
L	Rental, Hiring and Real Estate Services	6600-6799
M	Professional, Scientific and Technical Services	6900-7099
Household Services		
N	Administrative and Support Services	7200-7399
O	Public Administration and Safety	7500-7799
R	Arts and Recreation Services	8900-9299
S	Other Services	9400-9699
Health and Education		
P	Education and Training	8000-8299
Q	Health Care and Social Assistance	8400-8799

The spatial allocation of projected demand for employment space is based on a set of identified relationships between locations, sectors and population growth that were developed for each mega-sector and for all sectors combined. The final projection models reflect the key drivers of growth identified, with base year share of business activity, accounting for 60-80 per cent of the observed increase in employment over the last 20 years. The regression analysis also identified secondary contributions of household growth, all-sector activity in the base year, and changes in centre or business area relative accessibility. These variables showed out as being statistically strong from the regression analysis, consistent with their theoretical influences on both the market potential of catchments, and the attractiveness and competitiveness of locations, and as a consequence on growth potential. These factors also enable the model to be used to reflect potential changes in these factors that are different from the initial base case used in this report (such as changes in accessibility or catchment population growth). The dominance of existing base year activity also means that manual seeding is required to create new business areas in new greenfield areas.

The projection models took these findings into account as follows:

i. The overall requirement is to estimate and allocate the projected regional growth in business activity across the 'formal' spatial economy (centres, business areas, special nodes) in the first instance, together with the other urban and rural areas of the economy. For modelling purposes, all of the projected growth had to be allocated, as there is little benefit from leaving substantial unallocated residuals of Business Units and Employment.

ii. The analysis consistently showed the base year situation as the key determinant (statistically, and conceptually) of the growth over the projection period.

The mega-sector growth factors are shown in Table 37. In summary the models allocate:

a. 60-80 per cent of the projected growth in each mega-sector according to the shares of business activity in forecast locations in the base year (2022);

b. between 2.5-40 per cent of projected growth according to the base year total business activity;

c. Between 5 and 20 per cent of projected growth is allocated on the basis of projected household growth in the catchment areas of centres and business areas;

d. Between 3 and 20 per cent of growth is allocated according to accessibility.

Table 37. Employment projection model parameters.

	Modelled Growth Factors
Mega-sector	
Primary	*0.8*A + 0.05*B + 0.1*C + 0.05*D*
Manufacturing Utilities Construction	*0.4*A + 0.4*B + 0.1*C + 0.1*D*
Trade & Hospitality	*0.5*A + 0.2*B + 0.2*C + 0.1*D*
Finance & Professional	*0.9*A + 0.02*B + 0.05*C + 0.03*D*
Household Services	*0.75*A + 0.07*B + 0.15*C + 0.03*D*
Health & Education	*0.58*A + 0.07*B + 0.15*C + 0.2*D*

where

A = Base Year Sector Activity
B = Base Year Total Activity
C = Household Growth
D = Accessibility

Recent trends and projected employment by local board are shown in Table 38. It is important to note that this spatial allocation of employment is based on a future spatial distribution of population that is informed by the December 2022 Stats NZ population projections by local board area. A different spatial pattern of population growth (for example where housing supply was more aligned to land value than SNZ's LBA projections suggest) would result in a different pattern (between 5 and 20 per cent based on the population growth factor described above, not accounting for (positive and negative) accessibility changes that would also occur) of employment growth, but particularly for industries such as retail stores, restaurants, and other businesses which directly serve households and will seek to locate as close as possible to meet demand.

Table 38. Auckland employment projections by local board area (LBA) – Medium Future 2022-2052.

LBA	2002	2016	2022	2025	2032	2052	2022-25	2022-32	2022-52	Growth %	Share of growth %
Rodney LBA	15,600	20,400	25,800	27,300	29,800	33,400	1,500	4,000	7,600	29%	3.0%
Hibiscus and Bays LBA	17,000	24,300	38,800	40,300	42,000	47,300	1,500	3,200	8,500	22%	3.3%
Kaipātiki LBA	27,500	30,800	30,200	31,300	32,400	36,000	1,100	2,200	5,800	19%	2.3%
Upper Harbour LBA	21,900	47,400	49,000	51,200	53,500	60,800	2,200	4,500	11,800	24%	4.6%
Devonport-Takapuna LBA	27,800	33,600	38,500	40,300	42,400	49,300	1,800	3,900	10,800	28%	4.2%
Henderson-Massey LBA	27,300	35,300	42,600	44,600	50,700	59,700	2,000	8,100	17,100	40%	6.7%

LBA	2002	2016	2022	2025	2032	2052	2022-25	2022-32	2022-52	Growth %	Share of growth %
Waitākere Ranges LBA	6,800	9,200	10,300	10,800	11,200	12,600	500	900	2,300	22%	0.9%
Whau LBA	26,000	30,700	28,700	30,100	31,500	35,800	1,400	2,800	7,100	25%	2.8%
Waitematā LBA	142,900	191,500	218,400	230,200	244,200	295,800	11,800	25,800	77,400	35%	30.1%
Puketāpapa LBA	9,400	10,600	13,200	13,800	14,500	16,500	600	1,300	3,300	25%	1.3%
Orakei LBA	19,700	24,500	63,800	66,400	69,100	77,900	2,600	5,300	14,100	22%	5.5%
Albert-Eden LBA	39,200	47,100	64,000	67,100	70,700	82,700	3,100	6,700	18,700	29%	7.3%
Maungakiekie-Tāmaki LBA	71,700	94,200	74,700	78,200	81,800	92,500	3,500	7,100	17,800	24%	6.9%
Howick LBA	35,100	59,000	64,800	67,600	70,500	79,600	2,800	5,700	14,800	23%	5.8%
Māngere-Ōtāhuhu LBA	31,400	45,000	34,200	35,600	37,000	41,200	1,400	2,800	7,000	20%	2.7%
Ōtara-Papatoetoe LBA	33,400	46,000	61,400	64,200	67,200	75,800	2,800	5,800	14,400	23%	5.6%
Manurewa LBA	16,900	24,900	26,000	27,300	28,600	32,400	1,300	2,600	6,400	25%	2.5%
Papakura LBA	13,900	18,000	20,200	21,200	22,200	25,100	1,000	2,000	4,900	24%	1.9%
Franklin LBA	21,100	26,500	26,300	27,800	30,300	34,000	1,500	4,000	7,700	29%	3.0%
Waiheke and Great Barrier LBA	2,400	3,900	4,300	4,600	4,800	5,400	300	500	1,100	26%	0.4%
Total	607,200	822,700	936,600	980,000	1,034,000	1,194,000	43,000	98,000	257,000	27%	100%

Source: Auckland Economy Growth Model 2023

The top 50 centres and business areas across all zoning types that are projected to see the greatest employment growth from 2022 to 2052 are shown in Figure 70 (overleaf). Figure 71 (overleaf) shows the spatial pattern of projected employment growth for centre zones, with the size of the dots representing the scale of employment growth and colour coding representing the zoning types. In this case, large centres include the city centre and metropolitan centres, medium centres include town and local centres, and small centres include neighbourhood centres. Figure 72 (overleaf) shows the relative spatial pattern of projected employment growth in mixed use, business park, and general business zones and Figure 73 (overleaf) shows employment growth in light and heavy industrial zones.

Top 50 centres with the greatest projected employment growth

2022 - 2052

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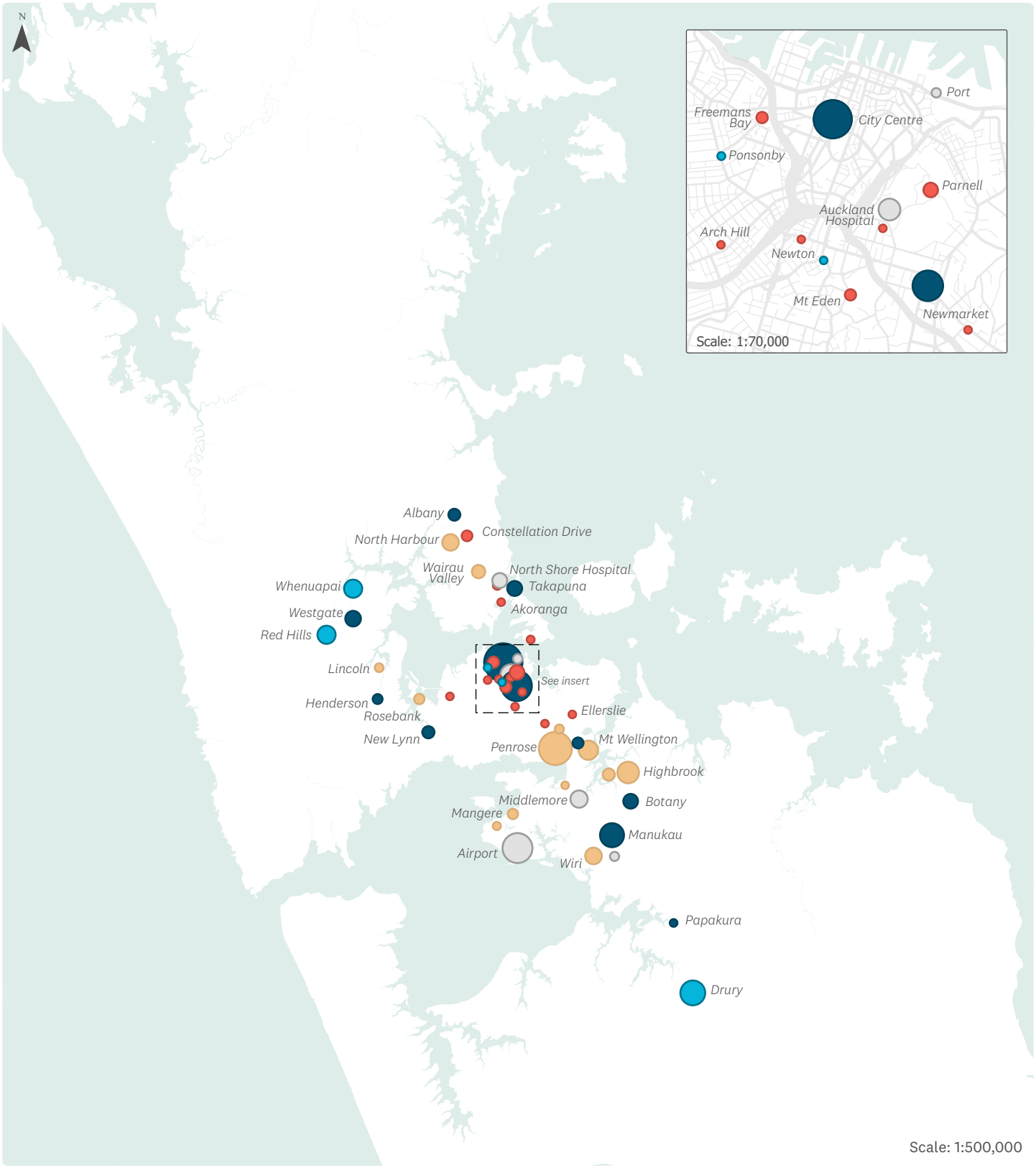
Figure 70.



These are the centres and business areas projected to see the greatest employment growth from 2022 to 2052 across all zone types under the medium growth scenario.

Source: ME Auckland Economy Growth Model 2023.

Projected employment growth in centre zones

2022 - 2052

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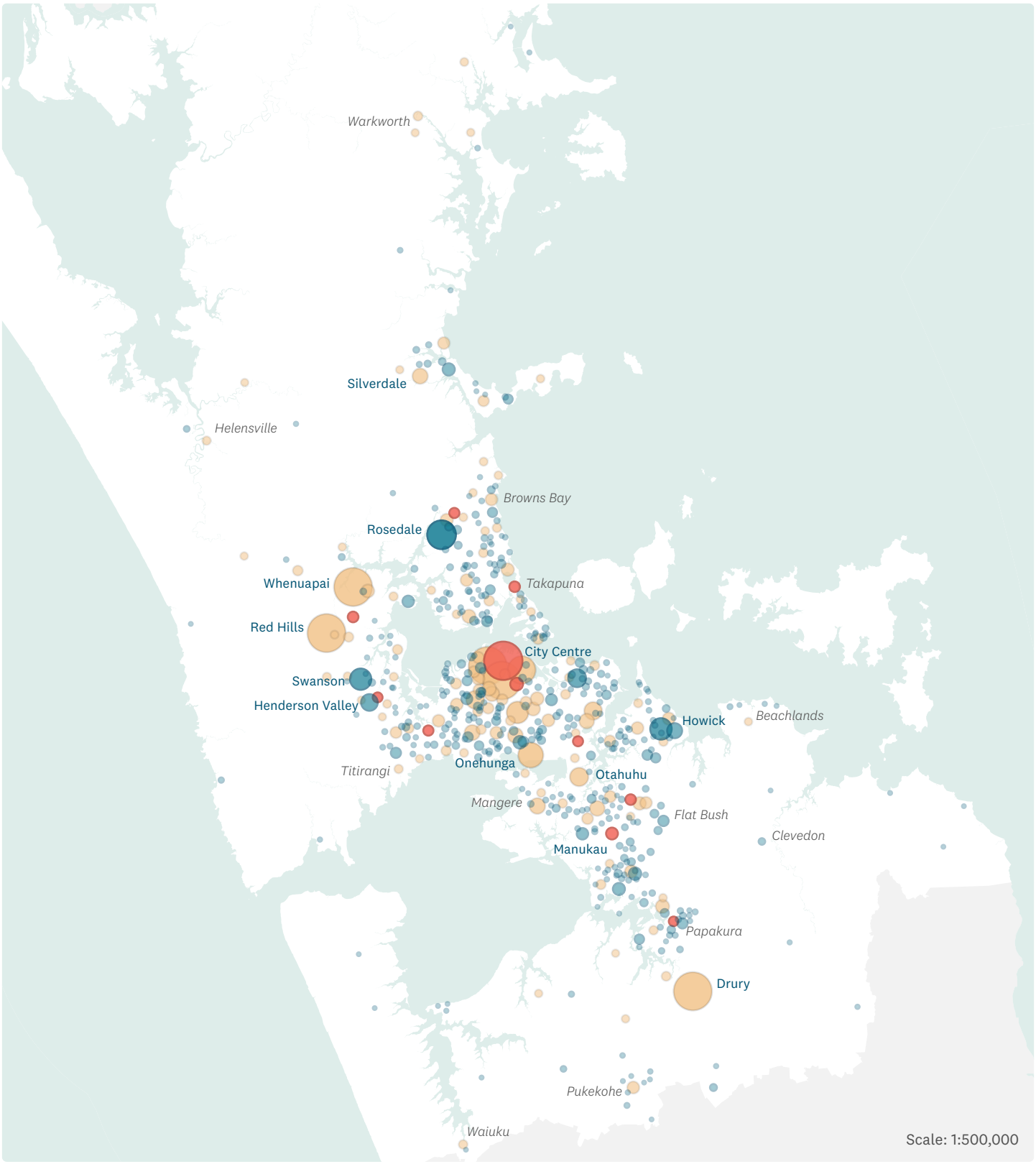
Figure 71.



Projected employment growth from 2022 to 2052 in city centre, metropolitan centre, town centre, local centre, and neighbourhood centre zones under the medium growth scenario.

Source: ME Auckland Economy Growth Model 2023.

Projected employment growth in business area zones

2022 - 2052

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Figure 72.

Projected employment growth from 2022 to 2052 in mixed use, business park, and general business zone under the medium growth scenario.

Source: ME Auckland Economy Growth Model 2023.

Projected employment growth in industrial zones

2022 - 2052

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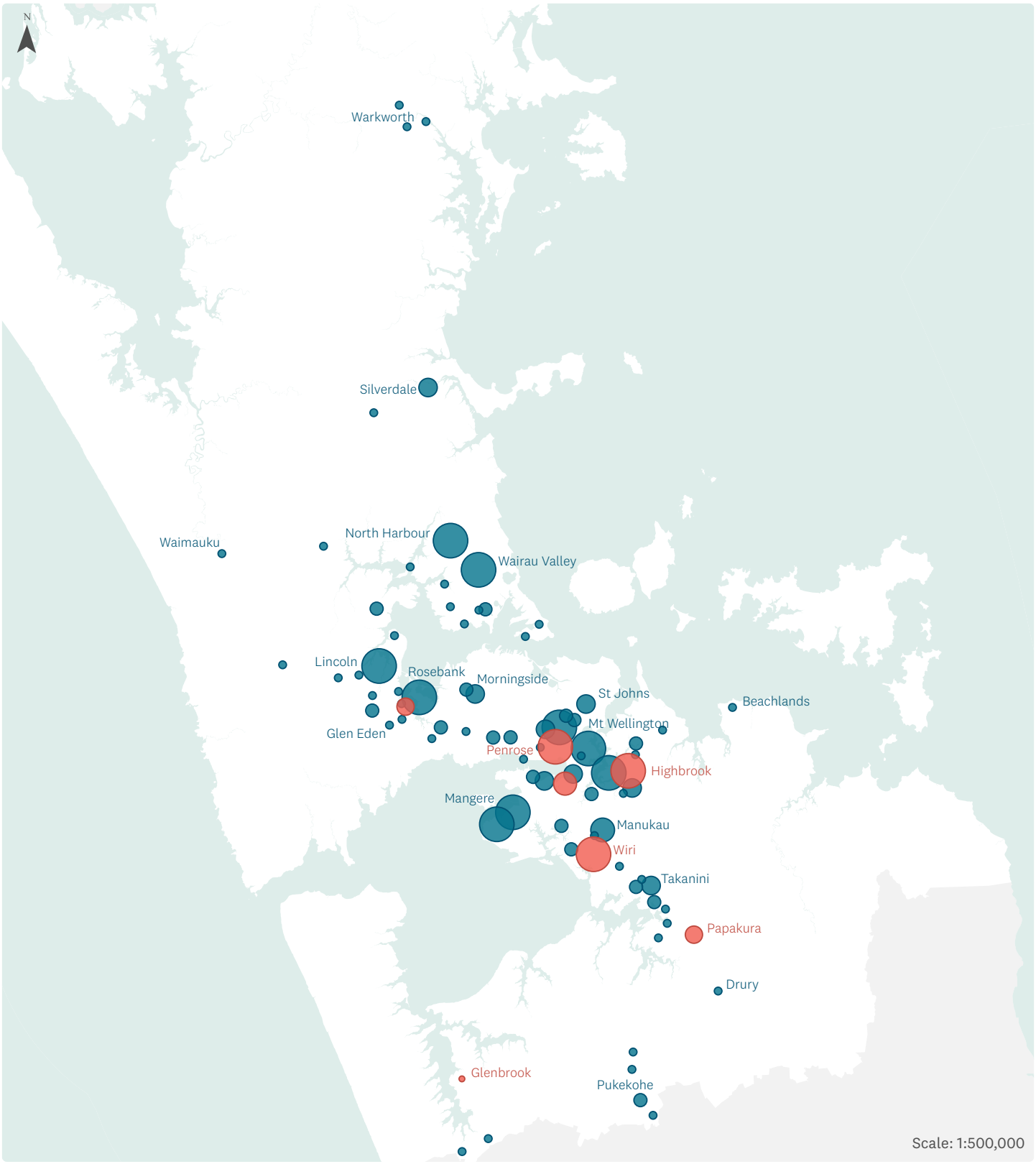
Figure 73.



Projected employment growth from 2022 to 2052 in light and heavy industry zones under the medium growth scenario.

Lower growth ● ● ● ● ● ● Higher growth

Light Industrial Centre ● ● Heavy Industrial Centre

Source: ME Auckland Economy Growth Model 2023.

5.2.3 Demand for building space

The employment projections have been converted to estimates of demand for floorspace (m^2) based initially on existing floorspace data for each centre and business area. These take account of the current levels of built development estimated from data on floorspace from the Council Rating Database (2022), and information from a range of sources on employment density (m^2 per MEC) across different sectors.

Employment intensity varies considerably among locations, and between individual businesses within sectors, as well as over time and across different types of activity. For example, office activities typically see a range (depending on location and type of business) of between 15-25 m^2 per MEC, whereas small format retail and hospitality is in the 12-20m^2 per MEC range, while factories are in the 40-80m^2 range, and warehousing is currently in the 60-150m^2 range per employee.

To take these matters into account, an indicative intensity has been applied for each Business zoned area, reflecting as far as possible the existing mix of activities. These same figures are also applied to the calculated plan-enabled floorspace capacity, to estimate the employment potential from the floorspace and land capacity which is enabled. The final assessments of sufficiency draw on these observations and assumptions about employment demand growth, floorspace productivity improvements, underdeveloped land development and finally redevelopment of existing developed sites for each individual centre and business area, and business locations generally.

On average, floorspace utilisation is 42m^2 per MEC, including 44m^2 per MEC in centres, and 40m^2 per MEC in business areas. Note that these averages should be treated with caution, as they are derived from matching floorspace estimates across several zones in some cases. Table 39 summarises the current average employment intensity by centre and business area type. However, the projected demand for floorspace assumes more intensive use of existing floorspace in the future, with the specific rate of increase from the base year dependent on the growth scenario. The projections assume an increase over 30 years of 6 per cent, 9 per cent, and 12 per cent for the low, medium, and high growth scenarios, respectively.

Table 39. Estimated floorspace utilisation 2022 (mean square metres per MEC).

Spatial Economy Element	Current Floorspace per Employee (m^2 per MEC)
City Centre	24
Metropolitan Centres	70
Town Centres	89
Local Centres	36
Neighbourhood Centres	29
Total Centres	44
Mixed Use	12
Business Parks	10
General Business	56
Light Industry	136
Heavy Industry	29
Total Business Areas	40
Centres & Business Areas	42

Source: Auckland Economy Growth Model 2023

5.3 Supply of employment space

5.3.1 Plan-enabled capacity

Vacant and vacant potential (underutilised) business land by business zones

As described in the methodology section, business land development capacity (both vacant and vacant potential) is largely informed by datasets that are publicly available, namely building footprints sourced from council's internal spatial data engine and LINZ, as well as the latest rating database. Table 40 provides the overall summary of total business land and business land that is readily available.

There is a total of 9,197 hectares of business zoned land as at March 2022. Of which, 1,370 hectares of land has been identified as being vacant (using the most up-to-date building footprint data[63]). Once factoring in the latest rating data[64] to bridge the 2017 building footprint (LiDAR) survey gap, the remaining vacant business land is estimated to be approximately 851 hectares in total (or 9.25 per cent of the total business land). Over half of the identified vacant business land is located within the Heavy and Light Industrial zones. Vacant land in centre zones consists of 30 per cent (or 247 hectares) of the total vacant business area identified.

In addition to vacant business land, 2,313 hectares of 'occupied' business land (25 per cent of the total business zoned land) is deemed 'vacant potential', or statistically underdeveloped (in terms of known existing floorspace to land area) relative to its peers, which could be further developed (by adding more floorspace). Of the vacant potential land identified, three quarters are located within the Heavy and Light Industrial zones. Another 202 hectares of vacant potential business land could be further developed in the Mixed Use zone.

Table 40. Business development capacity – vacant and vacant potential land.

Unitary Plan zone	Total land business land (ha)	Vacant business land (ha)	Vacant business land (adjusted using rating info, ha)	Vacant potential business land (ha)
Business Park	58.91	13.14	10.76	15.58
City Centre	257.83	26.10	25.31	64.39
General Business	358.91	47.40	41.49	89.56
Heavy Industry	1,846.41	429.61	84.96	460.05
Light Industry	4,472.17	584.77	467.41	1,268.85
Local Centre	243.98	49.99	47.01	53.84
Metropolitan Centre	379.92	55.69	48.35	87.02
Mixed Use	1,000.26	93.98	67.70	202.10
Neighbourhood Centre	134.78	16.77	16.14	17.35
Town Centre	444.09	52.99	42.72	54.96
Total	9,197.25	1,370.44	851.84	2,313.70

[63] Building footprint data from both council's spatial data engine and LINZ's data are mainly sourced from LiDAR survey carried out in 2017 and ad hoc updates since then. It is acknowledged that significant development activities have occurred since 2017 across the Auckland region. These datasets are the most up-to-date information and best available at the time the assessment was carried out.

[64] Current cutoff threshold is set at 50m^2 which means sites with total building floorspace with greater than or equal to 0m^2 and less than 50m^2 are assumed to be vacant.

Vacant and vacant potential business land by location

Comparing vacant business land to vacant business land adjusted using the latest rating database, a significant drop of vacant business land has been observed in the Franklin Local Board area which reduced from 444 hectares (as at 2017 when the LiDAR survey was carried out) to 102 hectares (as at March 2022). This vacant land reduction suggests that the level of business development activities, especially in land intensive business activities within the Franklin Local Board has been active over the past few years. Māngere – Ōtāhuhu Local Board area has seen a reduction of vacant business land by 36 hectares. Both Henderson–Massey and Upper Harbour local board areas have each seen a reduction of approximately 20 ha in vacant business land, suggesting business development activities are also active in recent years.

Table 41. Business development capacity – vacant and vacant potential land by local board areas.

Local Board Area	Total area business land (ha)	% of total business land	Vacant business land (ha)	% of vacant business land	Vacant business land (adjusted using rating info, ha)	% vacant business land adjusted	Decrease in vacant business land (ha)	Vacant potential business land (ha)	% of vacant potential business land
Albert-Eden	224.38	2%	10.37	1%	7.96	1%	-2.41	30.02	1%
Devonport-Takapuna	116.76	1%	9.09	1%	7.24	1%	-1.84	25.12	1%
Franklin	963.00	10%	444.24	32%	102.71	12%	-341.53	58.05	3%
Henderson-Massey	533.42	6%	88.78	6%	68.79	8%	-19.99	163.95	7%
Hibiscus and Bays	332.97	4%	79.89	6%	65.08	8%	-14.81	108.07	5%
Howick	706.99	8%	46.39	3%	30.01	4%	-16.38	123.48	5%
Kaipātiki	255.41	3%	11.14	1%	9.88	1%	-1.26	17.53	1%
Manurewa	623.19	7%	74.09	5%	60.01	7%	-14.08	202.46	9%
Māngere- Ōtāhuhu	836.04	9%	110.25	8%	73.80	9%	-36.45	220.28	10%
Maungakiekie-Tāmaki	1,143.89	12%	56.75	4%	51.86	6%	-4.89	258.36	11%
Orakei	132.46	1%	16.43	1%	13.03	2%	-3.40	27.48	1%
Ōtara-Papatoetoe	944.77	10%	98.80	7%	89.33	10%	-9.47	429.81	19%
Papakura	407.50	4%	57.26	4%	43.23	5%	-14.02	132.01	6%
Puketāpapa	105.44	1%	7.41	1%	6.45	1%	-0.96	17.33	1%
Rodney	382.12	4%	89.12	7%	78.24	9%	-10.87	168.01	7%
Upper Harbour	633.03	7%	107.72	8%	87.12	10%	-20.59	201.29	9%
Waitākere Ranges	48.89	1%	3.99	0%	3.59	0%	-0.40	12.69	1%
Waitematā	476.82	5%	38.09	3%	36.36	4%	-1.73	73.92	3%
Whau	330.16	4%	20.64	2%	17.12	2%	-3.52	43.84	2%
Total	9,197.25	-	1,370.44	-	851.84	-	-518.61	2,313.70	-

In contrast, land intensive business activities or business development on vacant land in areas such as Devonport – Takapuna, Puketāpapa, Waitākere Ranges and Waitematā local board areas have remained low which reflects the limited supply in new business zoned land and the scarcity of vacant business land in these already urbanised areas.

Plan-enabled floorspace capacity by business zones

Table 42 provides information on plan-enabled capacity for all business zones, totalling 23,665 analysed business zoned sites. Net floorspace capacity calculated provides 368 (AUPOIP) or 382 (PC78) million square metres across all business zones. More than half of the net plan-enabled floorspace capacity is supplied by industrial zones. As would be expected, the majority of business sites are zoned for Heavy or Light Industrial. Centre zones combined provides 82 (AUPOIP) or 85 (PC78) million square metres of floor area, which equates to 22 per cent of total business floorspace capacity supplied for commercial and residential use. A further of 31 (AUPOIP) or 37 (PC78) million square metres of floors area is supplied by Mixed Use zoned sites.

Table 42. Total plan-enabled floorspace capacity by business zones (excluding residential use).

Unitary Plan zone	No. of sites	Existing floorspace estimate (x1000m²)	Net plan-enabled floorspace (x1000m²) (AUPOIP)	Net plan-enabled floorspace (x1000m²) (PC78)
Business Park	80	283	2,074	2,074
City Centre	1,461	4,820	10,746	11,612
General Business	574	1,115	10,708	13,632
Heavy Industry	1,854	4,598	75,700	75,645
Light Industry	6,762	12,734	167,247	167,458
Local Centre	1,485	744	7,371	9,553
Metropolitan Centre	1,257	2,383	42,071	42,333
Mixed Use	5,607	4,692	31,323	37,532
Neighbourhood Centre	1,251	421	2,794	3,103
Town Centre	3,334	2,616	18,793	19,176
Total	**23,665**	**34,407**	**368,827**	**382,117**

Plan-enabled business floorspace capacity by location

As summarised below and illustrated in Figure 74 and Figure 75, distribution of business floorspace enabled between the operative and the notified plans is largely identical. Approximately 40 per cent of the total floorspace capacity comes from Auckland's southern local boards, reflecting large area and total quantities of industrial zoned sites. The isthmus supplies 22 per cent of additional floorspace capacity enabled and another 26 per cent enabled floorspace capacity from urban north and west combined.

Table 43. Plan-enabled business floorspace capacity by local board groups.

Local board group*	Net business floorspace capacity (x1000m²) (AUPOIP)	Percentage of total net floorspace capacity (AUPOIP)	Net business floorspace capacity (x1000m²) (PC78)	Percentage of total net floorspace capacity (PC78)
Rural North	14,074	4%	14,403	4%
Rural South	35,660	10%	36,905	10%
Urban Central	80,884	22%	85,701	22%
Urban North	53,478	14%	56,642	15%
Urban South	140,854	38%	143,089	37%
Urban West	43,876	12%	45,378	12%
Grand Total	368,827	100%	382,117	100%

***Note**: Local board group categories: **Rural North**: Rodney; **Rural South**: Franklin; **Urban Central**: Albert-Eden, Maungakiekie-Tāmaki, Orakei, Puketepapa and Waitematā; **Urban North**: Hibiscus and Bay, Kaipātiki, Upper Harbour and Devonport-Takapuna; **Urban South**: Howick, Māngere-Ōtāhuhu, Manurewa, Ōtara-Papatoetoe and Papakura; **Urban West**: Henderson-Massey, Waitākere Ranges and Whau

Figure 74 shows the difference in business floorspace capacity between the operative plan and the notified plan. The map highlights floorspace capacity differences between AUPOIP and PC78 are largely concentrated at the centres and other business zones along RTN routes or within close proximity to centres. This reflects how the notified plan has progressed on enabling further development potential to give effect to Policy 3(d) of the NPS-UD. Reduction in floorspace capacity has also been identified at some locations within the City Centre. It is understood that this reduction is related to the newly proposed upper-level setback rules within the Special Height Area which limit the size of tower and resulting in smaller buildable floorplate compared to the operative plan.

Auckland Plan-Enabled Business Development Capacity

Showing net AUPOIP business floorspace capacity

Housing and Business Development Capacity Assessment for the Auckland Region

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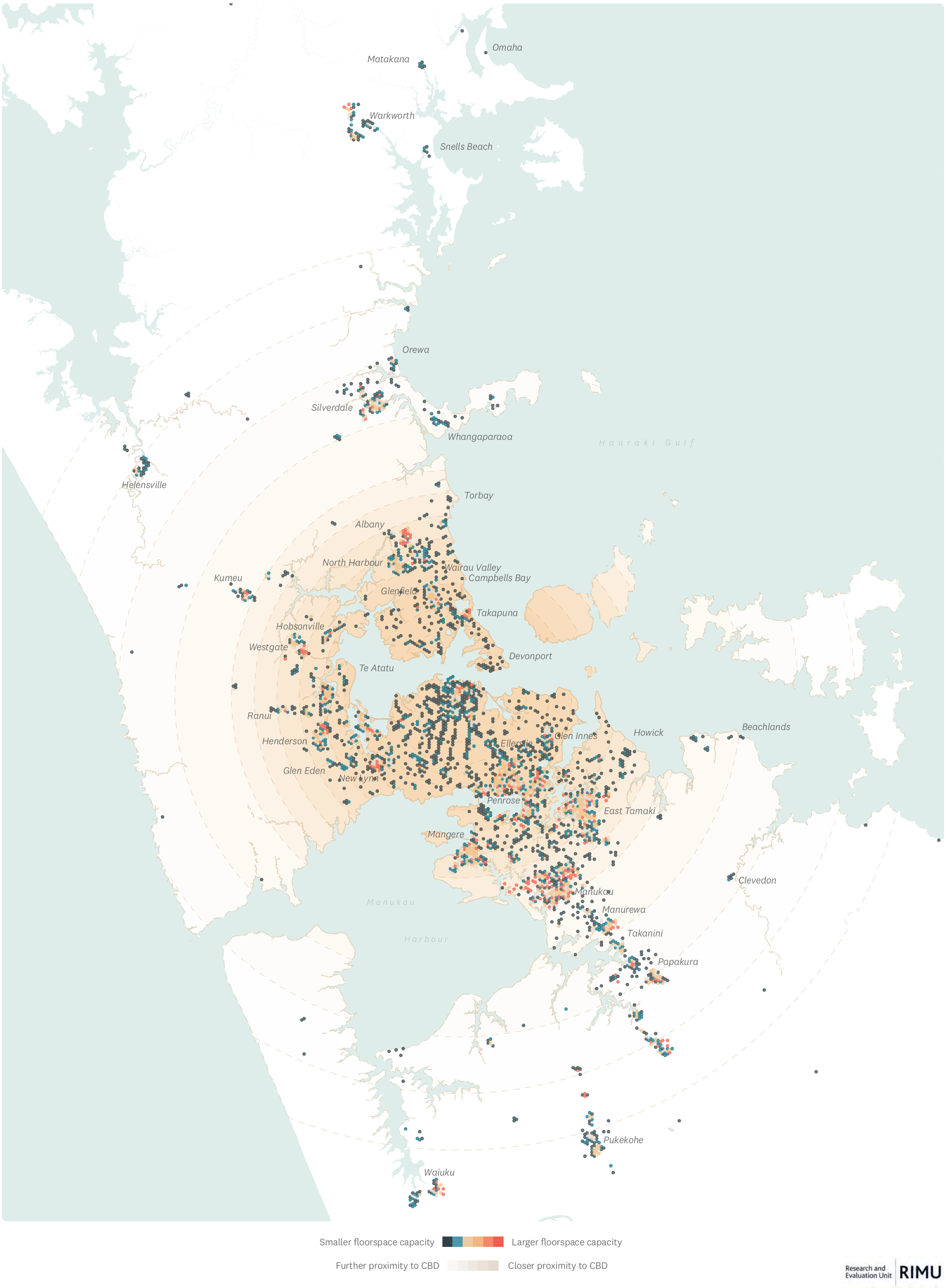
Figure 74.



Auckland Plan-Enabled Business Development Capacity

Showing potential floorspace capacity increase from AUPOIP to PC78

Housing and Business Development Capacity Assessment for the Auckland Region

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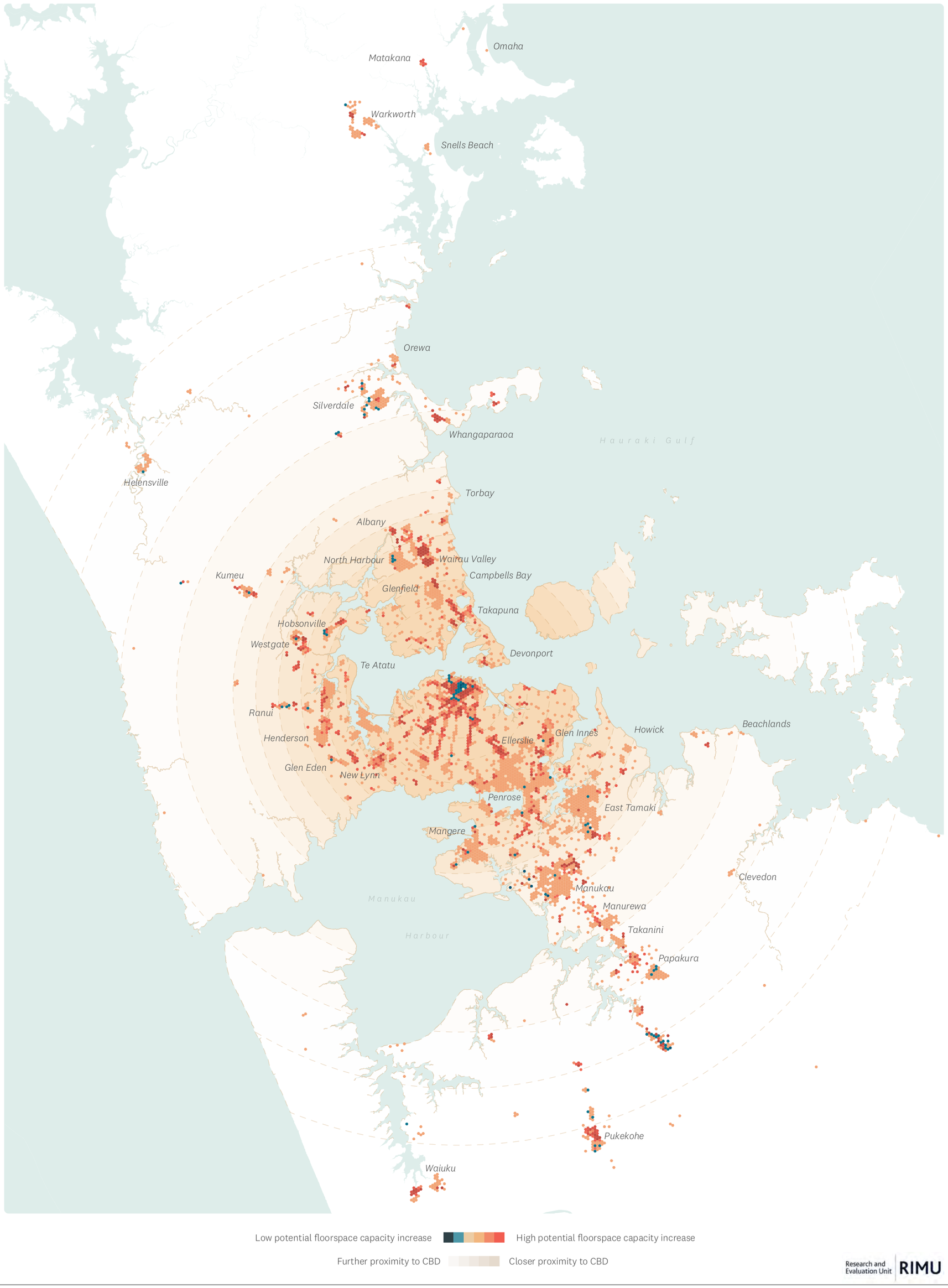
Figure 75.



5.3.2 Infrastructure

For this HBA, the infrastructure readiness assessment has also assessed business floorspace capacity. The assessment identifies business floorspace capacity that is constrained and unconstrained by transport, water supply and wastewater infrastructure, at a network (bulk) infrastructure level.

As with the residential analysis, this assessment has focussed on bulk network infrastructure constraints. For this reason, the constraints that exist for areas with business floorspace capacity broadly align with residential patterns. The investment programmes that support residential capacity will also support areas that have business floorspace capacity. Bulk infrastructure projects anticipated to be delivered during decade one of the 2023 Future Development Strategy are attached as Appendix 3, along with projects in the second and third decades.

There are issues in some locations in the short term that resolve in the long term. The key exception to the general finding of plan-enabled capacity in infrastructure-ready areas are the Franklin Local Board area and the Rodney Local Board area, which largely relates to transport infrastructure constraints. This is shown in the below subsections, which illustrate the distribution of business plan-enabled capacity which does not also have identified transport, water supply, or wastewater infrastructure constraints.

The following subsections describe infrastructure readiness as it pertains to business floorspace capacity across the region, first split by infrastructure type, then with all included infrastructure types considered together to form a combined indicator of infrastructure readiness. A detailed methodology is provided in Appendix 3 of this report.

An estimated floorspace demand figure has been calculated based on the assumptions presented in section 5.2.1 of this report, to compare against plan-enabled business floorspace capacity. This has been aggregated to local board level for the purpose of this assessment..[65]

It is important to note the limitations of this methodology, as already described in Appendix 3 and in other sections of this report. Notably, where reference is made to plan-enabled capacity located in constraints areas, it is uncertain whether there is a portion of that capacity which can still be serviced by infrastructure providers (albeit a quantity less than the growth projected by i11v6).

Conversely, where reference is made to plan-enabled capacity located in unconstrained areas, this must not be interpreted to mean that the full amount of that capacity is able to be serviced by infrastructure providers. This assessment is only able to draw general conclusions about the relative intensity of plan-enabled capacity located in the areas which infrastructure providers have indicated are not constrained. However, due to the limitations in the data supplied to us for this assessment, it is not possible to determine exactly how much development can actually be serviced in any given location.

This assessment does not, and is not required to, take into account local infrastructure requirements (which is usually developer built), that may play a significant role in enabling growth in specific areas. See Appendix 3 for detailed definition.

Where areas are shown to be constrained over different time periods, this does not imply that there is no capacity available, as a proportion of development is likely still able to occur. These constraints are better considered as limitations on significant change in the catchment until the planned project occurs, rather than hard limitations where no new connections are available.

[65] For the local board area summaries and charts in this section, additional business floorspace demand was calculated for the three new centres in the employment projections, Drury (Franklin LBA), Red Hills (Rodney LBA), and Whenuapai (Upper Harbour LBA). This additional floorspace is not included in the regional summaries of floorspace demand elsewhere in the report.

Additionally, the data supplied is a static input, rather than a dynamic one. This means that the assessment does not and cannot take into account the complexity of how development in any given location can have an impact on infrastructure capacity elsewhere in the network.

Due to these limitations, the infrastructure readiness assessment carried out can only indicate the general ability for any given area to accommodate growth, and broadly comment on where there may possibly be shortfalls in the short, medium, and long term.

Figure 76 (overleaf) shows the plan-enabled business floorspace capacity under PC78 provisions, aggregated to five-hectare hexagons. The subsequent subsections of this report apply various combinations of the three infrastructure constraint types included in this assessment to this raw plan-enabled capacity, in order to understand the percentage of plan-enabled capacity which is located in areas which are constrained or not constrained by each infrastructure type.

Auckland Plan-Enabled Business Development Capacity

Showing plan-enabled capacity based on PC78

Housing and Business Development Capacity Assessment for the Auckland Region
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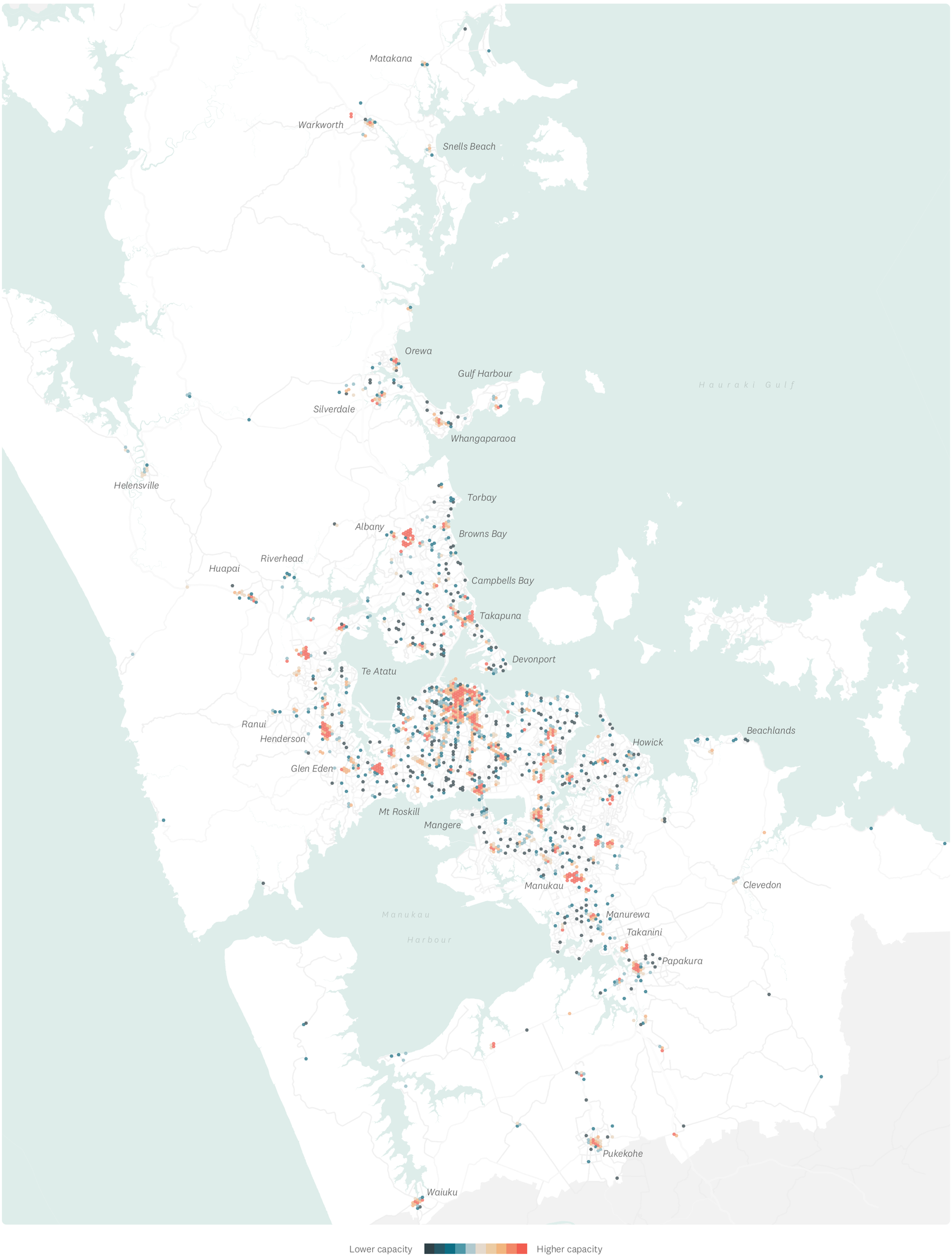
Figure 76.



5.3.2.1 Water supply and wastewater infrastructure

This subsection examines water supply and wastewater separately, then combines them as a single measure. The combined measure of constraint is of importance, because if an area is constrained for at least one of either water supply or wastewater infrastructure, then that area is overall considered as constrained for reticulated services by Watercare.

The assessment of the bulk water and wastewater networks indicates that, of net plan enabled business floorspace capacity, 51 per cent of this capacity is located in areas which are unconstrained by infrastructure in the short term, 88.89 per cent in the medium term, and 99 per cent in the long term.

5.3.2.1.1 Water supply infrastructure

Figure 42 shows the location of indicative bulk water supply network capacity, and this is described in section 4.3.3.1 of the report. The following Figure 77 shows a comparison of the plan-enabled capacity located in constrained and unconstrained areas under both AUPOIP and PC78 provisions at the regional level, and a local board level aggregation of plan-enabled capacity which is located in unconstrained areas under PC78.

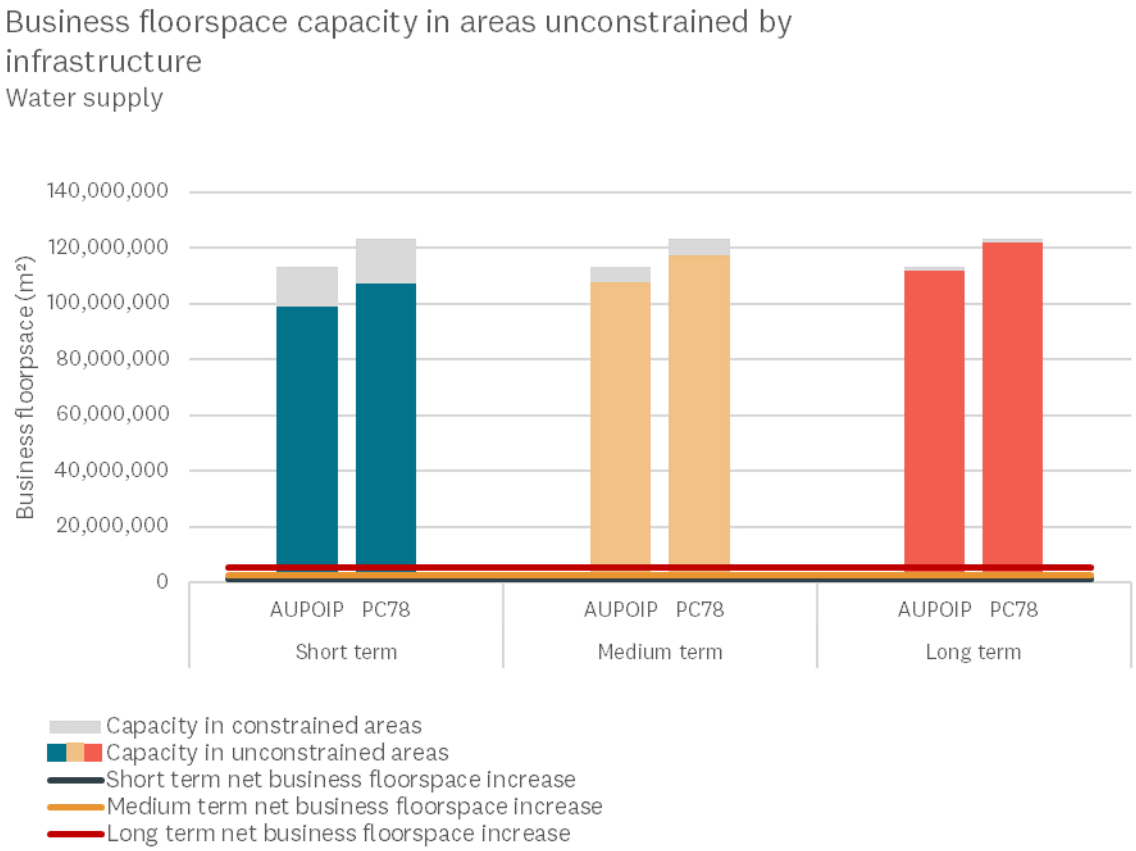
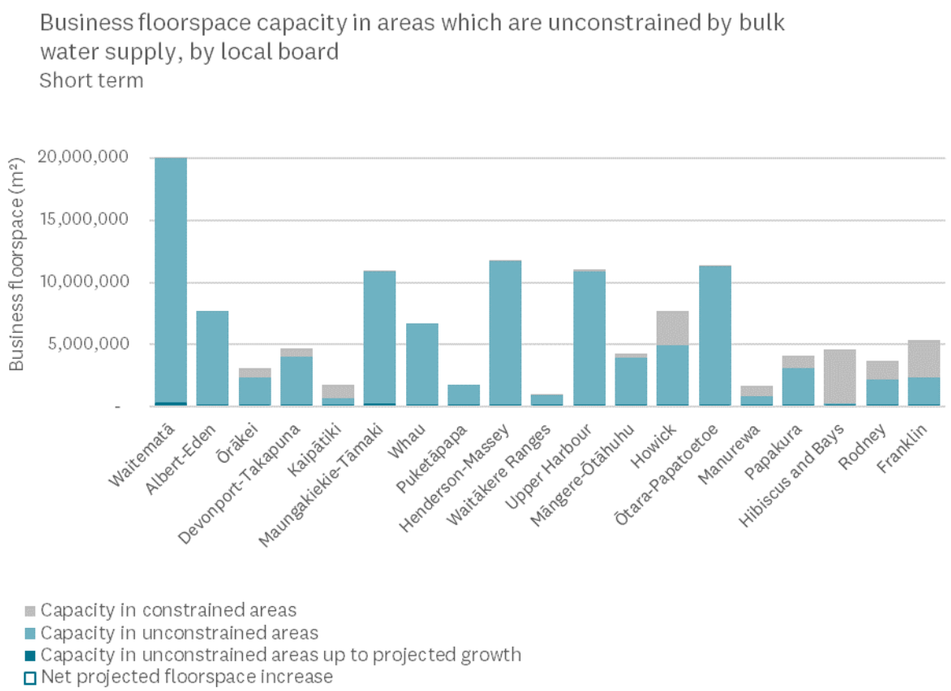
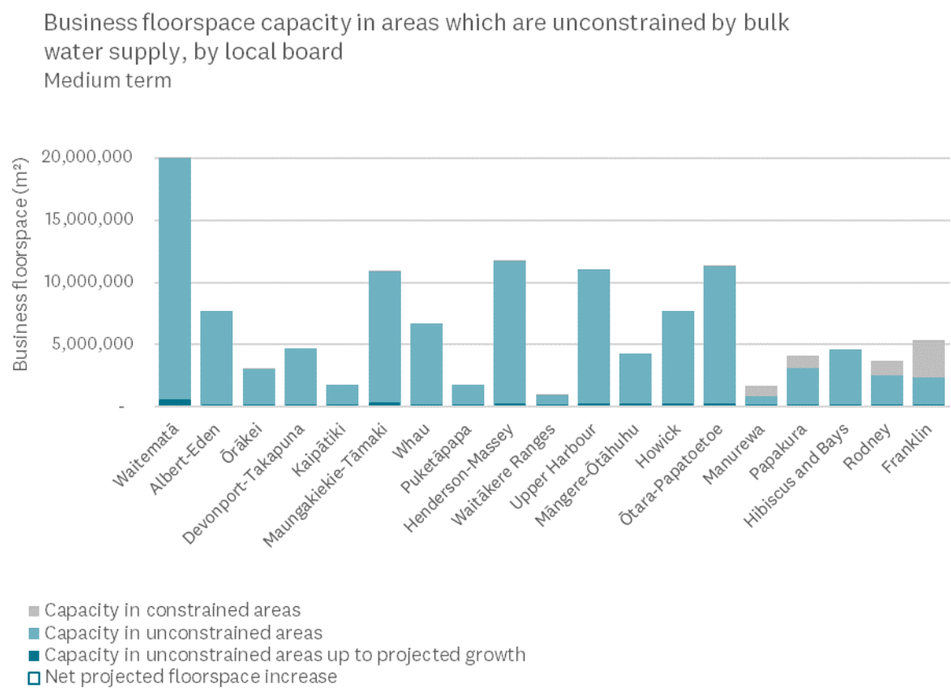


Figure 77. Business floorspace capacity in areas unconstrained by infrastructure – water supply.





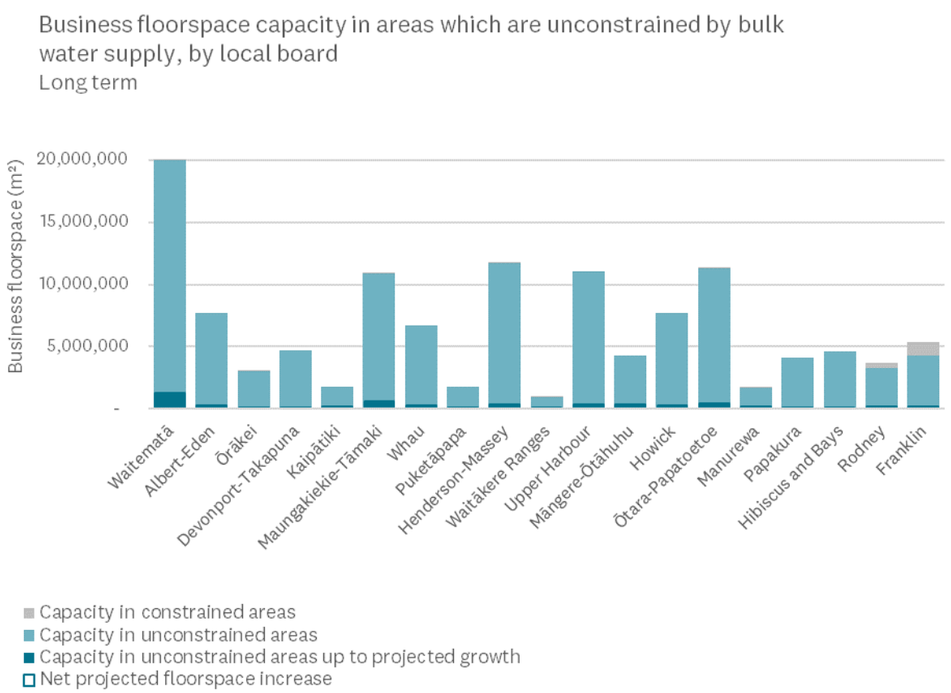


Figure 78. Business floorspace capacity in areas which are unconstrained by bulk water supply, by Local Board – short, medium, and long term.

Figure 78 shows that across local boards, the business floorspace capacity is broadly unconstrained by water supply. In the short term, areas such as Howick and Hibiscus and Bays have constraints but show greater capacity in the medium term as the networks are progressively upgraded. In the long term, the two furthest local board areas from the city centre, Rodney Local Board and Franklin Local Board, have the greatest amount of their plan-enabled business floorspace capacity located in areas constrained for water supply – 10 per cent and 21 per cent of plan-enabled capacity respectively. This is compared to negligible amounts of less than one per cent in all other local board areas.

In aggregate, plan-enabled capacity located in areas unconstrained by water supply infrastructure far exceeds calculated business floorspace demand across all local board areas.

When applying the water supply infrastructure constraint to i11v6 growth projections for employment, note the following "worst-case scenario" or lowest possible level of infrastructure servicing as shown in Table 44.[66]

Table 44. i11v6 net employment growth located in areas which are constrained and unconstrained by water supply infrastructure.

		Short term	Medium term	Long term
i11v6 net growth located in areas which are constrained by water supply infrastructure	Net projected number of employees	2,900	7,100	5,500
	Percentage of projected employees	*15%*	*8%*	*2%*
i11v6 net growth located in areas which are unconstrained by water supply infrastructure	Net projected number of employees	16,100	87,000	238,800
	Percentage of projected employees	*85%*	*92%*	*98%*

5.3.2.1.2 Wastewater infrastructure

Figure 43 shows the location of indicative bulk wastewater network capacity, and this is described in section 4.3.3.1 of the report. The following Figure 79 shows a comparison of the plan-enabled business floorspace capacity located in constrained and unconstrained areas under both AUPOIP and PC78 provisions at the regional level, and a local board level aggregation of plan-enabled capacity which is located in unconstrained areas under PC78.

[66] Methodology and explanation of this approach can be found in Appendix 3 of this report.

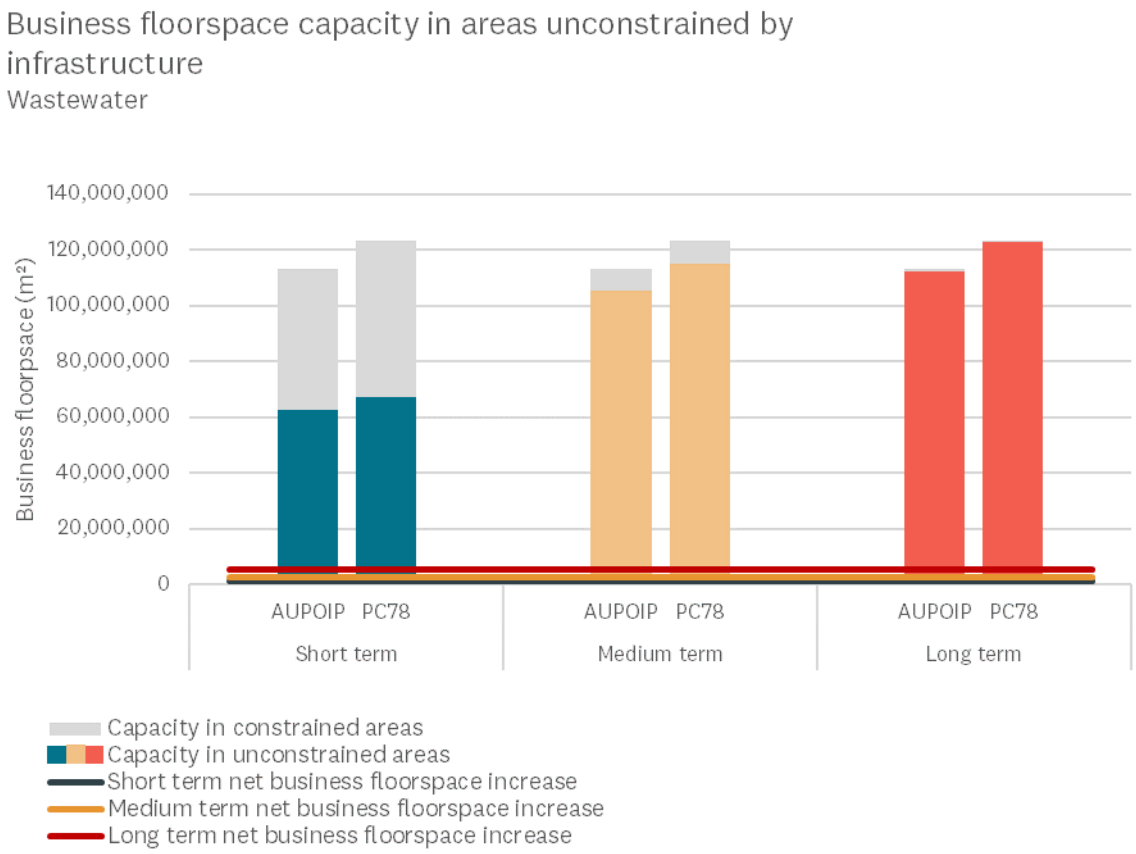
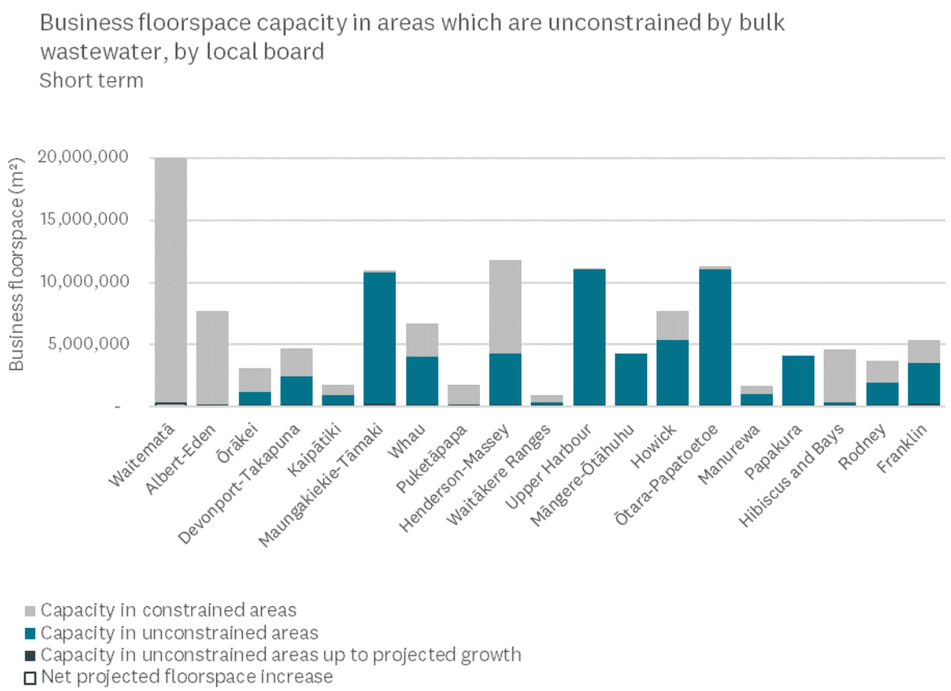
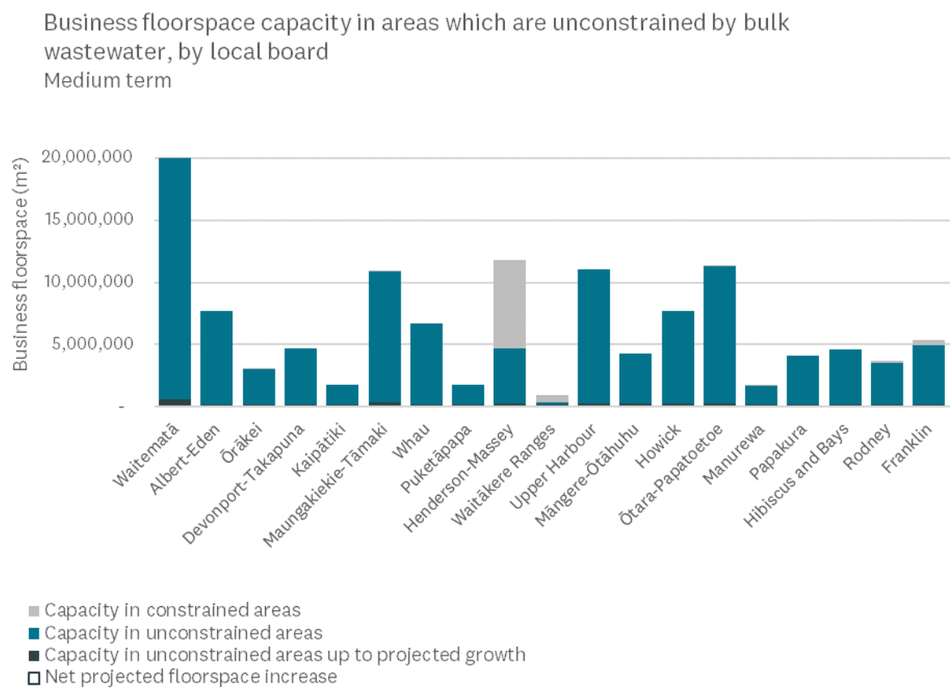


Figure 79. Business floorspace capacity in areas unconstrained by infrastructure – wastewater.





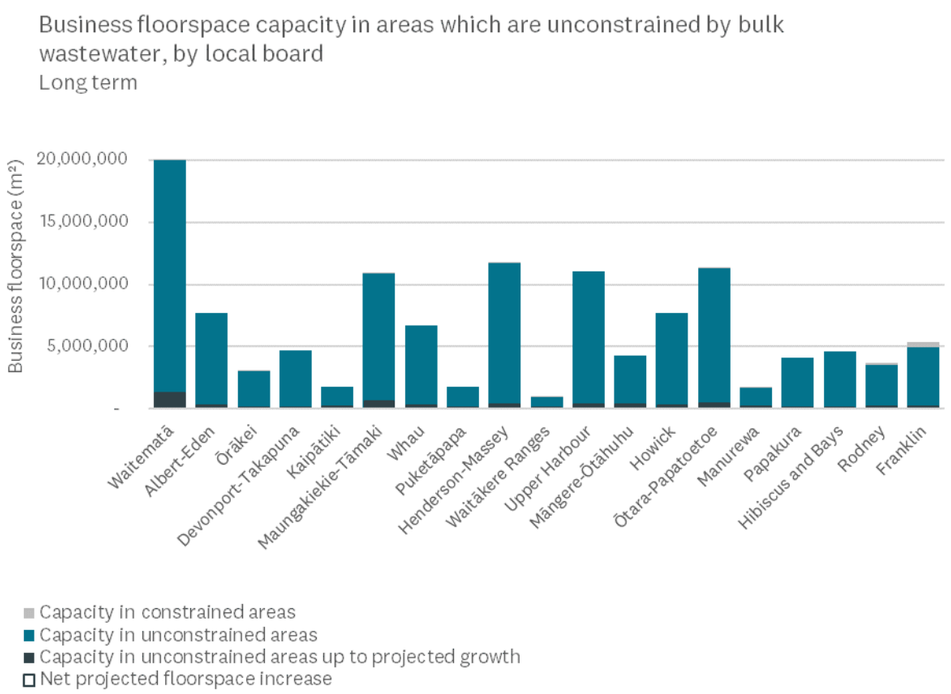


Figure 80. Business floorspace capacity in areas which are unconstrained by bulk wastewater, by local board – short, medium, and long term.

Watercare's 30-year 2021 Asset Management Plan (AMP) outlines growth investments scheduled to unlock constrained areas over time.

Figure 79 shows the amount of plan-enabled business floorspace capacity that is enabled under the AUPOIP and PC78 provisions in the short, medium, and long term, and indicates how much of this capacity is located in areas which are constrained by bulk wastewater infrastructure in each time period. In the short term, approximately 46 per cent of plan-enabled floorspace capacity provided for under PC78 is located in areas which are constrained for wastewater infrastructure. This decreases significantly by the medium term to 7 per cent, then to less than one per cent in the long term.

Figure 80 shows that, across local boards, the business floorspace capacity is broadly unconstrained by the wastewater network by the long term. In the short term, Waitematā Local Board has constraints, but shows greater capacity in the medium term as the networks are progressively upgraded as described in Watercare's 2021 AMP. Similarly, to plan-enabled capacity located in areas constrained for water supply, the local board areas with the highest proportion of plan-enabled business floorspace capacity located in areas constrained for wastewater infrastructure are the two local board areas furthest from the city centre – Rodney Local Board and Franklin Local Board areas. In the long term, Rodney Local Board area has 4 per cent of its plan-enabled business floorspace capacity located in areas which Watercare have indicated are not infrastructure-ready, and this is approximately double for Franklin Local Board area at 8 per cent of capacity. Comparatively, the remaining local board areas have a negligible quantity of their plan-enabled capacity located in wastewater-constrained areas, all less than one per cent.

In aggregate, plan-enabled capacity located in areas unconstrained by wastewater infrastructure generally exceeds calculated business floorspace demand across all local board areas. The exception to this is Waitematā Local Board, which has zero plan-enabled capacity located in areas unconstrained by wastewater infrastructure in the short term – however, this resolves in the medium and long term.

When applying the wastewater infrastructure constraint to i11v6 growth projections for employment, note the following "worst-case scenario" or lowest possible level of infrastructure servicing as shown in Table 45.[67]

Table 45. i11v6 net employment growth located in areas which are constrained and unconstrained by wastewater infrastructure.

		Short term	Medium term	Long term
i11v6 net growth located in areas which are constrained by wastewater infrastructure	Net projected number of employees	10,800	6,600	2,700
	Percentage of projected employees	*57%*	*7%*	*1%*
i11v6 net growth located in areas which are unconstrained by wastewater infrastructure	Net projected number of employees	8,200	87,600	241,500
	Percentage of projected employees	*43%*	*93%*	*99%*

5.3.2.1.3 Combined water supply and wastewater constraints

In terms of infrastructure constraints as a whole, it is important to consider both water supply and wastewater infrastructure together, as both are required in order to support business development in any given area. Watercare considers an area to be constrained for development if at least one of water supply

[67] Methodology and explanation of this approach can be found in Appendix 3 of this report.

or wastewater infrastructure is constrained for any given period. In order for an area to be considered unconstrained for reticulated water and wastewater infrastructure in any given period, it needs to be unconstrained for both components. This methodology is explained further in Appendix 3. The following section examines the collocation of plan-enabled capacity and areas where combined water supply and wastewater infrastructure is constrained/not constrained.

Table 46. Plan-enabled business floorspace capacity located in areas which are constrained or unconstrained by water supply or wastewater infrastructure.

		Short term	Medium term	Long term
PC78 Plan-enabled capacity located in areas which are constrained by water supply or wastewater infrastructure	Business plan-enabled capacity (floorspace in m²)	60,983,300	13,695,100	1,523,100
	Percentage of total business plan-enabled capacity	*49%*	11%	1%
PC78 Plan-enabled capacity located in areas which are unconstrained by water supply or wastewater infrastructure	Business plan-enabled capacity (floorspace in m²)	62,325,500	109,613,700	121,785,700
	Percentage of total business plan-enabled capacity	*51%*	*89%*	*99%*

Table 46 shows that, over time, the amount of plan-enabled business floorspace capacity that is located within areas that are unconstrained by water supply and wastewater infrastructure increases to approximately 99 per cent of capacity. This demonstrates that, in the long term, the Unitary Plan with PC78 provisions collocates 99 per cent of business floorspace capacity in areas where Watercare anticipates they are able to adequately service the projected business activity growth (represented by i11v6 employment projections).

5.3.2.1.3.1 Business floorspace capacity located in areas where water supply and wastewater infrastructure is constrained and unconstrained

Figure 81 (overleaf) and Figure 82 show the amount of plan-enabled business floorspace capacity that is located in areas which are not identified as being constrained by water supply and wastewater infrastructure, independently of the impact of the bulk transport servicing on infrastructure readiness within each period and area. In the short term there are constraints including in more central areas such as the city centre and central suburbs as well as in various suburbs and outlying rural and coastal settlements in the north, west, east, and south. By the medium term, the constraints begin to ease up in many of these areas, except for some outlying settlements, parts of Henderson-Massey, areas of Takaanini, and Beachlands-Maraetai. In the long term, approximately 99 per cent of plan-enabled business floorspace capacity is located in areas which are not identified as being constrained by water supply or wastewater infrastructure, and the vast majority of the region's business capacity, with a few exceptions, is located in areas where there are no water supply or wastewater constraints.

In aggregate, plan-enabled capacity located in areas unconstrained by water supply and wastewater infrastructure generally exceeds calculated business floorspace demand across all local board areas. The exception to this is Waitematā Local Board, which has zero plan-enabled capacity located in unconstrained areas in the short term – however, this resolves in the medium and long term.

Auckland Plan-Enabled Business Development Capacity

Showing plan-enabled capacity in areas which are constrained or unconstrained by bulk water supply or wastewater

Housing and Business Development Capacity Assessment for the Auckland Region

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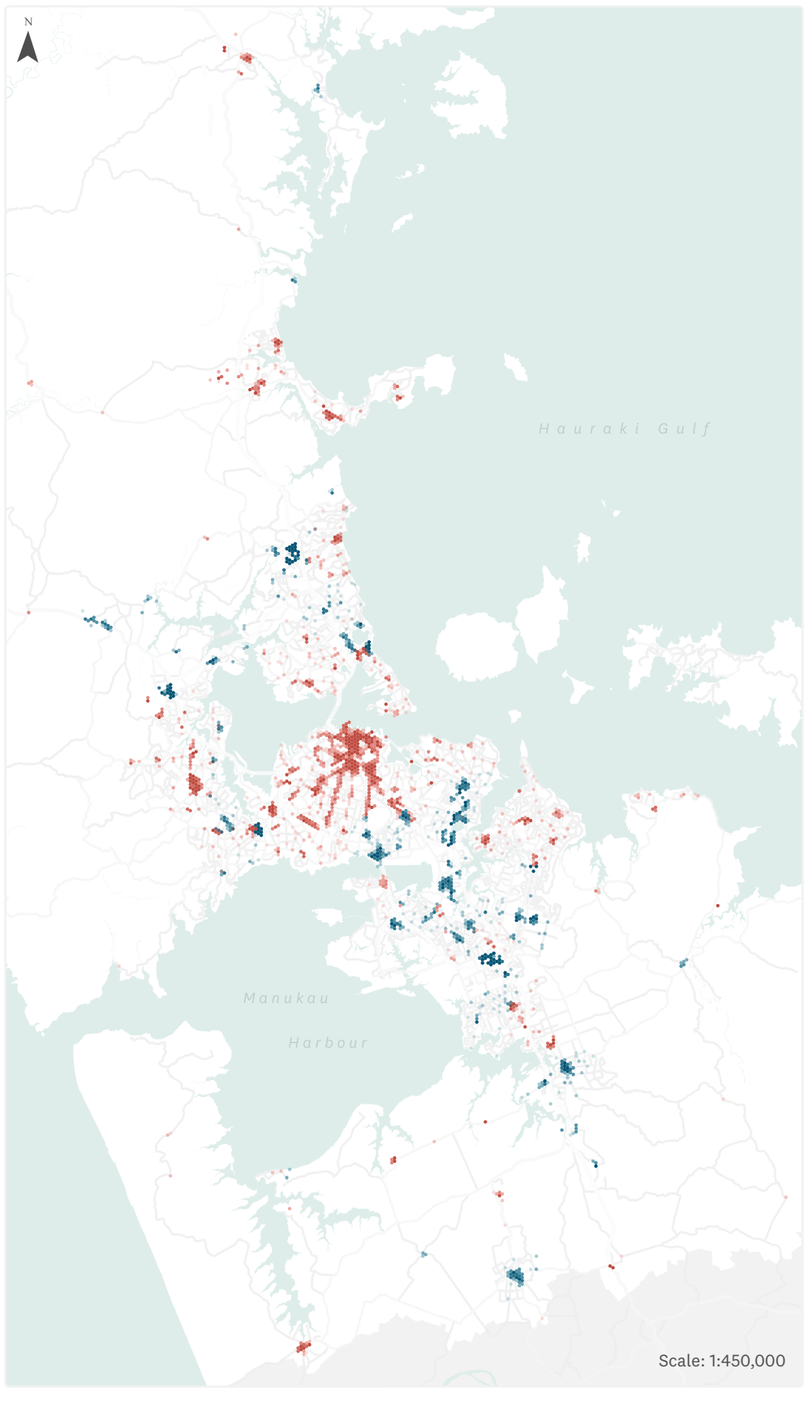
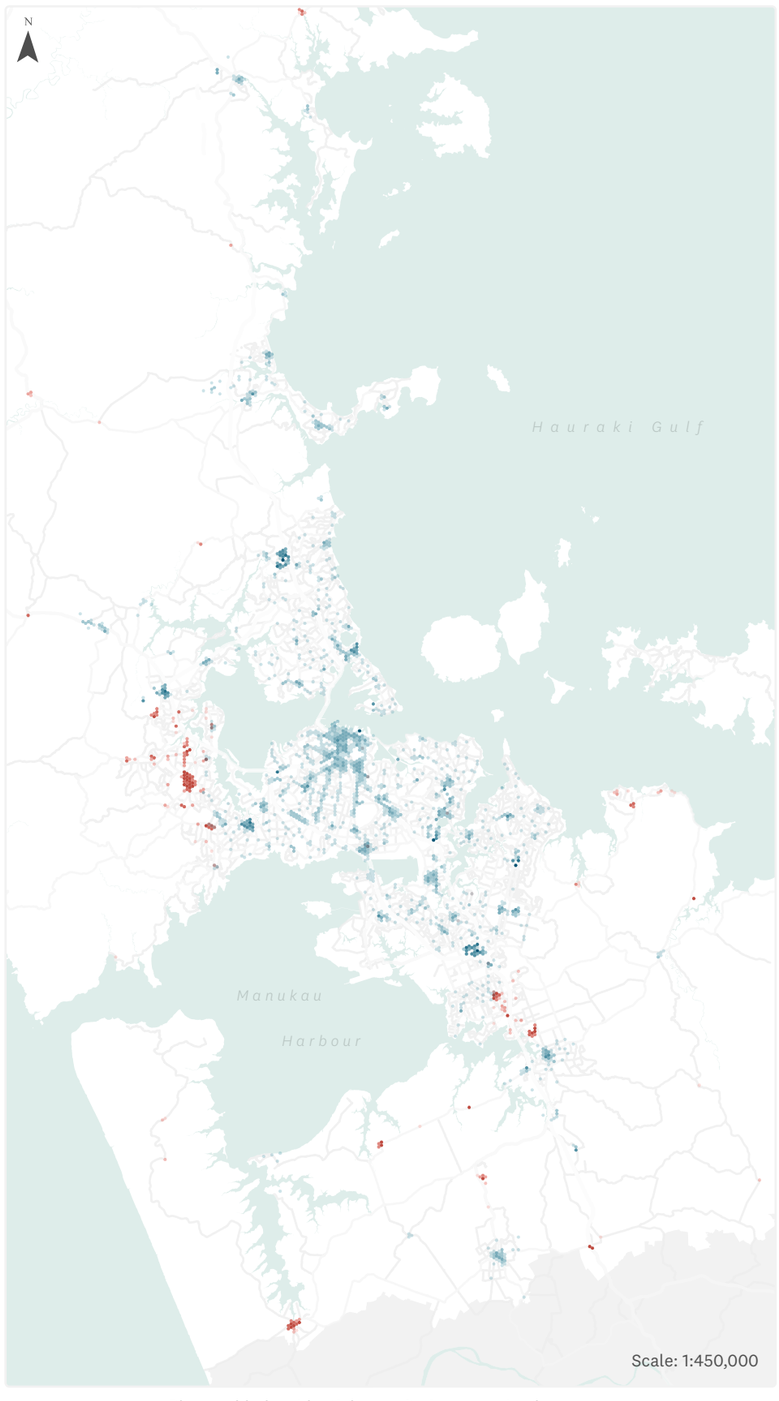
Figure 81.

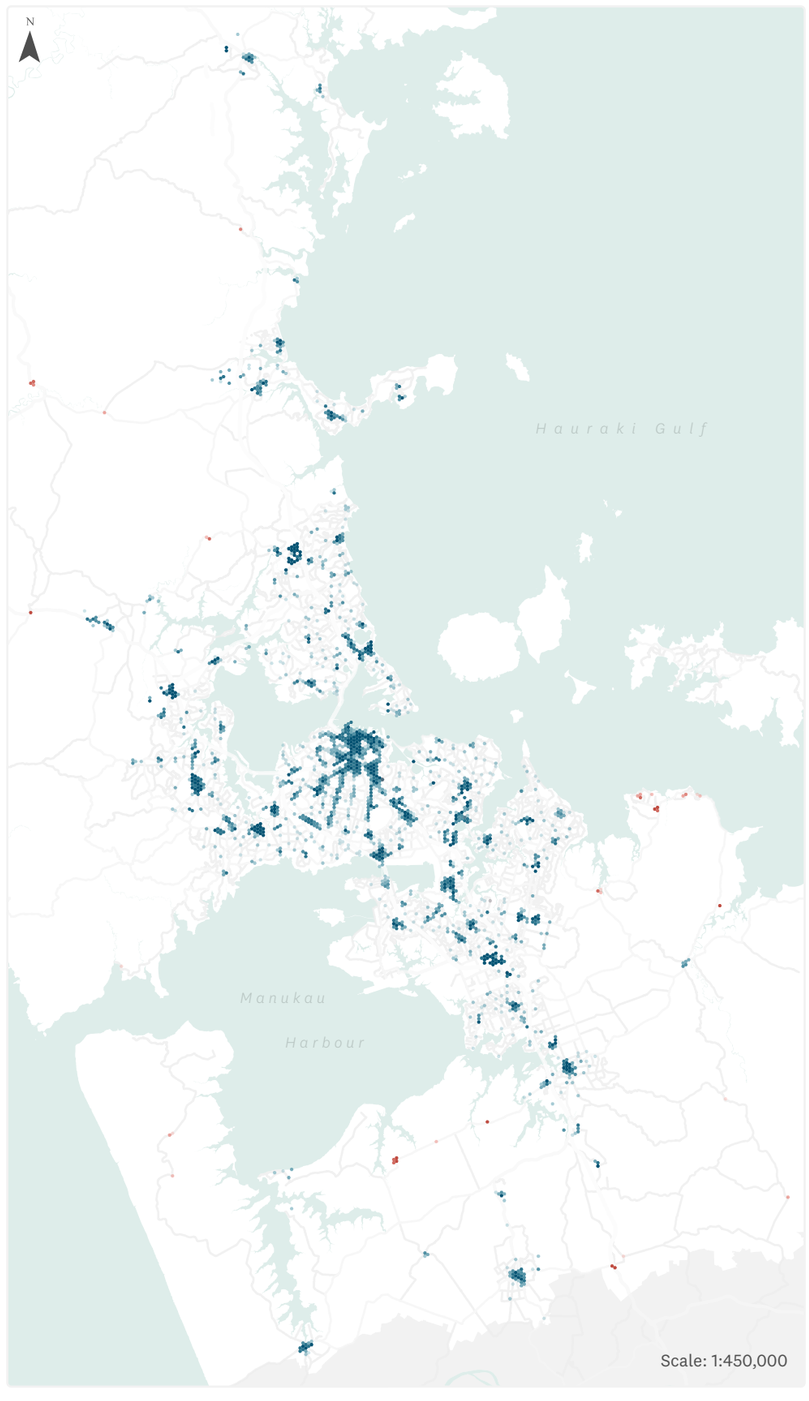
Short Term



Medium Term



Long Term



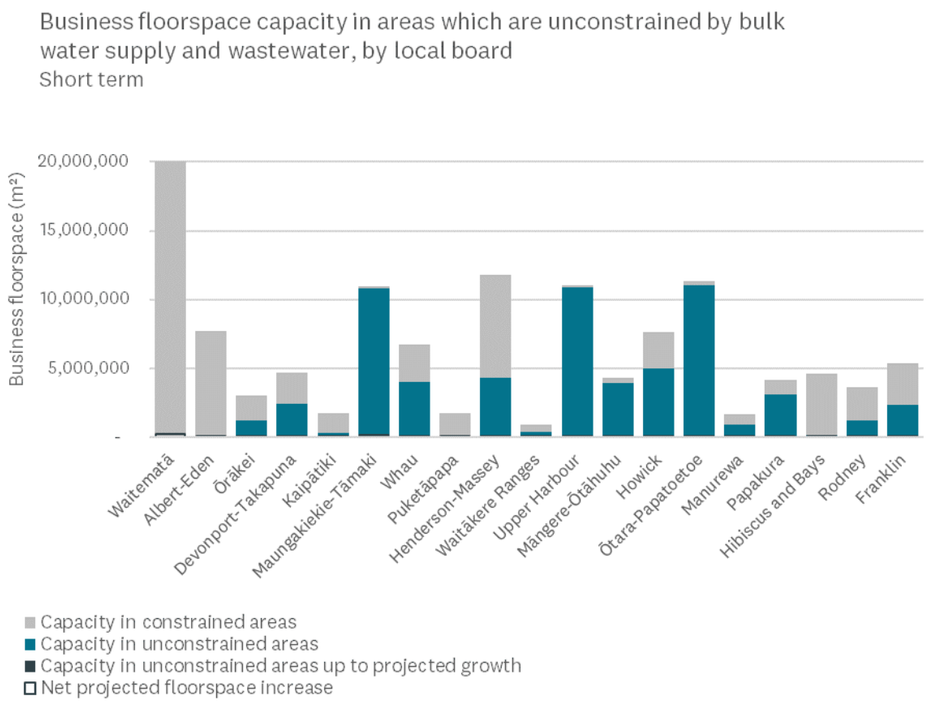
This represents the plan-enabled capacity which is located in areas which infrastructure providers have indicated are constrained/unconstrained. This is not necessarily the capacity which is actually able/unable to be serviced by infrastructure in these locations.

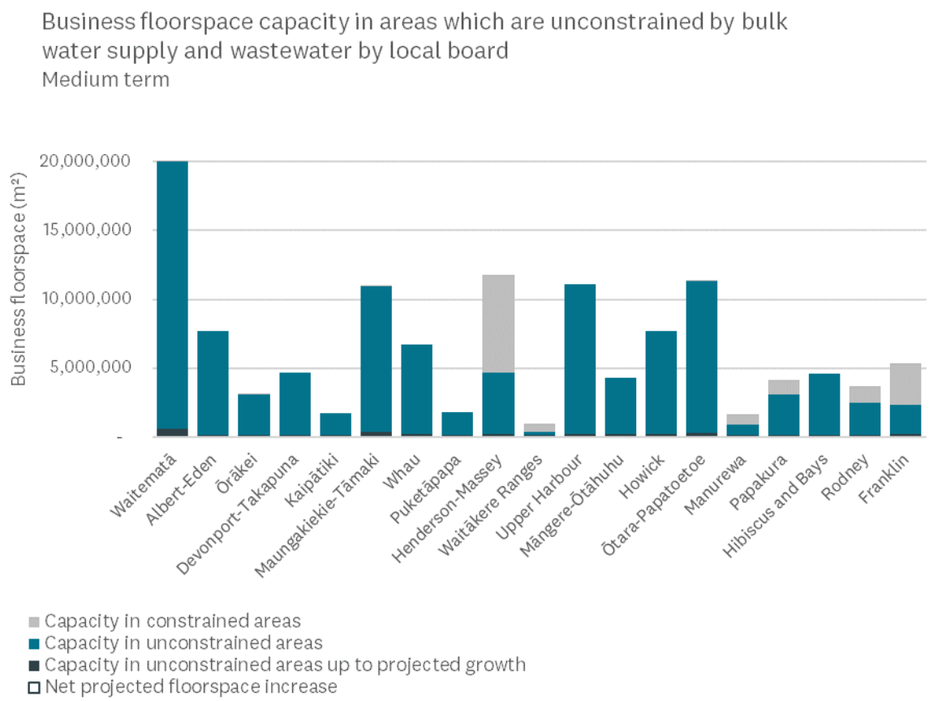
Plan enabled residential capacity in constrained areas

Lower capacity — Higher capacity

Plan enabled residential capacity in unconstrained areas

Higher capacity — Lower capacity





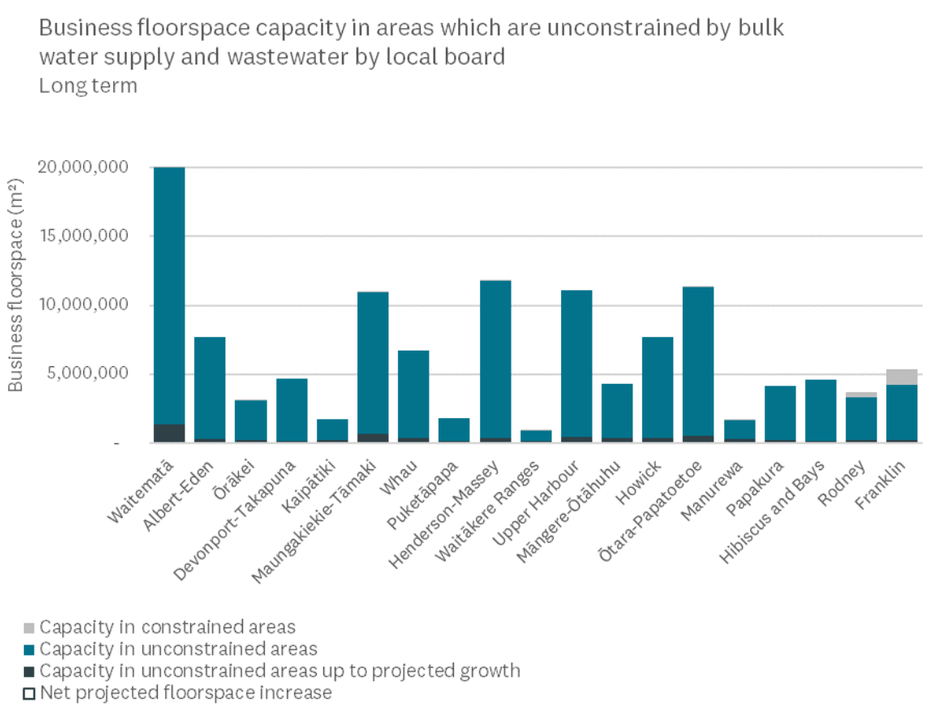


Figure 82. Business floorspace capacity in areas which are unconstrained by bulk water supply and wastewater, by local board - short, medium, and long term.

5.3.2.1.3.2 Business floorspace capacity located where water supply and wastewater infrastructure is constrained but transport infrastructure is not constrained

Of interest to this assessment is understanding where dwelling capacity exists in locations that are constrained for water supply and wastewater, but where Auckland Transport has indicated that the area is unconstrained for transport infrastructure. Figure 83 (overleaf) and Figure 84 highlight where there is a bulk water supply or wastewater constraint, that is not also constrained by transport. These highlight areas (and the impact on enabled business floorspace capacity in those locations) where bulk water supply or wastewater are the predominant constraint.

Figure 83 and Figure 84 indicate that in the short term, some areas of plan-enabled capacity are located where there are bulk water supply or wastewater infrastructure constraints, but where there are no transport infrastructure constraints, particularly on the isthmus, and in Henderson-Massey area, Devonport-Takapuna, Kaipātiki, and Manurewa areas. By the medium term, the business floorspace capacity across the region which is located where bulk water or wastewater constraints is the predominant constraint decreases from 38 per cent to approximately 7 per cent, and this is mostly located in the Henderson-Massey area, Manurewa, and a small portion of Papakura. In the long term, this decreases to less than one per cent, which can likely be attributed to local-level challenges.

Auckland Plan-Enabled Business Development Capacity

Showing plan-enabled capacity in areas which is constrained by bulk water supply or wastewater, but unconstrained by transport

Housing and Business Development Capacity Assessment for the Auckland Region

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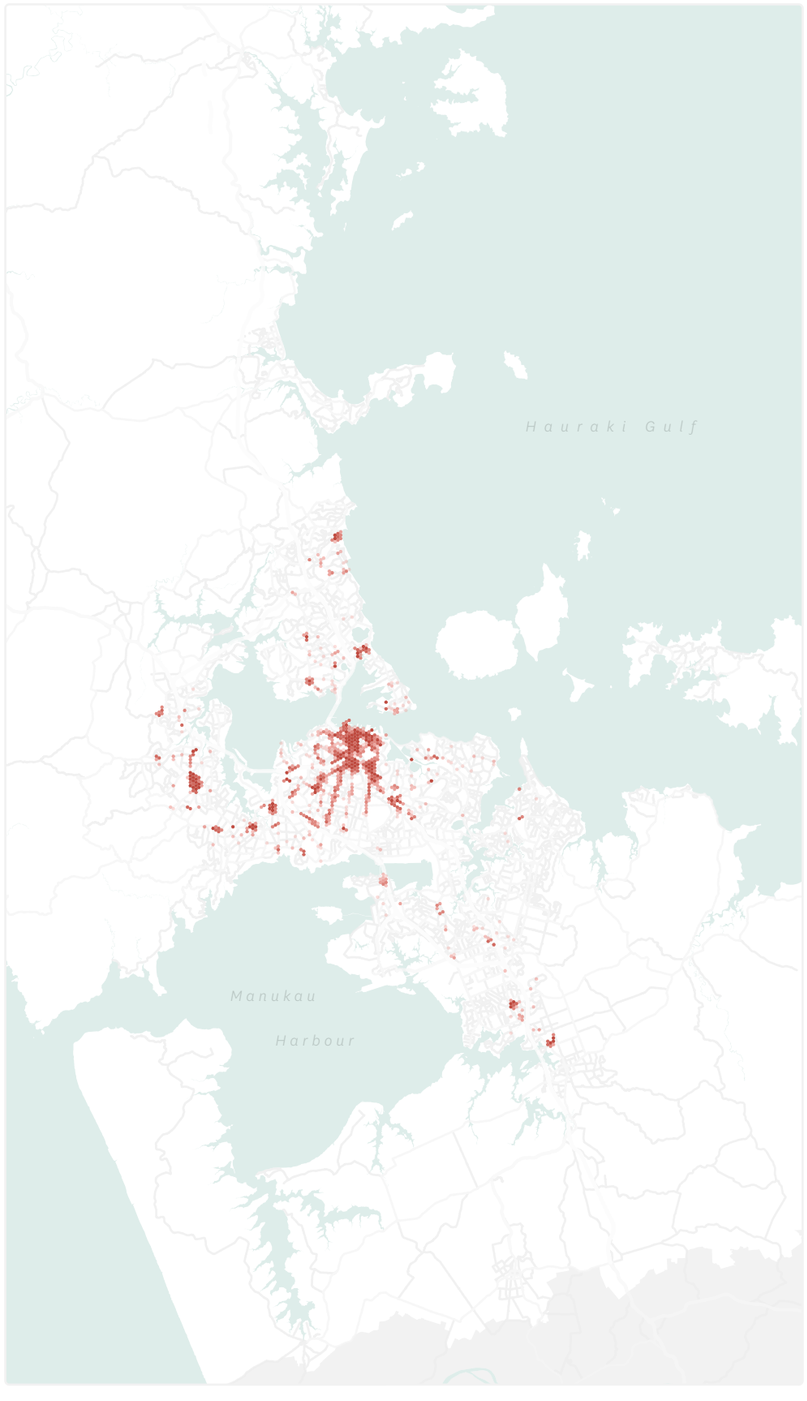
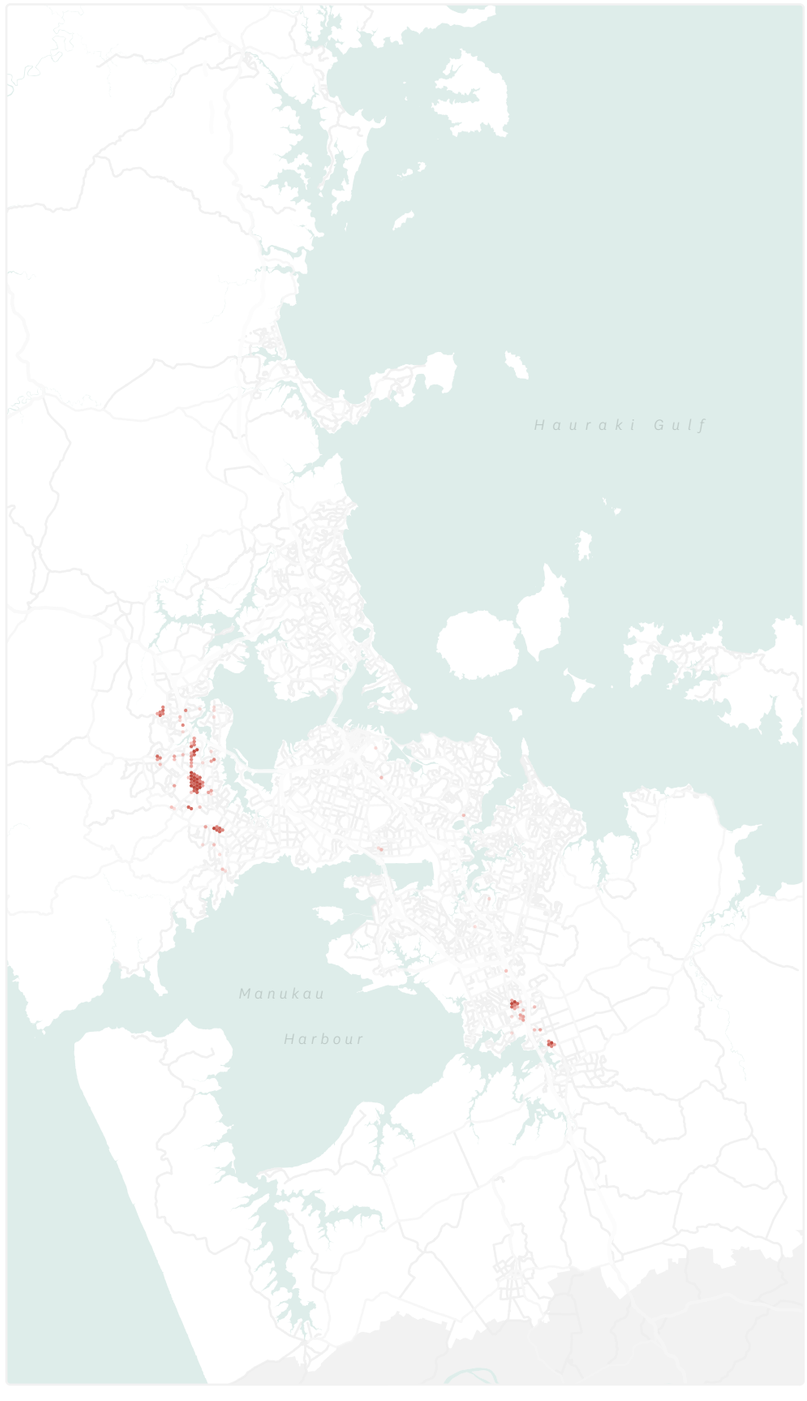
Figure 83.

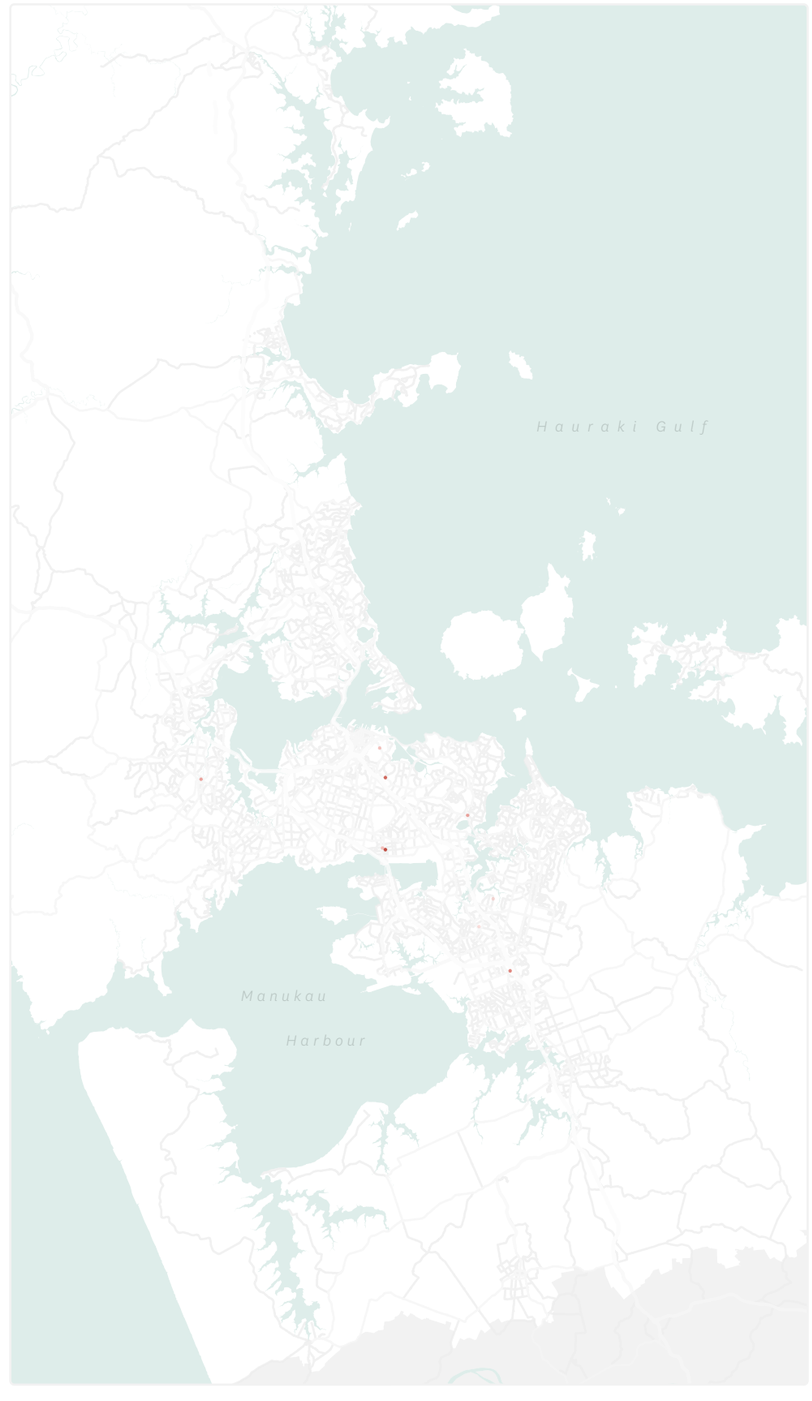
Short Term



Medium Term

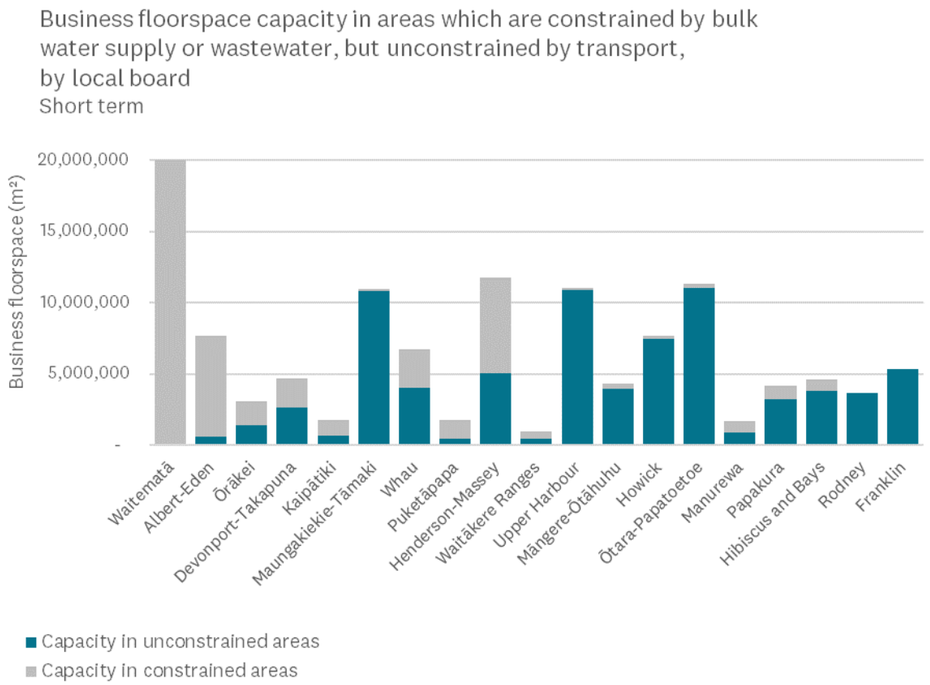


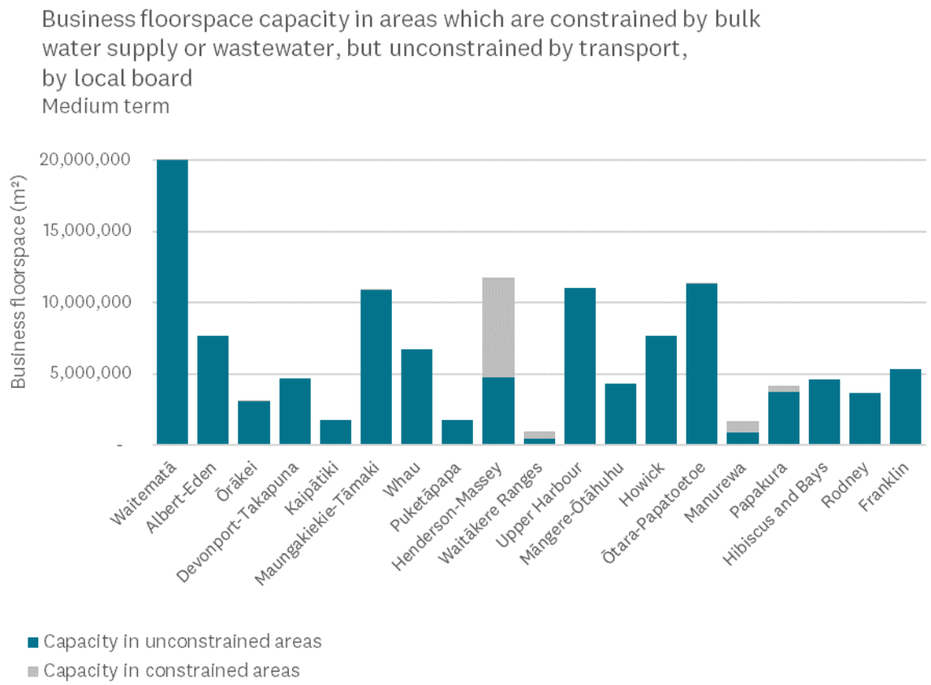
Long Term



This represents the plan-enabled capacity which is located in areas which infrastructure providers have indicated are constrained. This is not necessarily the capacity which is actually unable to be serviced by infrastructure in these locations.

Lower capacity — Higher capacity





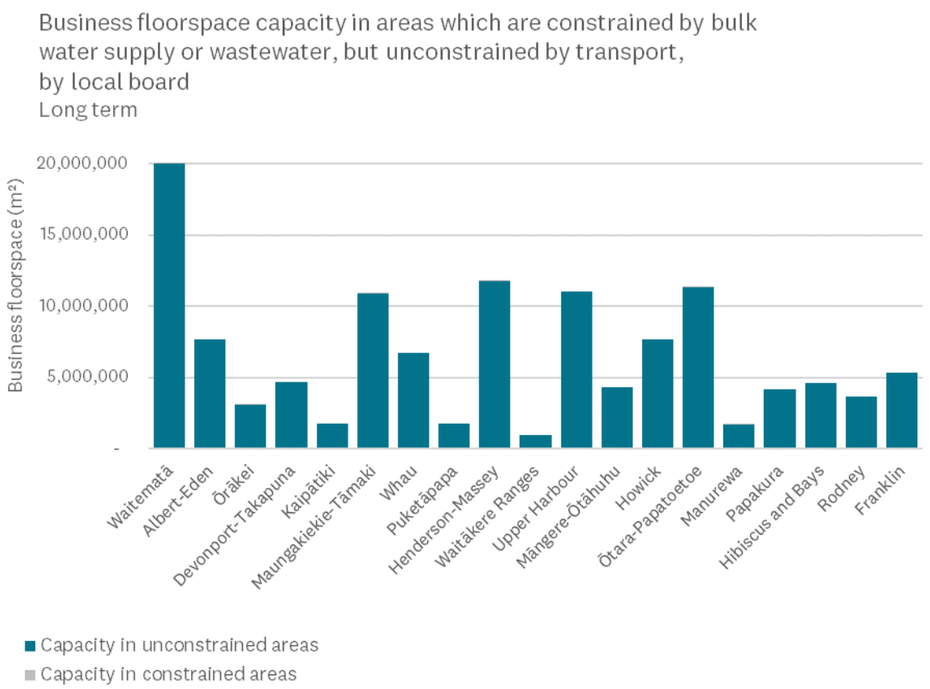


Figure 84. Business floorspace capacity in areas which are constrained by bulk water supply, wastewater, but unconstrained by transport, by local board – short, medium, and long term.

5.3.2.2 Transport infrastructure

The assessment of the bulk transport networks indicates that of net plan-enabled business floorspace capacity, 80 per cent of this capacity is located in areas which are unconstrained by transport infrastructure in the short term. This increases to 89 per cent in the medium term, and 92 per cent in the long term.

For centre land use (such as town centres and commercial centres), the infrastructure readiness trend largely follows residential, with an increasing proportion of infrastructure-ready areas over time due to planned transport infrastructure investment and improvements.

For industrial land use, the development ready zones tend to mirror accessibility to the strategic freight network which decreases over time. Based on the outputs from the MSM, this is partly caused by the predicted increase in general congestion that also affects freight vehicles.

The RLTP 2021-2031 and Auckland Transport Alignment Project ATAP 2 Scenario outlines growth investments scheduled to unlock constrained areas over time years as outlined in Appendix 3. Transport infrastructure constraints in Rodney and Franklin relate to expected timings of Northwest and Northern rapid transit solutions and other bulk roading investments currently planned for delivery near to or post-2048. Further work is needed to be done to understand the impact of these projects on enabling business capacity.

Table 47. Plan-enabled capacity located in areas which are constrained or unconstrained by transport infrastructure.[68]

		Short term	Medium term	Long term
PC78 Plan-enabled capacity located in areas which are constrained by transport infrastructure	Business plan-enabled capacity (net floorspace, m²)	*24,192,600*	13,581,200	9,791,400
	Percentage of total business plan-enabled capacity	*20%*	11%	8%
PC78 Plan-enabled capacity located in areas which are unconstrained by transport infrastructure	Business plan-enabled capacity (net floorspace, m²)	99,116,200	109,727,600	113,517,500
	Percentage of total business plan-enabled capacity	*80%*	*89%*	*92%*

Table 47 indicates that in the short term, 80 per cent of plan-enabled business floorspace capacity is located in areas which are unconstrained by transport infrastructure. This increases to 89 per cent in the medium term, and 92 per cent in the long term. While, as seen on Figure 85 the amount of capacity located in areas which are not constrained far exceeds projected demand, there is a level of uncertainty about the exact amount of plan-enabled business floorspace capacity that Auckland Transport is able to service with transport infrastructure beyond the level of employment growth that is projected in i11v6 – this is due to limitations in the infrastructure readiness data. Additionally, it is not possible to determine with any certainty whether those locations of business floorspace capacity which are indicated as being within areas constrained by transport infrastructure are able to absorb any business growth up to the i11v6 employment projections.

[68] Note that these figures are rounded – totals may not add up to the same numbers.

This data is more accurately interpreted to show that, in the long term, 92 per cent of business floorspace capacity enabled under PC78 is collocated with areas which Auckland Transport anticipates are able to be serviced by transport, based on projected i11v6 projections.

5.3.2.2.1 Business floorspace capacity located in areas where transport infrastructure is constrained and unconstrained

The following figures highlight where there are no bulk transport constraints, regardless of bulk water supply or wastewater status.

As can be seen in Figure 86 (overleaf), these areas tend to be located on the fringes of the main urban areas and in outlying towns and settlements, reflecting the fact that network capacity has to be improved from the centre out. This can also be observed in Figure 87, which indicates that more outlying local boards have a greater proportion of their plan-enabled capacity in locations that are not infrastructure-ready for transport.

In aggregate, plan-enabled capacity located in areas unconstrained by transport infrastructure generally exceeds calculated business floorspace demand across all local board areas. The exception to this is Rodney Local Board, which has zero plan-enabled capacity located in unconstrained areas in the short medium – however, in aggregate this resolves in the long term.

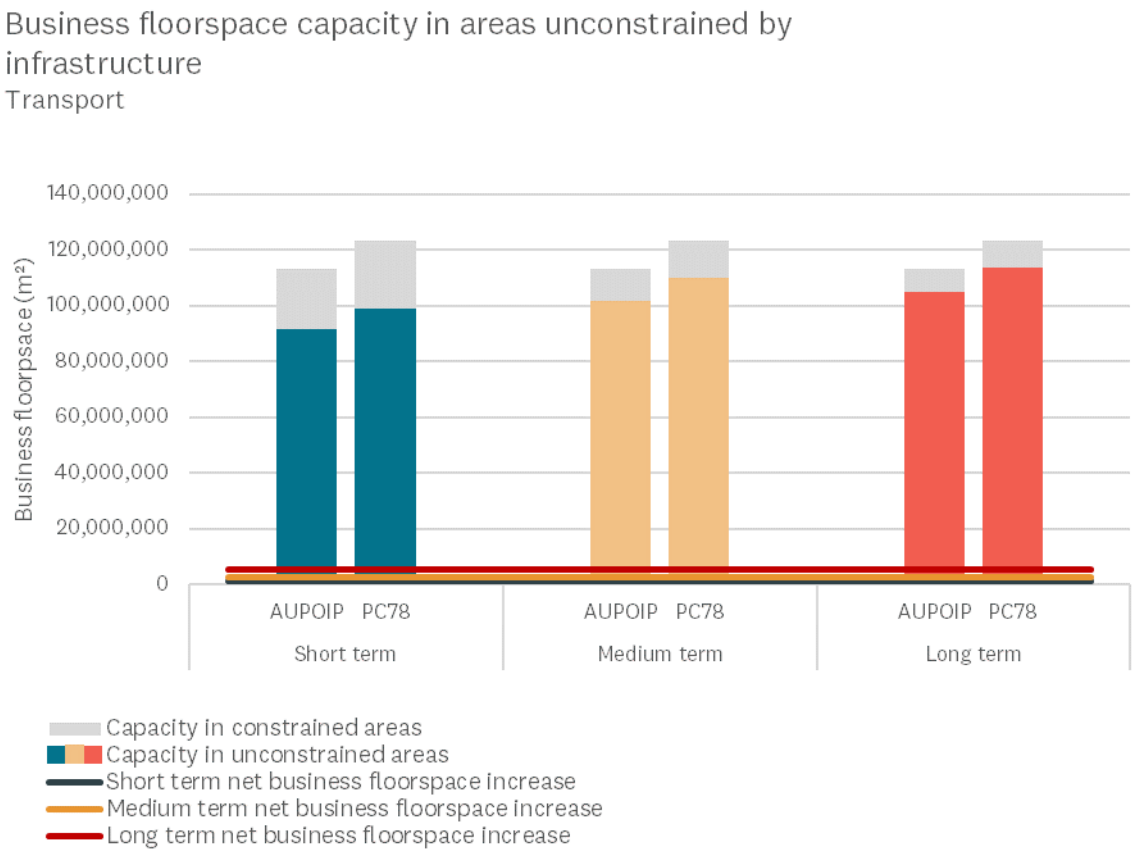


Figure 85. Business floorspace capacity in areas unconstrained by infrastructure – transport.

Auckland Plan-Enabled Business Development Capacity

Showing plan-enabled capacity in areas which are constrained or unconstrained by bulk transport

Housing and Business Development Capacity Assessment for the Auckland Region

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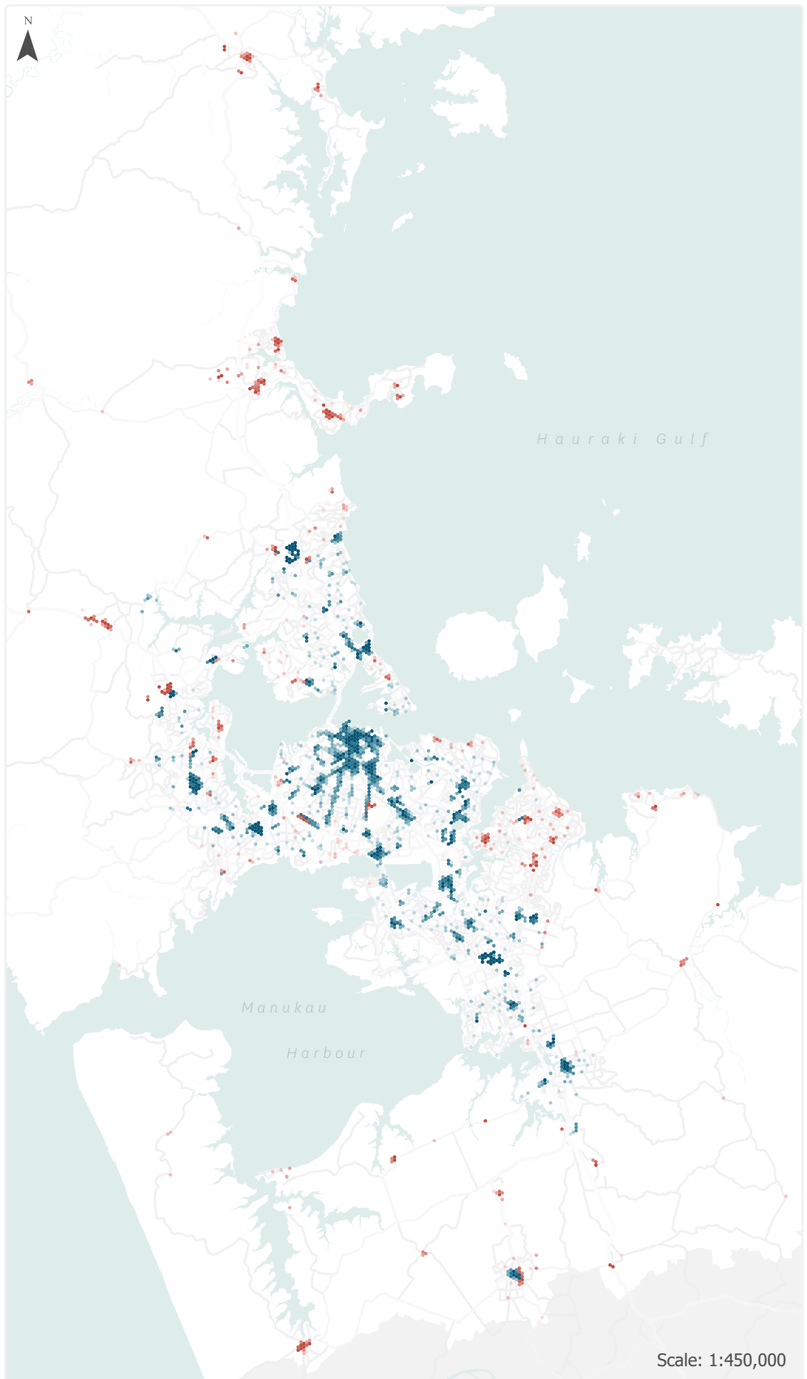
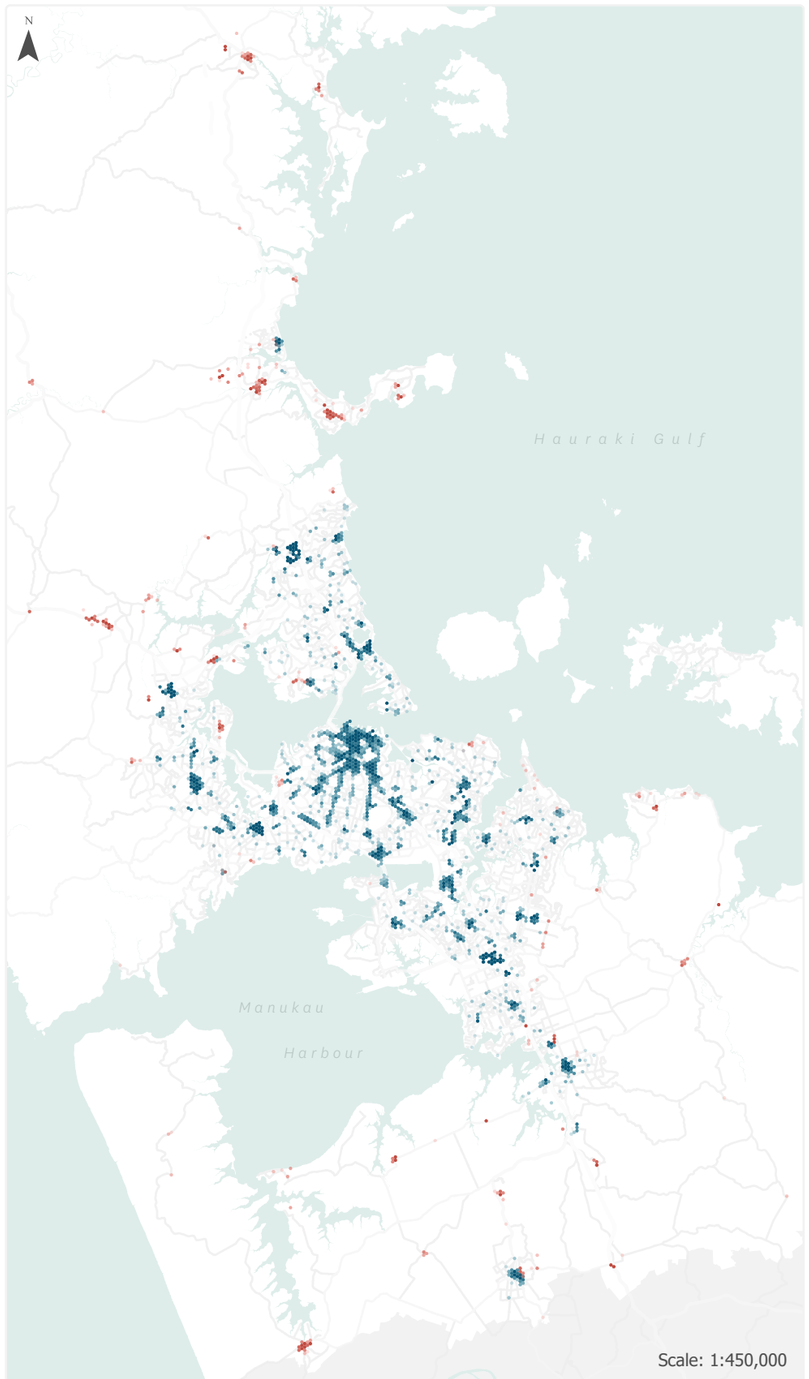
Figure 86.

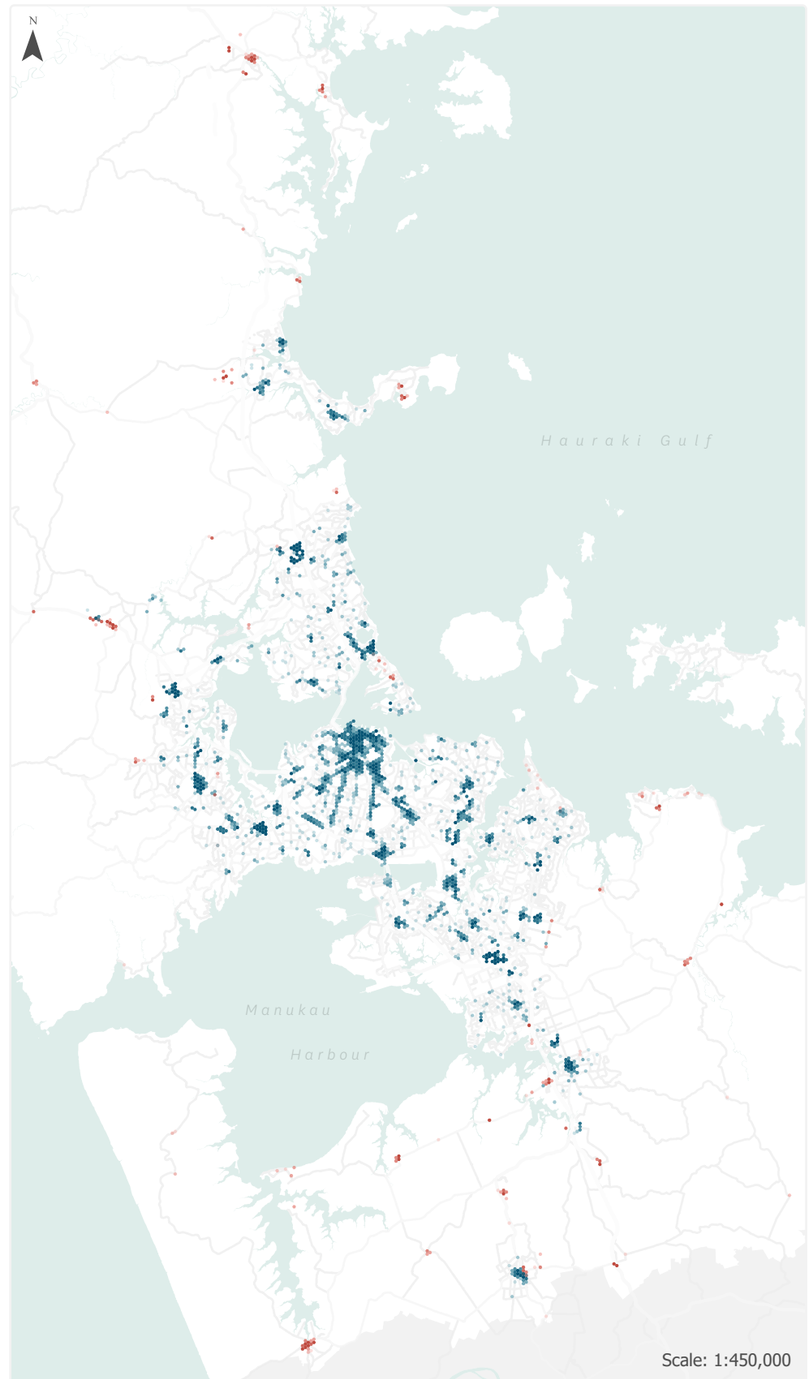
Short Term



Medium Term



Long Term



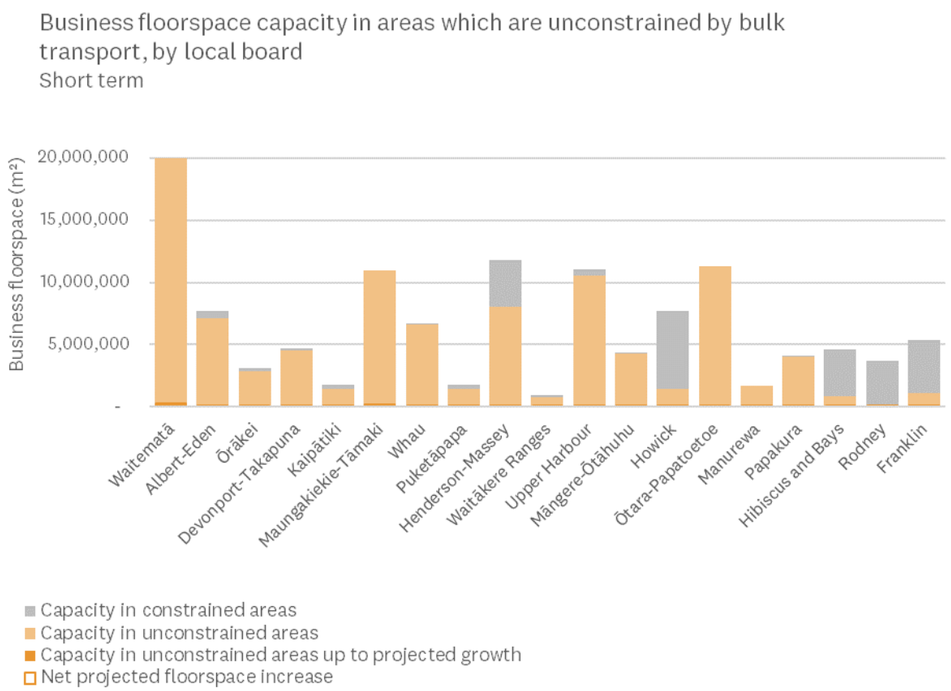
This represents the plan-enabled capacity which is located in areas which infrastructure providers have indicated are constrained/unconstrained. This is not necessarily the capacity which is actually able/unable to be serviced by infrastructure in these locations.

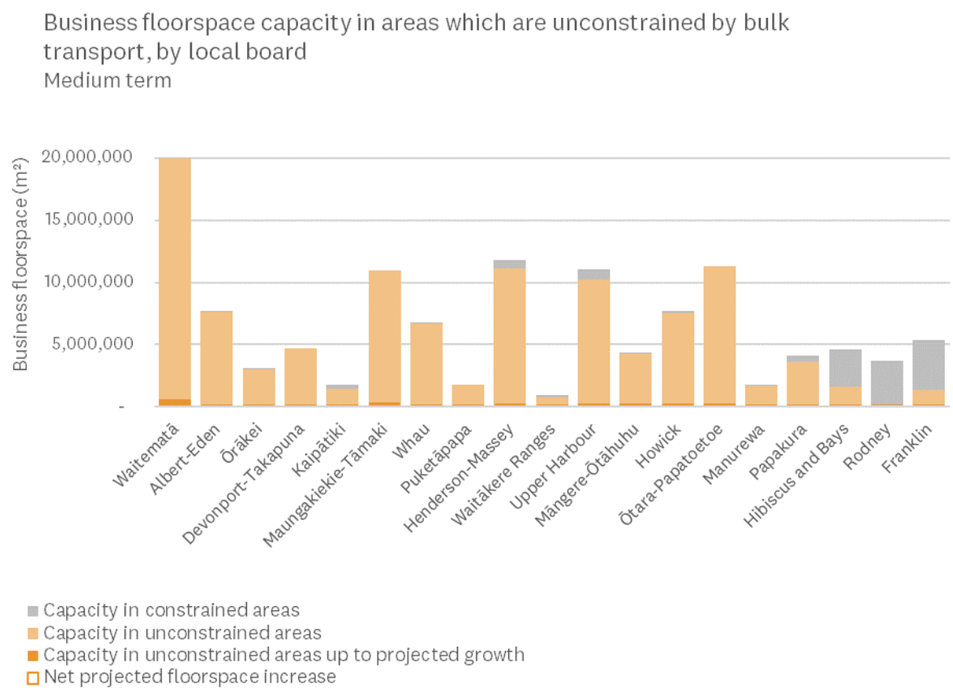
Plan enabled residential capacity in constrained areas

Lower capacity — Higher capacity

Plan enabled residential capacity in unconstrained areas

Higher capacity — Lower capacity





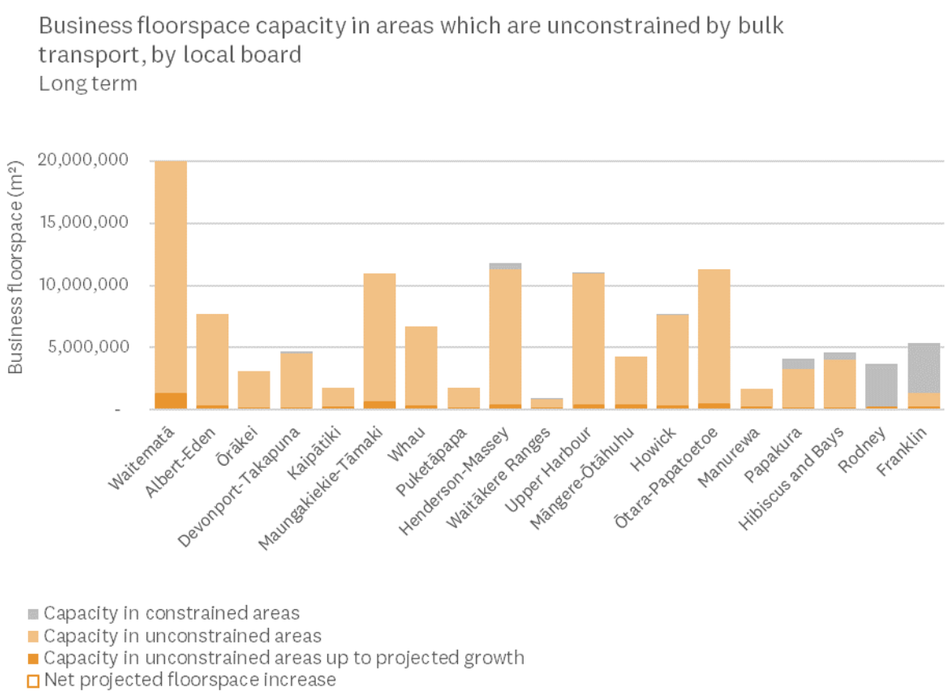


Figure 87. Business floorspace capacity in areas which are unconstrained by bulk transport, by Local Board – short, medium, and long term.

When applying the transport infrastructure constraint to i11v6 growth projections for employment, note the following "worst-case scenario" or lowest possible level of infrastructure servicing as shown in Table 48.[69]

Table 48 i11v6 net employment growth located in areas which are constrained and unconstrained by transport infrastructure.

		Short term	Medium term	Long term
i11v6 net growth located in areas which are constrained by transport infrastructure	Net projected number of employees	4,600	18,300	49,800
	Percentage of projected employees	*24%*	*19%*	*20%*
i11v6 net growth located in areas which are unconstrained by transport infrastructure	Net projected number of employees	14,400	75,900	194,400
	Percentage of projected employees	*76%*	*81%*	*80%*

5.3.2.2.2 Business floorspace capacity located in areas where transport infrastructure is constrained but water supply and wastewater infrastructure are not constrained

Figure 88 (overleaf) and Figure 89 below show the location of business capacity where there is a bulk transport constraint, but where water supply and wastewater infrastructure are unconstrained. This highlights areas where transport infrastructure is the predominant constraint, and where additional business capacity could be opened up if transport infrastructure constraints were to be addressed.

For the most part, water supply and wastewater infrastructure readiness is largely aligned with transport infrastructure readiness in relation to business floorspace capacity. Between the short, medium, and long term, there is very little change to the amount of business floorspace capacity located in areas where there is a transport constraint but where water supply and wastewater infrastructure are unconstrained. In the short term, this figure is approximately 8 per cent, decreasing to 7 per cent in the medium term and slightly less than 7 per cent in the long term.

The exceptions to this collocation pattern tend to be located on the fringes of the main urban areas and in outlying towns and settlements. This reflects the fact that network capacity has to be improved from the centre out. This pattern can be observed in the map series and local board graphs where, in aggregate, more outlying local boards have a greater proportion of their plan-enabled capacity in locations that are not infrastructure-ready for transport.

[69] Methodology and explanation of this approach can be found in Appendix 3 of this report.

Auckland Plan-Enabled Business Development Capacity

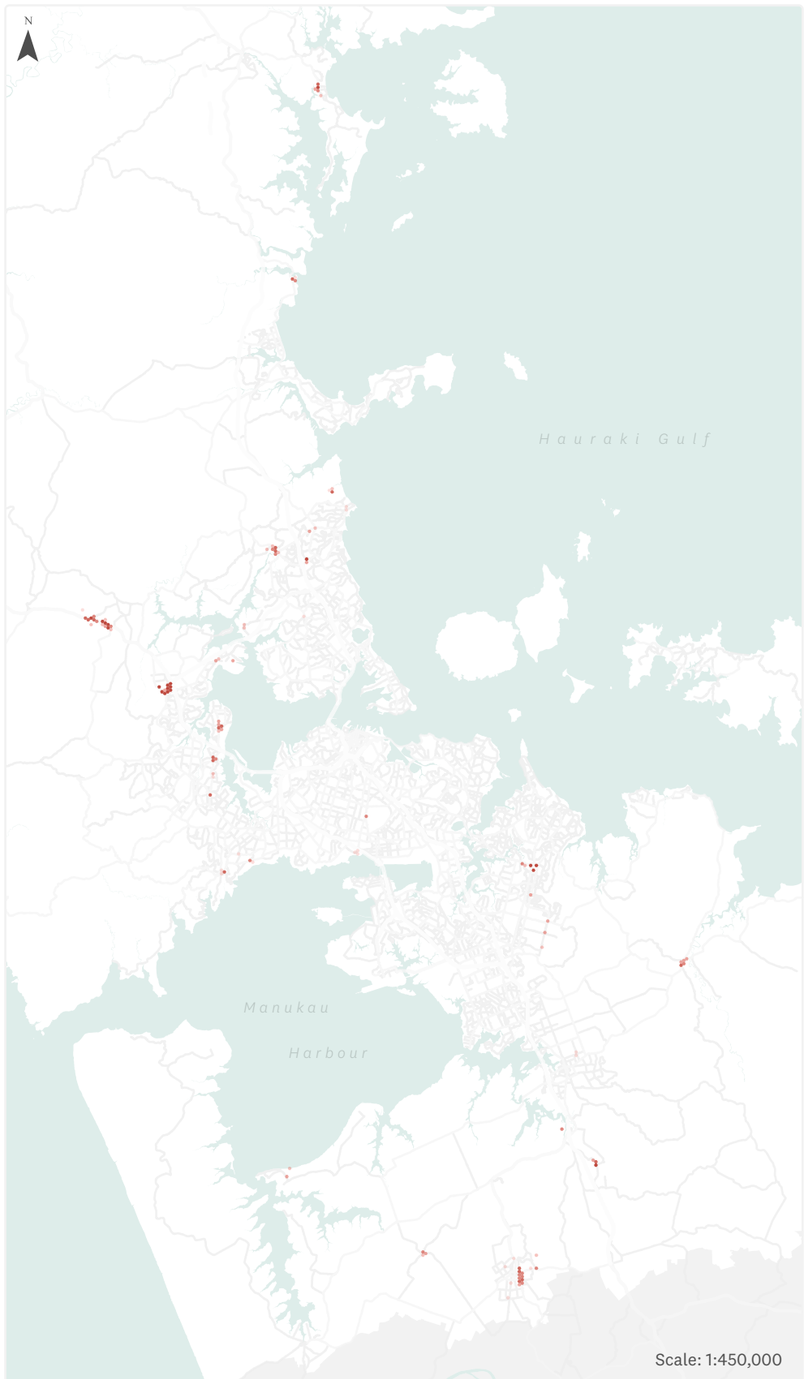
Showing plan-enabled capacity in areas which are constrained by constrained by bulk transport, but unconstrained by water supply and wastewater

Housing and Business Development Capacity Assessment for the Auckland Region

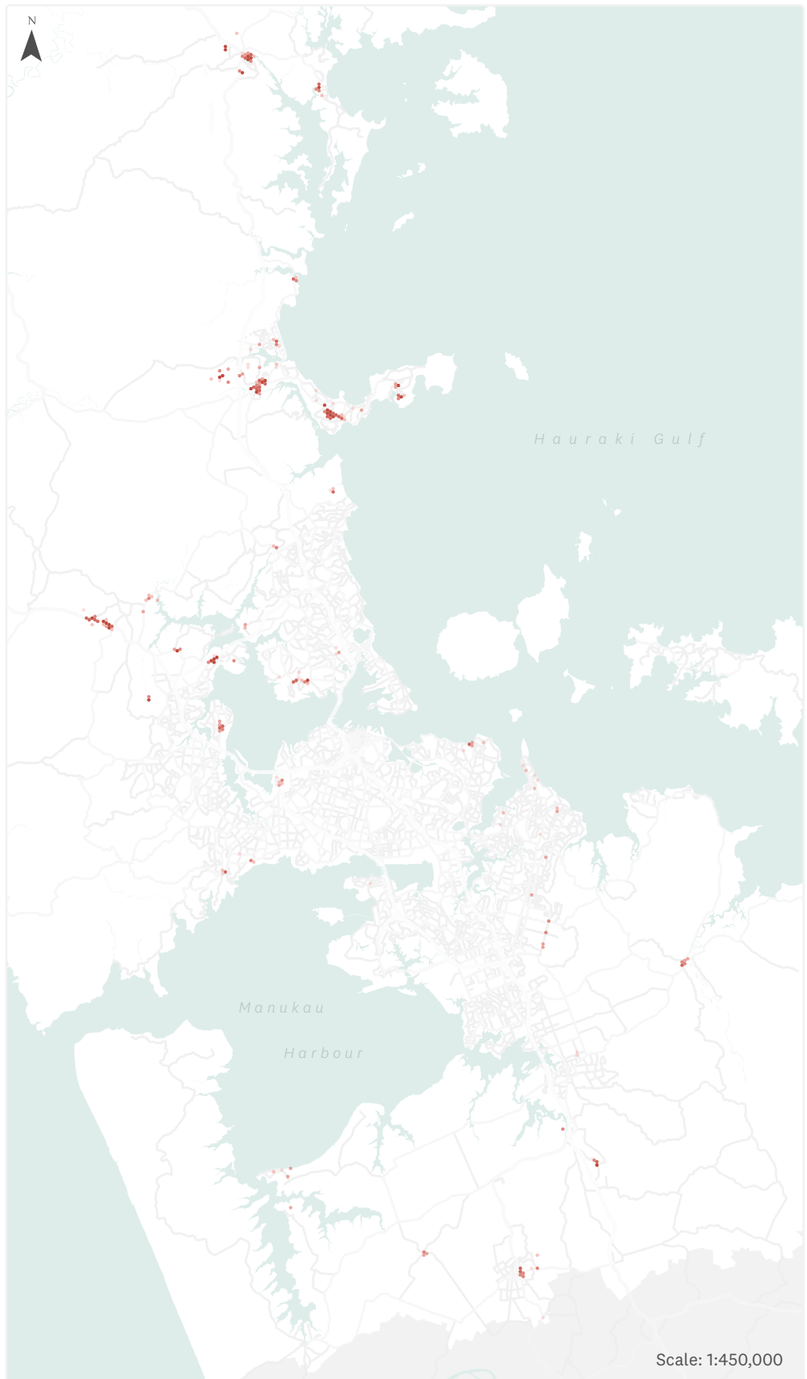
September 2023

Figure 88.

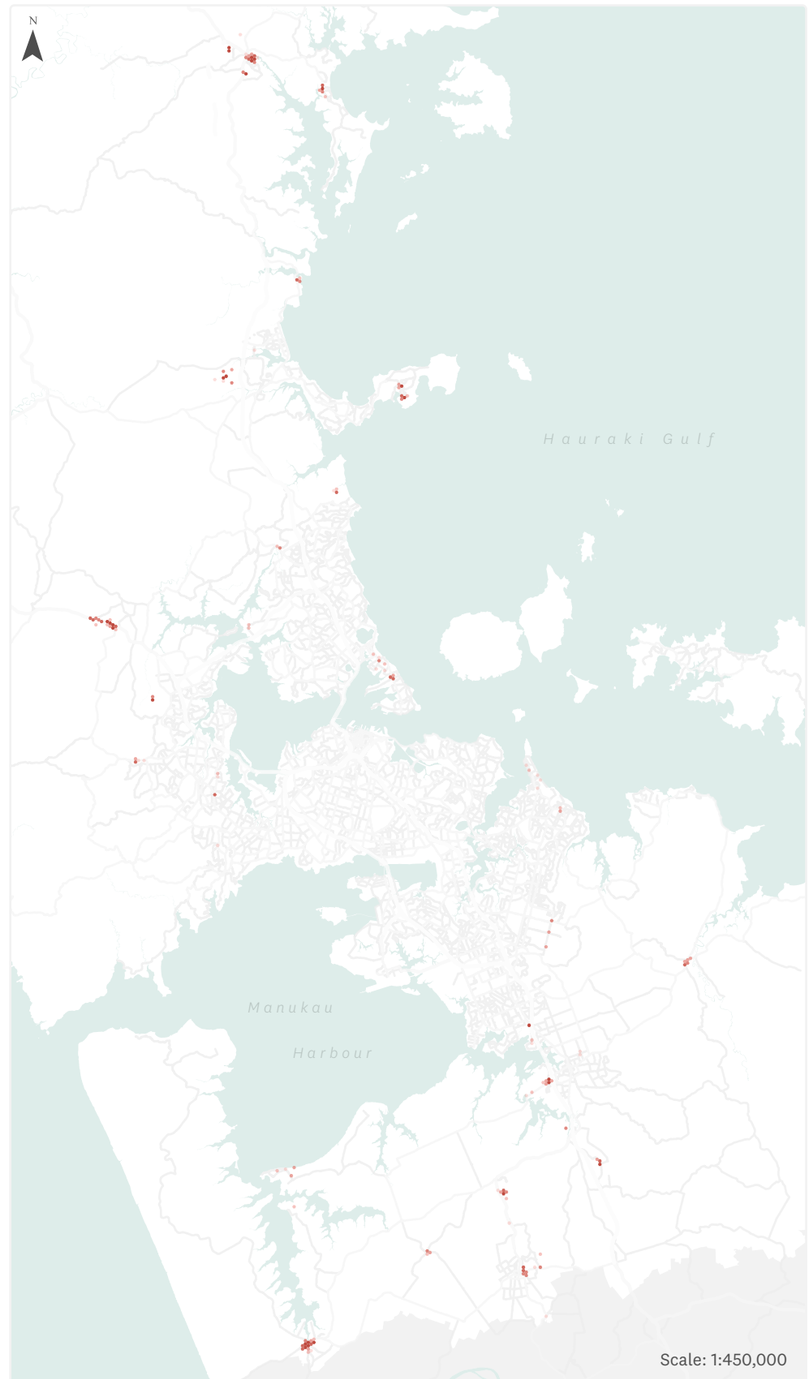
Short Term



Medium Term



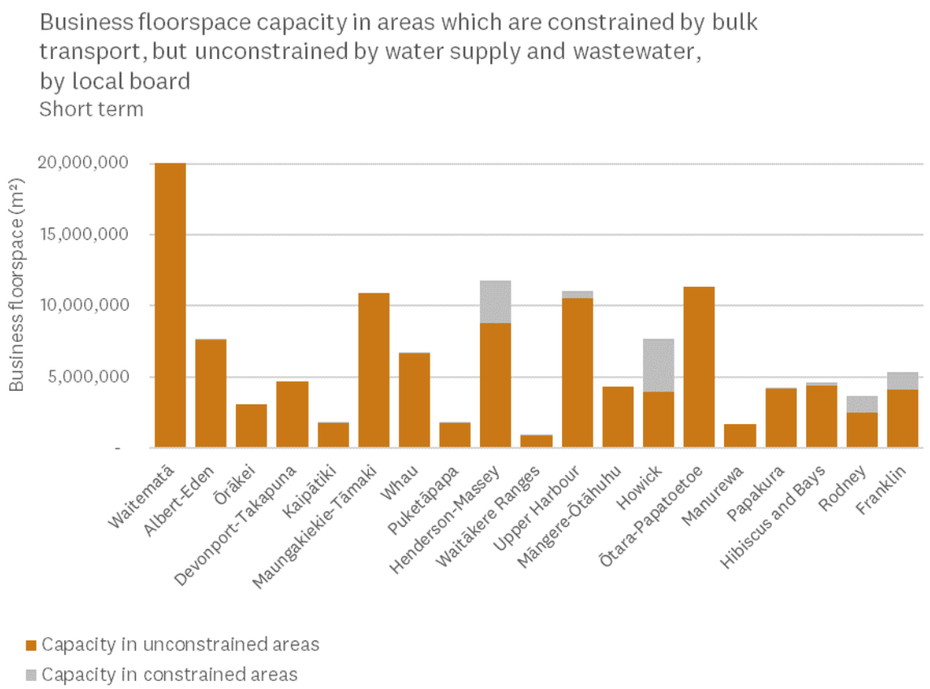
Long Term

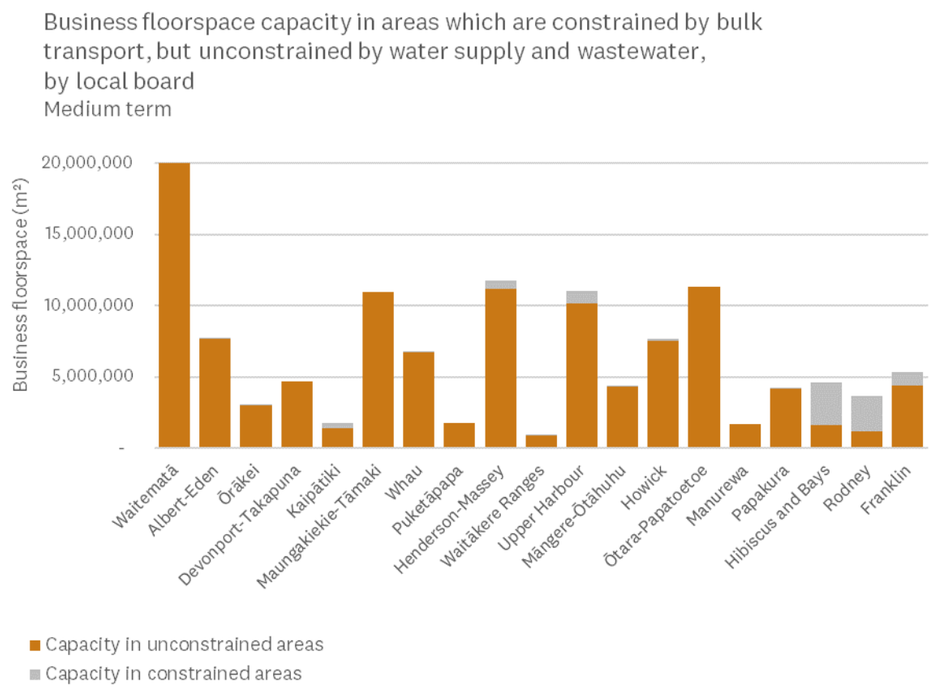


This represents the plan-enabled capacity which is located in areas which infrastructure providers have indicated are constrained. This is not necessarily the capacity which is actually unable to be serviced by infrastructure in these locations.

Lower capacity — Higher capacity

Research and Evaluation Unit RIMU





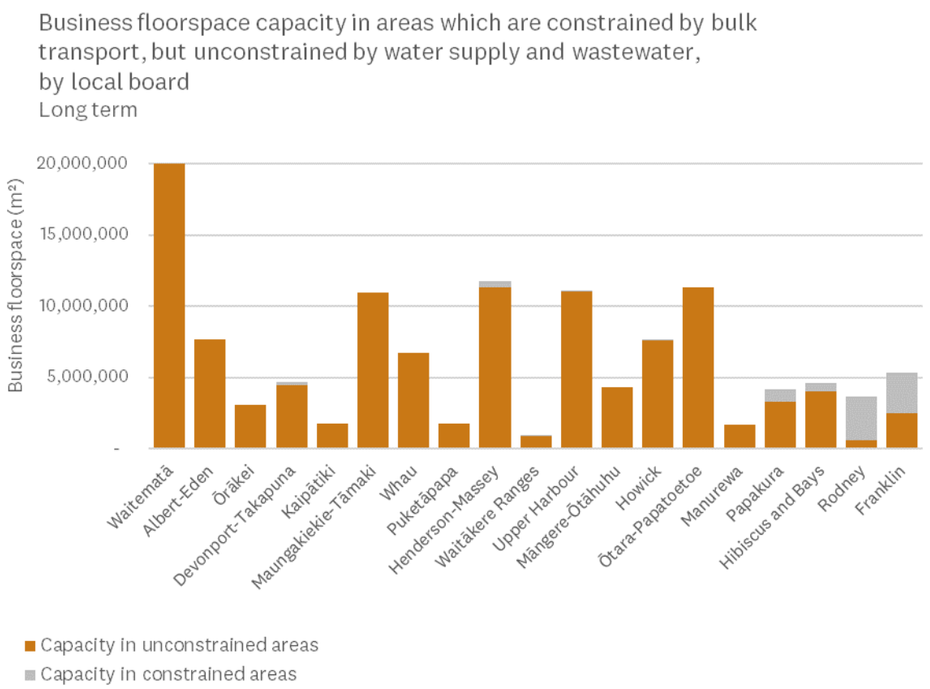


Figure 89. Business floorspace capacity in areas which are constrained by bulk transport, but unconstrained by water supply and wastewater, by local board – short, medium, and long term.

5.3.2.3 Combined infrastructure

This section of the report comments on the location of constraints for all three included infrastructure types together. In order for any given location to be considered infrastructure-ready for that time period, it must indicate that it is ready for transport, water supply, and wastewater. If any one of these three infrastructure types is indicated as not ready for that period, then the area is considered constrained overall. Refer to Appendix 3 for a detailed description of the methodology applied.

An additional subsection applies the combined infrastructure constraints to i11v6 projected growth for employment, to understand the absolute minimum 'floor' of development which is infrastructure-ready.

5.3.2.3.1 Business floorspace capacity located in areas where all three included infrastructures are constrained or not constrained

Figure 90 (overleaf) shows locations which are unconstrained by all three infrastructures in the short, medium, and long term, and gives an indication of the location of business land capacity provided for under PC78. Note that this is not necessarily the exact level of growth that infrastructure is able to accommodate, as the exact level of intensification that can be serviced by infrastructure is not known due to limitations in the data – rather, it is a relative and locational indicator of business land supply in relation to areas which are unconstrained by all three infrastructure types up to anticipated growth as indicated by infrastructure providers.

Figure 91 (overleaf) shows locations which are constrained by any one of the three infrastructures in the short, medium and long term. These are the areas which may face challenges in being able to provide infrastructure to supply business land up to the level of projected growth in i11v6.

Auckland Plan-Enabled Business Development Capacity

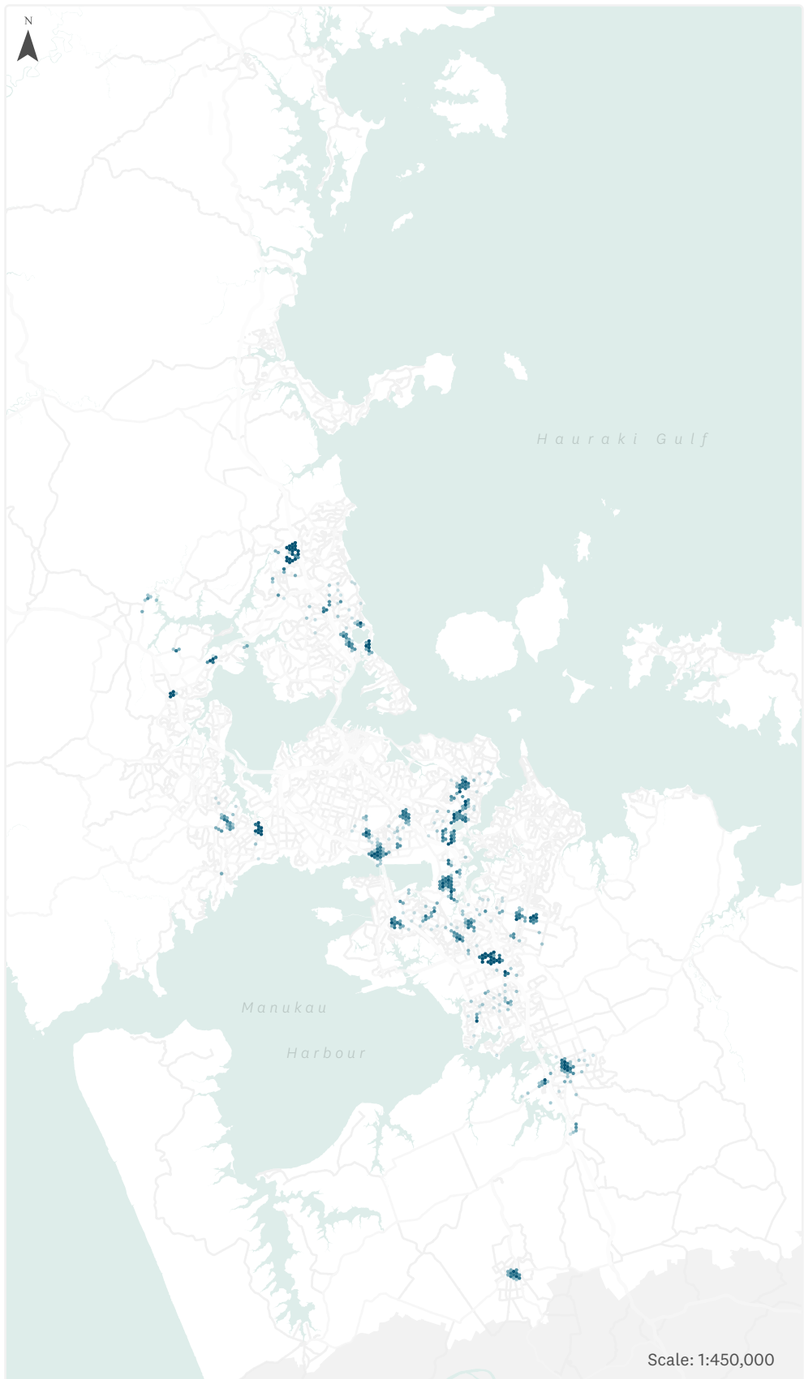
Showing plan-enabled capacity in areas without constraints

Housing and Business Development Capacity Assessment for the Auckland Region

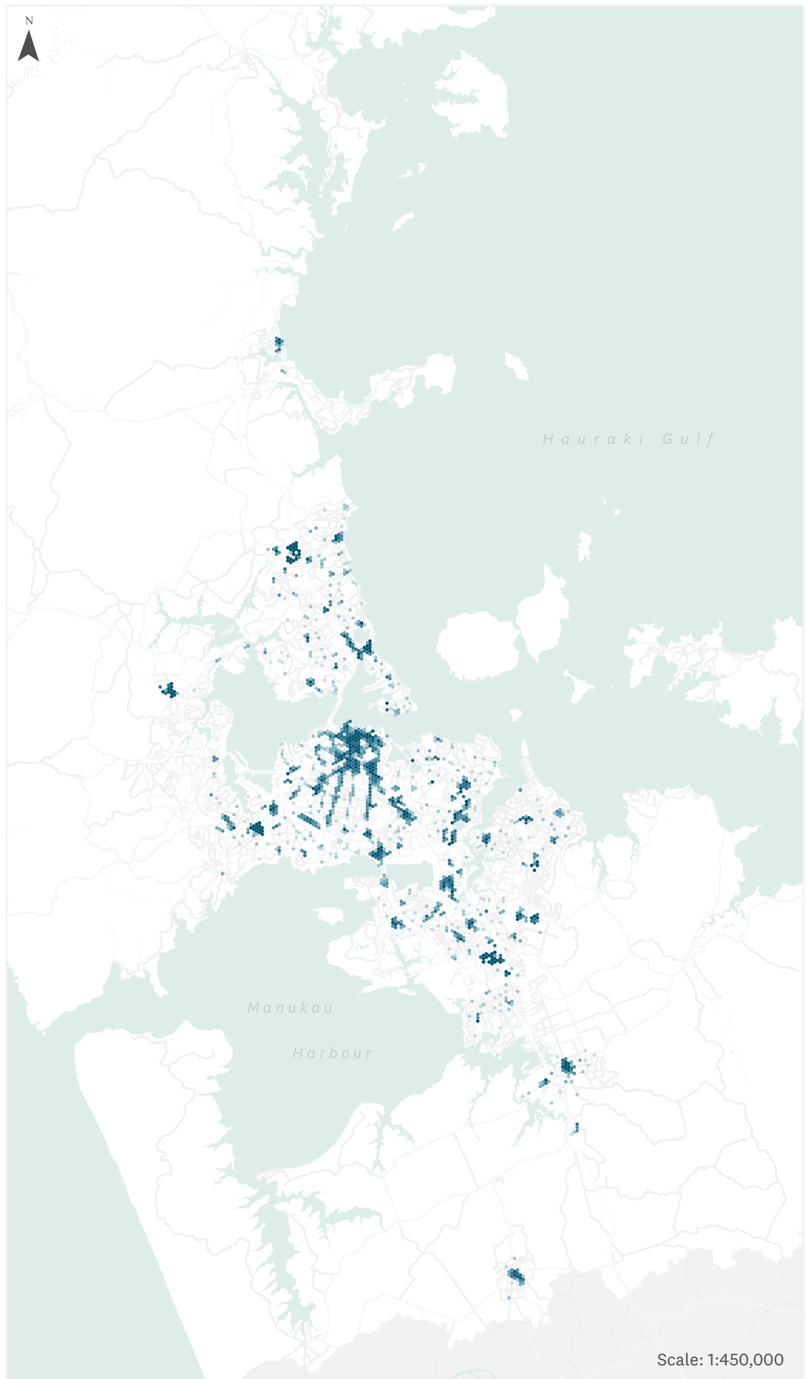
September 2023

Figure 90.

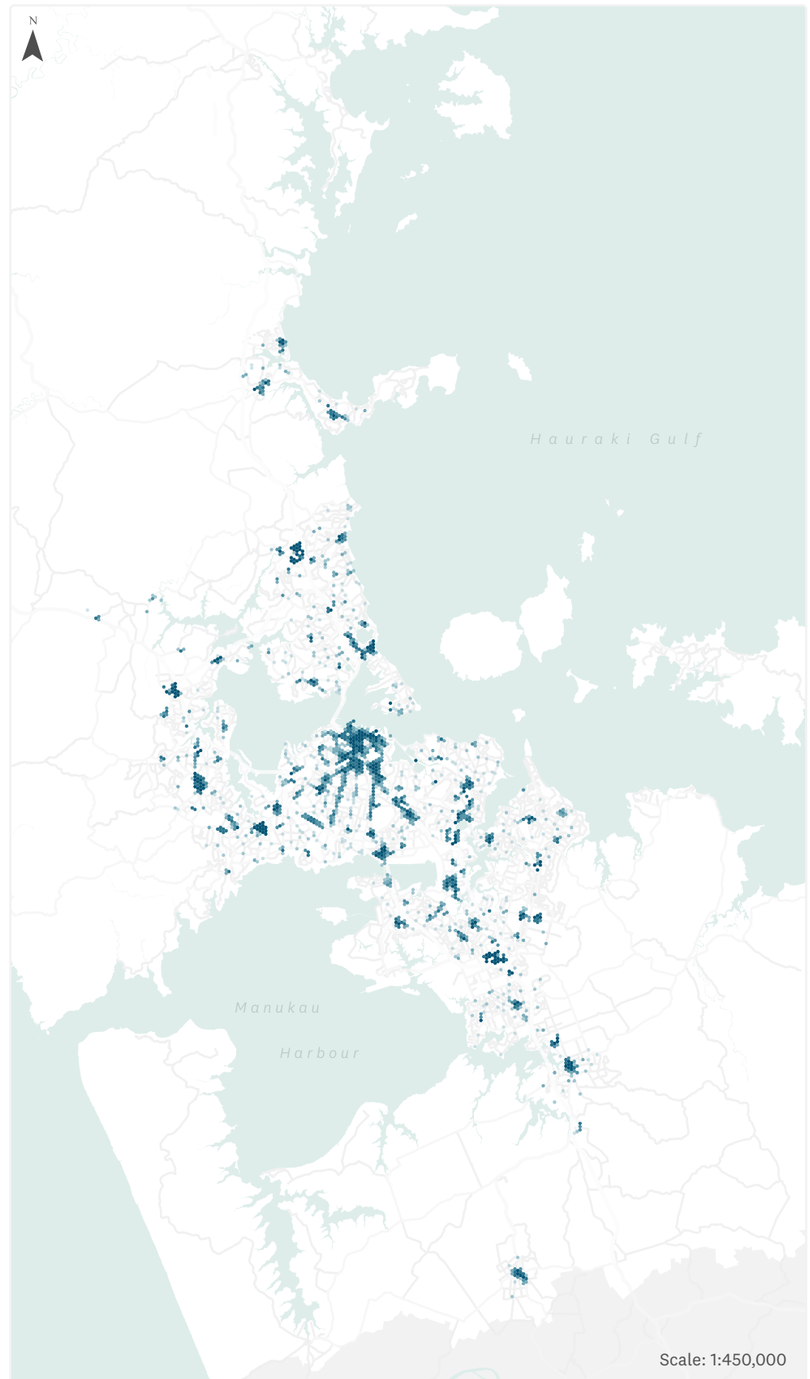
Short Term



Medium Term



Long Term



This represents the plan-enabled capacity which is located in areas which infrastructure providers have indicated are constrained. This is not necessarily the capacity which is actually unable to be serviced by infrastructure in these locations.

Higher capacity — Lower capacity

Auckland Plan-Enabled Business Development Capacity

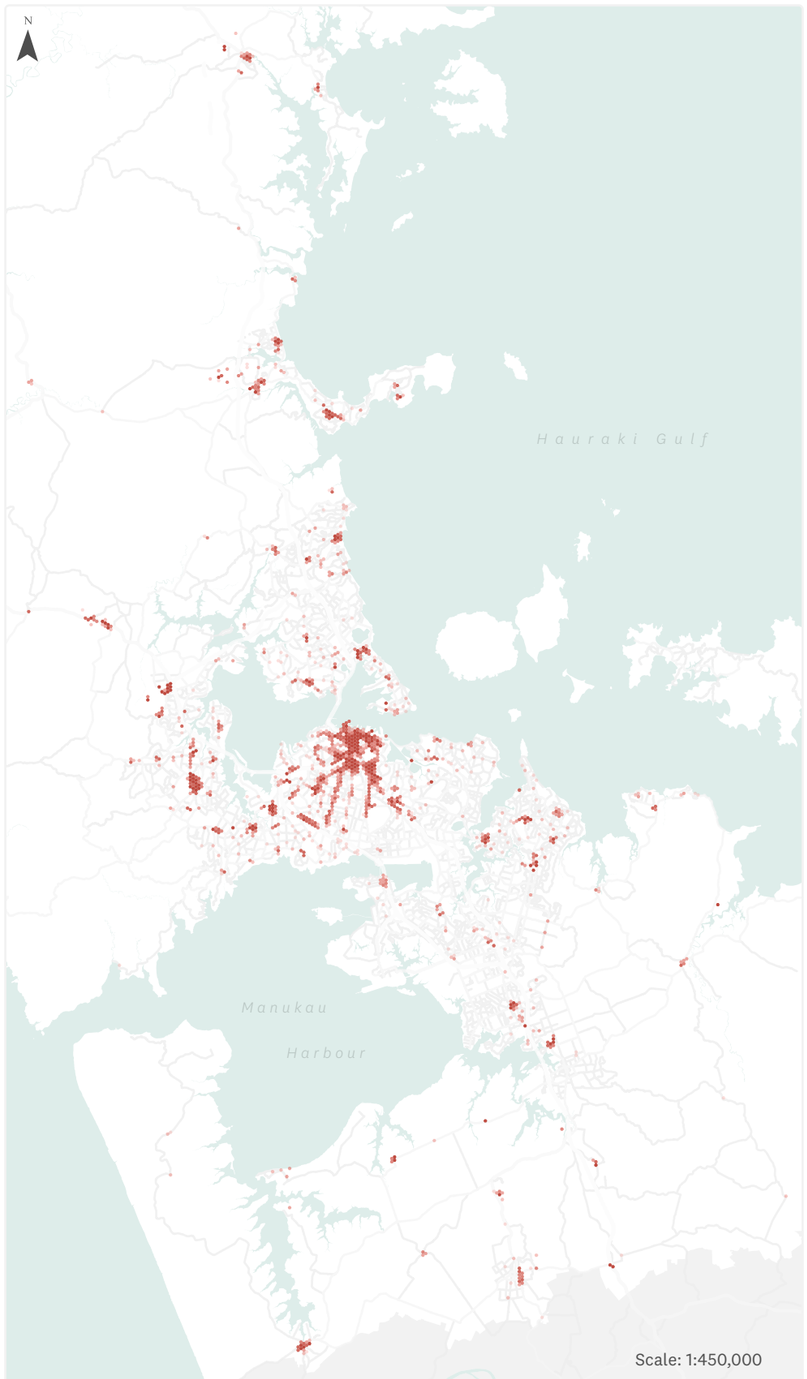
Showing plan-enabled capacity in areas which are constrained by bulk transport, water supply, and wastewater

Housing and Business Development Capacity Assessment for the Auckland Region

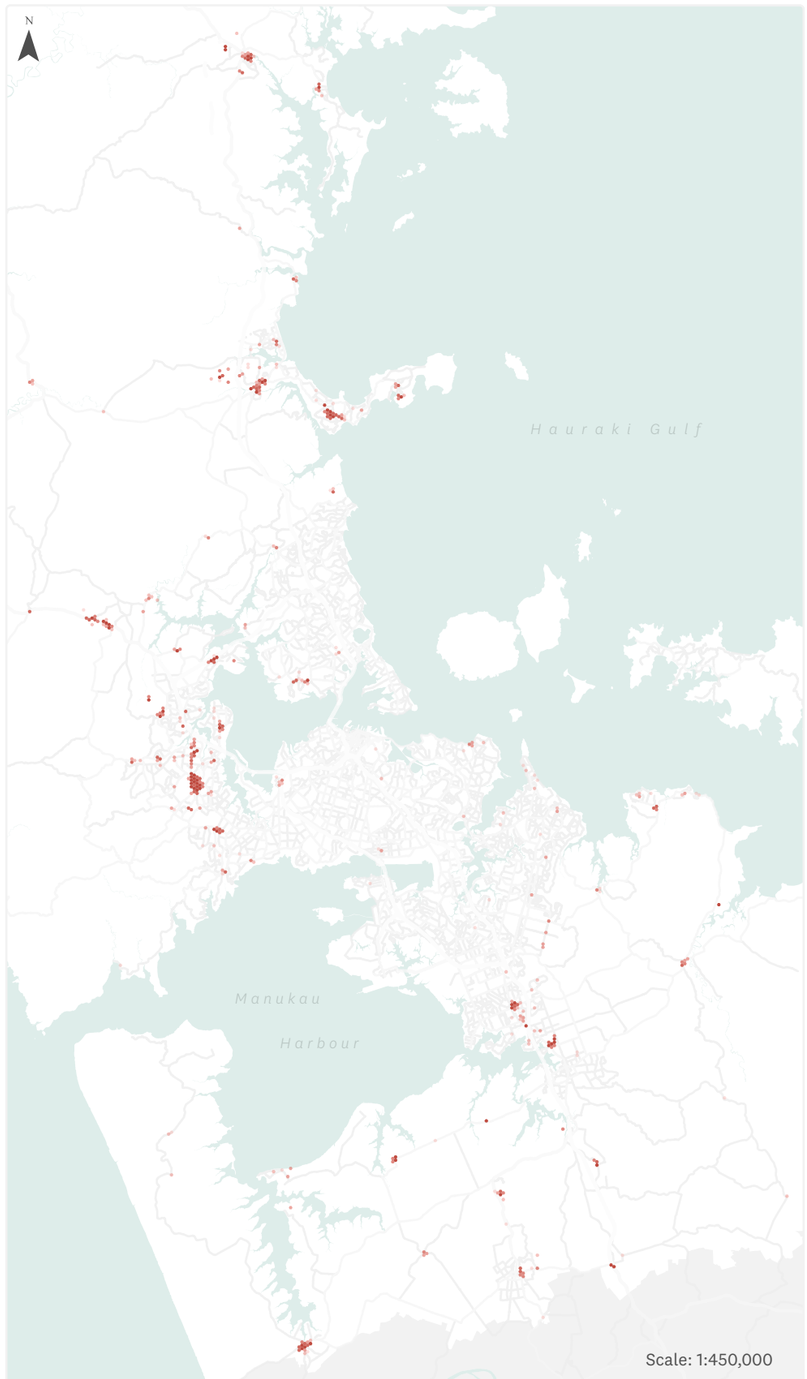
September 2023

Figure 91.

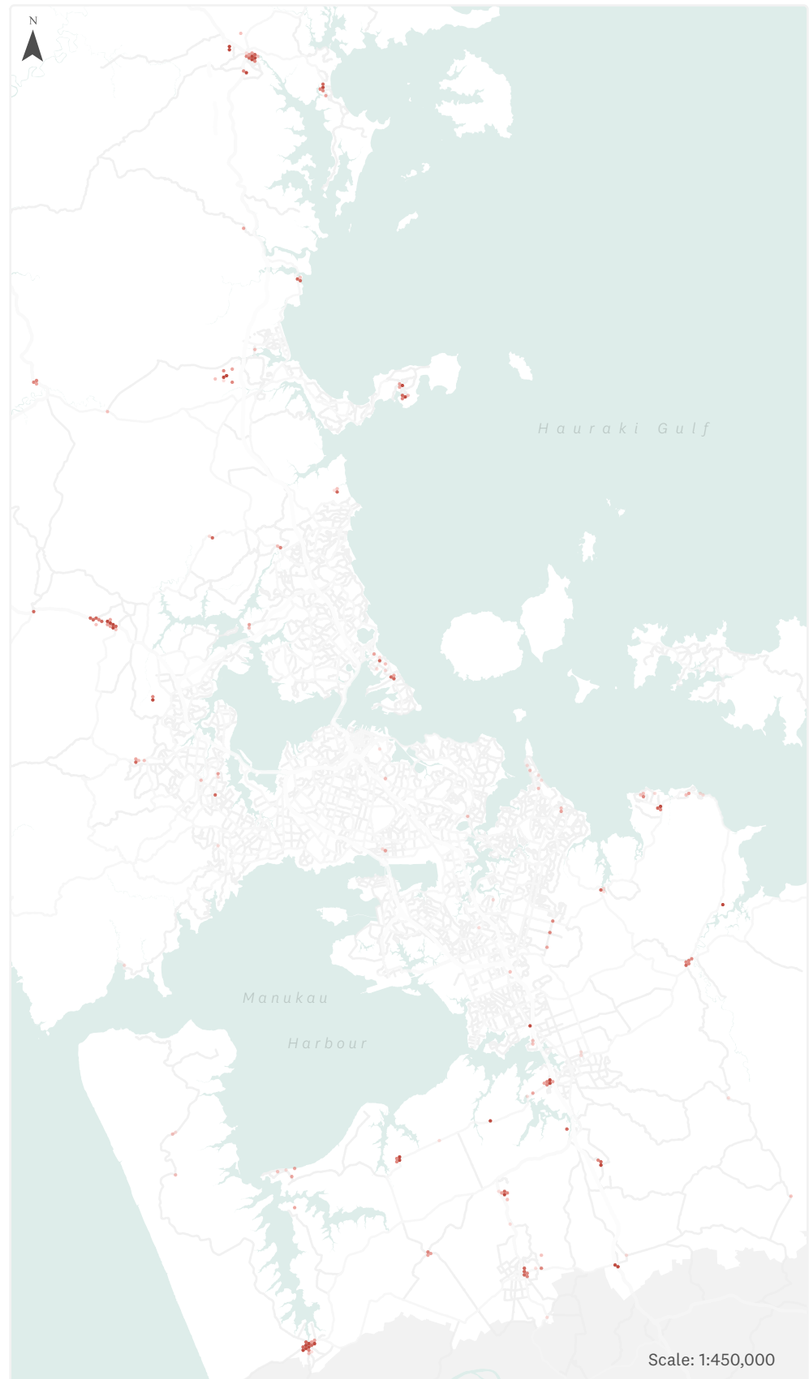
Short Term



Medium Term

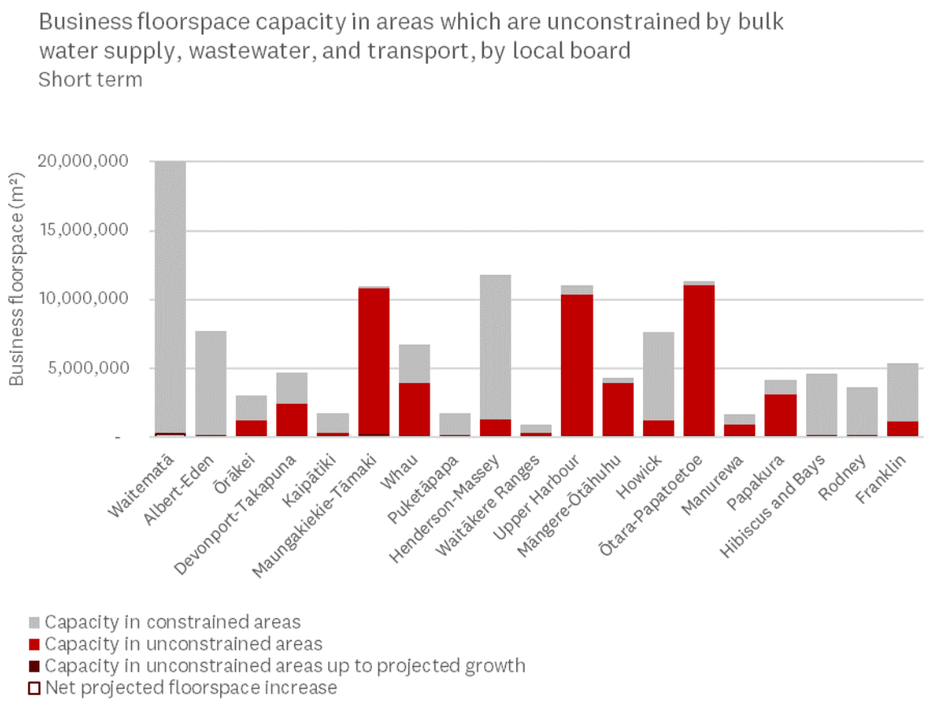


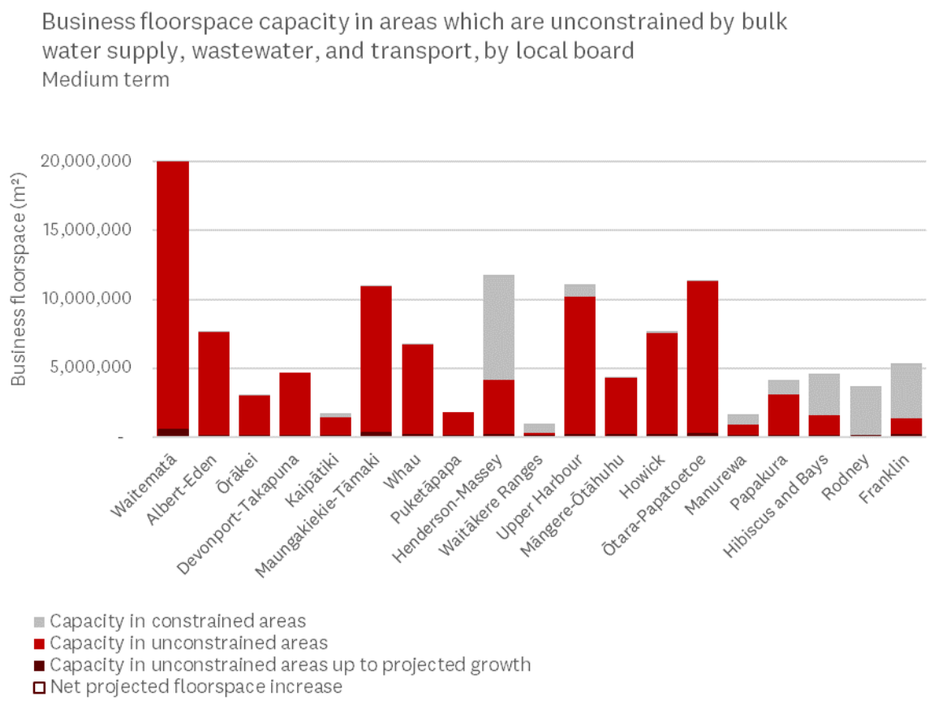
Long Term



This represents the plan-enabled capacity which is located in areas which infrastructure providers have indicated are constrained. This is not necessarily the capacity which is actually unable to be serviced by infrastructure in these locations.

Lower capacity — Higher capacity





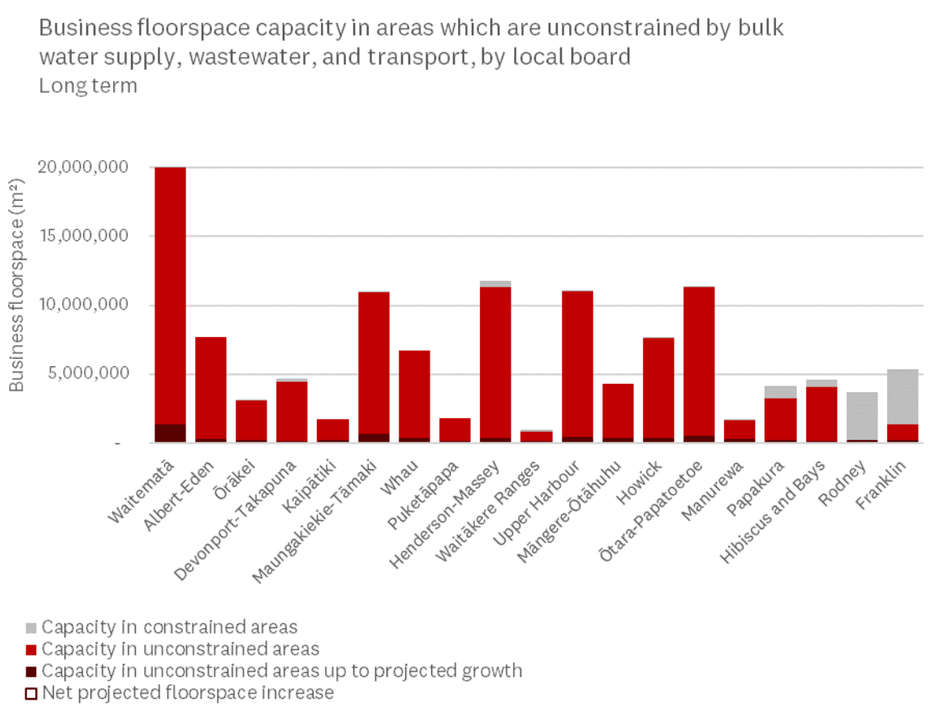


Figure 92. Business floorspace capacity in areas which are unconstrained by bulk water supply, wastewater, and transport, by local board – short, medium, and long term.

In the short term, those areas which are constrained by at least one of the three infrastructure types included in this assessment are mostly located in outlying rural and coastal settlement areas, as well as clusters of constrained local pockets around Whangaparāoa, the eastern suburbs, Beachlands-Maraetai, Waiuku, Te Atatū Peninsula, Kumeū-Huapai, and parts of Kaipātiki and Devonport-Takapuna. Approximately 58 per cent of plan-enabled business floorspace capacity overlaps with these areas where there is at least one infrastructure type constrained.

In the medium term, infrastructure providers have indicated that much of this constraint on business land will be resolved, with approximately 18 per cent of business floorspace capacity overlapping with infrastructure-constrained area. By the medium term, much of the infrastructure constraint issues on the Tāmaki isthmus regarding the servicing of business land use up to the projected level of growth are anticipated to be resolved.

In the long term, 92 per cent of business floorspace capacity is located in areas which are unconstrained for all three infrastructure types. The remaining amount of capacity located in constrained areas in the long term are indicated to be in smaller-scale pockets of outlying Centre zoning, and parts of Beachlands-Maraetai, Kumeū-Huapai, and Waiuku.

In aggregate, plan-enabled capacity located in areas unconstrained by water supply, wastewater, and transport infrastructure generally exceeds calculated business floorspace demand across all local board areas, with the following exceptions. In the short term, Waitematā Local Board, Albert-Eden Local Board, and Hibiscus and Bays Local Board have a shortfall of business floorspace capacity located in unconstrained areas compared to calculated floorspace demand in aggregate. By the medium term, these constraints are largely resolved, and continue to ease up into the long term. Overall, the amount of projected business floorspace capacity which is located in areas which are unconstrained far exceeds the amount of calculated demand for business floorspace for most local board areas in the medium to long term, in aggregate. The exception to this is the Rodney Local Board area, which has no plan-enabled business floorspace capacity located in unconstrained areas in the medium term, compared to a calculated demand for floorspace of approximately 84,100m². Looking at the figures aggregated at local board level, the amount of plan-enabled business floorspace in unconstrained areas in the long term in Rodney increases to 195,300m², compared to calculated demand for floorspace of approximately 157,600m².

Table 49. Percentages of business plan-enabled capacity located in areas that are constrained.

% of business plan-enabled capacity located in areas that are **constrained**	Water supply alone	Wastewater alone	Transport alone	Water supply and/or wastewater	Any one of transport, water supply, or wastewater
Short term	13%	46%	20%	49%	58%
Medium term	5%	7%	11%	11%	18%
Long term	1%	1%	8%	1%	8%

5.3.2.3.2 Applying infrastructure constraints to i11v6 growth projections (employment)

As has been previously noted, the application of infrastructure constraints onto plan-enabled business floorspace capacity has significant limitations. This is because infrastructure providers have used the i11v6 growth projections as the metric against which infrastructure readiness has been measured, and not the full extent of what is enabled by PC78. In cases where providers have indicated that an area is infrastructure-ready, it means they anticipate they are able to service up to at least the growth indicated by i11v6 modelling. In cases where they have indicated that an area is not infrastructure-ready, it is an indication that they may not be able to service the level of growth indicated in i11v6, however they may still be able to service a portion of that growth – the extent of the actual capacity to service those areas is not known from the data that has been supplied.

As the difference between what is plan-enabled by PC78 and the number of households projected by i11v6 is significantly large, it is important to also frame infrastructure constraints in the context of the i11v6 projections.

In order to establish a "worst-case scenario" understanding of the impacts of infrastructure constraints on growth, the infrastructure-readiness data from providers was spatially overlaid onto projected growth figures for population, households, and employment. Due to the spatial data limitations of i11v6 projections,[70] it is not possible to determine exactly how much of any future growth overlaps with infrastructure-constrained areas. However, a simple approach was used to estimate the approximate proportion of projected growth which would be affected by an infrastructure constraint in a worst-case scenario. This involved determining the percentage of any urbanised area (current or future) within the MSM zones which were affected by an infrastructure constraint and determining the affected proportion of the projected growth in that MSM using that factor.

As already noted, this is the absolute lowest figure of the number of dwellings which are unconstrained by any infrastructure, and while the actual infrastructure-ready figure is somewhere above that shown in the graphs below, it is a useful figure by which to modulate the earlier assessments of plan-enabled business floorspace capacity in the context of infrastructure constraints.

[70] The i11v6 growth projections are at the MSM zone level. The distribution of this growth is not uniform across the MSM, however it is not possible to ascertain this distribution using the current existing dataset.

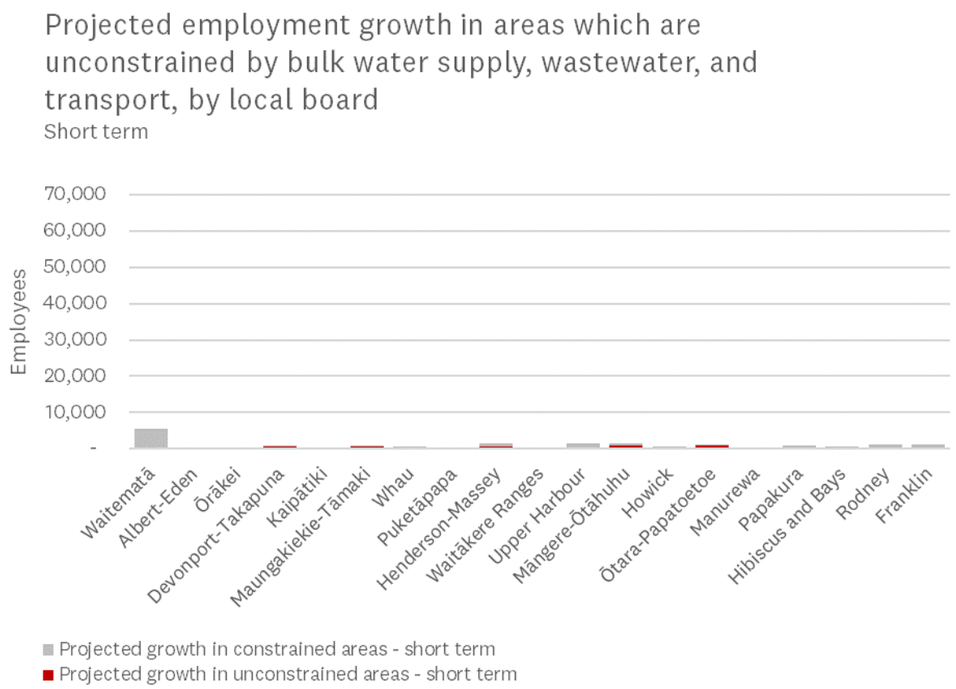
Employment i11v6 projections

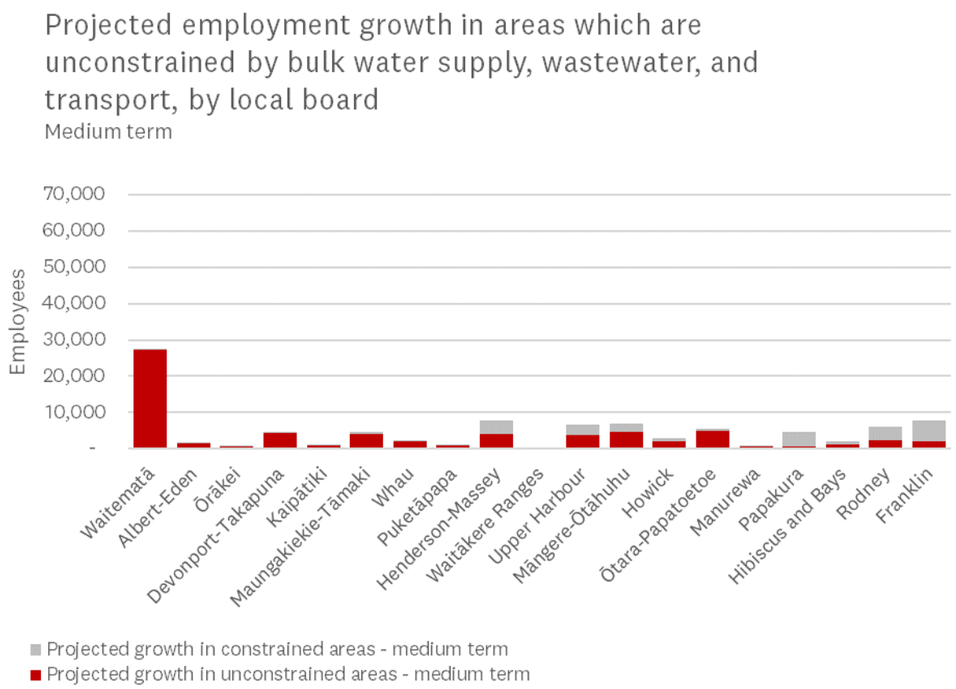
Figure 93 below shows the lowest "worst-case scenario" level to which infrastructure is likely able to service i11v6 employment projections, in the short, medium, and long term, aggregated to local board area. This is likely slightly lower than what is actually able to be serviced, but is closer to the scale of development upon which infrastructure providers are planning their future projects, compared to the scale of development enabled under PC78, which far exceeds calculated floorspace demand based on i11v6 employment projection assumptions. It is unable to be ascertained where the actual level of infrastructure readiness sits, as this information is not available in the data supplied by infrastructure providers, and due to the limitations already described elsewhere in this report.

(Note that this subsection expresses potential demand as projected employees rather than floorspace. These are the raw figures from the i11v6 model, rather than the calculated conversion of employees to floorspace demand based on assumptions outlined earlier in this report. This is currently a limitation of this iteration of the HBA and could be explored further in subsequent iterations or other future analyses.)

The following graphs indicate that approximately 28 per cent of i11v6 projected employment is located in areas which are unconstrained for water supply, wastewater, and transport infrastructures in the short term. In the medium term, approximately 73 per cent of projected employment is located in unconstrained areas, and this further increases to 80 per cent in the long term.

As distance from the city centre increases, more outlying local boards appear to face a greater proportion of their employment growth being potentially constrained by infrastructure provision going into the long term. The local board areas with the highest proportion of projected employment growth potentially affected by at least one infrastructure constraint are calculated to be Franklin Local Board (approximately 78 per cent of projected employment growth located in constrained areas), Ōtara-Papatoetoe Local Board (approximately 54 per cent) and Rodney Local Board (approximately 37 per cent).





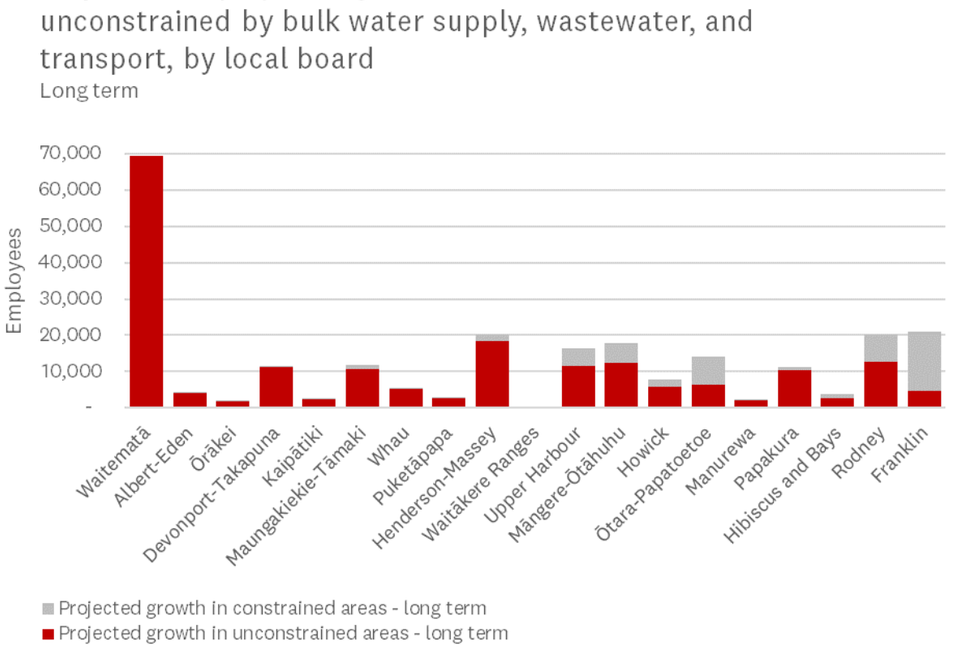


Figure 93. Projected employment growth in areas which are unconstrained by bulk water supply, wastewater, and transport, by local board – short, medium, and long term.

The following table summarises the regional "worst-case scenario" level of growth that could be serviced by all three included infrastructure types combined, for projected employment growth.

Table 50 i11v6 net employment growth located in areas which are constrained and unconstrained by water supply, wastewater, and transport infrastructure.

		Short term	Medium term	Long term
i11v6 net growth located in areas which are constrained by water supply, wastewater, and transport infrastructure	Net projected number of employees	13,700	25,800	49,800
	Percentage of projected employees	*72%*	*27%*	*20%*
i11v6 net growth located in areas which are unconstrained by water supply, wastewater, and transport infrastructure	Net projected number of employees	5,300	68,300	194,400
	Percentage of projected employees	*28%*	*73%*	*80%*

5.4 Sufficiency of employment space

5.4.1 Regional assessment

The demand for and supply of employment, floorspace and land are not able to be compared directly, or consistently over time as there are various ways that employment growth might be accommodated in the region. First, existing employment space can be used more intensively. This might be achieved, for example, by reducing the size of desks in an office to fit more employees into the same space, by reducing the number of hours that employees spend in the building with more work done from home, or adding additional shifts in a warehouse or manufacturing facility. Second, additional floorspace can be added by developing vacant and partially vacant land. And finally, existing buildings can be modified or redeveloped to a higher building intensity on already developed land to create more floorspace. The sufficiency analysis applies each of these growth accommodation strategies as follows:

1. Step 1 – Analyse current employment, Business zoned area and floorspace to identify m^2 per MEC (employment intensity) and floorspace per ha (development intensity); and consented floorspace trends last 10 and 20 years;
2. Step 2 – Estimate potential extra employment capacity from more intensive use of existing space. This is based on modelled change in the short, medium and long terms. The base point is current m^2 per MEC for each centre, with allowance for low increase (+6 per cent over 30 years), medium increase (+9 per cent) and high increase (+12 per cent). These scenarios are applied to each location, adopting the current m^2 per MEC as the best indication of the centre's performance and role in the centres and business areas network;
3. Step 3 – Estimate the potential uptake of vacant and vacant potential land for each centre, identified as ha. A scenario approach is again applied to all centres and business areas. The low scenario assumes that over the 2022-2052 period 33 per cent of the vacant and vacant potential capacity is developed, at the current (2022) development intensity for that location; the medium scenario allows for 40 per cent of vacant capacity to be taken up, the high scenario allows for 47 per cent to be taken up. This is purposely conservative, for the purposes of the sufficiency assessment. In all scenarios, the uptake is assumed to occur *pro rata* over the 30-year plan period;

4. Step 4 – estimate additional employment on the additional floorspace, which is assumed to occur at the same employment intensity as the average m^2 per MEC for the location (Step 2). This shows additional and total employment for the centre/business area at each future point in time – 2025, 2032 and 2053;
5. Step 5 – compare the estimated employment capacity for each future year with the projected employment levels generated by the Model, and identify the employment (MECs) which would not be accommodated by the extra floorspace and shift in intensity;
6. Step 6 – calculate the amount of additional floorspace (m^2) which would need to be (re)developed to accommodate this uncatered for employment growth, assuming the average floorspace employment intensity for that centre applies;
7. Step 7 – express this floorspace m^2 amount as a per cent share of the remaining and undeveloped plan-enabled floorspace capacity of the centre or business area (note: a floorspace amount in excess of remaining floorspace capacity would imply a shortfall in that specific centre or business area).

The following three tables (Tables 51, 52 and 53) report the results of this stepwise analysis in aggregate for the region, over the short, medium, and long terms respectively. There are several key indictors showing each step in the assessment leading to the results. The outputs for each location have a standard set of indicators in Columns A to P, in a table structure, as below.

The left side of the table examines sufficiency in employment terms.

1. The first three columns (A, B, C) track employment in that location – current 2022 (A), projected 2052 (B), and the net increase (C) from current to future.
2. The next column D *Extra Capacity Vacant Land Uptake* shows the estimated additional employment capacity (MECs) on newly developed vacant and vacant potential land.
3. Column E *Extra Capacity More Intensive Space Use* shows the estimated increase in employment capacity (MECs) from using existing space more intensively.
4. The next column F *Total Extra Capacity Without Redevelt* is the estimated increase in total capacity (MECs) from additional space (D) plus more intensive use (E).
5. The next column G *MEC Requiring Extra Space* is the balance of employment growth.
6. Column H *Share % of MEC Requiring Redevelt* shows the share (per cent) of total projected employment growth which would require more capacity than what may be realised from bringing in vacant and vacant potential land and using floorspace more intensively.

This (H) is a key measure because it shows the demand which is expected to require some redevelopment of existing built properties (assuming no further development of still unutilised and underutilised vacant land occurs beyond the baseline assumption).

It is expressed as a share of employment in order to highlight its significance. A large percentage figure would indicate there is substantial need for redevelopment, and that would indicate some pressure on sufficiency. A small percentage figure would indicate there is scope or more latitude in terms of sufficiency.

The right side of the Table examines the floorspace implications of the demand from employment growth. The floorspace estimates in these tables include the additional competitiveness margin of 20 per cent for the short and medium terms, and 15 per cent for the long term, over and above the estimated demand for additional business floorspace that results from employment growth.

7. Column I *Space 2022* shows the current situation in terms of existing floorspace (m^2).
8. Column J *Extra Floorspace* shows projected increase in floorspace arising from development on vacant land and land with vacant potential.
9. Together, these give an *Estimated Built Space* in the projection year as Column K (as 000 m^2). Column K is the sum of Column I plus Column J.
10. Next Column L *Future Floorspace Demand* shows the estimated floorspace m^2 which would be required to cater for projected total employment.
11. Column M shows *Extra Space Needed (gross),* which is the extra floorspace which would be needed to accommodate the projected demand (employment) in the centre.

The final three columns seek to show the significance of matters relating to sufficiency of capacity.

12. Column N *Extra as % (year) Built Space* shows the extra floorspace required to accommodate demand (employment), expressed as a per cent share of the estimated future built space. That is the per cent requirement in total over the planning horizon.
13. Column O indicates the additional floorspace required as a share of that which is potentially available from redevelopment in the centre or business area, drawn from the total plan-enabled capacity estimate for each location. That is also the per cent requirement in total over the planning horizon.
14. Column P expresses that additional floorspace required as an annualised percentage.

This is a key measure because it brings in the time element. It recognises specifically that a shortfall in sufficiency does not necessarily need to be solved immediately. Instead, it places any potential shortfall into its context, to show the mean annual change or rate of redevelopment which would be required each year, or over any selected time period.

In the urban environment things are not static, and the basic economic processes proceed as economies develop and grow. These include both commercial development and investment in built floorspace capacity, and public sector investment in infrastructure, especially transport and waters. Current potential capacity constraints may disappear as further investment occurs.

The assessment is undertaken for every centre and business area individually, but the summary tables show the statistics in aggregate for each type of centre and business area, to present the total outcome for that centre type. It is important to note that the totals for each type of centre show the gross figures, especially for the estimates of employment requiring more space, and the extra space needed. This means that the totals for each centre type do not simply net out the totals, which would see centres with plenty of capacity offsetting those without sufficient capacity. To illustrate, the estimates of MECs requiring extra space (G) are greater than just the net difference between projected employment growth (C), and the potential extra capacity (F). This means the Model identifies the centres and business areas which are expected to face the most pressure on their sufficiency, to show the most impacted locations according to the indicators used. In the short term (medium growth scenario), the major share of growth would be able to be accommodated by development of floorspace on vacant or vacant potential land, and through more intensive use of existing floorspace. However, in some locations, the vacant land and increase in intensity of usage would not be sufficient to accommodate forecast employment growth, and additional floorspace (via redevelopment of existing sites) will be needed. In a few locations, the additional floorspace needed exceeds plan-enabled capacity, and in these locations there is a shortfall, between what is enabled to be supplied (under tested provisions) and what the forecasts suggest will be demanded.

At the region-wide level, take-up of enabled capacity could more than cater for projected growth. However, sufficiency of capacity needs to be assessed on a location-specific basis, because a shortfall in one location may, but would not necessarily, be able to be offset by a surplus of capacity in another suitable or nearby location. For example, industrial land supply in more central locations is in high demand, and additional suitable industrial land is not practicably able to be supplied in those already highly developed areas – additional opportunities will need to be provided in other (further flung) locations, which may provide regional sufficiency and be suitable but may result in some businesses not being able to find locations that suit their locational preferences.

Between 2022 to 2025, under the medium scenario, across the region's multiple centres and business areas including some with and others without sufficient capacity, in net terms approximately 18,000 MECs 4 (Table 51, Column G) would require more space than is likely to arise from take-up of vacant and underdeveloped land (16,000 MEC, Column D), and more intensive use of existing floorspace (7,000MEC, Column E). This is equivalent to roughly 600,000 square metres of additional business floorspace needed over three years (Column M). Overall, for 2025 the estimates suggest those requiring additional space represent around 3 per cent of total regional employment (Column H).

Table 51. Sufficiency assessment for the short term (2022-2025), medium growth scenario.

Medium Future 2025	EMPLOYMENT ANALYSIS (MEC)								FLOORSPACE ANALYSIS (000m^2)							
	Employment Intensity Shift 1.0%								Vacant Take up: 4% (147 ha of 3,668)							
Centres & Business Areas	2022	2025	Change 2022-25	Extra Capacity Vacant Land Uptake	Extra Capacity - More Intensive Space Use	Total Extra Capacity without Redevelt	MEC Requiring Extra Space	Share % of MEC Demand Req Redevelt	Space 2022	Extra Floor Space	Estimated Built Space 2025	Future Floorspace Demand 2025	Extra Space Needed (gross)	Extra as % 2025 Built space	Extra Space as % Unused Enabled Capacity	Annual % Uptake Required 2022-25
Column Reference	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
City Centre	127,020	134,580	7,560	820	1,160	1,980	5,580	4%	3,075	20	3,094	3,265	134	4%	1.0%	0.3%
Metropolitan Centres	84,070	89,700	5,630	2,170	770	2,940	2,830	3%	3,516	97	3,614	3,789	129	4%	0.3%	0.1%
Town Centres	79,400	82,540	3,140	3,060	570	3,630	2,100	3%	3,903	161	4,064	3,955	19	0%	0.1%	0.0%
Local Centres	33,500	34,160	660	860	210	1,070	310	1%	794	16	810	806	8	1%	0.1%	0.0%
Neighbourhood Centres	28,600	29,090	490	570	170	740	380	1%	667	8	674	644	4	1%	0.1%	0.0%
Total Centres	352,590	370,060	17,470	7,500	2,900	10,400	11,200	3%	11,954	302	12,256	12,459	293	2%	0.3%	0.1%
Mixed Use	73,990	78,780	4,790	850	480	1,330	3,710	5%	1,630	18	1,647	1,751	88	5%	2.2%	0.7%
Business Parks	11,460	12,040	580	740	10	730	210	2%	199	12	211	209	4	2%	0.2%	0.1%
General Business	11,580	12,320	740	400	100	500	560	5%	613	22	635	651	27	4%	0.9%	0.3%
Light Industry	147,440	152,860	5,420	4,530	2,850	7,380	1,810	1%	9,094	304	9,399	9,353	111	1%	0.5%	0.2%
Heavy Industry	73,510	76,420	2,910	2,210	600	2,810	970	1%	5,434	116	5,550	5,650	76	1%	0.6%	0.2%
Total Business Areas	317,980	332,420	14,440	8,700	4,100	12,800	7,300	2%	16,969	472	17,442	17,614	306	2%	0.7%	0.2%
Centres & Business Areas	671,000	702,000	31,000	16,000	7,000	23,000	18,000	3%	29,000	775	30,000	30,000	599	2%	0.4%	0.1%

Source: Auckland Economy Growth Model 2023

The medium-term assessment in the medium growth future is set out in Table 52. Over the 2022 to 2032 period, total employment in the centres and business areas is projected to increase by 73,000 MECs, comprising 76 per cent of the regional total employment growth. The remainder of employment growth is projected to occur in non-business zoned areas such as schools and home-based businesses, as well as in the construction industry, as well as a much smaller proportion of growth in rural areas and other 'on site' activities. In similar vein to the short-term estimate, a substantial share of growth would be able to be accommodated by development of floorspace on vacant or vacant potential land, and through more intensive use of existing floorspace. However, the analysis shows across multiple centres without and with enough capacity, there is a net of some 33,000 MECs requiring more space (Column G). Overall, as at 2032, the estimates suggest that those requiring additional space represent around 4 per cent of total employment, with higher demand in the city centre and Mixed Use areas. Note that the demand estimate for town centres space is high because it includes the allowance for three 'new' town centres in greenfield areas. Those centres account for the bulk of the indicated MEC requiring extra space (Column G), as well as the estimated extra space needed (Column J). The projected potential increase in floorspace possible with 13 per cent of the vacant land taken up could add in the order of 2.6 million m^2 over the decade, which sounds like a lot (and it is) but we note that this is below the rate observed in Auckland over the last decade. Across all centres and business areas, the gross estimate of required floorspace from redevelopment would be in the order of 831,000m^2 (column M). That would be around 3 per cent of the estimated 2032 built space, which matches broadly with the employment redevelopment required estimates (column H). Under the assumptions and modelling estimates, the demand for additional floorspace through redevelopment represents about 3 per cent of the total projected demand for employment floorspace (Column N), indicating relatively low pressure on sufficiency in the medium term.

The estimates of the redevelopment requirement as a percentage rate of annual uptake of plan-enabled capacity to cater for growth, again show low required rates in the order of 0.1 per cent to 0.2 per cent pa for centres and business areas. This low rate of required development, at a scale below current floorspace consenting levels, indicates Auckland has good sufficiency and flexibility to meet demand, using only a small share of the enabled redevelopment capacity.

On this basis, the assessment for the medium term, medium growth future suggests there is sufficient capacity in Auckland for growth at the aggregate level, across all types of centres and business areas.

Table 52. Sufficiency assessment for the medium term (2022-2032), medium growth scenario.

Medium Future 2032	EMPLOYMENT ANALYSIS (MEC)								FLOORSPACE ANALYSIS (000m^2)							
	Employment Intensity Shift 3.0%								Vacant Take up: 13% (489 ha of 3,668)							
Centres & Business Areas	**2022**	**2032**	**Change 2022-32**	**Extra Capacity Vacant Land Uptake**	**Extra Capacity - More Intensive Space Use**	**Total Extra Capacity without Redevelt**	**MEC Requiring Extra Space**	**Share % of MEC Demand Req Redevelt**	**Space 2022**	**Extra Floor Space**	**Estimated Built Space 2032**	**Future Floorspace Demand 2032**	**Extra Space Needed (gross)**	**Extra as % 2032 Built space**	**Extra Space as % Unused Enabled Capacity**	**Annual % Uptake Required 2022-32**
Column Reference	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
City Centre	127,020	144,740	17,720	2,790	3,830	6,620	11,100	8%	3,075	66	3,140	3,485	261	8%	1.9%	0.2%
Metropolitan Centres	84,070	94,950	10,880	7,400	2,510	9,910	2,760	3%	3,516	326	3,842	3,969	97	3%	0.2%	0.0%
Town Centres	79,400	89,100	9,700	10,450	2,250	12,700	6,550	7%	3,903	540	4,443	3,975	14	0%	0.0%	0.0%
Local Centres	33,500	34,960	1,460	3,150	640	3,790	450	1%	794	61	855	813	12	1%	0.2%	0.0%
Neighbourhood Centres	28,600	29,980	1,380	2,050	280	2,330	770	3%	667	27	693	662	10	1%	0.3%	0.0%
Total Centres	352,590	393,720	41,130	25,800	9,500	35,300	21,600	5%	11,954	1,019	12,973	12,904	394	3%	0.4%	0.0%
Mixed Use	73,990	85,110	11,120	2,970	1,840	4,810	7,390	9%	1,630	60	1,689	1,888	174	10%	4.3%	0.4%
Business Parks	11,460	12,830	1,370	2,520	290	2,810	240	2%	199	40	239	224	6	3%	0.4%	0.0%
General Business	11,580	13,090	1,510	1,360	290	1,650	920	7%	613	74	686	684	43	6%	1.4%	0.1%
Light Industry	147,440	159,120	11,680	15,670	6,150	21,820	2,580	2%	9,094	1,034	10,128	9,620	153	2%	0.7%	0.1%
Heavy Industry	73,510	79,740	6,230	7,520	2,140	9,660	730	1%	5,434	389	5,823	5,827	62	1%	0.5%	0.0%
Total Business Areas	317,980	349,890	31,910	30,000	10,700	40,700	11,900	3%	16,969	1,597	18,566	18,243	437	2%	1.0%	0.1%
Centres & Business Areas	671,000	744,000	73,000	56,000	20,000	76,000	33,000	4%	29,000	2,616	32,000	31,000	831	3%	0.6%	0.1%

Source: Auckland Economy Growth Model 2023

The long-term assessment in the medium growth future is set out in Table 53. Over the 2022 to 2052 period, total employment in the centres and business areas is projected to increase by 190,000 MECs, just over three-quarters of total regional demand. In similar vein to the short- and medium-term estimates, a substantial share of employment growth would be able to be accommodated by development of floorspace on vacant or vacant potential land, and through more intensive use of existing floorspace. This is again consistent with the amount of vacant and vacant potential land, at least in aggregate. The modelling allows for 40 per cent of the vacant land to be taken up by 2052.

The table shows across multiple centres without and with enough capacity, there is a net of some 78,000 MECs requiring more space than what the increases in intensity of use and vacant land uptake would provide for. That is around 41 per cent of the projected growth. Overall, as at 2052, the estimates suggest that those requiring additional space through redevelopment represent around 9 per cent of total employment, with higher demand in the city centre, town centres and Mixed Use areas.

The projected potential increase in floorspace possible with 40 per cent of the vacant land taken up could add in the order of 7.8 million m^2 over the 30 years, again lower than the annual rate observed in Auckland over the last decade. Across all centres and business areas, the gross estimate of required floorspace from redevelopment would be in the order of 1,824,000 m^2 (column M). That would be around 5 per cent of the estimated 2052 built space. Under the assumptions and modelling estimates the overall redevelopment requirement is within 5 per cent of the projected demand, suggesting relatively low pressure on sufficiency in the long term.

Under the modelling assumptions, the overall shortfall in employment capacity without redevelopment of existing developed sites would be within 9 per cent of the projected employment. That is the aggregate over a 30-year period. The potential to redevelop sites, shown by the scale of plan-enabled capacity, would offer considerable opportunity to add floorspace to accommodate that 9 per cent of projected employment, over a 30-year period.

That is consistent with the estimates of required annual uptake of plan-enabled capacity (Column P) showing annual rates of uptake in the order of 0.1 to 0.2 per cent pa, reflecting the large amount of plan-enabled capacity, and the relatively long-time frame over 30 years.

On this basis, the assessment for the long term, medium growth future suggests there is sufficient capacity for employment growth at the aggregate level, across all types of centres and business areas. As for the short- and medium-term estimates, this does not mean that each location would meet the sufficiency requirements.

Figure 94 (overleaf) maps the spatial pattern of employment growth accommodated by using existing floorspace more intensively and building on vacant and underutilised land, in the long term. A map of employment growth requiring redevelopment of existing floorspace is shown in Figure 95 (overleaf).

Table 53. Sufficiency assessment for the long term (2022-2052), medium growth scenario.

Medium Future 2052	EMPLOYMENT ANALYSIS (MEC)								FLOORSPACE ANALYSIS (000m^2)							
	Employment Intensity Shift 9.0%								Vacant Take up: 40% (1,467 ha of 3,668)							
Centres & Business Areas	**2022**	**2052**	**Change 2022-52**	**Extra Capacity Vacant Land Uptake**	**Extra Capacity - More Intensive Space Use**	**Total Extra Capacity without Redevelt**	**MEC Requiring Extra Space**	**Share % of MEC Demand Req Redevelt**	**Space 2022**	**Extra Floor Space**	**Estimated Built Space 2052**	**Future Floorspace Demand 2052**	**Extra Space Needed (gross)**	**Extra as % 2052 Built space**	**Extra Space as % Unused Enabled Capacity**	**Annual % Uptake Required 2022-52**
Column Reference	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
City Centre	127,020	174,780	47,760	8,800	11,450	20,310	27,450	16%	3,075	197	3,271	4,093	610	19%	4.6%	0.2%
Metropolitan Centres	84,070	111,420	27,350	23,470	7,570	31,040	6,630	6%	3,516	977	4,493	4,516	219	5%	0.4%	0.0%
Town Centres	79,400	100,950	21,550	33,090	6,990	40,080	12,480	12%	3,903	1,615	5,518	4,066	22	0%	0.1%	0.0%
Local Centres	33,500	37,610	4,110	9,980	2,150	12,130	930	2%	794	182	976	835	22	2%	0.4%	0.0%
Neighbourhood Centres	28,600	33,270	4,670	6,760	1,650	8,410	2,430	7%	667	85	752	718	41	5%	1.3%	0.0%
Total Centres	352,590	458,020	105,430	82,200	29,800	112,000	49,900	11%	11,954	3,056	15,010	14,228	915	6%	0.9%	0.0%
Mixed Use	73,990	104,660	30,670	9,490	5,860	15,350	18,960	18%	1,630	181	1,810	2,289	420	23%	10.7%	0.4%
Business Parks	11,460	15,210	3,750	8,020	1,030	9,050	480	3%	199	122	320	262	14	4%	0.9%	0.0%
General Business	11,580	15,720	4,140	4,320	1,100	5,420	2,310	15%	613	221	833	790	101	12%	3.4%	0.1%
Light Industry	147,440	177,750	30,310	49,630	16,500	66,130	5,440	3%	9,094	3,093	12,184	10,353	300	2%	1.4%	0.0%
Heavy Industry	73,510	89,330	15,820	23,850	6,800	30,650	980	1%	5,434	1,167	6,601	6,301	74	1%	0.6%	0.0%
Total Business Areas	317,980	402,680	84,700	95,300	31,300	126,600	28,200	7%	16,969	4,783	21,752	19,995	909	4%	2.2%	0.1%
Centres & Business Areas	671,000	861,000	190,000	177,000	62,000	239,000	78,000	9%	29,000	7,838	37,000	34,000	1,824	5%	1.3%	0.0%

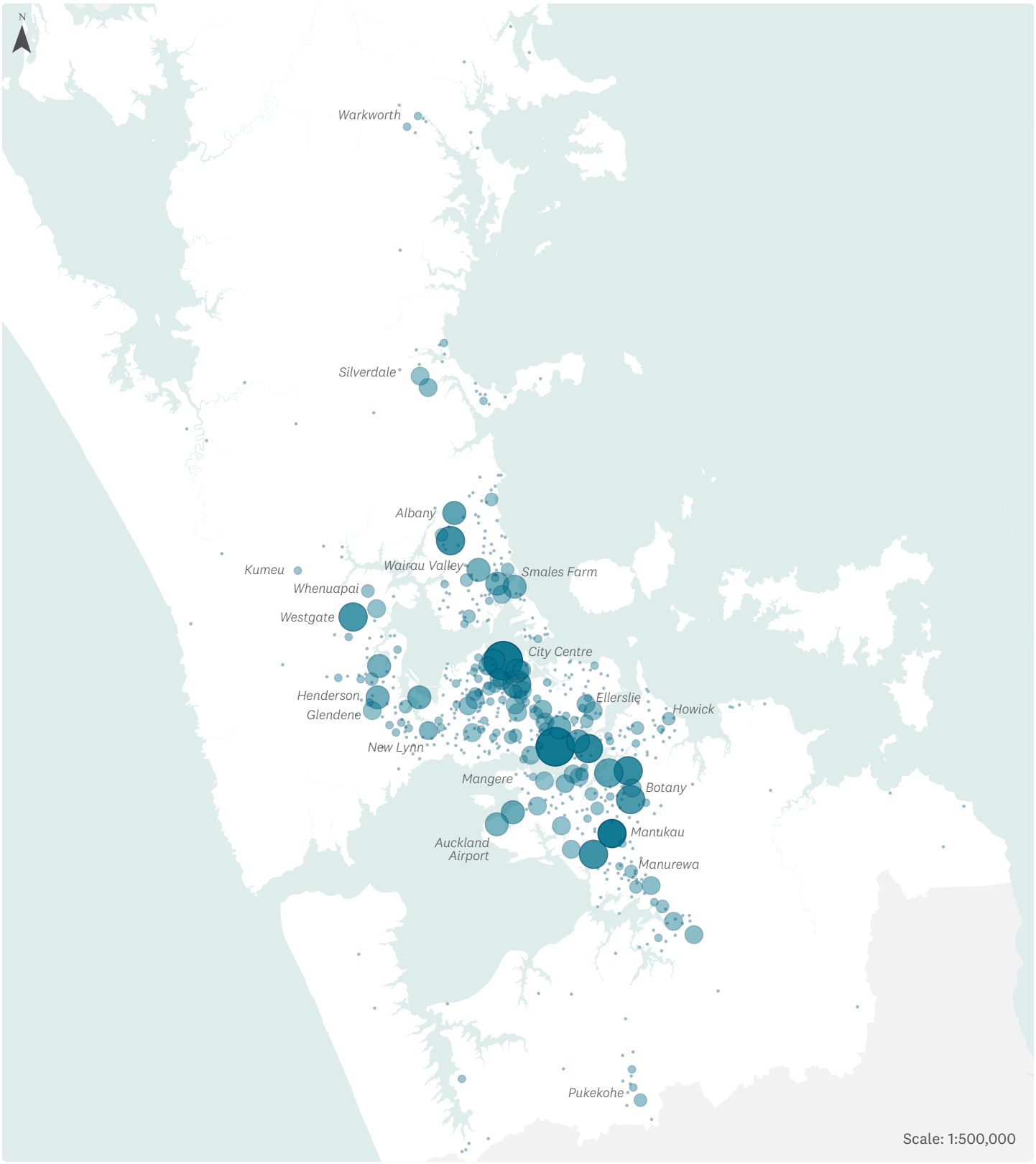
Source: Auckland Economy Growth Model 2023

Projected Employment Growth (2022 - 2052)

in centres and business areas accommodated by using existing floorspace more intensively and building on vacant land

Housing and Business Development Capacity Assessment for the Auckland Region
September 2023

Figure 94.



For the medium growth scenario over the long term, employment intensity is assumed to increase by 9% so employees require less floorspace, and 40% of vacant and vacant potential land is assumed to develop. The remaining projected employment growth must be accommodated through redevelopment of existing floorspace.

Source: ME Auckland Economy Growth Model 2023.

Projected Employment Growth (2022 - 2052)

Employment growth in centres and business areas accommodated through redevelopment

Housing and Business Development Capacity Assessment for the Auckland Region
September 2023

Figure 95.

For the medium growth scenario over the long term, employment intensity is assumed to increase by 9% so employees require less floorspace, and 40% of vacant and vacant potential land is assumed to develop. The remaining projected employment growth must be accommodated through redevelopment of existing floorspace.

Source: ME Auckland Economy Growth Model 2023.

5.4.2 Local sufficiency of individual centres and business areas

Some centres and business areas have abundant capacity, including vacant land, to accommodate employment growth while other locations have limited capacity. It is not practicable to provide commentary on every centre and business area in the region, so this section highlights locations where the scale of demand for capacity is expected to be greatest and where demand may exceed the plan-enabled capacity.

The vast majority of centres and business areas have sufficient plan-enabled capacity to accommodate projected employment growth through 2052, though some locations may require significant redevelopment of existing floorspace to realise that growth. However, there are locations where future demand for employment space is projected to be greater than plan-enabled capacity, shown in Table 54. These are primarily small centres, with a mix of zoning types including Light Industry, Mixed Use, and Neighbourhood centres. Demand for floorspace beyond the enabled capacity in these locations is likely to spill over to neighbouring employment zones, but could also potentially be accommodated through more flexible mixed-use zoning in areas that are short on space for compatible employment uses that serve nearby residential areas.

Table 54. Centres and business areas with a projected shortage of plan enabled capacity (PEC) in 2052.

Code	Centre Name	MECs 2022	MECs 2052	MEC change 2022-2052	Current floorspace 2022 (thousands m^2)	Projected floorspace 2052 (thousands m^2)	Plan Enabled Capacity 2052 (thousands m^2)	PEC shortage (thousands m^2)
GB9	Three Kings Hunters Park Dr	154	509	355	19	59	32	27
MU104	Newmarket George St	129	358	229	12	31	13	18
LI29	Howick Wellington St	10	82	72	2	17	3	14
LI21	Glendene	9	109	100	4	41	33	8
MU6	Balmoral Sandringham Rd	76	292	216	3	10	6	4
MU49	Mt Eden Hillside Cres	123	367	244	2	5	2	3
MU37	Manurewa	15	103	88	4	26	23	3
NC190	Manurewa Halsey Rd	1	8	7	0	3	1	2
MU21	Grafton Khyber Pass	459	784	325	7	10	8	2
MU64	Northcote	20	85	65	1	2	1	1
LI30	Kelston	21	103	82	1	4	3	1
NC195	Manurewa Russell Rd	2	9	7	1	2	1	1
MU13	Ellerslie	35	131	96	1	3	2	1
MU79	Pinehill	33	66	33	1	3	2	1

Source: Auckland Economy Growth Model 2023

The central city shows out as the location with highest demand for additional floorspace from redevelopment. This is expected as it is a main focus of regional and national business activity, attracting a substantial share of new activity and employment. Although the required floorspace from redevelopment is substantial (around 610,000m^2) this is the net estimate over the three decades to 2052. That projected annual requirement would be significantly less than the trends in non-dwelling floorspace consented over the last decade (and more). There is an abundance of plan-enabled capacity in the city centre, though it will require redevelopment of existing floorspace to make use of the enabled capacity. The current estimated floorspace is about 18.5 per cent of the estimated capacity, and with substantial growth in employment and floorspace this share is projected to rise to 23.4 per cent in 2052. This indicates considerable potential (or at least limited evidence of a planning constraint, in aggregate) to accommodate

business growth through the standard and established process seen in almost all economies, where there is progressive redevelopment of existing sites to provide more capacity in response to expected demand.

Similar conclusions may be drawn for other large centres, notably New Lynn, Newmarket, Takapuna and Papakura Metropolitan centres, and Wairau Valley as a large area of Light Industry. In each case, the required annual uptake of plan-enabled capacity to accommodate projected employment growth demand is low. This indicates considerable plan-enabled scope for further intensification and increased take-up.

The other locations showing specific pressure on sufficiency are generally smaller scale, with a number of Mixed Use areas on the Auckland isthmus indicating likely growth pressure associated with a relatively modest zoned capacity. This is consistent with the general intensification of housing and business land, and competition for land and built space within the business sector. As noted previously, several of these Mixed Use areas may face a shortage of employment capacity in the future, with projected use of plan-enabled capacity near or above 100 per cent in 2052.

Table 55. *Centres and business areas with greatest projected need for redeveloped floorspace (greater than 80 per cent of plan-enabled capacity used highlighted in red).*

Centre Name	MECs 2022	MECs 2052	MEC change 2022-2052	Employment growth accommodated by vacant and efficiency	Employment growth requiring redevelopment	Additional floorspace needed from redevelopment 2052 (thousands m^2)	Current share of PEC used 2022	Projected share of PEC used 2052
Large Centre								
City Centre	127,022	174,778	47,757	20,304	27,453	610	18.5%	23.4%
New Lynn	5,986	8,020	2,034	987	1,047	79	8.6%	10.5%
Newmarket	19,569	25,792	6,223	2,689	3,534	76	19.3%	23.3%
Takapuna	8,217	10,877	2,660	1,228	1,432	35	13.3%	16.1%
Papakura	3,154	4,169	1,016	484	532	24	10.3%	12.5%
General Business & Business Park								
Three Kings Hunters Park Dr	154	509	355	14	341	39	60.5%	183.6%
Mairangi Bay Constellation Dr	7,468	9,178	1,710	1,027	683	35	23.4%	26.3%
Ellerslie Lunn Ave	2,820	3,640	820	541	279	13	21.7%	25.7%
Central Park	2,678	3,677	999	516	483	14	22.6%	28.5%
Heavy & Light Industry								
Highbrook	21,085	25,255	4,170	3,360	810	60	45.2%	49.6%
Glendene Bancroft Cres	1,026	1,439	413	248	165	14	33.0%	42.4%
Wairau Valley	11,573	13,866	2,293	1,236	1,057	65	51.2%	56.3%
Glendene	9	109	100	33	67	25	11.2%	124.9%
Favona Mahunga Dr	1,058	1,292	234	111	123	15	49.5%	55.4%
Favona	2,265	2,847	582	267	315	15	45.1%	52.0%
Howick Wellington St	10	82	72	1	71	15	74.3%	559.2%
Three Kings Carr Rd	1,161	1,472	311	130	181	14	61.7%	71.8%
Manukau Centre	2,549	3,188	639	324	315	13	42.8%	49.1%
New Lynn Wolverton St	713	924	211	65	146	12	50.4%	59.8%
St Lukes Road	224	426	202	21	181	11	42.0%	73.2%
Ellerlsie Marua Rd	714	942	228	64	164	10	47.2%	57.2%
Pakuranga Ben Lomond Cres	1,330	1,624	294	148	146	10	55.8%	62.5%
Ōtāhuhu	2,600	3,132	532	412	120	10	48.4%	53.5%

Centre Name	MECs 2022	MECs 2052	MEC change 2022-2052	Employment growth accommodated by vacant and efficiency	Employment growth requiring redevelopment	Additional floorspace needed from redevelopment 2052 (thousands m²)	Current share of PEC used 2022	Projected share of PEC used 2052
Mixed Use								
Parnell	8,406	10,971	2,565	1,060	1,505	25	75.0%	89.8%
Manurewa	15	103	88	5	83	21	18.2%	114.8%
Newmarket George St	129	358	229	11	218	19	93.1%	237.7%
Mt Eden Normanby Rd	5,331	7,151	1,820	612	1,208	18	37.3%	45.9%
Newton – Upper Symonds St	2,313	3,163	850	298	552	18	52.5%	65.9%
Mt Eden New North Rd	1,673	2,304	632	182	450	14	52.6%	66.5%
Epsom Manukau Rd	2,302	3,165	863	252	611	14	40.8%	51.4%
Grafton Upper Symonds St	159	403	244	14	230	12	22.2%	51.8%
Arch Hill	2,622	3,498	876	446	430	12	50.9%	62.3%
Mt Eden Dominion Rd North	963	1,472	509	87	422	12	51.2%	71.8%
Takapuna Barrys Point Rd	1,451	1,925	474	158	316	12	44.7%	54.4%
Kingsland	745	1,160	415	67	348	11	47.3%	67.5%
Morningside	596	927	331	54	277	11	47.1%	67.2%
Kelston Centre	22	113	91	2	89	11	20.4%	95.9%
Grey Lynn Richmond Rd	968	1,414	446	87	359	10	44.7%	59.9%
Newmarket Remuera Rd	2,411	3,236	825	275	550	10	30.4%	37.4%
Greenlane	1,542	2,117	575	219	356	9	53.1%	66.8%

Source: Auckland Economy Growth Model 2023

Plan Enabled Capacity has not been comprehensively evaluated in special use zones including airports[71], hospitals, and recreation facilities, however these areas are zoned for their special uses, often designated by the operating agency, and projected to see significant employment growth and are important to factor into decisions about infrastructure and growth planning.

Table 56. Projected employment growth (2022-2052) in special use zones.

Centre Name	MECs 2022	MECs 2052	MEC change 2022-2052	Percent change 2022-2052
Airports				
Ardmore Airport	568	767	200	35%
Auckland International Airport	9,333	15,419	6,086	65%
Dairy Flat Airport	92	222	131	143%
Kaipara Flats Airport	43	55	12	27%
Whenuapai Airport	39	418	379	964%
Hospitals				
Auckland Hospital	9,927	14,151	4,224	43%
Pukekohe Hospital	295	334	39	13%
Waitākere Hospital	1,665	2,302	637	38%
Waitematā Health	226	352	126	56%
Waiuku Hospital	46	55	9	19%

[71] Auckland Airport for example is a major industrial, logistics and retail employment location, as well as NZs busiest airport (itself a significant employer), largely operating across several large parcels under common ownership in a special zone, subject to several precinct overlays and a designation where the Airport is the controlling authority.

Centre Name	MECs 2022	MECs 2052	MEC change 2022-2052	Percent change 2022-2052
Warkworth Medical	79	95	16	20%
Botany Super Clinic	316	537	221	70%
North Shore Hospital	6,497	9,165	2,668	41%
East Med	259	451	192	74%
Manukau Super Clinic	4,304	5,647	1,343	31%
Mason Clinic	508	770	263	52%
Mercy Hospital	796	1,352	556	70%
Middlemore Hospital	7,657	10,843	3,186	42%
Wilson Home Trust	216	357	141	65%
Recreation				
Bruce Pulman Park	192	274	82	43%
Eden Park	184	337	153	83%
Franklin A&P	18	23	5	27%
Harrisville Motorcross Track	85	91	7	8%
Millenium Centre	277	332	55	20%
TAPAC	519	725	206	40%
Avondale Racecourse	9	69	60	667%

Source: Auckland Economy Growth Model 2023

5.4.3 Suitability

The NPS-UD requires assessment of the suitability of the enabled supply to meet the needs of businesses by sector. Suitability relates primarily to the ability of a particular sites location and size to meet the needs of a specific industry or sector of the economy, assuming the required amount of capacity is available or potentially available. This has been assessed here on the basis that the existing pattern of activity for an industry – that is, its incidence in a location (centre or business area) – indicates the general suitability of that location. In other words, the locations general suitability is revealed by the fact that particular industry or activity are already located in that location.

That said, while the presence of an industry will establish that the location is suitable for that industry, the absence of the industry does not necessarily show a location is not suitable. It is important to recognise that most industries are characterised by a relatively large number of Business Units of varying sizes, and the presence of operating Business Units in multiple locations. This is because if the industry is not currently present in a location, then that could be due to at least three reasons – because:

1. that location is not suitable for that industry, or
2. the location is otherwise suitable for that industry, but there is not sufficient capacity[72] for it to establish there, or
3. the location is suitable, but there is not sufficient demand from that industry to establish there, at this time, including because other locations may be more suitable and have adequate capacity to satisfy demand.

Although there is no definitive test to identify these circumstances, there is substantial information to assess suitability. If the location is not suitable, then as long as there is not a capacity constraint – i.e., there is capacity for more activity generally – the absence of that industry there shows it is not a chosen/suitable

[72] This includes specific regulations or rules that preclude the location being 'plan enabled' for the activity/industry.

location. As long as there is capacity for that sector in (an)other location(s) then it may be concluded that sector's needs are met. This may be examined by general locality, i.e., less than whole-of-Auckland level.

On this basis, the Auckland economy has been examined at the 109-sector level, in terms of sector incidence in centres and business areas, and the capacity for further growth including through vacant land, or further intensification of existing sites. Clearly, not all sectors would expect to locate in all locations, and primary sector (rural and extraction) is excluded. Similarly, schools and hospitals typically locate outside business zones or in specified sites.

The key indicators used are first the incidence of sectors in centres and business areas where they can be expected to occur, and second whether there is additional capacity in those centres which would enable activities to establish. The analysis indicates that there is sufficient business-zoned capacity in suitable locations across the network of centres and business areas. There is not strong evidence of insufficient capacity, or capacity in only unsuitable locations.

Based on observed employment data, there is wide incidence of sectors across the spatial economy, at all levels and in nearly all locations. Further, there is additional plan enabled capacity across the network of centres and business areas, including vacant and vacant potential capacity. This conclusion is consistent with the nature of the major share of economic activity in Auckland, which is characterised by mostly small-medium sized operations, with considerable flexibility of location options.

However, that conclusion may not apply in all situations or to all sectors of the economy. This is because some sectors are characterised by a limited number of large business units and require large sites. These are primarily in large-scale manufacturing, transport or exchange hubs, or large-scale construction including yard-based activities. Such activities are recognised as space-extensive industries, which are likely to have specific site size and location requirements, as well as related requirements for infrastructure and transport links. Requirements for large sites may come from established activities seeking to expand as well as new developments.

Until proposals arise, it is not possible to directly assess specific site size or location requirements. Nevertheless, in a large and growing economy such as Auckland, demand for sites should be anticipated. The current Auckland context shows there are significant areas of vacant land, especially in Light Industry zoning, and there is substantial opportunity to provide for future capacity through the Future Urban zoned areas, on the fringes of urban Auckland. This suggests that Auckland has sufficient and suitable capacity for business growth for the great majority of sectors and is very likely to have sufficient and suitable capacity for space-extensive activities, when these are identified in the future.

5.4.4 Overall assessment

The assessment shows that the Auckland economy has substantial plan-enabled capacity to accommodate future employment growth. That conclusion may also be drawn from the centre- and business area-based assessment. The assessment indicates that the Auckland economy in general, and most centres and business areas will be well able to accommodate future business growth. This meets a key requirement of the HBA. There is substantial capacity for business activity across a very large number of locations, including locations where there is ongoing growth.

At the high level, and the local level, Auckland's plan-enabled capacity largely meets the requirements of sufficiency and suitability for all sectors in the Auckland economy. Importantly, the capacity for growth is well-located in terms of the established and working structure of the economy. This provides for potential in the important hubs of activity, especially the city centre and other major centres, and the large industrial

employment hubs. It also provides for capacity in areas which are expected to see considerable household and population growth going forward.

This does not mean that all locations have sufficient capacity, or that there will not be pressures in terms of feasible development occurring which can cater for employment demand. Nor does it suggest that everything will simply roll into place in the future - the current evolution of a strong centres-based economy with major business areas is a result of considerable effort to have Plan provisions which seek to be well oriented to the needs of the business sectors. It does suggest that the current planning environment provides an appropriate foundation.

There is clear indication that some locations will not individually meet the sufficiency requirement. This is especially so for some minor centres and business areas, whose needs may be more difficult to address.

At the high level, evidence gathered at the time of Market Economics' assessment indicates that Auckland does have sufficient capacity to provide for growth into the long term, in locations which are suitable for the needs of individual sectors and for the economy as a whole. The ongoing performance of the Auckland economy, including the steady path of property redevelopment and addition of business floorspace, indicates that the underlying economic processes are well established to take up the potential capacity as demand arises.

5.4.5 Business sufficiency summary

For business supply, PC78 has not significantly altered development potential outside of centres with increased height limits, where the aggregate demand for floorspace above ground floor from both apartments and offices is unlikely to result in take- up challenges in most locations.

Some smaller centres and business areas may have specific challenges, and the City Centre, already the most intensively developed and most expensive land per square metre in the country, is also expected to continue to see strong employment and residential growth, which will require high levels of redevelopment.

Retail and other services are also well serviced by ground floor options across all centres and mixed use areas. However, land extensive activities that favour light industrial zones like warehousing, industrial and large format retail, will find it increasingly difficult to find affordable space in an intensifying city, as other activities that are able to use land more efficiently, and are willing to pay more, increasingly outbidding them.

Some smaller, more central industrial areas may be appropriate to transition to other more intensive uses. Conversely other, larger areas of industrial activity with significant agglomerations or key strategically important roles may need to be better protected from residential creep and other sensitive uses that reduce suitability for business use. Additional land, with the attributes suitable for these light industrial activities, can practically only be provided in greenfield areas, particularly where this land is flatter, and has excellent freight transport access and is sufficiently large in area to provide some level of protection to activities within it.

Table 57 below, Business demand and capacity summary is structured similarly to the housing summary, with some business specific differences.

Like housing demand, employment demand is driven by population projections, where the expected workforce (expressed as MECs) is derived using demographics.

The existing economic structure, the existing and expected spatial structure of Auckland (including the distribution of population and timing and location of new greenfield business land), and the projected

growth in population, households, and firms, both in Auckland, the rest of NZ and assumed export growth, also drive an estimated future economy that this workforce could be fully employed in.

Different industries have different floorspace densities per employee, and as the economy evolves, MECs by industry are converted to floorspace demands. They are different, but equivalent measures of 'business demand' and allows direct conversion between 'the economy' and 'the planning system' – the amount of floorspace and the zoning of land it is developed on are controlled by the planning system and infrastructure availability, but employees themselves are not.

Table 57. Overall business demand vs. supply assessment.

Business land demand and development capacity	For more detail see section:	Total FS and EM					Note
DEMAND							
					Floorspace (m²x1000)	**Employment (MECx1000)**	
Estimated business demand **(AC March 2023 Medium projection)**	*Auckland Economy Growth Model 2023, not incl. competitiveness Margin*	Existing (2022)			28,920	670	From HBA modelling.
		Short term			29,950	702	From HBA modelling; allowing for employment growth and floorspace per person demand.
		Medium term			31,050	744	
		Long term			33,740	861	
			Additional FS Demand	**Required Competitiveness Margin**	**Total Additional FS Capacity Requirement**	**Additional Employment Demand**	
Additional business demand with Competitiveness Margin	*Auckland Economy Growth Model 2023*	Short term	1030	210	1,240	32	From HBA modelling of employment growth and floorspace demand; Competitiveness Margin added (NPS-UD)
		Medium term	2130	430	2,560	74	
		Long term	4820	720	5,540	191	
SUPPLY							
Plan enabled business land development capacity	*Auckland Economy Growth Model 2023 : Enabled Less Used*	Short term			120,930	6,160	From HBA modelling of net additional plan-enabled floorspace capacity (Auckland Council) for employment growth.
		Medium term			120,930	6,160	
		Long term			120,930	6,160	
Plan enabled and infrastructure ready business land development capacity	*Water and Wastewater and Transport*	Short term			35,700	1,820	Plan-enabled net additional floorspace capacity adjusted for estimated Infrastructure constraints (Sep 2023): -70% (2025), -32% (2032), -13% (2052)
		Medium term			81,700	4,160	
		Long term			105,100	5,350	
Plan enabled, infrastructure ready, and suitable business land development capacity	*Land Suitability @ 95%*	Short term			33,900	1,730	Plan-enabled additional capacity adjusted for Land Suitability (95%)
		Medium term			77,600	3,950	
		Long term			99,800	5,080	
SUFFICIENCY							
Business land development capacity surplus/deficit	*Plan-enabled, Infrastructure Ready, Feasible and RER Business Capacity LESS Business FS or MEC demand*	Short term			32,660	1,698	Net Surplus / Deficit = net additional plan-enabled capacity suitably located, less net additional floorspace demand, each period.
		Medium term			75,040	3,876	
		Long term			94,260	4,889	

Like residential, business demand also has a competitiveness margin added to ensure there is an additional buffer built into the demand side that the supply must be demonstrably above.

Like residential, business supply is filtered and must be plan enabled, and supported by infrastructure. The next test is that the location is ‘suitable’ for the respective industry to use, as commercial feasibility is more complex to ascertain given the wider variation in development and investment approaches in commercial and industrial real estate and across different industries.

The analysis shows that under the assumptions made about employment intensification, vacant and underdeveloped land take up, and redevelopment, even with limited greenfield land supply, there is at least sufficient infrastructure ready and suitable land for business.

Like residential, this high-level assessment does not delve deeply into particular issues (these are explored in more detail in the sections above), in particular the need for more light industrial land both for growth and relocation of existing business, to ease pressure on existing rents and limited vacancy, though improved land and development market competitiveness, and also to provide new centres in new greenfield areas to meet the needs of new local communities and ensure they are well functioning.

6 Conclusions

6.1 Conclusions

This section provides conclusions from the analysis and key findings in this report.

6.1.1 Housing assessment

Commercially feasible, infrastructure-ready capacity will increase substantially and could accommodate future demand for housing in aggregate

1. This assessment compares the amount of commercially feasible, infrastructure-ready capacity for new dwellings with projected demand over 30 years. It finds that capacity is likely to be sufficient to meet demand in aggregate, over the short, medium and long term.
2. Auckland's capacity for additional dwellings will more than double, from 945,000 to 2.108 million dwellings, if the notified plan change (Plan Change 78) is adopted. Much of that plan-enabled capacity would be commercially feasible, with estimated feasible dwellings increasing from 838,000 to 1.230 million under a profit maximising scenario.
3. Near-term infrastructure constraints ease as planned projects are delivered. The portion of plan-enabled capacity that is feasible and infrastructure ready rises from 11% or 297,000 dwellings in the short term (0-3 years), to 30% or 803,000 dwellings in the medium term (3-10 years), to 39% or 1.034 million dwellings in the long-term (10-30 years).
4. Demand for new housing is projected to be 23,000 dwellings over the short term, 85,000 dwellings over the medium term, and 227,000 dwellings over the long-term. This view of demand is based on projected population growth (medium series), with assumptions about household formation and margins of 15-20% added, as required by the NPS-UD.

Some high demand locations are infrastructure constrained in the short term and require prioritisation and delivery of investment

5. The assessment of demand across locations includes a projection based on historic trends that has growth being weighted to peripheral locations, partly due to limits on capacity in the existing urban area. Conversely, using land values as an indicator of demand suggests growth being weighted to central locations that are closer to jobs, transport and amenities.
6. Recent evidence of strong demand for multi-unit dwellings that use less land suggests the addition of plan-enabled capacity in more central locations is likely to be taken up. In some locations the infrastructure is insufficient to accommodate demand in the short term. This points to the need for planned infrastructure projects and to monitor take up of capacity.

Relatively more capacity is likely to be more supportive of competition among developers, choice among buyers, and housing being more affordable than otherwise

7. While the amount of feasible, infrastructure-ready capacity is larger than the amount of projected demand for new dwellings, the question of sufficiency is relative rather than absolute. Adding relatively more plan-enabled capacity increases feasible development opportunities. In turn, that increases competition among developers to be more responsive to demand and increases buyer choice of dwelling type and location for their budget.

8. Increasing the responsiveness of housing supply to demand in this way, in the context of persistent affordability challenges, will be an important step in ensuring that affordability does not worsen and instead improves over time. Given the uncertainty over the take-up of development opportunities due to unforeseen frictions (e.g. willing sellers of development opportunities at a point in time) it is prudent to ensure there is an abundance of feasible development opportunities available in the short, medium and long term.

6.1.2 Business assessment

Most centres and business areas have sufficient plan-enabled capacity to accommodate employment growth over the long term

9. The assessment of centres and business areas finds there is substantial plan-enabled capacity to accommodate future employment growth. Most centres and business areas have sufficient plan-enabled capacity to accommodate projected employment growth through to the long term, although some locations may require significant redevelopment of existing floorspace to realise that growth.
10. There are locations where future demand for employment space is projected to be greater than plan-enabled capacity. These are primarily small centres, with a mix of zoning types including light industry, mixed use, and neighbourhood centres. Any excess demand for floorspace in these locations may spill over to neighbouring employment zones but could also be accommodated through more flexible mixed-use zoning.

The city centre has sufficient capacity to accommodate its large share of new activity and employment

11. The city centre city is the location with highest demand for additional floorspace from redevelopment, attracting a substantial share of new activity and employment as the focus of regional and national business activity.
12. There is an abundance of plan-enabled capacity in the city centre, though it will require redevelopment of existing floorspace to make use of the enabled capacity. The current estimated floorspace is about 18% of the estimated capacity, and with substantial growth in employment and floorspace this share is projected to rise to 23% in the long term

Other Centres and Business Areas

13. Business growth can be accommodated through the progressive redevelopment of existing sites to provide more capacity in response to expected demand
14. Similar conclusions may be drawn for other large centres, notably New Lynn, Newmarket, Takapuna and Papakura Metropolitan centres, and Wairau Valley as a large area of Light Industry. In each case, the required annual uptake of plan-enabled capacity to accommodate projected employment growth demand is low.
15. Building on the challenges identified in the business assessment, along with feedback from business and development community and monitoring suggests further business land suitable for land extensive activities (light industrial in the main) will be needed. This land is in addition to the centres that will be also required to service and support expected new communities in greenfield locations.

6.2 Concluding remarks

A HBA is intended to identify if urban areas are allowing enough development opportunity, including the infrastructure necessary, to provide for reasonably expected growth and change in demand. In the absence of adequate opportunity for development, whether that be land zoned for development or dense enough zoning rules, or the infrastructure necessary to support it, there will be a shortage of housing and the price of housing that does exist can be artificially high. In a country with very high housing prices already, particularly relative to incomes, planning rules that push prices unnecessarily higher would be problematic.

The NPS-UD operates on the basic premise, founded in basic urban economic theory, that if councils provide for enough development – by way of an appropriate mix of greenfield land and/or brownfield development opportunity – and ensure that all of it is served with appropriately priced infrastructure capacity, regardless of how much development is taken up – then there would be a well-functioning housing market and housing would not be more expensive than it should be.

Councils have a limited set of levers, but how we use them is important:

Auckland Council has multiple levers that impact on housing market performance and outcomes, including land use regulation, infrastructure delivery and pricing of infrastructure. The Unitary Plan added to the urban land supply and enabled more flexible use of some urban land, demonstrating that land use policy is a powerful lever for enabling more housing to be built. While improving affordability will involve a number of policy remedies, over the medium term, we can be confident that abundant and flexible land supply needs to be part of the policy mix.

Councils have 3 main levers at present:

- Control over land use zoning (through RMA planning rules)
- Provision of development and other infrastructure, and
- The pricing of access to that infrastructure (determined on a sliding scale between 100% rates funding and 100% user pays)

A related function is the coordination and integration of these functions though strategies and higher-level plans, but these have limited effect on their own – these strategies 'work' by influencing or guiding decisions on the above levers, including the infrastructure provision of others (including central government, central government agencies, and private providers).

However, it is important to consider what councils do and do not have total control over the housing market. Local councils do not determine New Zealand's migration policy, tax settings favouring capital investment in property, the building code, banks' lending criteria, global interest rates, the desired profit margins for developers, or the willingness of property owners to further develop their properties. They also do not determine whether a specific development is economically viable or how much of the development potential the sector chooses to take up at any given time (or ever).

In general, the only variables councils currently have some level of control over are how much land is zoned and theoretically available for development, how dense/tall/bulky that development can be, and whether there is adequate bulk infrastructure (to the extent that they have influence over bulk infrastructure decisions[73]) to service the expected take up. Building regulations are nationally set and there is (at least in theory) no scope for local variation, but they also, to some extent, control how onerous the resource

[73] Auckland Council's relationship arrangements with Auckland Transport and Watercare Services Ltd are by design at arm's length.

consenting process is (by setting the thresholds for resource consent). In Auckland, all of these can play a part, but it is generally the provision of bulk infrastructure that is most problematic at the aggregate level. In Auckland, it is estimated to be tens of billions of dollars to provide the infrastructure needed to service projected growth in addition to all the costs of resolving years of underinvestment in infrastructure that was needed for past growth and depreciation, as well as dealing with higher standards or replacing infrastructure affected by climate change in the future.

Recent experience in Auckland though the AUPOIP highlight that these levers, while limited, are powerful and do have an effect on development patterns, and wider economic, social and environmental wellbeing. Getting these levers right can also mitigate the impacts of these other factors that councils do not control.

Technical sufficiency exists, but the details matter

There is projected to be adequate housing capacity in aggregate in the long run in Auckland, given the assessment planning system and current infrastructure plans. However, there are localities where – depending on assumptions about where demand is and where future growth will be – there is projected to not be enough capacity that is plan-enabled, serviced by infrastructure, economically feasible, and reasonably expected to be realised. The area close to the centre of the city has high demand, but are regulatorily constrained for amenity reasons. Areas beyond the existing urban area of the city are constrained by the high cost of providing the required infrastructure. The suburban areas between have been growing faster than they would have otherwise to accommodate spillovers from both. In these high demand, well located areas, particularly where otherwise feasible and likely to be realised development is not presently or proposed to be plan enabled, there should be increased zoned density to allow for more people to locate in the most desirable areas of the city.

Naturally, this will put strain on existing infrastructure, and require forward planning for additional infrastructure required given the long lead times and significant investment involved. For this development to happen in an integrated, successful and effective manner (or, to be well-functioning), there will need to be understanding, agreement and coordination between developers, communities, central and local government to ensure adequate provision and funding of infrastructure, particularly wastewater and water supply which is currently designed for limited growth in these areas, transport (which is less of an issue given the locations in question are highly accessible already), as well as *additional infrastructure* such as schooling, emergency services, medical care, and the like.

Future Climate Change Impacts and Hazards

Adapting our planning system to better accommodate and refine land use practices to live with natural hazards such as flooding will be critical in the future. This includes considering the potential long-term impacts and the wider ‘footprint’ of decisions to manage extreme weather events, sea-level rise, and changing weather patterns due to climate change.

This will require a range of actions at a range of spatial scales and timeframes.

This HBA has taken a limited assessment of impacts from hazards, because it is very difficult to determine the way that development should or could respond to the presence of hazards, the determination of risk, which may change over time and the design response to avoid, remedy or mitigate the risk to acceptable levels.

This has been less of an issue in the past where residential zoning controls were nuanced or adjusted to reflect, partly, known hazard areas, and by design, limited development capacity. With a less nuanced planning system including MDRS and NPS-UD approach to qualifying matters, that do not definitively

include hazards by default, determining the impact of future changes to hazard controls and the impacts on new development potential will require new tools.

Considerable further work is ongoing, including at the national legislative, council priority workstreams and public awareness levels, and much more work will be required in this space.

Business

There is considerable potential for office development, even accounting for centre residential development. Ground floor spaces, suitable for retail and other services in centres and mixed use areas are also plentiful.

Covid has impacted work and shopping patterns. Remote working and online purchasing trends have accelerated rapidly, reducing commuter travel demand and daytime pedestrian counts, though these are now rising. The importance of locational amenity and accessibility to attract and retain tenants, workers, shoppers and residents is increasingly important for commercial uses, particularly corporate and retail[74]. This suggests the existing trend of concentration of these activities into a few key centres is likely to be ongoing. At the same time, total demand for space though hot-desking and flexible spaces may affect total floorspace requirements, including on 'm^2 per employee' based assumptions, which underpin most capacity analyses.

Somewhat conversely to the general trend of concentration stated above, provision of opportunities for smaller scale and smaller catchment 'population servicing' activities[75] to locate close to where demand is (i.e., people and households) will be also important to facilitate to meet demand from growing populations, reduce the need for travel for basic needs, and facilitate community connections, in both intensifying brownfields and greenfield areas.

Based on market feedback, land suitable for large format retail and industrial, particularly but not only large sites, is however in short supply, and new opportunities can only be realistically provided in greenfield locations where land is both available to be identified in advance, and relatively less valuable per square metre. However, the specific locational requirements of these two land uses are similar but not the same and careful identification of land suitable for both will be needed to ensure other possible uses with more flexible locational requirements and higher willingness to pay do not preclude these important land use opportunities. However further work on detailing these land use requirements, and the exact amount of land required, will need further research.

The economics of land values will also increase pressure on existing light industrial areas. However, many light industrial areas play regionally significant roles and have functions and suitability that would be less spatially efficient or difficult to replicate in other locations. Identifying and differentiating areas where transition should be facilitated, and areas where protections should be enhanced is also an area for further work.

Feasibility Modelling

This HBA provides a unique opportunity to examine development capacity under like-for-like conditions. By maintaining market conditions at the same level as the previous housing capacity assessment, we were able to test the net effect of the capacity change between PC78 and the operative plan on commercial viability. Modelled findings have demonstrated that an increase in plan-enabled capacity does help to unlock additional feasible development opportunities substantially. This added feasible development

[74] https://www.jll.nz/en/trends-and-insights/research/2023-new-zealand-office-sentiment-survey
[75] See for example https://knowledgeauckland.org.nz/publications/auckland-retail-economic-evidence-base/

capacity suggests the proposed plan change can improve supply as one intervention required to help alleviate Auckland's housing crisis.

Auckland Council has now run four feasibility analyses since 2016. The first two analyses tested a largely identical planning system under different market conditions while the latter two examined different planning system under identical market conditions. These four analyses produced contrasting results, with feasible dwelling units ranging from less than half a million to over one million.

The ACDC model remains a valuable tool for assessing how council's land-use policy affects real estate development potential and viability while keeping one or more contributing factors constant. Nevertheless, its limitations, particularly testing future feasibility are becoming apparent. Market conditions are influenced by a variety of highly dynamic factors that the existing tools cannot comprehensively address or reasonably project into the future. The models can of course show the effect of externally adjusted input changes, but do not have the capability to determine what these changes might be in any dynamic sense.

For instance, between the first and the second feasibility runs, finance costs increased as a result of Australian banks concerns about apartment oversupply in key capital cities, and land values appreciated (in response to AUPOIP upzoning), which reduced development feasibility considerably by impacting larger developments. Soon after, the RBNZ lowered and maintained the official cash rate at a low level for an extended period to stimulate the economy as the country recovers from the pandemic. Consequently, feasibility improved significantly, leading to record numbers of building consents issued and dwellings constructed. Over time, the RBNZ steadily increased the OCR from 0.25% to 5.5% as of August 2023, subsequently raising costs for many. This change in monetary policy is beyond the influence or prediction of any local or regional authority. Although we have not tested feasibility using the latest cost inputs, it is anticipated that feasibility would decrease, given the observations made over the short and medium terms.

Reoccurring findings highlighted through all four feasibility assessments show the inadequacy of the feasibility assessment under the NPS-UD framework to adequately assess or address the fundamental challenges the NPS-UD is intended to explore.

Feasibility assessment conducted under the NPS-UD framework have been found to be inadequate in addressing critical aspects of urban development. They may not take into account all relevant factors and externalities associated with changes in planning regulations or infrastructure development. For instance, the Cost-Benefit Analysis of proposed MDRS done by PwC and Sense Partners, has highlighted the likelihood of an 'up-zoning premium' resulting from the application of MDRS across Auckland. This suggests that the current modelling approach, which keeps current costs and revenues constant for the short and medium terms, misrepresents feasible development opportunities.

Development costs, encompassing materials, labour, and financing, are steadily increasing. Recent market indicators also point to a downward trend in dwelling prices. The simultaneous increase in costs and decrease in prices erode feasible profit margins. This can add complexity to the feasibility assessment process, as heightened costs and reduced revenue may impact the identification of viable development locations, particularly when other contribution factors are held consent. Furthermore, since most capital budgeting decisions by developers/landowners, especially those related to site acquisitions, are often made well in advance, estimating the true costs and profit margins of real estate development becomes a challenging task.

The limitations of the previous two points result in an expected outcome that feasible development opportunities with lower dwelling price are often identified to be associated with lower land value areas at urban fringe or greenfield locations. Similar assessment results are consistently and frequently presented during the consenting processes by applicants seeking approval for private plan changes in greenfield

areas where lacking infrastructure services or existing infrastructure is insufficient to cope with additional demand.

6.3 Challenges and opportunities for further work

A number of new tools and techniques have been developed for this HBA, building on the foundation established by our previous assessments, evolving best practice and the feedback from users and interested parties.

We are always learning and new challenges, planning approaches, legislative requirements and expectations often arise. We have identified a number of areas where further research would benefit future assessments and responses, and some of them are noted below.

The size and scale of New Zealand's largest city means that efforts, initiatives and interventions that impact the city's liveability or form requires a comprehensive and coordinated approach. Any approach is required to consider and balance outcomes for urban planning, infrastructure development, community engagement and wellbeing.

Like any large international city facing growing pains, the timing and delivery of initiatives to enable people and businesses to prosper is critical. Auckland is expected to continue to grow significantly over the period to 2052 and beyond, and without effective planning and funding for housing and infrastructure the impacts of traffic congestion, housing affordability, environmental sustainability, and social inequity will continue to worsen. Forward planning directly impacts the lives and well-being of citizens, as well as New Zealand's largest economy.

The land use planning system is now highly enabling and required to be responsive, resulting in high uncertainty of outcome through inbuilt flexibility. The financial planning system however is still based on a paradigm of (false) certainty where highly detailed assumptions about growth and change over the next 30 years can be both accurately determined and also relied on for making detailed cost allocations and charges. Flexibility and certainty are contradictory concepts – either the planning system needs to be amended to provide the certainty that the financial planning system requires, or the financial planning system will need to be reconfigured to reflect the new land use planning paradigm.

Finally, the timely provision and enablement of knowledge is critical for the best outcomes. The data-rich world we live in creates significant opportunities to improve outcomes. Data and knowledge sharing in government is essential. Enabling better decision-making, service delivery, and collaboration, and ultimately efficiency of government agencies is critical to the businesses and communities we serve.

Some key areas to address moving forward:

Local and Central Government partnerships - Greater certainty of infrastructure funding to support growth

- Major city shaping initiatives, investment or decisions have long and far-reaching impacts that transcend government terms, LTPs and investment cycles. With limited funding and resources, early and ongoing agreement, collaboration and coordination amongst and between all stakeholders, including at the governance level, is critical to ensuring long commitments needed to successfully deliver changes of this scale.
- Developer feedback and our own analysis have indicated that the lack of infrastructure is a key constraint. We need to get better at delivering on our commitments. It is also a challenge to quickly create infrastructure without long lead times. However, this amongst other issues, also reflects the

constraints of a highly inflexible financial planning system clashing with an increasingly dynamic land use planning system. Long term-based planning for infrastructure development and its funding *by definition*, will struggle to respond to out of sequence and unplanned developments. Responding to out of sequence and unplanned development also impacts on the roll out of planned investments when funding envelopes and other resources are constrained (which is a permanent condition). Clear signalling and a better approach to allocation of public infrastructure funding resources and for efficient use of new financing tools are needed, including an exploration of the possible impacts (as an effect) in the RMA decision making process is also required.

- Financial pressure on the council: The council is under financial pressure. Rates revenue is limited because of concerns about increasing financial burdens on current (and future) households, Development Contributions are limited by concerns about impacts on the economics of development/developers. This makes it challenging for the council to effectively signal pricing or allocate resources in a way that aligns with ideal urban development management. Working together to agree, prioritise and plan long-term investment and development that enables sustainability, inclusivity, and resilience is critical.
- Weak financial policy integration: The current RMA and NPS-UD framework lacks the necessary capabilities and tools to introduce new financial policies. Impacts on existing financial policies are given limited weight in RMA decision making. This means that there isn't a well-defined mechanism to pass on the costs of providing adequate infrastructure and services fairly and equitably due to the changes in the planning regime or infrastructure development, including the impacts of planned projects foregone or delayed, and other wider inefficiencies.

Business Demand and Supply Model

The Business Demand and Supply Model supplied by Market Economics is a newly developed model (built on existing approaches) that is designed to provide different outputs in response to different inputs and assumptions.

A number of these will need to be further adapted and adopted, including to new circumstances over time. In the short term, development of inputs reflective of the 2023 FDS will be required. This model is a key update to the broader suite of Auckland Council's modelling ecosystem and will be needed to generate outputs that are used as inputs for other models and a wide range of modelling purposes. The immediate task will be responding to decisions on the Future Development Strategy to develop regional growth scenario to inform the 2024-2034 LTP.

These inputs include but are not necessarily limited to:

- Population distribution – total population inputs are consistent with the AC March 2023 projection set. However, the distribution of that population by Local Board follows StatsNZs December 2022 distribution, which is inconsistent with what is likely to occur given the draft FDSs indicated slower release of greenfield land, the greater choices indicated by PC78 and our understanding of demand (which generally follows land value)..[76]
- Additional Business Areas – the version of the model referenced in this report has three arbitrary new centres in Redhills, Whenuapai and Drury. This does not reflect the FULSS 2017, current i11v6 Assumptions, nor the draft FDSs signalled approach. Analysis of the final FDSs greenfield land

[76] See section 4.2.4 for more on this issue.

sequencing and indicative zoning, as well as recent private plan changes will need to be used as inputs to ensure this additional supply is accurately reflected in the model.

- Refinement of key development assumptions such as employment intensity, vacant and underdeveloped land take-up and redevelopment, particularly for light industrial.

Business Suitability

Improving understanding of the factors affecting business suitability will be an area of further focus. This would allow for better understanding of the matters to consider in terms of:

- The most appropriate management approach to take between protection and transition for existing industrial zoned areas in Auckland as pressure from other land uses is expected to continue.
- How to identifiably and justifiably protect areas with the characteristics most suited for particular industries or activities from other uses (new or existing).
- These matters would cover basic issues such as land size, slope, zoning, amenities/dis-amenities, accessibility, and other potential suitability factors specific to the industry and/or location.
- Market and price indicators relevant to business supply and demand.

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8 Appendices

Appendix 1 Business sufficiency assessment

Appendix 2 Property developer survey

Appendix 3 Supply inputs, assumptions, and methodology

Appendix 4 Workflow for the model for dwelling demand

Appendix 5 Demand for dwellings based on ACMar23 low and high projection

Appendix 6 Infrastructure to support development capacity

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