
***Housing and Business Development
Capacity Assessment
Wellington City Council***

November 2019



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Executive Summary

This report presents the results of the Housing and Business Land Capacity Assessment (HBA) for Wellington City Council. The HBA reports on the demand for, and supply of, residential and business development capacity over the 30 years to 2047.

Residential Demand

- Wellington City will need to provide for between 24,929 and 32,337 new dwellings between 2017 and 2047.

Demand for residential dwellings has been assessed based on two growth scenarios. The first is based on projections produced by Forecast.id which are broadly equivalent to the Statistics New Zealand medium growth series projection. The second scenario is based on the Statistics New Zealand high growth series projection. This demand is then broken down further by demand for dwelling type across three categories – stand-alone housing, terrace housing, and apartments.

Residential Capacity

- Wellington City has a capacity for 20,294 realisable dwellings over the period between 2017 and 2047.
- This represents a shortfall of between 4,635 and 12,043 dwellings from that required to meet projected population growth.

Residential capacity has been assessed by determining as a starting point what capacity is enabled by the Wellington City District Plan. Plan enabled capacity is then assessed for feasibility, and lastly consideration is given to what proportion of that feasible development is likely to be realised.

The assessment has revealed that Wellington City has an overall undersupply of residential development capacity beyond the medium term (10 years). This shortage is particularly acute in the form of terrace housing and apartment development, both of which cannot meet anticipated demand over the long term (2027-2047). There is sufficient standalone dwelling capacity to meet projected demand over the long term, however the majority of that is located within existing urban areas as the city's supply of greenfield land is limited to 2,628 additional dwellings. That greenfield supply is expected to be exhausted within the 30 year period of this HBA.

Given the shortage of capacity for terrace housing, it is anticipated that that demand will likely switch to standalone housing putting additional pressure on that capacity.

Capacity for apartment development is lower than expected at 4,343 apartments based on the feasibility assessment undertaken. That supply is again insufficient to meet projected demand over the long term.

Infrastructure

- The city has a number of constraints across its three waters network.
- Investment in the network will be required to avoid those constraints having a detrimental effect on development capacity.
- This assessment has not been able to quantify the exact impact of those constraints on development capacity.
- Transport infrastructure will require additional investment to keep pace with population growth and to offer acceptable levels of service.

The assessment of infrastructure undertaken for this HBA finds that the three waters infrastructure for Wellington will impose constraints on growth over the 30 year span of this HBA. These constraints will be more acute in some areas of the City than others and differ in which of the three water components are affected throughout the city. However, it is difficult to quantify what the exact impact of these constraints will be on development capacity over time. This would necessitate attempting to map development realisation accurately against infrastructure constraints. Given the inherent uncertainty around realisation, this HBA has ultimately not attempted to make such a quantification. Future iterations of this HBA could look to improve this assessment should a finer grain of detail become available on the nature of infrastructure constraints.

It is clear that there are various pressures across the three waters network city-wide. To address these pressures the Council continues to invest in the upgrading and renewal of infrastructure assets. It is the level of investment required and its sequencing that may ultimately impact on the supply of development capacity.

There are existing constraints on the transport network across the city. Whilst current levels of service broadly meet the needs of the city, anticipated growth will see these levels of service decline and increasingly reach poor levels. Accommodating and facilitating this growth will require significant investment in order to achieve acceptable levels of service.

Given the role of Wellington city as the main employment centre in the region, the state highway network servicing the city is subject to significant peak-time congestion. This is additional to peak-time loads on the public transport network. Key congestion points are from Tawa to Ngauranga, and Ngauranga to the airport.

Similar congestion issues affect public transport. Bus services are utilising the same traffic corridors as regular traffic, and space constraints mean that options for separation are limited. Peak traffic flows cause conflicts between north-south and east-west traffic. This impacts on the capacity and reliability of the public transport network within the city.

Overall, there is some pressure on the city's transport network but not of a level that would impact on development capacity within the city. The Let's Get Wellington Moving project is a joint transport planning initiative between NZTA, Greater Wellington Regional Council and Wellington City Council that is seeking to develop a programme of infrastructure investment to address transport improvements from in Wellington that will help to respond to these pressures.

An assessment of other infrastructure⁽³³⁾ shows that there are no particular constraints that would restrict available development capacity. Ongoing development of new infrastructure and improvement of existing infrastructure will occur in line with usual capital programs.

Business Demand

- The commercial and government sectors are the primary drivers of business demand in the city.
- The city is projected to require an additional 787,277 square metres of business floor area over the period 2017-2047.

Demand for business land is measured in two ways – land area and floor area. Floor area is utilised as the principal measure in this HBA to more accurately reflect the various types of business activities that are more prevalent in Wellington City and their configuration i.e. multi-storey buildings.

Demand for business land and floor space in Wellington city over the next 30 years will be primarily driven by the government and commercial sectors. Together, these two sectors are projected to require a further 460,000 square metres of floor space by 2047.

There is little additional demand in the industrial sector with a projected net loss of floorspace over the long term. This is reflective of the ongoing change from heavier industries to more service-based activities and smaller scale manufacturing. It is further influenced by increasing land costs with cheaper land being available elsewhere within the region.

The retail and health, education and training sectors show moderate growth. Given the projected population growth, growth across these sectors is anticipated. There is some uncertainty around the retail sector given the increasing influence of internet-based retailing. However, these and other possible trends have not been modelled as potential outcomes within this HBA.

33. Other infrastructure refers to infrastructure such as parks, community facilities etc.

Business Capacity

- There is capacity for an additional 501,929 square metres of infill floorspace.
- There are 47 vacant business zoned sites across the city that can accommodate 792,973 square metres of floor space.
- Redevelopment capacity provides for over 5 million square metres of floor space.

This HBA concludes that Wellington City has a sufficient supply of land, and subsequent floorspace, to meet all categories of business demand.

The feasibility of development within the assessed business areas was considered through a Multi Criteria Analysis. That analysis showed that all areas appear to be feasible for business development on the basis of the assessment undertaken. Individual proposals will of course vary in their relative feasibility and this assessment has not attempted to assess feasibility on a site-specific scale.

Next steps

Overall, this HBA for Wellington City has revealed that the city has a shortage of residential development capacity. That insufficiency to meet demand will become evident over the medium and long term, comprised of shortages for terrace housing, apartments and greenfield land. The Council will need to respond by way of planning interventions to increase feasible housing capacity.

This shortage of supply will be further exacerbated by constraints within the three waters network. While this HBA has not been able to quantify the exact impact of these constraints, in some areas of the city they will be significant without further intervention. The Council is planning for continued investment in its infrastructure network by way of renewal and upgrade projects, along with new capital investment.

The Council is already in the process of reviewing its Urban Growth Plan as a precursor to a full and comprehensive review of the Wellington City District Plan which will commence in mid-2019. This is the appropriate method by which to address future land use planning for the city.

The preparation of this HBA has provided a baseline information source to inform these reviews. Given the anticipated timeframes involved in undertaking those reviews it is likely that the next iteration of this assessment, due for completion in December 2021, will provide a further evidence base during the notification and hearing period for the replacement District Plan.

1.0 Introduction

Wellington City is poised to grow by between 46,766⁽³⁴⁾ and 74,484⁽³⁵⁾ people by 2047 from a base of 209,713 people in 2017. This significant growth will put further pressure on a housing market which is showing signs of stress, evidenced by recent house and rental price rises.

As a city that is constrained by its geography, Wellington's compact urban form is a product of its location and landform. This has a number of benefits for the city, including the ease of mobility, proximity to services, proximity to employment, and efficiency in the provision of infrastructure.

Maintaining a compact urban form has been an important objective for the Council. The Council's approach to achieving that objective is expressed in the current Wellington City District Plan and other documents, such as the Urban Growth Plan.

However, maintaining a compact urban form also poses challenges in accommodating future growth. Wellington City's ability to open additional areas of greenfield land on its fringe is constrained by the same topography that brings with it the positive benefits that help shape Wellington's character.

Therefore, it is important to accommodate as much future growth as possible within the existing urban area. This is efficient from the point of view of infrastructure provision, but also serves to reinforce an existing urban form that itself brings benefits, such as the concentration of people, supporting businesses, public transport patronage, and a host of other positive effects.

This HBA report has sought to assess, to the greatest extent possible, what capacity the city has for further development, where that capacity exists, and what type of development that capacity can cater for. It then contrasts that capacity with an estimate of what demand exists for it over the next 30 years. Overlaid on that assessment are further considerations of infrastructure availability and an assessment of whether the development capacity that exists is feasible to develop.

This chapter of the Wellington Regional HBA seeks to meet the requirements of the NPS for Wellington City Council. In particular it addresses the requirements of Policy PB1 of the NPS to:

- Estimate demand for dwellings, including demand for different types of dwellings, locations and price points, and the supply of development capacity to meet that demand in the short, medium and long-term;
- Estimate demand for the different types and locations of business land and floor area for businesses, and the supply of development capacity to meet that demand, in the short, medium and long terms;
- Assess interactions between housing and business activities, and their impacts on each other.

This report should be read in conjunction with the Wellington Regional HBA and associated appendices. The Regional HBA details the underlying methodology and assumptions that underpin the data presented in this report.

34. Forecast.id 2017-2047.

35. Statistics New Zealand High Series.

2.0 Existing Policy Context

2.1 Wellington City District Plan

The Wellington City District Plan, which became operative in 2000, is the Council's key planning document that controls the use of land in the city. Prepared under the Resource Management Act 1991 it does this by zoning land and setting out objectives, along with policies and rules to achieve those objectives.

The District Plan seeks to maintain Wellington's compact urban form by providing a generally permissive regime for urban development and intensification within the existing urban area. It encourages apartment development within the central area, and targets specific areas for medium density housing.

The Council has recently agreed to undertake a complete review of the District Plan. This review will commence in 2019 following a review of the Urban Growth Plan. The Council's aim is to notify a Proposed District Plan for submissions in 2021.

2.2 Urban Growth Plan

The Council adopted its Urban Growth Plan in 2015. The Urban Growth Plan replaced, and integrated, the prior Urban Development Strategy and Transport Strategy.

The Urban Growth Plan is the Council's strategy for managing the city's growth over the next 30 years. It seeks to ensure that as the city's population increases, new houses, transport networks, infrastructure, and services are developed sustainably and in areas that benefit the city the most so that residents continue to enjoy a world-class quality of life.

The Growth Plan is itself currently subject to a review which will precede, and then inform, a review of the District Plan. The preparation of this HBA is therefore opportune in its timing as it will be used as a foundation for the review of the Urban Growth Plan, and in turn will inform the District Plan review⁽³⁶⁾.

2.3 Other policy initiatives

The Council has a broad work programme relevant to the wider housing agenda. Recent initiatives include the completion of the Mayoral Housing Taskforce report, adoption of a Housing Strategy, and ongoing redevelopment of the Council's social housing portfolio.

The 'Let's Get Wellington Moving' project is a multi-billion-dollar investment in the city's transport network. It provides a range of opportunities to support housing and business growth, and in turn is supported by housing and business development through improved access to customers and wider markets, increased public transport patronage, and promoting a compact urban form. This HBA process provides a comprehensive analysis of the Council's planning provisions and how they affect capacity for development. It provides a perfect jumping off point for a continuing discussion of Wellington's response to its growth pressures as part of a larger suite of initiatives undertaken by the Council.

36. Noting that a subsequent HBA will be prepared in advance of the notification of a Proposed District Plan in accordance with the three yearly requirements of the NPS-UDC.

3.0 Monitoring of market and price efficiency indicators

3.1 Market indicators

Policy PB2 of the NPS requires that the HBA considers information about demand including from the monitoring of market indicators. The following sections outline a range of relevant indicators and provides specific context to the development trends in Wellington City. A subsequent discussion considers the implications of these indicators.

3.1.1 Residential Sales Prices⁽³⁷⁾



Figure 2.1. Median residential dwelling sale price for Wellington City, Greater Wellington and Auckland. Source: MBIE.

37. This indicator shows the median prices of residential dwellings sold in each quarter. This median price series is not adjusted for size and quality of dwellings. Prices are presented in nominal terms and have not been adjusted for inflation.

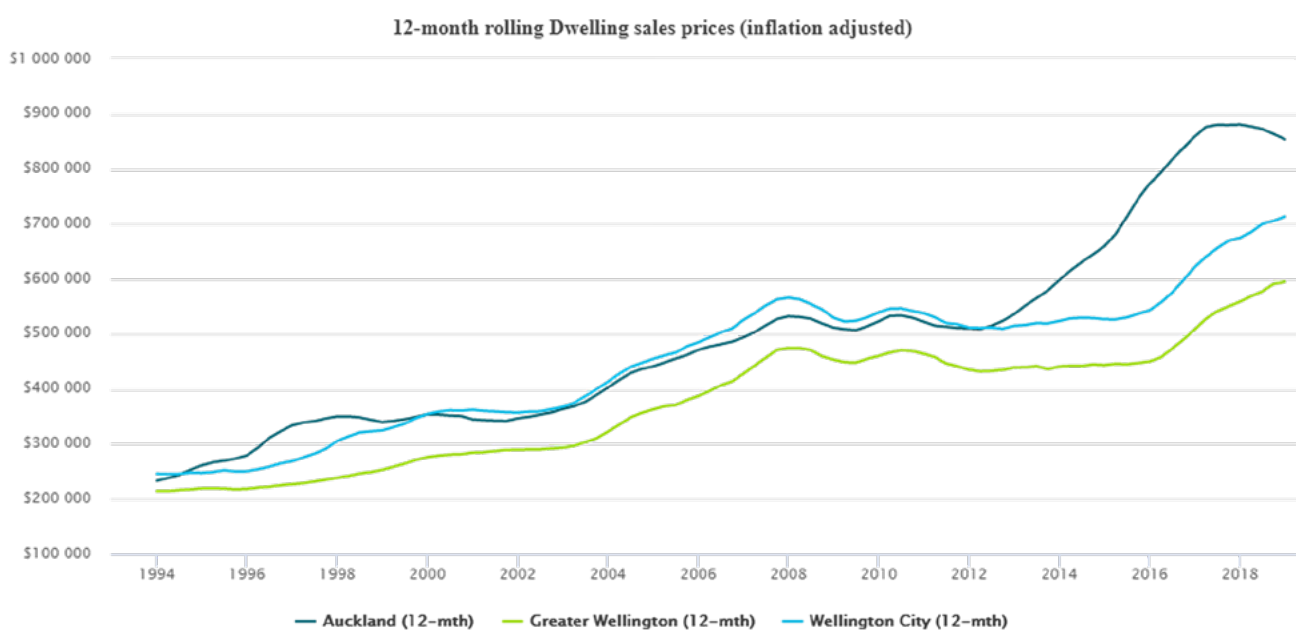


Figure 2.2. Median residential dwelling sale price for Wellington City, Greater Wellington and Auckland, adjusted for inflation. Source: MBIE.

The two indicators above show a significant increase in sales prices which commenced in mid-late 2015. They indicate that Wellington City is a key driver for sale prices in the region, highlighting the importance of Wellington City as the largest housing market in the region, with the most housing diversity, but also the highest prices resulting from higher land values, and higher incomes.

Additionally, for many years Wellington's sales prices were similar to the Auckland market, and changes to those prices largely followed each other. However in 2012/2013 Auckland began to experience significant price increases while Wellington stayed largely flat. Wellington's market only began a significant upsurge in 2015/2016 which has continued, even while the Auckland market appears to have plateaued.

Overall the growth in Wellington City's housing prices is both positive and negative. Positively, the upsurge in prices highlights the desirability of the city as a place to live. Negatively however, the rate of increase has had a significant effect on affordability. This has consequential effects on the ability of people to live and work in the city, affecting workers in areas such as the service sector for instance as well as young professionals.

3.1.2 Residential Rents⁽³⁸⁾

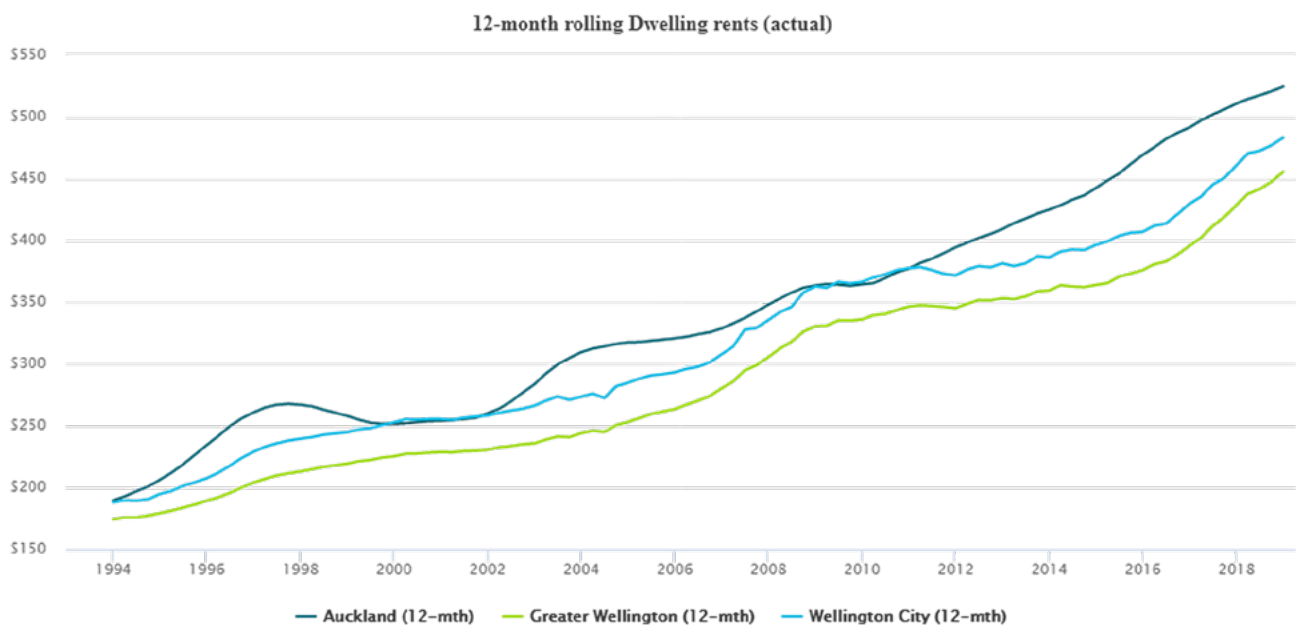


Figure 2.3. Average rents. Source: MBIE.

In contrast to sales prices, this series shows a generally consistent increase in rents with two periods of increased growth rates. Wellington rents appear to strongly follow regional rents. There is less of a correlation with movements in Auckland rent prices. There are two periods of heightened growth. The first started in 2007 and plateaued in 2009, and a second period which commenced in late 2016 and continues currently.

The rapid increase in rental prices, combined with a general shortage of supply, is leading to rental stress within the city, which is reflected in the comments presented by Victoria University earlier in this report.

38. This indicator reflects nominal mean rents as reported in new rental bonds lodged with MBIE. The mean used is a geometric mean. The reason for using this mean is that rents cluster around round numbers, and tend to plateau for months at a time (spiking up by say \$10 or \$20 at a time). This makes analysis of time series difficult and using the geometric mean is a way of removing this clustering effect. Prices are presented in nominal terms; they have not been adjusted for general price inflation. The data is for private bonds only and so excludes social housing.

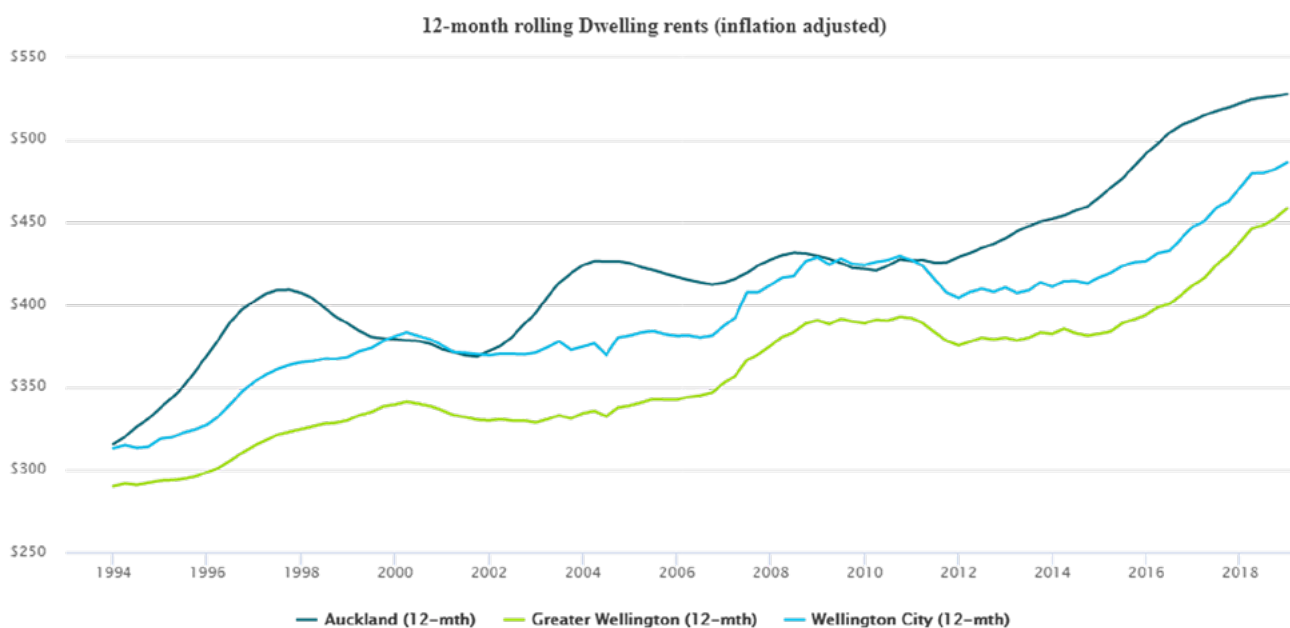


Figure 2.4. Average rents - inflation adjusted. Source: MBIE.

And Figure 2.4 shows rents adjusted for inflation. Again, Wellington City movements closely mirror those in the region. Recent increases in Auckland commenced earlier than in Wellington and the Wellington region, however the latter are now increasing significantly where Auckland increases appear to be tapering.

3.1.3 Dwelling Sales

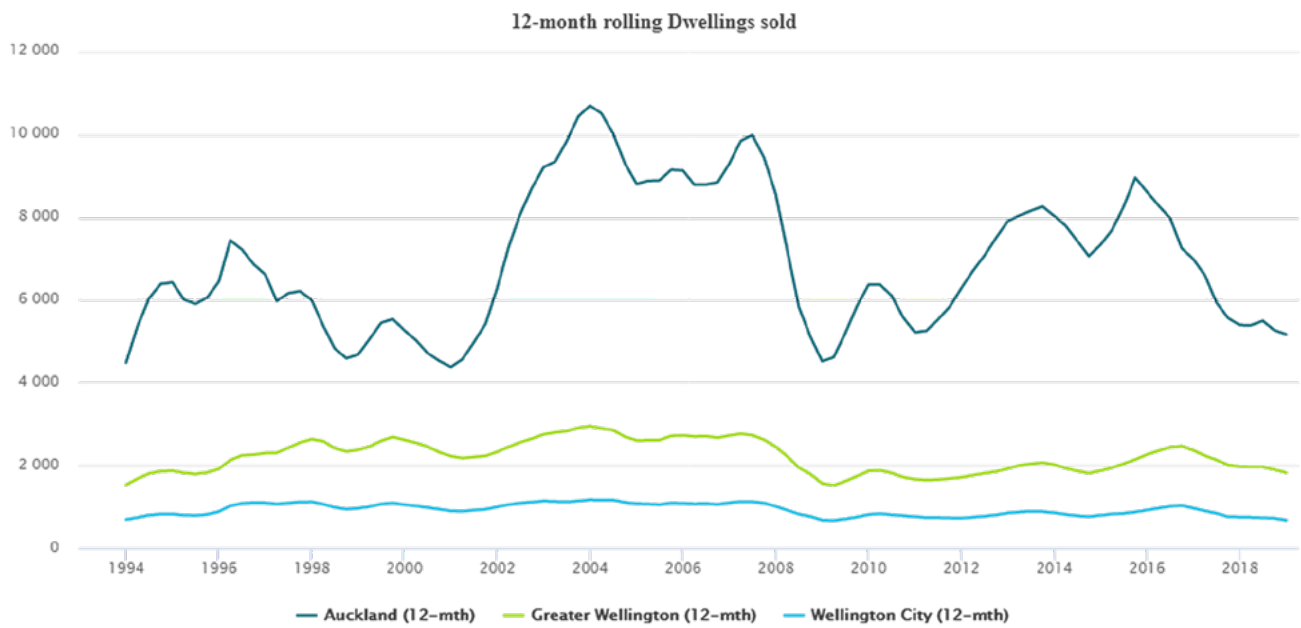


Figure 2.5. Dwelling sales in Wellington City. Source: MBIE.

Dwellings sales in Wellington City have remained relatively flat over the course of the above series, and certainly when contrasted against Auckland, and to a lesser extent Greater Wellington, which both show variation. In closer detail, Wellington City varies year on year, with an increase in the early 2000's and a drop-off following the global financial crisis in 2008. Low sales volumes are not evidence of a lack of activity in the market. On the contrary, the market has been very active in recent years. Rather, the lack of stock coming for sale is causing further pressure on prices as buyers seek to purchase from a limited range of stock. This is further highlighted in Figure 2.6 below.

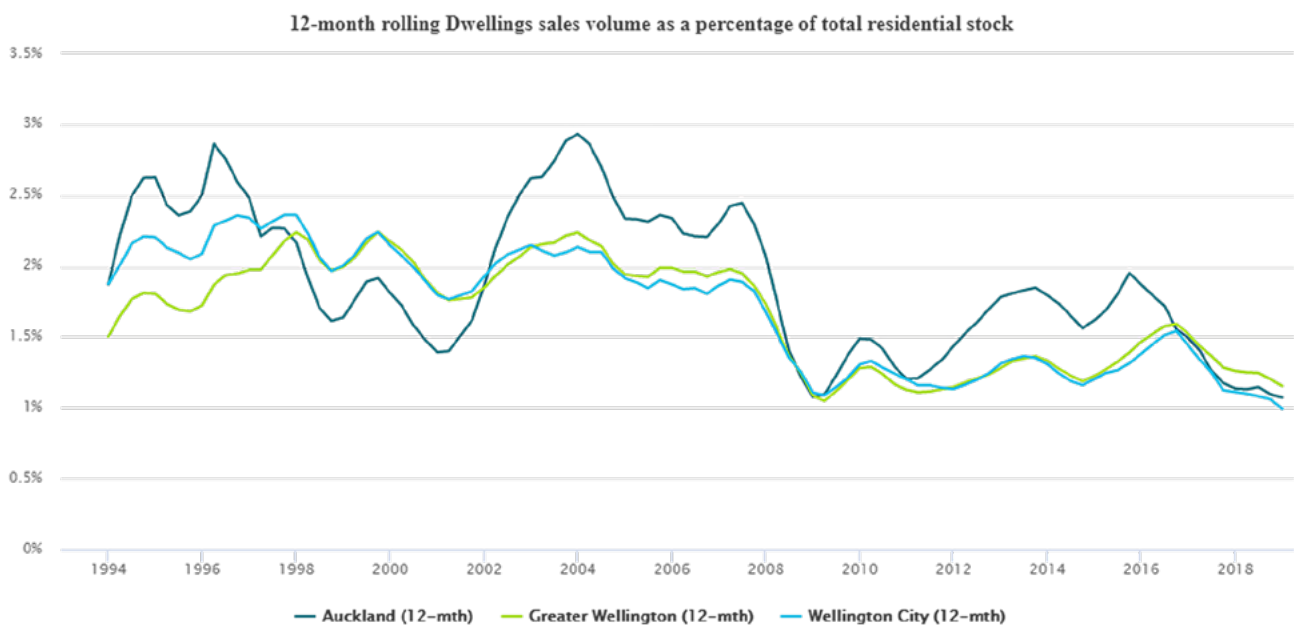


Figure 2.6. Residential sales volumes in Wellington City as a percentage of overall housing stock. Source: MBIE.

Figure 2.6 shows that sales volumes as a percentage of overall housing stock are at their lowest level since the above series commenced. This is in line with trends in Auckland and the Greater Wellington area and affects the amount of overall sales made.

A scarcity of dwellings for sale has the effect of driving up prices as buyers compete for a limited pool of available housing. This indicator shows sales volumes as a percentage of overall stock. Current sales are at slightly lower than 1%.

3.1.4 Housing Affordability

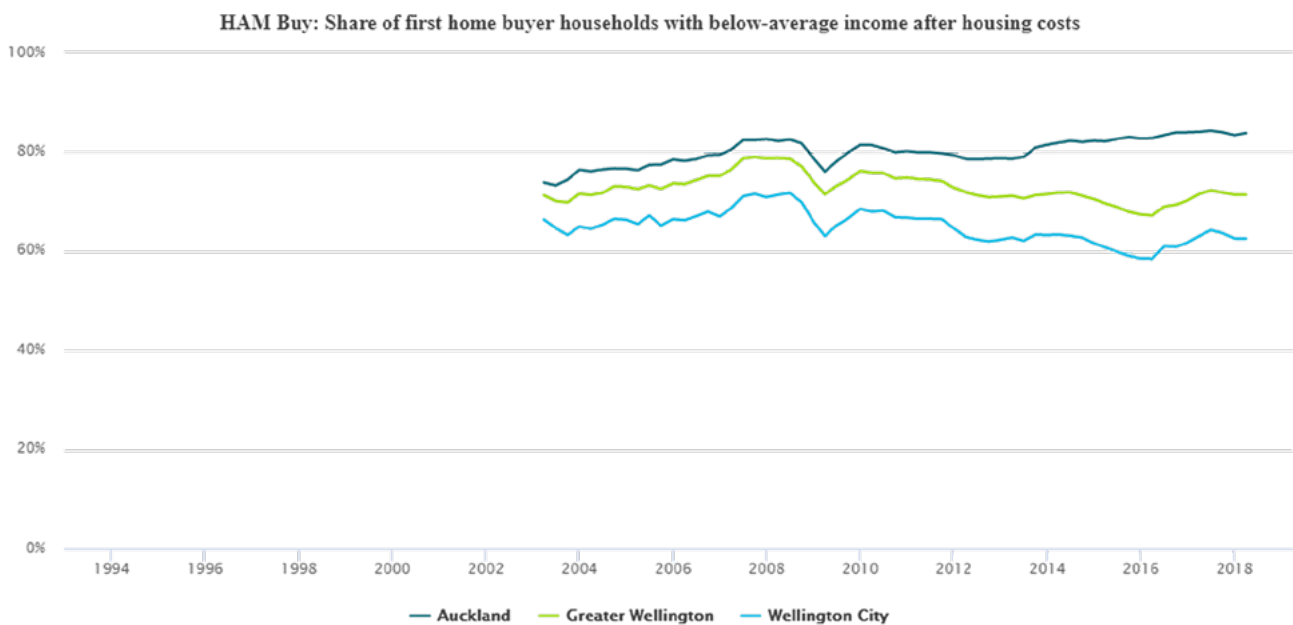


Figure 2.7. Housing Affordability Measure (Buy) for Wellington City. Source: MBIE.

The Housing Affordability Measure (HAM Buy) measures trends in housing affordability for first home buyer households.

For potential home-owning households, HAM Buy calculates what the residual income of the household would be after housing costs if they were to buy a modest first home in the area in which they currently live. Affordability is affected by dwelling prices, mortgage interest rates and the incomes of rental households.

Average income is determined using the average New Zealand household, both homeowners and renters, nation-wide, in June 2013. A higher number on the chart indicates more households are below the average and a lower level of affordability.

There is a strong relationship across the three areas compared above that could be attributed to national data influencing the outcomes. It does show that Wellington City by this measure is more affordable than Auckland, but also the Greater Wellington region which is likely reflective of slightly higher incomes in Wellington City. However despite this relative affordability, the underlying trend for continued levels of unaffordability in the city.



Figure 2.8. Housing Affordability Measure (Rent) for Wellington City. Source: MBIE.

The Housing Affordability Measure (HAM Rent) measures trends in housing affordability for renting households. For renting households, HAM Rent calculates what their residual income would be after housing costs.

Average income is determined using the average New Zealand household, both homeowners and renters, nation-wide, in June 2013. A higher number on the chart indicates more households are below the average and a lower level of affordability.

Again, Wellington City compares favourably to Auckland and the Greater Wellington region, and despite recent increases in rents, there is a slight downward trend in the series indicating slightly improving affordability. Despite this trend, the overall level of unaffordability remains quite high (however much lower than that for HAM Buy).

3.1.5 New Dwellings⁽³⁹⁾



Figure 2.9. New dwelling consents and household growth. Source: MBIE.

The indicator shows that household growth has increased significantly since late 2013 and has far outstripped growth in building consents at a rate not seen in this series. Building consents are now increasing but still not at a rate nearly equivalent to household growth. Whilst dwelling consents could be considered to be a lagging indicator in the sense that they respond to population growth, the gap between the two is such that it will require a significant increase in building consents to overcome the gap that has emerged. This gap is reflected in the latent demand that has been reported alongside the demand requirements in this HBA.

39. This indicator approximates the demand for, and supply of, new dwellings. It measures changes in demand and how responsive supply is. The number of new dwelling building consents is lagged by six months (presented as a 12 month rolling average), to account for the time taken from consenting to completion. It is not adjusted for non-completions, or for demolitions. It is used as a proxy for supply. The most recent resident population, divided by the local average housing size, is used as a proxy for demand. Both sets of data are sourced from Statistics New Zealand.

3.1.6 Summary of market indicators

A clear picture begins to emerge from these indicators. Population growth has been strong in Wellington since late 2013. This upswing in population growth has not been matched by development activity. Resultantly, a shortage of supply has existed since that time and which continue to grow.

An increase in development activity is presently being seen but it is not proportionate to the growth in population that has been experienced. There have been periods in the recent past where the growth in consents (and by extension new dwellings) has exceeded population growth but not by significant enough amounts to overcome the undersupply that occurred before that time, or in the most recent increase in population.

This general absence of new stock coming to market has led to generally low dwelling sales, especially as a percentage of overall housing stock. Subsequently, though later than in other parts of New Zealand, Wellington has experienced significant increases in both house prices and rents. This has had a consequential and predictable impact on housing affordability for both renters and buyers.

3.2 Price Efficiency Indicators

Policy PB7 of the NPS requires Councils to monitor a range of price efficiency indicators. These indicators seek to provide a deeper insight into the operation of the land market and planning interventions within it.

There are four such indicators:

- Price Cost Ratio
- Rural-Urban Differentials
- Industrial Differentials
- Land Concentration Index

These indicators are produced by the Ministry for Business, Innovation and Employment, and the Ministry for the Environment. They are reproduced directly⁽⁴⁰⁾.

3.2.1 Price Cost Ratio

The price cost ratio indicator provides an insight into the responsiveness of the land market, relative to construction activity. In short, it monitors the proportion of land cost to the cost of a home. The ratio is composed of the following:

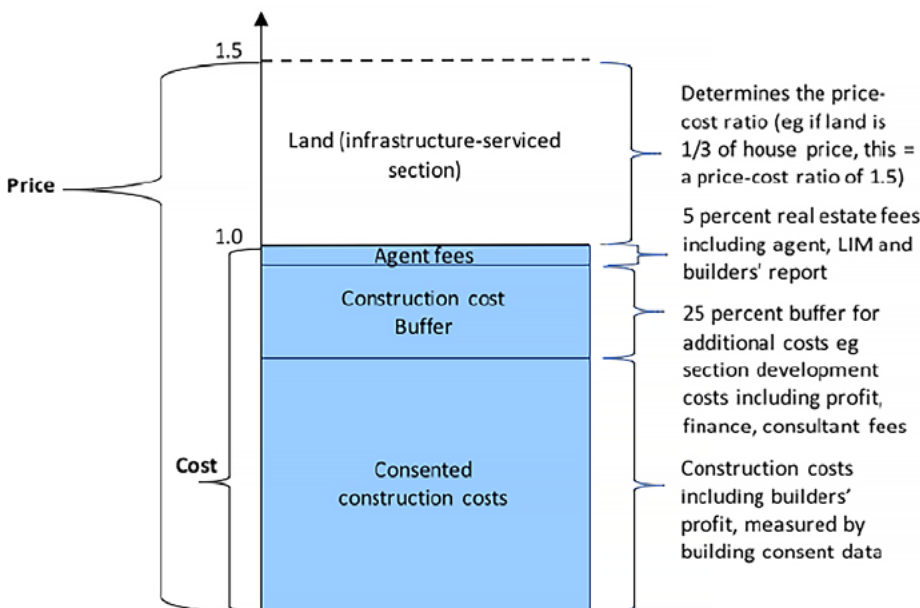


Figure 2.10. Composition of the Price-Cost Ratio. Source: MBIE and MfE.

40. Urban Development Capacity Dashboard <https://mbienz.shinyapps.io/urban-development-capacity/>

A ratio of below one indicates that houses are selling for a price below the cost of replacing them. Such a situation may occur in areas of no growth or even contraction.

A price cost ratio of between 1-1.5 is historically common where the supply of land and development opportunities is responsive to demand. As noted in the Evidence and Monitoring Guidelines⁽⁴¹⁾ all urban areas in New Zealand had a ratio of between 1-1.5 some 20 years ago. In areas of New Zealand with more affordable housing markets, such ratios are still common.

And a price cost ratio above 1.5 suggests, with some caveats, that land supply and development opportunities are not keeping up with demand. As a result, land prices are having an effect on house prices.

The price cost ratio for Wellington City Council is shown below in Figure 2.11. It shows that the price cost ratio sits at about 1.9 suggesting that there may be an influence of land constraints and subsequent development opportunities on the price of dwellings. Wellington City has a higher ratio than the Greater Wellington region showing there are more affordable land values elsewhere in the region. This is to be expected given Wellington City also has other geographical constraints on land supply including steep hills and the harbour. These factors influence the availability of developable land and drive this higher ratio.

Additionally, these factors are driven by the desirability of Wellington City as a place to live given greater proximity to jobs, entertainment and other lifestyle factors that come from living closer to the regional CBD. These pressures will serve to influence higher prices.

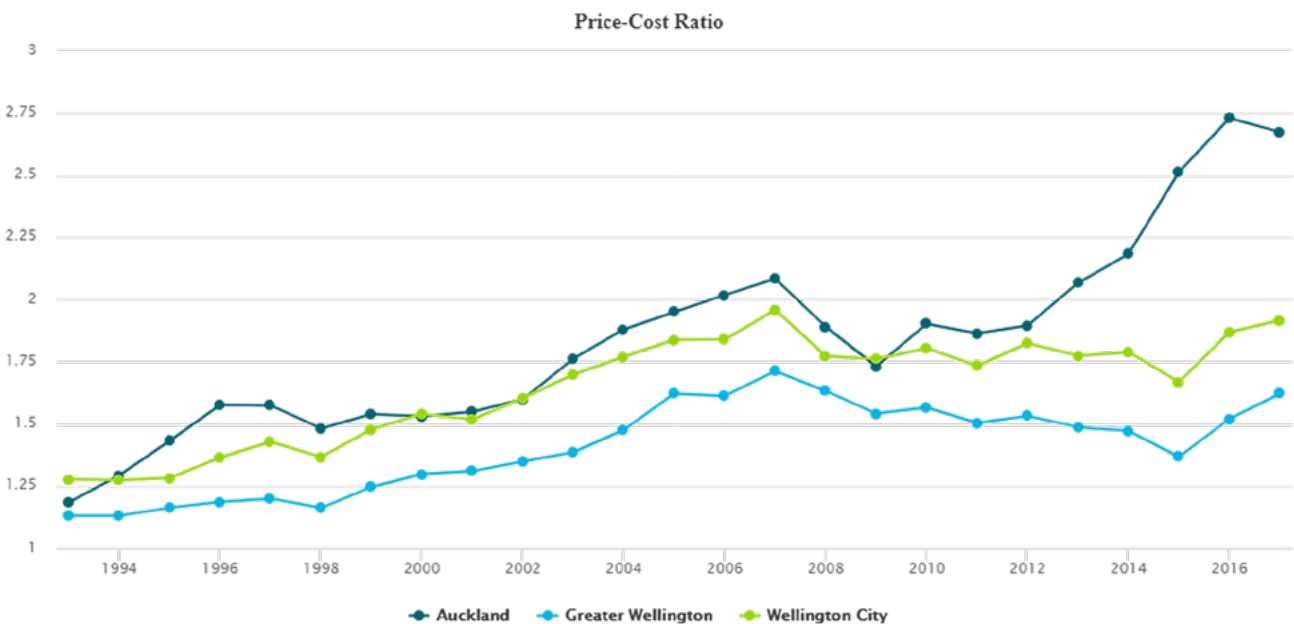


Figure 2.11. Price-cost ratio. Source: MBIE

41. National Policy Statement on Urban Development Capacity: Guide on Evidence and Monitoring

3.2.2 Rural-urban differentials

The rural-urban differential seeks to measure the impact of land use regulations on urban sections on the edge of a city, compared with alternative land use regulations on the other side of the 'boundary'. Traditionally this would be a distinction between residential and rural land uses.

The difference can be expressed as both a ratio and a dollar difference. For Wellington⁽⁴²⁾ the rural-urban ratio is:

Urban Area	Ratio	Difference (\$/m ²)	Difference (\$/600m ² section)
Wellington	2.30	\$201	\$120,371

A ratio above 1.00 is a signal that zoning or other regulations may be constraining development capacity, increasing urban land values. A ratio of 2.30 shows that urban land is worth slightly more than twice the value of non-urban land. Additionally there is a per 600m² section difference of over \$100,000. This suggests that there may be insufficient development capacity and that planning constraints are impacting on land costs.

In a Wellington City context seeing a higher ratio is not surprising. The city is strongly geographically constrained with a limited supply of greenfield land at its northern fringe. Rural land is often particularly steep and difficult to develop, further reinforcing a lower land value for rural land. Further, while a ratio above 1 may highlight the impact of regulation on land prices, this is also to be expected given the practice of zoning land and limiting land use in other non-urban areas. This is fundamental to land use planning, and indeed the modelling that underpins this assessment in that the higher value a potential use, the more valuable the land. As such, a higher land value for urban areas should be expected and to an extent is needed. It is the scale of the difference that is perhaps of more importance. Further monitoring will highlight movements in this area.

3.2.3 Industrial differentials

The Industrial differential focuses internally to an urban area, and considers the relationship between industrial and other land uses. The differentials measure the change in land values across the boundaries between different zones.

Wellington City's industrial zones are generally small in their extent, with the largest area being located along Hutt Road (Kaiwharawhara) and Ngauranga Gorge. An analysis of the industrial differentials for Wellington City prepared by MBIE⁽⁴³⁾ highlights:

- An area at Greta Point shows that surrounding residential values far outweigh business land values. However when the area is considered in greater detail it shows that a large portion of the area is already developed for residential purposes, with a smaller section being occupied by an institutional use (NIWA).
- An area at Evans Bay shows that surrounding residential values outweigh business land values. The area already contains some residential development within it and there has been some pressure for further residential development as the zoning does provide for some residential development (though not at ground floor level).
- At Ngauranga, business land values significantly exceed surrounding rural values. This variation would suggest, on face value, that consideration should be given to whether the rural zoning is appropriate. Closer examination however reveals that the surrounding rural zoning is an extremely steep hillside separated from the existing business area by State Highway 1. It is therefore not likely to be developable for any urban use.
- At Grenada North business land values also significantly exceed surrounding rural values; the most significant ratio of all the business areas looked at within Wellington City. This does suggest that further consideration could be given to rezoning areas of rural land for additional business capacity.

42. It is noted that the ratio for Wellington is the ratio that has been prepared for the larger urban area, and not Wellington City specifically. Therefore the ratio should be considered as providing a regional, not city specific picture. However it is likely that the regional ratio is broadly representative of the Wellington City situation.

43. <https://mbienz.shinyapps.io/urban-development-capacity/>.

Outside of these areas the analysis shows that there are few other areas where the differential data shows statistically significant variations between zones.

3.2.4 Land Concentration

The last indicator addresses land concentration, or more particularly land ownership concentration. The indicator attempts to show to what extent greenfield land is concentrated in ownership. The indicator is again provided by MBIE.

The index for Wellington City is 286 which is a low score, indicating a low level of land ownership concentration. It compares for instance with a score of 1,476 for Upper Hutt and 1,225 for Porirua which indicate a high concentration of land ownership in a few land owners.

The Council's examination of this indicator suggests that it has a level of inaccuracy for Wellington City. The Council is aware that the majority of the greenfield land in Wellington City is held by a small number landowners. It would therefore expect that the index score for Wellington City would be significantly higher, perhaps in line with those for Porirua and Upper Hutt.

It therefore cautions relying on the present index score. The Council will work with MBIE to correct the data informing this indicator and will report on the indicator further as part of the ongoing monitoring for the NPS once corrected.

3.2.5 Summary of price efficiency indicators

The analysis of the price efficiency indicators suggests that:

- The price-cost ratio for Wellington is higher than what would be expected in a properly operating market. This is reflective of a generally limited land supply and few options for significant increases. This is not however a symptom solely of the impact of regulation. In a Wellington City context a greater driving factor is the geographic limitation of the city in terms of its topography and harbourside location.
- The drivers of the higher price-cost ratio are also those that impact on the rural-urban differential. The rural-urban differential for Wellington City does suggest that urban land prices are higher than they should be. However it is considered that such an increase is not solely caused by policy constraints. Policy constraints may have a role however Wellington's geographical constraints are such that they impact on the ability of the city to significantly increase greenfield land supply.
- With one exception, there does not appear to be a significant industrial land differential that suggests a need for the Council to take any action around zoning changes. The one exception is for Grenada where the price of industrial land compared to neighbouring rural land suggests that providing additional industrial land in this area could be considered.
- The Council expects the Land Concentration Index for Wellington City to be higher than is currently reported as the majority of greenfield land that is identified for urban expansion is owned in limited landowners.

4.0 Housing Demand

Key Findings

- Wellington City will grow by between 46,766 people, and 74,484 people from 2017 to 2047.
- To accommodate this growth, the City will require between 24,929 and 32,337 new dwellings⁽⁴⁴⁾.
- Growth in visitor accommodation services such as Airbnb is not having as significant an impact on residential accommodation as in other centres such as Queenstown.
- There appears to be a latent demand for commercial hotel accommodation in the CBD, with existing occupancy rates at a high level that suggest further capacity is likely to developed.

4.1 Population and Household Growth

Demand for housing is driven by increases in population. As noted in the Chapter 1, this report utilises two different projections (Forecast.id and Statistics NZ High Growth) that encompass two possible growth scenarios.

Under these scenarios, population growth for Wellington City Council over the period 2017-2047 is projected to be:

	2017 ⁽⁴⁵⁾	2017-2020	2020-2027	2027-2047	2047	Change
Forecast.id	209,713	6,300	12,304	28,162	256,479	46,766
SNZ High	213,100	9,567	18,565	46,352	287,584	74,484

Table 2.1. Population growth for Wellington City, 2017-2047.

Translating that population growth into households⁽⁴⁶⁾, allows for a projection of the number of dwellings required to meet that population growth as follows:

	2017	2017-2020	2020-2027	2027-2047	2047	Change
Forecast.id	76,925	2,106	5,680	13,553	98,264	21,339
SNZ High	80,964	3,342	8,117	20,878	113,301	32,337

Table 2.2. Demand for dwellings, Wellington City, 2017-2047.

This assessment considers that the Forecast.id projection is a more accurate predictor of likely growth for Wellington City over the long term. However, in order to prudently plan for movements in population growth, the Council also utilises a higher growth series which provides a range in which population growth is expected to occur. Therefore, while growth rates may increase above the Forecast.id projection over shorter durations, historical growth suggests a return to the medium rate over the long term⁽⁴⁷⁾.

44. Inflated to meet the requirements of Policy PC1 of the NPS.

45. The 2017 population figure differs between the two projections as it is based on the 2013 census count, being the last accurate population count.

46. Based on the number of people per dwelling and adjusting for changes in this over time.

47. For completeness, it is noted that a high growth scenario is run in this assessment also.

However, for planning purposes it is important that the Council supplies a greater amount of housing capacity than what is projected to be required by the baseline scenario. In accordance with Policy PC1 of the NPS, the baseline demand scenario is inflated by 20% over the short and medium term, and 15% over the long term in order to ensure that the Council is providing a suitable buffer of over-supply. Given that the high projection is already a higher order projection, it has not been inflated for the purposes of the HBA. The resulting demand is as follows:

	2017	2017-2020	2020-2027	2027-2047	2047	Change
Forecast.id	76,925	2,527	6,816	15,586	101,854	24,929
SNZ High	80,964	3,342	8,117	20,878	113,301	32,337

Table 2.3. Demand for dwellings, inflated, Wellington City Council, 2017-2047.

4.2 Latent Demand

In addition to the demand identified above, recent under development of housing compared to population growth suggests that an existing latent demand for housing exists.

This is most readily estimated by considering historic population growth against the construction of new dwellings⁽⁴⁸⁾. In determining latent demand, the number of dwellings built for each year from 2000-2016 was contrasted against population growth over the same timeframe. Average household size was then applied to determine whether an adequate number of dwellings were constructed to keep pace with population growth.

This is demonstrated in Table 2.4 and Figure 2.12 below:

New Dwelling Construction and Population Growth 2000-2016

Year	Built Dwellings	Population Growth	Dwellings Required	Shortfall/Surplus
2000	325	900	344	-19
2001	169	1,600	611	-442
2002	336	3,300	1,260	-924
2003	583	4,400	1,679	-1,096
2004	543	3,300	1,260	-717
2005	1,158	2,400	916	242
2006	898	3,200	1,221	-323
2007	824	1,800	687	137
2008	588	1,300	496	92
2009	959	1,700	649	310
2010	1,179	1,200	458	721

48. Constructed dwellings are measured by the issuing of a Code Compliance Certificate. Constructed dwellings are used over consented dwellings to account for consents that are not implemented.

Year	Built Dwellings	Population Growth	Dwellings Required	Shortfall/Surplus
2011	375	1,700	649	-274
2012	478	1,200	458	20
2013	463	900	344	119
2014	484	2,500	954	-470
2015	498	3,800	1,450	-952
2016	488	4,100	1,565	-1,077
Total	10,348	39,300	15,000	-4,652

Table 2.4. New dwellings and population growth, Wellington City, 2000 - 2016. Source: WCC.

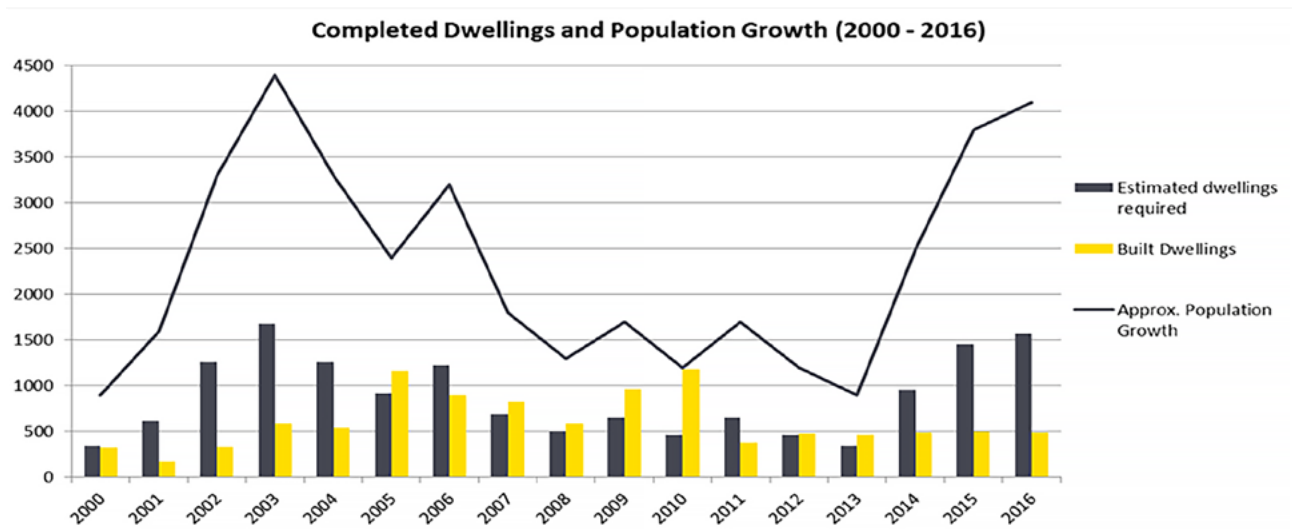


Figure 2.12. New dwellings and population growth, Wellington City, 2000 - 2016. Source: WCC.

This therefore suggests an existing undersupply of 4,652 dwellings at the end of 2016, in addition to the forecast amounts above.

Given the estimations that are involved in preparing the above data, it has not been included in the core demand numbers that form the basis of this HBA. The limitations of this data include limited exploration of the types and size of dwellings consented, but also the accuracy of population growth, particularly around retention in local areas where it is possible to easily cross a local boundary and be miscounted. As such, this latent demand is reported alongside the core demand number in order to demonstrate the extent of the possible latent demand but highlighting the degree of uncertainty involved in its estimation.

4.3 Demand by Typology

The overall demand can be considered by type of dwelling. Broadly, demand is described in this HBA across three categories:

- Stand-alone Housing – typically refers to stand-alone houses on separate allotments.
- Terrace Housing – typically refers to terrace housing, semi-detached dwellings and low-rise apartments.
- Apartments – in a Wellington context higher density refers to apartment buildings, generally within the CBD.

Focussing on different typologies is important given the range of household types in the city, and the variation in typologies across different areas of the city,

Based on the Forecast.id projection the following demand by dwelling type is projected⁽⁴⁹⁾:

	2017-2020	2020-2027	2027-2047	Total
Stand-alone Housing	1,243	2,733	6,791	10,767
Terrace Housing	550	1,209	3,424	5,183
Apartments	594	2,470	4,454	7,519
Other Dwellings	140	404	917	1,461
Total	2,527	6,816	15,586	24,929

Table 2.5. Projected dwelling demand by type. Forecast.id scenario.

And based on a high growth scenario, the following demand by dwelling type is projected⁽⁵⁰⁾:

	2017-2020	2020-2027	2027-2047	Total
Stand-alone Housing	1,743	3,620	9,818	15,181
Terrace Housing	786	1,628	4,819	7,233
Apartments	633	2,405	5,053	8,091
Other Dwellings	180	464	1,188	1,832
Total	3,342	8,117	20,878	32,337

Table 2.6. Projected dwelling demand by type. SNZ High Growth scenario.

A note on terminology:

The term 'Other Dwellings' refers mobile and improvised dwellings, roofless or rough sleepers, and dwellings in a motor camp. It is not a core aspect of the consideration of this HBA, particularly as it comes to the modelling of supply which is detailed in a subsequent chapter.

49. Again inflated to meet the requirements of Policy PC1 of the NPS-UDC.

50. This HBA has left the high growth series uninflated unlike the Forecast.id scenario. This is due to the high series already being a higher growth scenario that inherently builds in a higher level of supply.

4.4 Demand by location

In addition to addressing overall demand, it is important to consider where the demand exists for the various housing types. For the purposes of this HBA Wellington has been divided into six broad catchments as shown in Figure 2.13.

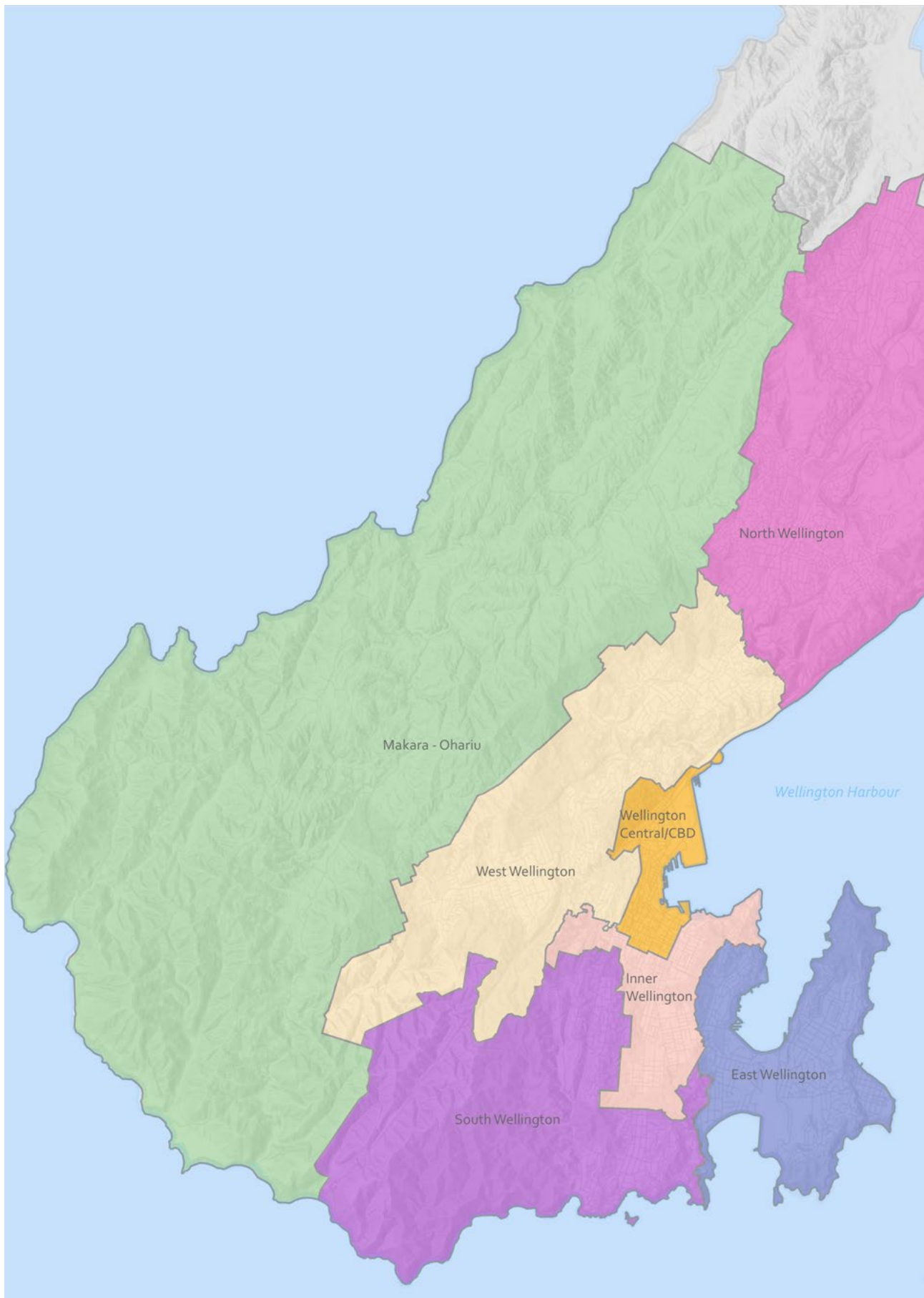


Figure 2.13. Wellington City Residential Catchments. Source: WCC.

The above divisions have been created by grouping together areas of the city that form logical housing catchments i.e. the southern suburbs vs. the eastern suburbs. They represent clearer sub-markets of the city in which the demand and supply of different typologies can be contrasted at a more detailed level.

In preparing this classification several assumptions have been made:

- The demand model used for this HBA groups terrace housing and apartments into one classification. This classification is then split by apportioning it in Central Wellington as apartments in the tables below. A 0 is shown for terrace housing in the Central Wellington table as a result.

- Apartments that may be created in other areas are therefore classified as terrace housing and a 0 is shown for apartments outside of Central Wellington. Given that apartments outside of Central Wellington are likely to be low rise or part of a mixed-use development in centres, it is considered that such a differentiation is appropriate.
- Demand for stand-alone houses is held constant in Central Wellington at 2013 levels, and therefore shows 0 growth over the 30 years of the HBA. The underlying assumption here is that it is unlikely for a stand-alone house to be developed within Central Wellington. Again, such an assumption is considered to be appropriate.

The following tables show demand by housing type across the six catchments. The tables show the range of houses required for both the Forecast.id and Statistics NZ high projections.

North Wellington

	2017-2020	2020-2027	2027-2047	Total
Stand-alone Housing	616-720	1460-1637	3159-4041	5235-6398
Terrace Housing	150-176	356-399	772-986	1278-1561
Apartments	0	0	0	0
Other Dwellings	31-37	76-84	162-208	269-329
Total	797-933	1892-2120	4093-5235	6782-8288

Table 2.7. Projected dwellings by type, North Wellington, Forecast.id and SNZ High, 2017-2047

Central Wellington

	2017-2020	2020-2027	2027-2047	Total
Stand-alone Housing	0	0	0	0
Terrace Housing	0	0	0	0
Apartments	594-633	2471-2405	4452-5053	7517-8092
Other Dwellings	50-53	208-202	374-424	632-679
Total	644-687	2679-2606	4828-5477	8149-8771

Table 2.8. Projected dwellings by type, Central Wellington, Forecast.id and SNZ High, 2017-2047

Inner Wellington

	2017-2020	2020-2027	2027-2047	Total
Stand-alone Housing	143-195	332-422	1043-1361	1518-1979
Terrace Housing	221-300	511-650	1604-2093	2336-3043
Apartments	0	0	0	0
Other Dwellings	29-39	66-84	207-271	302-394
Total	393-534	909-1156	2854-3725	4156-5415

Table 2.9. Projected dwellings by type, Inner Wellington, Forecast.id and SNZ High, 2017-2047

Southern Wellington

	2017-2020	2020-2027	2027-2047	Total
Stand-alone Housing	175-244	295-428	454-880	924-1552
Terrace Housing	61-84	102-148	158-304	321-537
Apartments	0	0	0	0
Other Dwellings	12-16	19-28	30-57	61-101
Total	248-344	416-604	642-1242	1306-2190

Table 2.10. Projected dwellings by type, Southern Wellington, Forecast.id and SNZ High, 2017-2047

Western Wellington

	2017-2020	2020-2027	2027-2047	Total
Stand-alone Housing	196-363	457-750	995-1867	1648-2981
Terrace Housing	61-114	144-236	313-588	518-938
Apartments	0	0	0	0
Other Dwellings	8-15	19-32	43-79	70-126
Total	265-493	620-1018	1351-2534	2236-4045

Table 2.11. Projected dwellings by type, Western Wellington, Forecast.id and SNZ High, 2017-2047

Eastern Wellington

	2017-2020	2020-2027	2027-2047	Total
Stand-alone Housing	113-220	188-383	1,140-1,668	1,441-2,272
Terrace Housing	58-112	95-195	578-847	731-1,153
Apartments	0	0	0	0
Other Dwellings	10-20	17-34	101-149	128-203
Total	181-351	300-612	1,819-2,664	2,300-3,628

Table 2.12. Projected dwellings by type, Eastern Wellington, Forecast.id and SNZ High, 2017-2047

Considering dwelling demand by these areas confirms some existing and expected growth patterns. There is strong demand for stand-alone housing in northern Wellington, which aligns with Wellington city's greenfield growth areas. Also evident is an increasing amount of terrace housing being constructed in these areas, which is reflective of what is shown on the demand side.

Unsurprisingly, Central Wellington show a significant amount of demand for apartment development. This is consistent with the nature of development experienced in the city in recent years and consistent with the Council's strategy for the central city. It is reflective of the attractiveness of the central city as a place to live.

Inner Wellington, with its proximity to the central area, is an ideal location for higher density residential development which is reflected in the projected demand for terrace housing. Terrace demand in this catchment could also translate to demand for apartments. It is noted that even stand-alone housing in this catchment is generally of a higher density than the outer suburban areas.

Western, Southern and Eastern Wellington are the established suburban areas of the city. They generally reflect a lower density of residential development, though also have experienced significant infill subdivision. Increasingly some pockets of medium-density development in the form of terrace housing have begun to appear in these areas, often as the result of redevelopment of larger residential sites. Each of these areas is projected to see further demand for this form of housing. Overall these suburbs continue to show demand for additional housing, but not at the level of the central city and northern suburbs. As noted below, given the level of existing development in these areas, meeting this demand will prove challenging without increases in density.

4.5 Demand by Price

Policy PB1 of the NPS also requires that the HBA considers demand by price point. Beyond the general assessment of affordability, this HBA has not attempted to undertake any additional assessment at this time due to the complexity required to undertake such an assessment meaningfully. This is an area for development in future iterations of the HBA. Rather the HBA has chosen to consider the demand for different types of housing by location. It is the type of housing, coupled with location, which can provide us with an indication of price point.

4.6 Visitor Accommodation

The provision of visitor accommodation can be another demand pressure on residential accommodation. In Wellington City, commercial accommodation is predominantly located in the central city. Given the prevalence of apartment development within the central area, along with general business activity through office buildings, the commercial accommodation sector competes for a share of the airspace available in this area.

Hotel accommodation is experiencing significant occupancy in Wellington City. Hotel occupancy is approximately 80 on average, meaning that during peak times spare hotel capacity in Wellington is non-existent.

Occupancy at such levels would ordinarily suggest that the market should respond through the provision of additional supply. However, given the effects of the Kaikoura earthquake, ongoing attention of the sector to Christchurch, and some previous uncertainty over key projects in the city, any market response has been slow. There have been recent signs that there are some impending projects coming on stream that will provide further supply.

In addition to the commercial hotel sector, the growth of property rental services such as Airbnb has provided a further demand driver. Airbnb has experienced significant growth in recent years. Data from AirDNA shows that in January 2015 there were 59 'Entire Place' listings available in Wellington. By January 2019 that had grown to 825. Those 59 listings translated to 1,267 'Entire Place' room nights available of which 651 were booked. By January 2019, that had grown to 34,957 room nights with 25,205 booked.

Though this growth is significant, in the overall scale of 80,935 dwellings in the city, 825 dwellings being listed on Airbnb at a particular point in time represents 1% of the overall stock. Relevantly, it appears that growth in listings has generally plateaued.

The overall impact of Airbnb on the Wellington City market does not appear to be significant. Yes, these dwellings are being utilised for visitor accommodation at a time of larger strains across the residential property market and are not being used, for instance, as longer-term rentals. However, they are also providing a valuable visitor accommodation function at a time of increased occupancy in the commercial accommodation sector.

4.7 Student Accommodation

Wellington City is home to three main tertiary institutions - Victoria University⁽⁵¹⁾, Massey University and Weltec. Otago University also has a presence in the city.

Increased pressure on the rental market in particular has a flow on effect on the student population, some of which has been well publicised in the media. Principally there is a shortage of rental housing in the city. This shortage of supply has seen marked increases in rental prices which has affordability effects. These effects are even more acute for students. In a worst-case scenario, students are simply struggling to find accommodation.

Beyond the immediate effects on students, these issues affect the institutions directly, and in turn have flow on effects for the city.

Victoria University advises that:

- First year students generally do not experience problems as they rely mainly on university owned halls of residence.
- Returning undergraduate students and postgraduate and international students are more likely to seek private sector accommodation.
- The university is seeing declining numbers, particularly for second year students, who are moving to different locations having completed their first year at Victoria.
- The university links this to rental shortages and rent prices.
- The university additionally sees landlords' passing on to tenants any additional costs from such things as compliance or insurance fees.

The other issue highlighted by Victoria University is that such shortages have flow on effects for the city in the longer term. This relates to a lesser likelihood of students completing their degrees from seeking to stay on in Wellington.

Victoria is considering options for addressing this issue including what further actions it can take to provide additional residential accommodation options. It sees the City Council as having a key role in ensuring that there are sufficient and affordable options for student accommodation.

51. In preparing this HBA, two senior staff from Victoria University were interviewed.

5.0 Housing Development Capacity

Key Findings

- Modelling indicates that the Wellington City District Plan provides for 106,411 dwellings.
- Of the capacity that is enabled by the District Plan, some 26% or 27,954 dwellings are considered to be economically feasible to develop at the time of preparing this report.
- Of the 27,954 feasible dwellings, 2,628 come from greenfield land supply. The remainder come from existing urban areas through infill development, redevelopment, intensification and apartment development.
- Applying a further realisation test to feasible capacity, results in a realisable capacity of 20,294 dwellings over the 30 years to 2047.
- When factoring in realisation, this number decreases to 20,094 realisable dwellings.

The modelling of residential development capacity for this HBA has been split into two parts. Firstly, modelling has been undertaken of the capacity that is available in the city's greenfield areas. A site size of a minimum 5 hectares has been used to define greenfield sites. Secondly, modelling has been undertaken of what infill capacity and redevelopment capacity exists within existing urban areas.

All modelling uses current District Plan settings as a starting point. District Plan enabled capacity has been determined to be 106,411 dwellings by this modelling. That total comprises 2,628 sections and 103,783 dwellings from brownfield development. From this plan enabled capacity, the modelling then assesses the feasibility of that capacity.

The modelling methodology, assumptions and limitations have been discussed in the regional chapter of this HBA and are detailed in Appendix 1.3.

5.1 Greenfield Development Capacity

Greenfield land in Wellington is limited primarily to the 'Northern Growth Area' and therefore is constrained geographically. The Council does not currently have any plans of 'breaking through' into new greenfield areas but is working to realise the currently Rural zoned Upper Stebbings Valley area. Once these areas are exhausted the city will have no further greenfield capacity identified. The current review of the Urban Growth Plan and subsequent review of the District Plan provide an opportunity to consider future greenfield development options.

Modelling was undertaken on areas either currently zoned or already identified as greenfield areas for their plan enabled development capacity. Areas of 5 hectares or greater were considered as part of the greenfield model.

Once modelled within the GIS model as detailed in Appendix 1.3, the resulting model outputs are then tested for feasibility. This has been undertaken through a separate greenfield feasibility model developed for the Councils by MRCagney. MRCagney have produced an accompanying report which details the feasibility modelling process for greenfield land. This report is attached as Appendix 1.4.

The assessment of plan enabled capacity in Wellington city's greenfield areas shows a feasible supply of **2,628** new residential sections⁽⁵²⁾. As these are modelled as sections, they are only added to the stand-alone housing typology in the totals presented below as this is the most common typology for greenfield development.

52. In this instance, one section equates to one dwelling.

5.2 Infill Development and Redevelopment Capacity

The infill and redevelopment model addresses areas of land under 5 hectares that are zoned for residential development, and therefore is concentrated on areas of existing development or smaller peripheral land parcels.

Feasible infill and redevelopment capacity is modelled as being:

Typology	Quantity
Stand-alone Housing	6,996
Terrace Housing	8,345
Apartments	9,985
Total	25,326

Table 2.13. Overall supply of feasible residential capacity by typology.

That city-wide capacity can then be broken down by the same catchments used to assess demand:

	Standalone	Terrace	Apartments	Total
Central Wellington	112	243	5,903	6,258
Inner Wellington	820	785	2,388	3,993
Northern Wellington	1,421	1,524	997	3,942
Western Wellington	2,037	3,600	84	5,721
Southern Wellington	1,036	707	24	1,767
Eastern Wellington	1,570	1,486	589	3,645
Total	6,996	8,345	9,985	25,326

Table 2.14. Supply of feasible infill and redevelopment residential capacity by typology and catchment.

It is difficult to apportion that overall development capacity over time. That is, it is difficult to accurately estimate how overall supply will be taken up over time due to the range of factors that influence development rates. To overcome this, this HBA estimates uptake by typology, based on historic rates of development. Ongoing monitoring, and future iterations of this report, will enable further refinement of this data and uptake rate.

Having analysed historic rates of development uptake between 1991 – 2017, the following averages emerge:

- Standalone: 302 dwellings per annum
- Terrace: 229 dwellings per annum
- Apartment: 246 dwellings per annum

These averages can then be applied to give an estimate of the likely rates of uptake, based on historical averages, over the course of the 30 years of this HBA and will be used in order to assess the degree of sufficiency in the following section.

5.3 Overall Feasibility

Combining Residential Greenfield capacity (2,628) with Infill and Redevelopment capacity (25,326) indicates an overall feasible development capacity of 27,954 dwellings.

In making this combination, greenfield capacity has been added to standalone capacity in the northern Wellington catchment.

	Standalone	Terrace	Apartments	Total
Central Wellington	112	243	5,903	6,258
Inner Wellington	820	785	2,388	3,993
Northern Wellington	4,049	1,524	997	6,570
Western Wellington	2,037	3,600	84	5,721
Southern Wellington	1,036	707	24	1,767
Eastern Wellington	1,570	1,486	589	3,645
Total	9,624	8,345	9,985	27,954

Table 2.15. Overall supply of **feasible** residential capacity by typology and catchment (Infill, Redevelopment and Greenfield).

5.4 Realisation

Not all development capacity will be delivered over the next 30 years. Landowners have different motivations for their land and may not wish to sell to a developer, or may not wish to subdivide or redevelop themselves. Others may simply value their property as it currently is. Additionally, different development types have different risk profiles and developers require certain profit margins to undertake development. All these factors affect realisation of feasible development capacity.

Policy PC1 of the NPS calls for a 20% oversupply of feasible development to be provided in the short and medium term, and a 15% oversupply in the long-term to overcome this issue. As shown above, in order to be able to accurately apportion that oversupply over time, we have inflated our demand side numbers by this amount.

Policy PC1 is about addressing the fact that, for a range of reasons, not all feasible development capacity will be taken up. In considering the particular characteristics of Wellington, and the various types of development, this HBA has further discounted the proportion of feasible development capacity that will likely not be realised. This is detailed further in the report by Property Economics attached as Appendix 2.1.

Property Economics details realisation rates by development type and across different areas. It concludes that, in the round, 66% of the feasible capacity identified by this HBA is likely to eventuate. Breaking that realisation rate down further, realisation for standalone development is relatively high at 88%, compared to 63% for terraced housing and 54% for apartments. For greenfield development, a 100% realisation rate is assumed.

The terrace housing realisation rates are low in a Wellington context due to the particular factors relevant to that form of development, and Wellington's topography. They are however considered to be reasonable. Importantly they will need to be monitored over the next three years to be updated in subsequent assessments. Lower rates of apartment realisation reflect the complexities, timeframes and risk involved in apartment development.

Conversely, greenfield and stand-alone realisation is high given the factors particular to it. For greenfield generally single land ownership and the ability to design and execute a subdivision in a manner that is particular to that piece of land. And for stand-alone development, generally a lower risk profile to that of apartment and terrace housing. Resultantly, a high level of realisation is assumed and noted that eventual yield could in fact be higher than the number that is modelled. This matter is addressed through additional sensitivity analysis as detailed in the appended Property Economics report.

Table 2.15 above can therefore be reproduced accounting for the issue of realisation as follows:

	Standalone	Terrace	Apartments	Total
Central Wellington	138	138	2,567	2,843
Inner Wellington	1,007	445	1,038	2,490
Northern Wellington	4,373	864	434	5,671
Western Wellington	2,502	2,040	37	4,579
Southern Wellington	1,273	400	11	1,684
Eastern Wellington	1,928	843	256	3,027
Total	11,221	4,730	4,343	20,294

Table 2.16. Overall supply of **realisable** residential capacity by typology and catchment (Infill, Redevelopment and Greenfield).

Therefore for the purposes of assessing sufficiency of residential development capacity in the following section, residential capacity for Wellington City is modelled as being 20,294 dwellings.

6.0 Housing Sufficiency

Key Findings

- Wellington City has a realisable residential capacity of 20,294 dwellings.
- That realisable capacity is **insufficient** to meet projected demand over the 30 years to 2047.
- The shortfall is between 4,635 and 12,043 dwellings based on the two demand scenarios outlined in this HBA.

Having established both demand and supply, the two can now be contrasted. This will answer the question that is at the heart of this HBA – does Wellington City have sufficient feasible residential capacity that will be realised over the next 30 years to meet expected population growth to 2047?

At a city-wide level, the following comparison can be made:

	Forecast id	SNZ High
Demand ⁽⁵³⁾	24,929	32,337
Capacity	20,294	
Shortfall/Surplus	-4,635	-12,043

Table 2.17. Residential development capacity sufficiency for Wellington City, 2017 – 2047.

There will be a **shortfall** of between 4,635 and 12,043 dwellings across the city based on the parameters of the modelling undertaken for this HBA.

Table 2.18 below provides a further breakdown of the base case scenario (Forecast.id) for each housing typology across the short, medium and long term⁽⁵⁴⁾. Capacity over time at a city-wide scale for the first two periods of 2017-2020 and 2020-2027 is based on the historic averages identified in section 4.2 above. For the period 2027-2047, the capacity identified is the overall capacity for that housing type minus the capacity allotted to 2017-2027.

	2017-2020			2020-2027			2027-2047		
	Demand	Capacity	+/-	Demand	Capacity	+/-	Demand	Capacity	+/-
Stand-alone Housing	1,243	906	-337	2,733	2,114	-619	6,791	7,582	791
Terrace Housing	550	687	137	1,209	1,603	394	3,424	2,440	-984
Apartments	140	738	598	2,470	1,722	-748	4,454	1,883	-2,571
Total	1,933	2,331	398	6,412	5,439	-973	14,669	11,905	-2,764

Table 2.18. Demand and capacity comparison by housing type over time. Forecast.id scenario.

53. Existing latent demand has been excluded from these figures.

54. The delineation over time utilises historic consenting averages by house type as outlined in section 4.2. 'Other dwellings' are not included.

In order to apportion capacity over time but split across the 6 catchments utilised for this HBA, the total capacity per catchment for each housing type is divided by the total capacity of that housing type across the city in order to obtain a proportion. That proportion is then used to apportion the city-wide capacity from Table 2.18 above to generate a capacity figure for each housing type, by catchment and over time below.

	2017 -2020			2020-2027			2027-2047		
	Demand	Capacity	+/-	Demand	Capacity	+/-	Demand	Capacity	+/-
North Wellington									
Stand-alone Housing	616	353	-263	1,460	824	-636	3,159	2,955	-204
Terrace Housing	150	125	-25	356	293	-63	772	446	-326
Apartments	0	74	74	0	172	172	0	188	188
Total	766	552	-214	1,816	1,289	-527	3,931	3,589	-342
West Wellington									
Stand-alone Housing	196	202	6	457	471	14	995	1,691	696
Terrace Housing	61	296	235	144	691	547	313	1,052	739
Apartments	0	6	6	0	15	15	0	16	16
Total	257	504	247	601	1,177	576	1,308	2,759	1,451
Inner Wellington									
Stand-alone Housing	143	81	-62	332	190	-142	1,043	680	-363
Terrace Housing	221	65	-156	511	151	-360	1,604	230	-1,374
Apartments	0	176	176	0	412	412	0	450	450
Total	364	322	-42	843	753	-90	2,647	1,360	-1,287
Central Wellington									
Stand-alone Housing	0	11	11	0	26	26	0	93	93
Terrace Housing	0	20	20	0	47	47	0	71	71
Apartments	594	436	-158	2,471	1,018	-1,453	4,452	1,113	-3,339
Total	594	467	-127	2,471	1,091	-1,380	4,452	1,277	-3,175
South Wellington									
Stand-alone Housing	175	103	-72	295	240	-55	454	860	406
Terrace Housing	61	58	-3	102	136	34	158	206	48
Apartments	0	2	2	0	4	4	0	5	5
Total	236	163	-73	397	380	-17	612	1,071	459

	2017 -2020			2020-2027			2027-2047		
	Demand	Capacity	+/-	Demand	Capacity	+/-	Demand	Capacity	+/-
East Wellington									
Stand-alone Housing	113	156	43	188	363	175	1,140	1,303	163
Terrace Housing	58	122	64	95	286	191	578	435	-143
Apartments	0	44	44	0	102	102	0	111	111
Total	171	322	151	283	751	468	1,718	1,849	131

Table 2.19. Demand and capacity comparison by housing type over time and by housing catchment. Forecast.id scenario.

And the same comparison⁽⁵⁵⁾ can be made on the basis of the Statistics NZ high growth projection:

	2017-2020			2020-2027			2027-2047		
	Demand	Capacity	+/-	Demand	Capacity	+/-	Demand	Capacity	+/-
Stand-alone Housing	1,743	906	-837	3,620	2,114	-1,506	9,818	7,582	-2,236
Terrace Housing	786	687	-99	1,628	1,603	-25	4,819	2,440	-2,379
Apartments	633	738	105	2,405	1,722	-683	5,053	1,883	-3,170
Total	3,162	2,331	-831	7,653	5,439	-2,214	19,690	11,905	-7,785

Table 2.20. Demand and capacity comparison by housing type over time.

And again, breaking the Statistics NZ high projection down further by catchment area:

	2017-2020			2020-2027			2027-2047		
	Demand	Capacity	+/-	Demand	Capacity	+/-	Demand	Capacity	+/-
North Wellington									
Stand-alone Housing	720	353	-367	1,637	824	-813	4,041	2,955	-1,086
Terrace Housing	176	125	-51	399	293	-106	986	446	-540
Apartments	0	74	74	0	172	172	0	188	188
Total	896	552	-344	2,036	1,289	-747	5,027	3,589	-1,438
West Wellington									
Stand-alone Housing	363	202	-161	750	471	-279	1,867	1,691	-176
Terrace Housing	114	296	182	236	691	455	588	1,052	464
Apartments	0	6	6	0	15	15	0	16	16
Total	477	504	27	986	1,177	191	2,455	2,759	304

55. Capacity is held the same as that used for the base case Forecast.id scenario, with demand adjusted.

	2017-2020			2020-2027			2027-2047		
	Demand	Capacity	+/-	Demand	Capacity	+/-	Demand	Capacity	+/-
Inner Wellington									
Stand-alone Housing	195	81	-114	422	190	-232	1,361	680	-681
Terrace Housing	300	65	-235	650	151	-499	2,093	230	-1,863
Apartments	0	176	176	0	412	412	0	450	450
Total	495	322	-173	1,072	753	-319	3,454	1,360	-2,094
Central Wellington									
Stand-alone Housing	0	11	11	0	26	26	0	93	93
Terrace Housing	0	20	20	0	47	47	0	71	71
Apartments	633	436	-197	2,405	1,018	-1,387	5,053	1,113	-3,940
Total	633	467	-166	2,405	1,091	-1,314	5,053	1,277	-3,776
South Wellington									
Stand-alone Housing	244	103	-141	428	240	-188	880	860	-20
Terrace Housing	84	58	-26	148	136	-12	304	206	-98
Apartments	0	2	2	0	4	4	0	5	5
Total	328	163	-165	576	380	-196	1,184	1,071	-113
East Wellington									
Stand-alone Housing	220	156	-64	383	363	-20	1,668	1,303	-365
Terrace Housing	112	122	10	195	286	91	847	435	-412
Apartments	0	44	44	0	102	102	0	111	111
Total	332	322	-10	578	751	173	2,515	1,849	-666

Table 2.21. Demand and capacity comparison by housing type over time and by housing catchment. Statistics NZ High Growth scenario.

7.0 Business Demand

Key Findings

- Wellington City will require sufficient land to accommodate a further 238,000 square metres (23 hectares) of business development over the 30 years to 2047.
- Within that land area there is projected to be demand for a further 787,277 square metres (78.7 hectares) of floor space for business activities.
- The main driver for this growth comes from the commercial and government sectors.
- Demand for industrial land is projected to drop as a result of a number of factors ranging from changes in the nature of industrial activity, the impacts of hazards, the availability of transport infrastructure and land prices.

In addition to residential demand and capacity, the NPS requires the Council to undertake a similar exercise for business activities. The Council, along with Hutt City, Upper Hutt City and Kapiti Coast District Council, commissioned economic consultancy Sense Partners to prepare an analysis of business land demand for the purposes of the NPS. The full Sense Partners report is attached as Appendix 1.5.

The demand for business land⁽⁵⁶⁾ over the 30-year period addressed by this HBA for Wellington City is estimated shown in Table 2.22:

	2017-2020	2020-2027	2027-2047	TOTAL
Retail	28,604	8,638	29,414	66,656
Health, Education and Training	6,167	17,845	31,611	55,623
Commercial	11,756	6,230	25,399	43,385
Government	7,661	8,557	20,518	36,736
Industrial	285,051	-191,326	-88,446	5,279
Other	5,490	8,914	16,230	30,634
TOTAL				238,313

Table 2.22. Land area demand (square metres) for business activities, Wellington City Council 2017-2047.

Land area is a two-dimensional measure of space requirements. For the majority of the sectors the more relevant measure is floor area. Office space in nearly all instances involves multi-storey buildings. The same can be said of space for government requirements, and the retail, and health, education and training sectors also often operate in multi-storey environments. Table 2.23 and Figure 2.14 below set out business demand by floor area.

56. Refer to Appendix 1.5 for the full assessment.

	2017-2020	2020-2027	2027-2047	TOTAL
Retail	21,453	6,479	22,060	49,992
Health, Education and Training	12,333	35,691	63,221	111,245
Commercial	58,779	31,149	126,997	216,925
Government	38,308	42,783	102,590	183,681
Industrial	142,526	-95,664	-44,222	2,640
Other	10,979	17,829	32,459	61,268
TOTAL				625,750

Table 2.23. Floor area demand (square metres) for business activities, Wellington City Council 2017-2047.

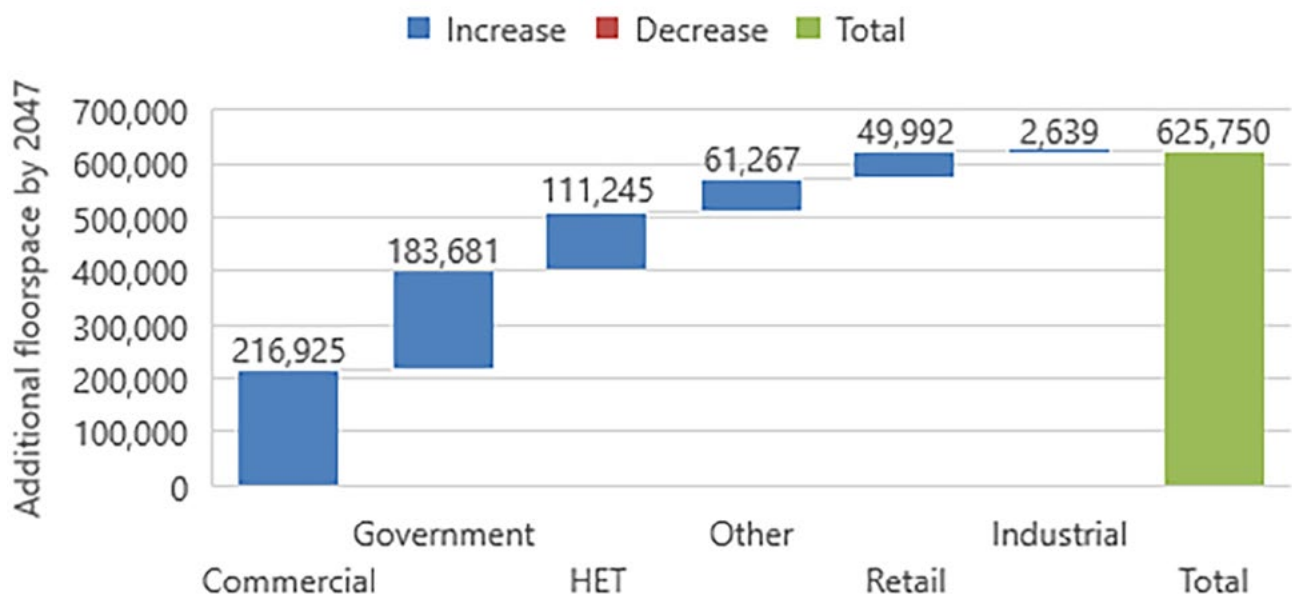


Figure 2.14. Floor area demand by sector. Wellington City. Source: Sense Partners.

As for residential development, Policy PC1 of the NPS requires the demand requirement to be inflated. This produces the following floor area requirement:

	2017-2020	2020-2027	2027-2047	TOTAL
Commercial	70,535	37,379	146,047	253,960
Government	45,970	51,340	117,979	215,288
Retail	25,744	7,775	25,369	58,887
Industrial	171,030	-76,531	-37,589	56,911
Health, Education and Training	14,800	42,829	72,704	130,333
Other	13,175	21,395	37,328	71,898
TOTAL	341,254	84,187	361,837	787,277

Table 2.24. Floor area demand (square metres) inflated, for business activities, Wellington City Council 2017-2047.

The government sector remains a key driver of demand for business land, and along with demand from commercial development represents over half of the anticipated growth in floor area over the 30 years of this HBA. Ongoing growth in the government sector is expected to continue at a rate close to or slightly below the rate of the national economy. This rate will be faster than the growth rate of the region meaning that the government sector will increase in size as a share of the region's employment base.

Under the Sense Partners projection, industrial land demand falls away from 2020 onward, with a loss of demand for industrial floor area and land area projected from 2020-2047. This is a product of a decline in heavier industries and a shift towards services and other less land intensive activities. It is further influenced by land cost with cheaper alternatives available elsewhere, and locational characteristics such as resilience to natural hazards and proximity to transport corridors influencing the distribution of industrial activities.

The retail sector is more uncertain. A growing shift towards online retailing has impacted on some sub-sectors of retail activity, but overall retailing will continue with instore transactions, particularly in key centres. The projections for this assessment show a modest rate of growth in retail floor area.

Growth in the category of Health, Education and Training is also modest in land area terms, with a larger amount of floor area growth reflective of the nature of these industries. This is the same for the general catch-all 'Other' category.

Overall Wellington City should expect continued growth in business land and floorspace requirements, with the greatest uncertainty surrounding the industrial sector which is undergoing a period of transition.

8.0 Business Capacity

Key Findings

- Wellington City has a number of business areas that cater for a range of activities, often with elements of mixed-use residential development.
- The main source of capacity is the CBD with over 3 million square metres of floor area available under the redevelopment calculation utilised for this modelling.
- The assessment has identified a lack of true land vacancy across the existing business areas of the city. However, the Lincolnshire Farm business area is still to be developed offering the city significant vacant space for business growth.

The approach to understanding business capacity has been detailed in the covering regional report. By way of summary, a GIS model was developed that allowed the capacity of the business areas of the city⁽⁵⁷⁾ to be understood – both in terms of infill development, redevelopment, and development of any currently vacant sites. In the same vein as residential, this modelling was based on District Plan standards. As discussed in the following chapter, a similar level of economic analysis as undertaken for residential development was not suitable for business land. This is due to the particular economics underlying business development being different across varying types of business development. A full methodology is attached as Appendix 1.7.

57. Small neighborhood centres were excluded from the analysis.

The following areas of business land were assessed:

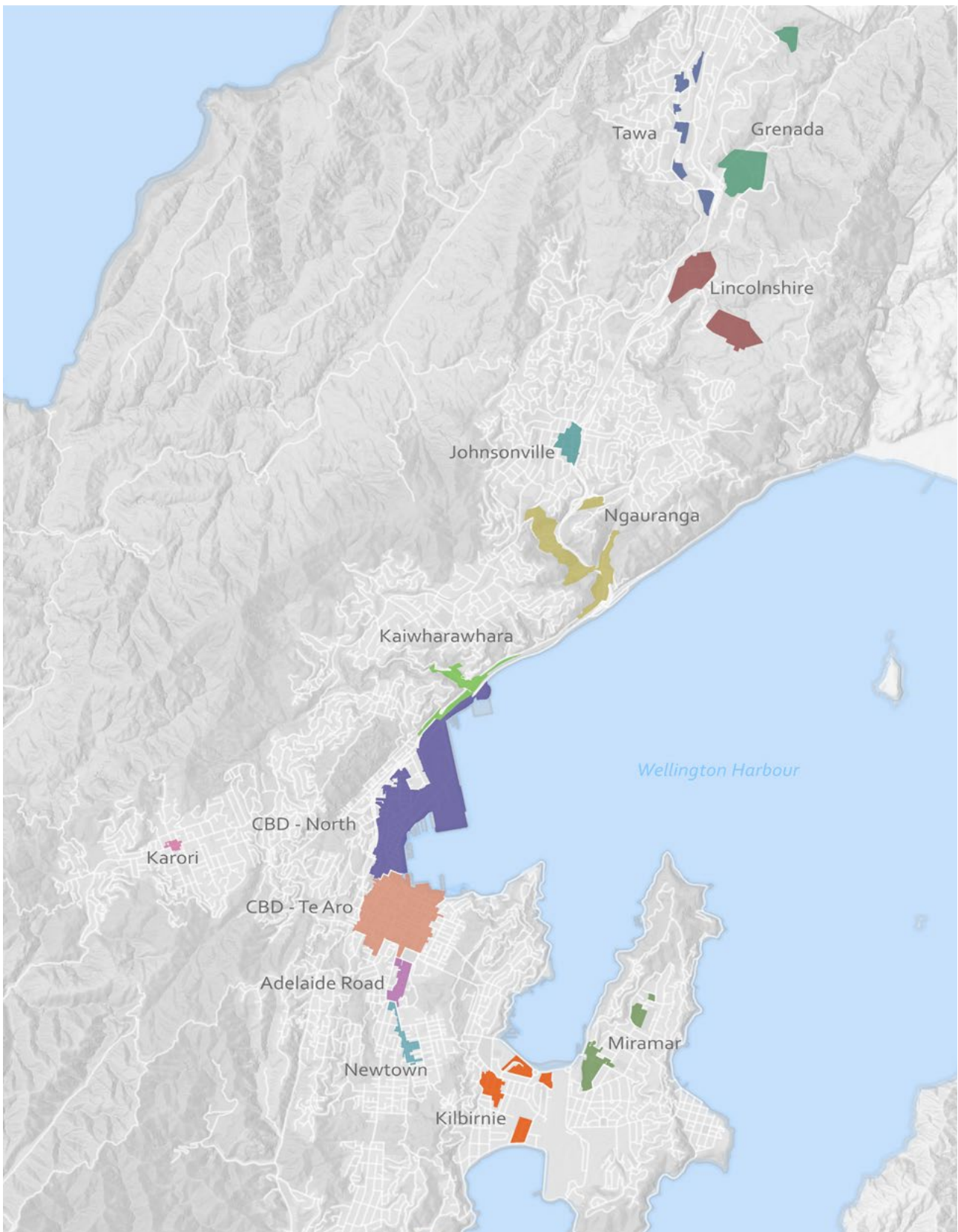


Figure 2.15. Wellington City Business Areas. Source: Wellington City Council.

Some of these areas of business zoned land also allow for residential development. Therefore, there is a crossover between the modelling undertaken for business capacity, and the modelling undertaken for residential capacity. This has been addressed by applying a proportion to determine the residential share of a development compared to its business share. This is detailed in the modelling methodology attached as Appendix 1.3. This method avoids any potential double counting of floor space in areas of multi-storey mixed-use development.

8.1 Capacity Assessment

Modelling results show the following business capacity:

Business Area	Existing Floorspace ⁽⁵⁸⁾	Redevelopment ⁽⁵⁹⁾ Floorspace	Infill Floorspace ⁽⁶⁰⁾
Grenada North	108,523	149,492	67,911
Johnsonville	68,850	214,412	-
Kaiwharawhara	89,421	248,811	55,050
CBD - North	1,166,689	1,410,136	-
CBD - Te Aro	509,122	1,656,209	-
Karori	12,998	96,897	-
Kilbirnie	172,592	455,249	19,747
Miramar	109,695	352,370	35,412
Newtown	77,938	132,951	406
Adelaide Road	97,557	133,217	-
Ngauranga	134,040	252,439	133,458
Owhiro Bay	7,402	22,660	16,206
Tawa	66,522	366,327	123,940
Lincolnshire Farm	2,962	826,744	822,489
Total	2,624,311	6,317,913	1,274,619

Table 2.25. Business floorspace capacity (square metres), Wellington City. Source: WCC.

58. Existing floorspace is taken from the Councils rating database. In mixed-use areas it is not presently possible to differentiate between residential and business use so an existing floor area is not reported.

59. Redevelopment floorspace is the measure of floorspace available if an existing dwelling on a site was demolished and the site was redeveloped to the maximum extent permissible under the District Plan.

60. Infill floorspace is a measure of the ability to undertake infill development on a given site. Infill capacity is not reported in some instances due to limitations with the modelling methodology. Further refinement will occur in future HBA's.

The assessment also examined the availability of entirely vacant sites. Vacancy was assessed firstly based on data sourced through the Council's rating database (by comparing capital value and land value), then comparing that data with aerial photography, and lastly by undertaking site visits where necessary.

There are few truly vacant sites available in the existing urban areas of Wellington City. The assessment identified 41 vacant sites totalling 102,705m². In addition, there are 6 vacant sites in the Lincolnshire Farm area that total an additional 690,268m² of potential developable floorspace. Besides the redevelopment opportunities in the CBD, this is the single largest business floorspace opportunity in Wellington.

In addition to the vacant sites in existing business areas, one area of 'greenfield' business land exists at Lincolnshire Farm.

9.0 Business Feasibility and Sufficiency

Key Findings

- Wellington City has significant District Plan enabled business land capacity, particularly within its CBD, that will be sufficient to accommodate projected growth in business floorspace demand.
- Of the business areas assessed as part of this HBA, all are considered to be feasible for future business development.
- The city should expect to plan for 625,750m² of new business floor space use by 2047.
- The city has plan enabled capacity of 1,274,619m² of infill capacity, and 6,317,913m² of redevelopment capacity.
- Vacant sites provide for 102,705m² and future greenfield supply at Lincolnshire Farm provides for 690,268m².

Akin to the approach adopted for residential development, it is necessary to consider the feasibility of the business development capacity identified in the previous section.

As noted elsewhere, assessing the feasibility of business development is different to the approach adopted for residential. This is because the feasibility of residential development can be undertaken in a generic manner based on a range of certain financial inputs. Business development is much more nuanced, given the range of buildings, locations and tenures that are involved in business development.

To overcome this, rather than assessing the feasibility of business development in dollar terms, an assessment of the same areas that were modelled above has been undertaken using a Multi Criteria Analysis (MCA). The methodology and results are attached as Appendix 1.6.

9.1 Multi Criteria Analysis - Feasibility

As part of the analysis, each of the business areas considered as part of this HBA was assessed against the following 14 criteria on a 0-5 scoring range:

- Proximity to major roading corridors
- Access to rail routes
- Access to the airport
- Access to the seaport
- Public transport accessibility
- Parking availability and accessibility
- Access to labour
- Access to markets/consumers
- Resilience to hazards
- Supporting businesses/services in the area
- Land and property cost
- Developability/functionality
- Separation from more sensitive activities
- Community impact

The scoring was undertaken by a panel comprising both Council staff and external industry experts.

Area	Predominant Use	MCA Score	Infill Capacity	Redevelopment Capacity
Kaiwharawhara	Industrial/Retail	63/70	55,050	248,811
Johnsonville	Retail/Commercial	56/70	-	214,412
CBD - North	Commercial/Retail	55/70	-	1,410,136
Grenada North	Industrial	54/70	67,911	149,492
CBD - Te Aro	Commercial/Retail	53/70	-	1,656,209
Kilbirnie	Retail/Industrial	53/70	19,747	455,249
Adelaide Road	Commercial	48/70	-	133,217
Tawa	Commercial	48/70	123,940	366,327
Ngauranga	Industrial	47/70	133,458	252,439
Miramar	Neighbourhood Centre/Industrial	46/70	35,412	352,370
Lincolnshire Farm	Industrial	39/70	822,489	826,744
Newtown	Retail/Commercial	38/70	406	132,951

Table 2.26. Business area development capacity (square metres) and Multi Criteria Analysis scoring. Source: Wellington City Council.

All of the business areas considered achieve a score of greater than 50% of the maximum in the MCA. Kaiwharawhara is the highest performing area at 90% and Newtown the lowest scoring at 54%. A full breakdown of each areas scoring against each criterion is attached as Appendix 1.6.

Kaiwharawhara is an area of established light industrial and large format retail which scores highly across all but one category (resilience to hazards) given its location and suitability to its use. It maintains some capacity for infill development but given that there are a number of yard-based activities, as well as large format retail which utilises some site area for car parking, it can be concluded that infill capacity in the area is likely to be negligible.

The CBD was divided into two halves for the purpose of this assessment to account for the slight variation in use and character between Te Aro, and the northern CBD. Both however have been scored very similarly reflecting the importance of the CBD to the city, and indeed the region, as the key centre for employment. Both areas have significant redevelopment capacity, and very little in the way of vacant sites that are not otherwise used (e.g. car parking) or are in the process of redevelopment.

In terms of industrial land, Grenada North is the highest scoring area. It is located in close proximity to transport (State Highway 1) and scores highly against a range of criteria relevant to industry. Whilst it has been identified to have some 67,000m² of infill capacity, given the need for some yard-based activity and truck circulation, in practice there is likely little capacity left in this area.

The other main area of industrial land, and to a lesser degree some large format retail, is at Ngauranga. There are a number of heavier industrial uses in this area. Infill potential is again significant at 133,000m² however this is again deceptive given the nature of uses in the area and the yard-based requirements of some. It is noted that in the long term, additional industrial land will become available here at the conclusion of quarrying activities at Kiwi Point Quarry.

Overall, all of the identified areas assessed for their capacity are likely to be feasible for business development. That feasibility and therefore the attractiveness of an area for a given development will still be subject to a site specific assessment relevant to the business use that is proposed to be established.

Whilst an MCA assessment may indicate that an area is highly feasible, it may not be feasible to establish an activity if there isn't a suitable site for that activity. What the MCA can indicate at a broader level is that an area is or isn't attractive to business use as compared to other areas.

9.2 Sufficiency

Having established the demand for business land and floorspace, that demand can then be contrasted with the available capacity identified in the preceding section.

Demand for floor area was set out in Section 6.0 as follows:

	2017-2020	2020-2027	2027-2047	TOTAL
Retail	21,453	6,479	22,060	49,992
Health, Education and Training	12,333	35,691	63,221	111,245
Commercial	58,779	31,149	126,997	216,925
Government	38,308	42,783	102,590	183,681
Industrial	142,526	-95,664	-44,222	2,640
Other	10,979	17,829	32,459	61,268
TOTAL				625,750

Table 2.27. Business floor area demand by sector (square metres). Source: Sense Partners.

On the supply side, the following infill and redevelopment capacity is available:

Business Area	Infill Floorspace ⁽⁶¹⁾ (m ²)	Redevelopment ⁽⁶²⁾ Floorspace (m ²)
Grenada North	67,911	149,492
Johnsonville	-	214,412
Kaiwharawhara	55,050	248,811
CBD - North	-	1,410,136
CBD - Te Aro	-	1,656,209
Karori	-	96,897
Kilbirnie	19,747	455,249
Miramar	35,412	352,370
Newtown	406	132,951
Adelaide Road	-	133,217
Ngauranga	133,458	252,439
Owhiro Bay	16,206	22,660
Tawa	123,940	366,327
Lincolnshire Farm	822,489	826,744
Total	1,274,619	6,317,913

Table 2.28. Infill and redevelopment capacity for business land (square metres), by business area. Source: Wellington City Council.

Against a projected demand of 625,750m² over the next 30 years, the District Plan enables infill capacity of over 1,200,000m², and over 6,300,000m² in redevelopment capacity, of which over 3,000,000m² is located within the CBD where the greatest demand exists. A significant portion of this capacity also exists in the undeveloped land at Lincolnshire Farm, meaning further exploration of the detail figures in certain areas is likely to be necessary at time of further planning.

Growth in the commercial and government sector can therefore readily be accommodated via redevelopment over the 30 year timeframe of this HBA. It is unlikely that demand for this type of space will exist in the other business areas

assessed, and given the lack of infill space as understood by the Council, redevelopment will be required.

The CBD is also a significant supplier of retail space. Given the relatively minimal growth in this sector, it is considered that there is sufficient capacity to meet anticipated growth.

Health, education and training is a sector where demand can be accommodated in commercial space, or institutional sites such as schools, hospitals and universities. It is considered that across the various areas, there is sufficient capacity to accommodate expected requirements, in addition to demand that will go to institutional sites.

61. Infill floorspace is a measure of the ability to undertake infill development on a given site. Infill capacity is not reported in some instances due to limitations with the modelling methodology. Further refinement will occur in future HBA's.

62. Redevelopment floorspace is the measure of floorspace available if an existing dwelling on a site was demolished and the site was redeveloped to the maximum extent permissible under the District Plan.

In respect of industrial land it is noted that the projections anticipate a significant reduction in demand. Even if this was not to occur, or to occur at a lesser scale, there does not appear to be significant demand for industrial land in Wellington City. Accordingly, it is considered that what industrial land is available is sufficient.

There are some limitations to this sufficiency assessment in respect of business land:

- In terms of the take-up of business capacity, this HBA has not attempted to quantify take-up over time. This is due to the varied nature of business development where it cannot be predicted with any certainty.
- The demand assessment has been undertaken on a city-wide scale, and has not been assessed on the basis of the sub-city scale business areas used to assess demand. Therefore, demand and capacity cannot be compared at a sub-city level.
- The assessment has not considered institutional sites (schools, universities, hospitals etc.) to determine the development capacity of those sites. That has an implication on meeting demand requirements from the health, education and training sector.
- Whilst redevelopment capacity is significant, it should not be counted in its entirety. The nature of redevelopment is that existing buildings are often demolished, converted, or added to as demand requires and economics allow for.

Overall however, it is the conclusion of this assessment that Wellington City has sufficient development capacity enabled by its District Plan to accommodate expected growth in business uses over the short, medium and long term timeframes considered by this HBA.

10.0 Infrastructure

Key Findings

- There are no significant issues that would have an **immediate** impact on development capacity.
- There are constraints across the three waters network that will impact on development capacity without intervention. These constraints vary in their scale and location.
- The three waters network is ageing in parts and some issues, such as water penetration into the wastewater network, are in part caused by the age of the network.
- Transport infrastructure is generally fit for purpose currently but increasingly there are strains on the network, and peak time congestion is problematic.
- The city has an extensive open space network but a finer grained analysis is required to adequately determine where increased investment is required, aligning with growth areas.

The NPS requires that the Council considers the availability of infrastructure in its assessment of capacity. Development capacity must be either:

- serviced with infrastructure in the short term;
- serviced with infrastructure or funding for that infrastructure must be identified in the Council's Long Term Plan; and
- in the long term infrastructure requirements must be identified in the Council's infrastructure strategy.

Infrastructure is broadly defined by the NPS as either Development Infrastructure or Other Infrastructure. Development infrastructure refers to three waters⁽⁶³⁾ infrastructure and roading infrastructure including state highways. Other infrastructure refers to a broader range of infrastructure including open space, social infrastructure, public transport and community infrastructure.

A summary of the infrastructure investigations undertaken for this HBA is set out below. The full assessments are attached as appendices to this report.

10.1 Three Waters

Wellington Water has undertaken an assessment of the three waters infrastructure for the city. The full assessment is attached as Appendix 2.2. That report should be read alongside this summary to fully understand the modelling methodology, assumptions, levels of service, and further commentary on mitigation measures.

The assessment shows that Wellington city's water infrastructure is at capacity in some areas and that there are constraints on the network in others.

At present, water supply will be inadequate to accommodate the projected population growth in three quarters of the city's water supply catchments to the expected levels of service. This will be due to either inadequate pressure, insufficient storage or both. This does not mean however that water supply in these areas is inadequate in its entirety, but that it will be inadequate to meet expected levels of service without further intervention. By way of example, the Brooklyn water storage area does not meet storage requirements in the short term. A planned intervention by way of additional storage will alleviate this issue in the medium and long term. Conversely, some areas meet requirements currently but modelling shows that they will no longer meet requirements over the duration of this HBA as growth occurs. In these instances there are no interventions currently planned, however it does not mean that further investment cannot overcome these projected shortfalls.

Wastewater will be a limitation for growth in the majority of catchments in the medium term. It would not enable growth over the long term across all catchments. As noted by Wellington Water, "modelling indicates that sewer pipes in the hills surrounding the harbours typically have sufficient capacity and are unlikely to be stressed by further intensification." Rather, the limitations are caused by insufficient capacities in pumping stations and undersized main trunk diameters. This is exacerbated by rainwater inflow and the infiltration of ground water, often resulting from ageing private wastewater laterals that connect into the network from private properties. This results in additional loading on the system and can lead to overflows of untreated wastewater in certain areas of the city.

63. Three waters infrastructure refers to water, wastewater and stormwater.

The stormwater network is designed to carry away water from small to medium sized rainfall events. Therefore, the onus is to manage flooding events that are greater in size by way of land use controls. Some areas of the city are more prone to flooding from stormwater already. For instance, the Wellington Water assessment notes⁽⁶⁴⁾ that large areas of the stormwater network in Karori do not have capacity to convey water from a 10 year rainfall event.

The results are presented in a binary sense – yes a given catchment has sufficient capacity for water, wastewater or stormwater; or no, the catchment does not have sufficient capacity. This highlights the nature of this assessment as one that happens at a given point in time. In practice, such matters are not as absolute. Without any investment, mitigation or other intervention, a given catchment will at some point reach capacity. But these investments are ongoing, whether by the Council through renewal and replacement programmes, developers as part of development proposals, or by other mitigation measures and network management relating to site specific development proposals. For consistency, where a mitigation action may be required, the assessment has assessed the area as not having capacity. In other words, it is a conservative assessment.

Notwithstanding the conservative nature of the assessment, overall the results do highlight that the three waters networks will not be sufficient to accommodate expected growth without ongoing interventions and investment, and highlights the ageing nature of some parts of the network and the effects this has on capacity.

10.2 Local Road Network

The capacity of Wellington's local road network has been assessed internally by Council staff. The full report can be found at Appendix 2.3.

The state of Wellington's transport infrastructure is in good condition overall. That infrastructure is presently providing an adequate level of service; however, levels of service are under pressure from increasing population growth. Some of these pressures can be addressed by way of ongoing investment in

maintenance, renewal and upgrading of existing assets. Longer term growth however will require more transformational investment and the Let's Get Wellington Moving project is the vehicle to address these longer term transport issues.

The performance of the network is monitored on an ongoing basis, whether that is the condition of the infrastructure, road safety or travel time monitoring.

A key measure of the performance of the transport network is that of travel times. Average trip times for pedestrian and car trips remained constant over the period 2004/2005 – 2016/2017. Public transport trips over that time have increased slightly. Travel speeds on average have also remained constant over the same period of time.

Morning peak travel times are monitored on four key routes into the central city. Peak travel times from Karori have increased since 2002; they have decreased from Miramar over the same period, and have stayed constant from Johnsonville and Island Bay.

Choices of travel modes are also changing. Trends show a decrease in the percentage of people driving and carpooling to work, with a significant increase in the percentage of people cycling and walking. Public transport has seen a slight percentage increase. These trends are also consistent with growth occurring within the central city, and surrounding inner residential areas.

Due to Wellington's topography, options for increasing capacity are often limited by corridor constraints. These key corridors are often those that are most congested and need to accommodate a range of transport modes. The Council's approach it to maximise the efficiency of these existing corridors by reallocating space away from relatively inefficient general traffic and parking lanes to higher capacity transit modes. Moving more people by public transport, walking, and cycling, will allow the Council to move more people through constrained road corridors.

Overall the current state of the network provides a suitable level of service. However, anticipated growth both within the city and regionally will, without any intervention, put increased

64. See Appendix 2.2.

pressure on the network that will lead to levels of service falling below acceptable levels, both for the local road network and the state highway network.

10.3 State Highway Network

NZTA have provided an assessment of the State Highway network. This is attached as Appendix 1.8.

By its nature the assessment largely paints a regional picture. It does however highlight that Wellington City is the major regional employment centre and that this role leads to significant traffic flows into and out of the city at peak times. This leads to congestion on the road network particularly from Ngauranga Gorge, through the Wellington CBD and to the airport.

The impact of that internally within the city is for greater congestion and peak time travel delays. This is evidenced in various areas of the city with a key congestion point being around the Basin Reserve where east-west traffic along SH1 to the airport and eastern suburbs intersects with north-south traffic. Bus services are also impacted in these areas with only partial dedicated bus lanes and some priority signalling.

As noted previously, the Let's Get Wellington Moving project will seek to address these issues through an integrated programme of road and public transport investment. Early improvements from that programme may commence before 2020 with more significant projects commencing thereafter.

10.4 Public Transport

A public transport assessment has been provided by Greater Wellington Regional Council, and is provided in full at Appendix 1.9.

Public transport is important in providing an ability to move large numbers of people along key corridors which often have constrained capacity. It has beneficial effects through reducing overall congestion and providing a further travel option for people.

Public transport within Wellington City is almost entirely serviced by a bus network, with the sole railway line that provides a commuter service being the Johnsonville line serving Johnsonville along with Crofton Downs, Ngaio and

Khandallah. Wellington is however a significant receiver of rail passengers with Wellington Railway Station being the terminus for all lines entering the city.

Bus capacity is however reaching capacity limits in certain parts of the city, often along key corridors. Options to increase that capacity are limited by well-known constraints in Wellington, often borne of topography. Therefore options to improve this situation need to focus on investment in infrastructure such as mass transit options and increased bus priority.

There are some constraints on the network. Wellington City is particularly constrained in the ability to provide for additional capacity given the narrow nature of some corridors and the mixing of public transport with other traffic along these routes.

Again, the current Let's Get Wellington Moving project is the vehicle through which this investigation and investment is occurring. The project will agree a set of system improvements from Ngauranga to the airport, including connections to the hospital, southern and eastern suburbs.

10.5 Education

The Ministry of Education has provided an assessment of school rolls and capacity for the region. This is attached as Appendix 1.11.

Current school capacity varies across the city. By way of summary:

Wellington Central and South	<p>17 primary schools are located within this catchment. Four of these are state-integrated and have capacity for some 250 students. The remaining 13 state schools are at or over capacity.</p> <p>The Ministry has identified this catchment as a priority area for investment over the next 10 years.</p> <p>There are four secondary schools in this catchment, one of which is state integrated. The three state schools secondary schools are at or over capacity. Each operates an enrolment scheme.</p>
Wellington West	<p>There is capacity for 182 students across the 11 public schools in this catchment, and 384 places in the three state integrated primary schools.</p> <p>There are no secondary schools in western Wellington with students being zoned for secondary schools in the Wellington Central and South catchment.</p>
Wellington East	<p>Eastern Wellington has the greatest latent capacity for school roll growth.</p> <p>There is space for some 400 students in the state primary schools in this area, along with space for 300 students in the state-integrated primary schools.</p> <p>There are four single sex secondary schools, two of which are state-integrated. The two state schools have capacity for some 150 students, while the state-integrated secondary schools have space for some 100 students.</p>
Wellington North	<p>Capacity exists in this catchment for 475 students across the 18 state primary schools. The two state-integrated primaries have capacity for approximately 50 students.</p> <p>There are three state secondary schools in this area. All are at or above capacity, albeit that one takes over 500 students from Porirua city.</p>

It is noted that the assessment provided outlines the capacity of schools in their current state. No assessment is made of the ability of these schools to increase their capacity.

10.6 Open Space and Recreation

An analysis of the city's open space and recreation network is detailed in Appendix 2.4. An assessment of regional open space provision is attached as Appendix 1.10.

The Council provides an extensive parks and open space network across the city with a network of over 4200 hectares of reserves and over 365km of tracks.

The Council currently has a target of ensuring that open spaces (a neighbourhood park, play space or other outdoor opportunity) are located within 600 metres or 10 minutes walk of people. An analysis of that target against urban residential areas shows that 73% of the areas meet this target.

The above assessment is coarse and does not measure, for instance, the quality or size of the open space relative to the area it services. Therefore a small neighbourhood park may be servicing an area of high density, and cannot be reasonably said to be providing an adequate open space function. This is an area of further refinement for the council in how it measures the success of its open space provision.

Wellington City provides 18.8 hectares of open space per 1000 people. This exceeds the national median of 17.3 hectares. However, in terms of actively maintained parks, Wellington only provides 2 hectares per 1000 people compared to 8.8 hectares nationally, and 1.1 hectares of sports fields compared to a national median of 2.3 hectares.

Despite the large overall provision of open space, further analysis reveals that large portions of open space are hillsides and gullies that while important for landscape and ecological reasons, have limited utility for recreation purposes. This is reflective of the geographical characteristics of the city.

A further issue is the quantity and quality of flat useable open space for recreation. As noted in the appended assessment "[w]hile the Outer Green Belt and the Wellington Town Belt provide a good foundation, the network of sports fields, community parks and neighbourhood parks is compromised by the quantity and quality of many of those spaces."

As further growth occurs in existing urban areas either new parks will be required, or investment will be required in existing parks to improve their quality and function. Particular attention will need to be paid to the central area of the city given the population growth to date in this area, and the anticipated growth that will occur in the future, the Council plans for such investment in parallel with other planning initiatives such as the current review of the Urban Growth Plan, or budgeting for capital projects occurs through Long Term Plan and Annual Plan processes. Additionally, new housing areas resulting from greenfield developments are required to provide open space as part of their development.

The Council also provides a range of recreational facilities across the city ranging from swimming pools, sports fields, recreation centres and multi-use facilities such as the ASB Sport Centre. There are a wide range of demands on recreational facilities, and the nature of this demand changes. Older facilities can also be difficult to re-purpose for changing demands. The assessment notes that there is currently underway the development of a regional strategy addressing sport and active recreation. This will provide an opportunity for the Council to consider its requirements at a local level.

11.0 Conclusion

This HBA has shown that:

Residential

- Wellington City has a theoretical District Plan enabled residential capacity of 106,411 dwellings.
- Once tested for feasibility, the feasible residential capacity falls to 27,954 dwellings.
- And applying a realisation test suggests that of that feasible capacity, only 20,294 dwellings will likely be realised over the next 30 years based on today's costs and sales values.
- Contrasting that supply with the anticipated demand over the same time leads to an anticipated shortfall of between 4,635 and 12,043 dwellings over the course of the next 30 years.
- Additionally, it is estimated that the city has an estimated existing latent demand of 4,652 dwellings as of December 2016.
- The city has experienced significant price increases in both house and rental costs. Such rises have significant effects on a range of sections of the community.

Business

- Demand for business capacity will come primarily from the commercial and government sectors.
- Demand for industrial capacity will fall away over the long term due to a range of factors including the availability of cheaper land elsewhere, resilience issues, and a general movement away from heavier industrial uses, and lower land prices in more regional locations.
- The city can meet demand requirements from existing business areas, however the HBA has identified a general shortage of vacant and greenfield land supply, which could negatively impact on the ability of the city to attract new business ventures that are land intensive.

Infrastructure

- Wellington has a number of constraints across its three waters network that, without intervention, will have a detrimental effect on the ability to realise the development capacity available to the city.
- Constraints vary in scale and severity across the network, and across the different types of water reticulation.
- Roading infrastructure requires additional investment to keep pace with population growth and maintain appropriate levels of service.
- The Lets Get Wellington Moving project is a substantial long-term initiative that will have significant impacts on the city, and will provide additional opportunities to leverage development opportunities and support greater public transport initiatives.
- Other community infrastructure is largely considered to be sufficient, with further work ongoing around the continued planning for open space delivery in the city.

Overall this HBA has identified that the Council needs to provide for additional residential development capacity to meet projected population growth. The timing of this HBA is helpful in informing a recently commenced review of the Wellington Urban Growth Plan and subsequent review of the Wellington City District Plan. It is changes to those documents that can meaningfully address the Council's requirements under the NPS to provide for sufficient development capacity.

12.0 Next Actions

The NPS requires the Council to prepare an HBA every 3 years. In between the preparation of the next HBA, the Council will continue to monitor a range of indicators relating to the Wellington property market.

As noted above, a recently commenced project for the Council is the review of its current Urban Growth Plan, leading to a full review of the Wellington City District Plan. The Council aims to notify a proposed District Plan for public submissions in late 2021 to early 2022.

Once notified, the completion of the District Plan will take a number of years. Therefore, it is likely that not only will the Council prepare a second HBA in advance of notifying the proposed District Plan, but that a third HBA will be prepared during the course of the statutory process of developing the next District Plan.

An optional facet of the NPS is the preparation of a Future Development Strategy⁽⁶⁵⁾. The Council is in effect preparing such a strategy in updating its Urban Growth Plan. The Council will continue to work with its neighbouring Councils on matters of common interest. This is particularly important given the regional nature of the property market in Wellington.

65. Policies PC12-PC14 of the National Policy Statement.

