Housing and Business Development Capacity Assessment

Acknowledgements

The following are acknowledged for their contribution to the preparation of this report:

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Hutt City Council – Joseph Jeffries

Porirua City Council – Alisha Karan and Stewart McKenzie

Kapiti Coast District Council – Hamish McGillivray

Upper Hutt City Council – Ike Kleynbos, Connor Spence, and Liezel Jahnke

Along with key contributions from

Wellington Water

Property Economics

MRCagney

Sense Partners and

Eagle Technology

ISBN: 978-0-947521-14-1

CSWCCJ007753

Contents

Executive Summary

This Housing and Business Development Capacity Assessment has been prepared to meet the requirements of the National Policy Statement on Urban Development Capacity, and to assess the ability of the Councils to meet those demand requirements.

The assessment has been undertaken cooperatively by Wellington City Council, Hutt City Council, Upper Hutt City Council, Porirua City Council and Kapiti Coast District Council.

Residential

Population projections indicate that the collective population of the Councils will increase by between 90,314 and 137,757 people between 2017 and 2047. To accommodate that population growth, an additional 49,292 to 61,233 new dwellings will be required.

The development capacity of the Councils has been modelled using GIS modelling tools and drawing on a range of inputs from District Plan provisions, to construction costs, land values and sales values. This has enabled the modelling to determine the likely feasibility of the development capacity provided for by District Plans.

That modelling suggests that collectively the Councils have a realisable development capacity for 39,875 new dwellings.

Accordingly, a comparison of demand and modelled capacity suggests that the Councils will have sufficient capacity to meet projected demand in the short and medium term, but that that capacity will be insufficient in the long term. A shortfall of between 9,417 and 21,358 dwellings is projected.

Business

The Councils commissioned business demand assessments from Sense Partners and Property Economics. Those assessments project a future business land demand over the 2017-2047 period of 1,340,472 square metres of new floor area across all business sectors.

The capacity to meet that demand requirement was assessed in a similar manner to residential capacity. However, given the nature of business activities, the capacity assessment has considered capacity in three forms – currently vacant sites, infilling of existing sites, and redevelopment. All three forms of capacity are valid, and capacity will not be sourced from a single source but rather all three.

Capacity from those three sources is significant. The Council's have a collective capacity of over 1.8 million square metres of floorspace available on sites that are currently zoned and vacant. A further 3.89 million square metres is available through infill development and redevelopment of existing areas could provide for an additional maximum of 15 million square metres. To replace an economic feasibility study, the Councils undertook a Multi-Criteria Assessment process to help provide more understanding to these figures. This is explained further below and in the subsequent chapters.

It is accordingly concluded that the Councils have sufficient capacity to meet projected demand for business land over the study period.

Infrastructure

An investigation of the sufficiency of infrastructure has shown that there are pressures and constraints across the three waters networks of each Council. This HBA has not been able to quantify the impacts of those constraints on development capacity and future iterations of this report will look to improve this level of assessment.

Those constraints vary in their scale and significance. The causes also vary between the water, wastewater and stormwater networks. For instance capacity constraints in the wastewater network are often caused by stormwater infiltration, but may also be caused by capacity constraints in pump stations. Water network constraints may be caused by storage shortages, or insufficient pressure to meet expected levels of service.

In all, the assessment has found that there are a number of constraints on development capacity from the three waters network. This assessment has highlighted the need for ongoing investment in the renewal and upgrading of infrastructure in order to ensure that development capacity is not adversely affected by infrastructure constraints.

The other area of concern identified by this assessment is that of transport infrastructure. This relates in varying degrees to local networks, the state highway network and public transport. A number of initiatives such as Let's Get Wellington Moving, along with existing ongoing investment, are seeking to address these issues. Again, the assessment has not considered these to be sufficiently significant to impact on development capacity.

An assessment of other infrastructure concludes that overall it is sufficient to meet expected demand on it, subject to ongoing investment in line with normal capital expenditure programmes.

Next steps

The specific next steps for each Council following this assessment are included in the relevant chapters of this report. The Councils in the Wellington Region are undertaking further cooperative planning approaches, as well as most Councils being directly engaged in either District Plan reviews, District Plan changes, or stages of updating development strategies. Additionally, the Councils have identified process improvements relevant to the preparation of this HBA that include issues with data availability and quality. These will be resolved in subsequent assessments.

1.0 Introduction

1.1 What is this document?

This Housing and Business Development Capacity Assessment (HBA) has been prepared to meet the requirements of the National Policy Statement on Urban Development Capacity (NPS).

Introduced in 2016, the NPS seeks to recognise the national significance of urban environments, and to ensure that

Councils are providing sufficient development capacity in their districts to meet growth requirements over the short, medium and long term[1].

This is the first HBA prepared for the Wellington region. It covers the jurisdictions of Wellington City Council, Porirua City Council, Kapiti Coast District Council, Upper Hutt City Council and Hutt City Council ("the Councils").

1. Short, medium and long term refers to 3, 10 and 30 year timeframes.

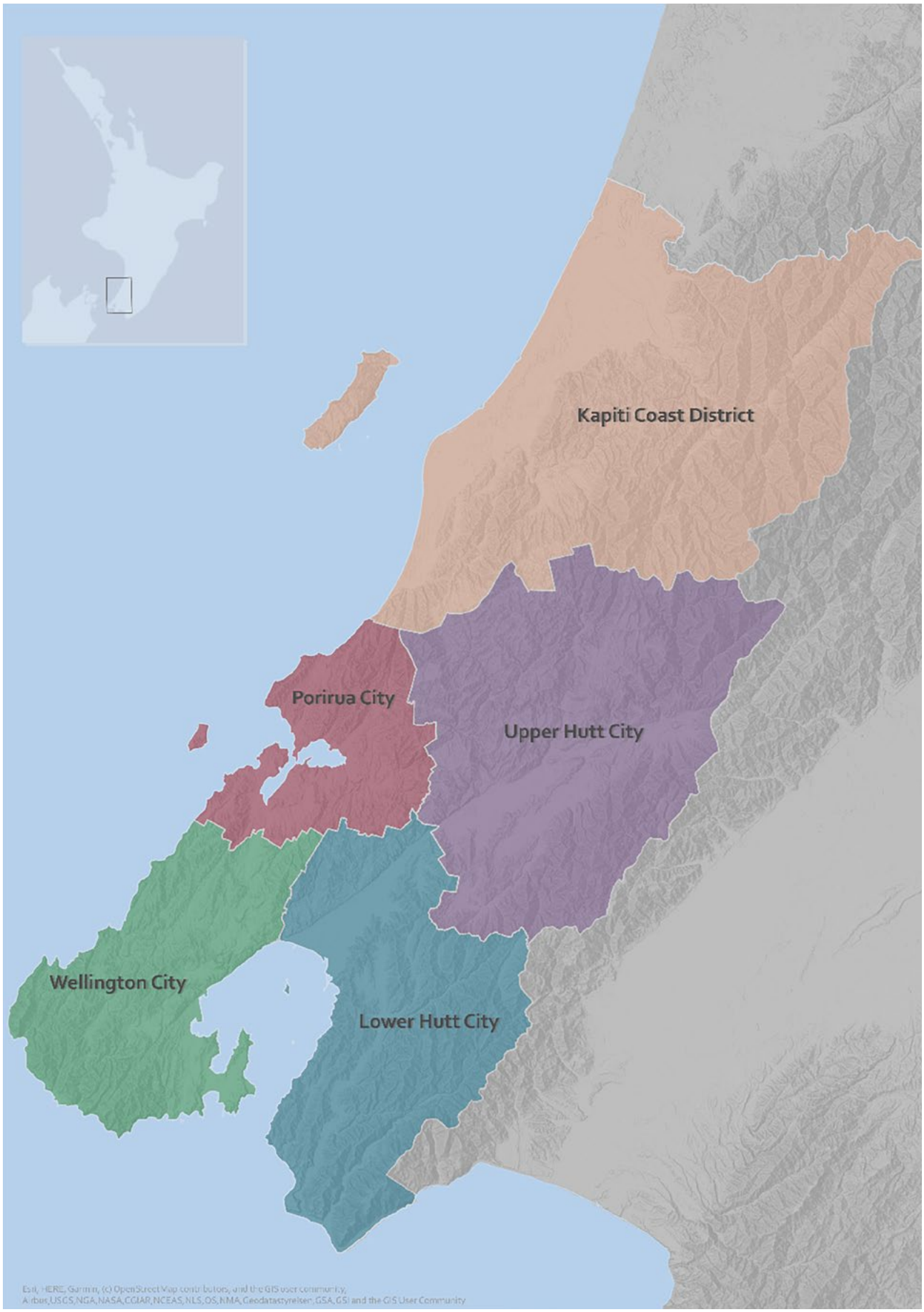


Figure 1.1. The participating Councils.

1.2 Statutory Context - what does the NPS require?

The region is growing. And that growth puts pressure on the development capacity that is available to accommodate it. But the Councils cannot effectively plan for that growth if they do not know how much development capacity they have, what pressure is being put on it, over what timeframe, and in what areas. It is these questions that this report seeks to answer. This is important as a shortage of development capacity is likely to put upwards pressure on house prices as people compete for limited development opportunities or limited housing stock.

The requirements of the NPS depend on whether a given Council is classified as a low, medium or high growth area[2]. A high growth Council has additional requirements over a medium growth Council, and a medium growth Council has additional requirements over a low growth Council. The Councils party to this report are all currently classified as medium growth areas.

The preparation of this HBA is the principal requirement of the NPS for medium growth Councils. The HBA is used to assess the development capacity of a district and must be prepared at least every three years. More specifically, this assessment must:

- Estimate demand for dwellings (of differing types, in various locations and at various price points) and the supply of dwellings to meet that demand over the short, medium and long terms.
- Estimate demand for different types and locations for business land and floor area, and the supply of development capacity to meet that demand over the short, medium and long term.

The requirements of the NPS are demonstrated in Figure 1.2 below.

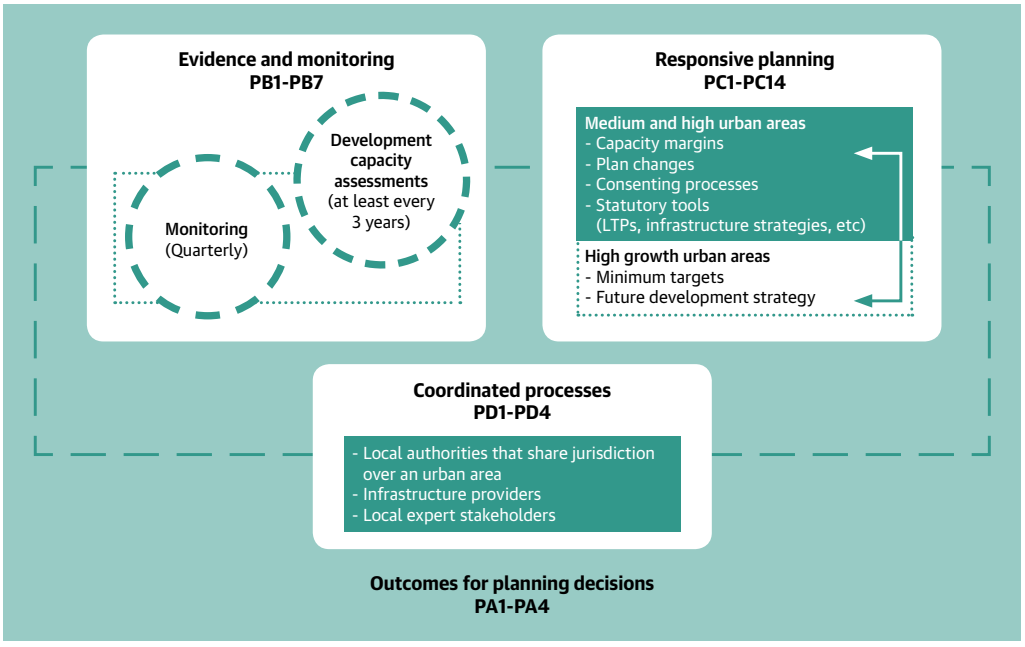


Figure 1.2. Requirements of the NPS. Source: Ministry for the Environment.

2. Classification is based on urban area population projections from Statistics New Zealand.

Determining capacity under the NPS goes beyond a straightforward assessment of how much land is zoned for development or how many apartments or infill houses zoning allows for. The NPS goes further by requiring Councils to test the feasibility[3] of theoretical capacity and to make sure that there is sufficient infrastructure, either already in the ground or planned for, to service that development capacity.

In addition to this main requirement, there are a number of other things that the NPS requires. Chief among those is monitoring the performance of the development market. These requirements are set out in more detail in this report where they apply and the full requirements of the NPS are set out in Appendix 1.1.

1.3 A partnership approach

The Wellington region is highly connected. Good transportation links between the cities means that there are few barriers between the various housing markets, and businesses have a wide choice of locations to establish within. It also means that the labour force is highly mobile.

In this context, rather than each Council prepare a separate HBA, the Councils have adopted a joint approach to undertake the assessment together for the region. This joint approach:

- Ensures a consistent way to assess development capacity
- Utilises the same modelling process for each Council
- Leverages off the resources available to each Council
- Presents results not just on a city by city basis, but across the main urban areas of the region; and
- Positions the Councils to readily replicate this work for subsequent HBA's.

1.4 Report Structure

This report has been structured with several chapters:

Chapter 1: Introduction and Regional Summary

- This chapter provides the background to this project, details how the HBA fits in with the broader planning framework, outlines the methodology for the HBA and provides results at a regional scale.

Chapters 2 through 6: Results for each Council

- These chapters provide a more detailed breakdown on a Council by Council basis and tells the growth story for each of these areas.

Technical Appendices

- These contains the various technical reports and detailed methodologies that underpin this HBA.

1.5 Relationship with other plans and strategies

The NPS fits within a broader framework of plans and policy statements prepared under the Resource Management Act 1991 (RMA) as set out in Figure 1.3.

3. Feasibility refers to the commercial viability of undertaking a development based on likely current costs and revenues.

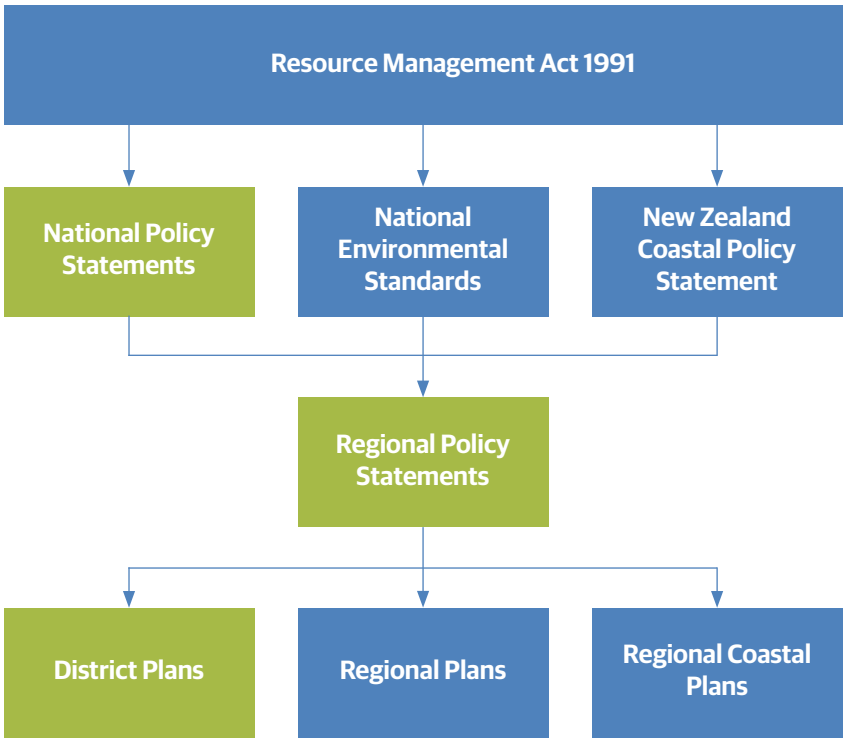


Figure 1.3. RMA Statutory Relationships.

National Policy Statements sit at the second tier of the RMA hierarchy. They direct Regional Policy Statements and District Plans which must 'give effect' to a National Policy Statement[4].

In this case there is little that must be included in District Plans that comes directly from the NPS. Rather, the NPS directs Councils to undertake tasks like preparing this HBA.

Changes to District Plans are more likely to follow as a response to the findings of the HBA. For instance, if there was an assessed shortage of greenfield land in the medium or long term, then a Council may prepare a plan change to rezone a new greenfield area in response. Alternatively, if there was not enough capacity for further infill development, a Council may initiate a plan change to amend infill housing rules and standards.

Beyond these statutory documents, Councils also prepare a number of non-RMA plans and strategies that inform decision making and directions for the management of growth. These range from required documents such as Long Term Plans and associated Infrastructure Strategies, through to optional documents like growth strategies, town centre plans, open space strategies and the like.

These optional planning documents like growth strategies often reflect a Council's strategic direction for accommodating future growth and shaping the urban form of a city over the longer term. They are therefore an important consideration for this capacity assessment, and for responding to the findings of the HBA where required. These documents are detailed in the individual Council reports that follow.

4. Section 75(3)(c) RMA.

2.0 Regional Residential Assessment

2.1 Population Growth

Key Findings

- The population of the five Councils is projected to grow by between 90,314 – 137,757 people over the period to 2047 from an estimated 2017 base of between 459,910 and 471,864.[5]

Residential demand is a product of population growth and household formation, and refers to the demand for residential dwellings across the spectrum of housing types. In order to understand the growth pressures facing the Councils, it first needs to be established what level of growth the Councils expect to see and over what timeframe.

The NPS suggests that the starting point for this demand side assessment should be population projection series[6] produced by Statistics New Zealand. For the base case of this assessment the Councils have instead chosen to use population projections produced by Forecast.id[7], who prepare forecasts for each of the Councils involved in the study. In practice, the Forecast.id projections are broadly equivalent to the Statistics New Zealand medium growth series projection. However, the use of Forecast.id as a base allows the Councils to have a more robust, supply driven projection that is able to consider finer grain details in both input, via the forecasting process, as well as output, in terms of locational and typology information.

In order to test alternatives, the Councils have also utilised a further scenario(8) in this assessment, which is the Statistics New Zealand high population projection series. This has primarily been undertaken as parts of the Wellington Region have been growing at faster rates than expected over recent years. Additionally, as the HBA will be used to inform future infrastructure decisions, a longer-term outlook is more useful to the Councils.

The other issue that needs to be established is the timeframe for the projections. The NPS timeframe is out to 30 years. 2017 has been used as the Year 0 for the HBA modelling. Therefore, the timeframe for the modelling and HBA is 2017-2047. The estimated combined population of the participating Councils in 2017 is 459,910[9].

Residential demand, or the number and type of houses that it is expected will be needed in the future, has been calculated by combining the residential population projections and the projected changes in household size. One household equates to one dwelling of demand.

5. This HBA utilises two growth scenarios – a base case prepared with Forecast.id projections and the Statistics New Zealand high growth series.
6. Policy PB2 of the NPS-UDC.
7. .id are an independent demographic company operating across New Zealand and Australia.
8. Porirua City Council has included a further two scenarios in its individual assessment.
9. Based on the Forecast.id projection. The SNZ High series has a 2017 population slightly higher. This issue arises as the last firm population count was from the 2013 Census.

The regional population is projected to grow as follows over the short, medium and long term:

	2017	2017-2020	2020-2027	2027-2047	2047	Change
Forecast i.d	459,910	11,140	21,535	57,639	550,224	90,314
SNZ High	471,864	18,114	35,905	83,737	609,621	137,757

Table 1.1. Regional population growth, 2017-2047.

Table 1.2 shows population growth broken down for each Council for the two scenarios:

Population

	Forecast.id				SNZ High			
	2017-2020	2020-2027	2027-2047	Total	2017-2020	2020-2027	2027-2047	Total
Wellington	6,301	12,317	28,264	**46,882**	9,580	18,600	46,520	**74,700**
Upper Hutt	728	1,772	6,073	**8,573**	1,595	3,384	7,218	**12,198**
Hutt City	879	1,780	6,856	**9,515**	3,040	5,820	11,499	**20,359**
Kapiti	1,171	2,660	9,610	**13,441**	1,840	4,000	9,921	**15,761**
Porirua	2,061	3,006	6,836	**11,903**	2,059	4,101	8,579	**14,739**
TOTAL	**11,140**	**21,535**	**57,639**	**90,314**	**18,114**	**35,905**	**83,737**	**137,757**

Table 1.2. Regional urban population growth by territorial authority, 2017-2047.

The following charts show the same growth projections for the Wellington region over the 30-year period that this report covers:

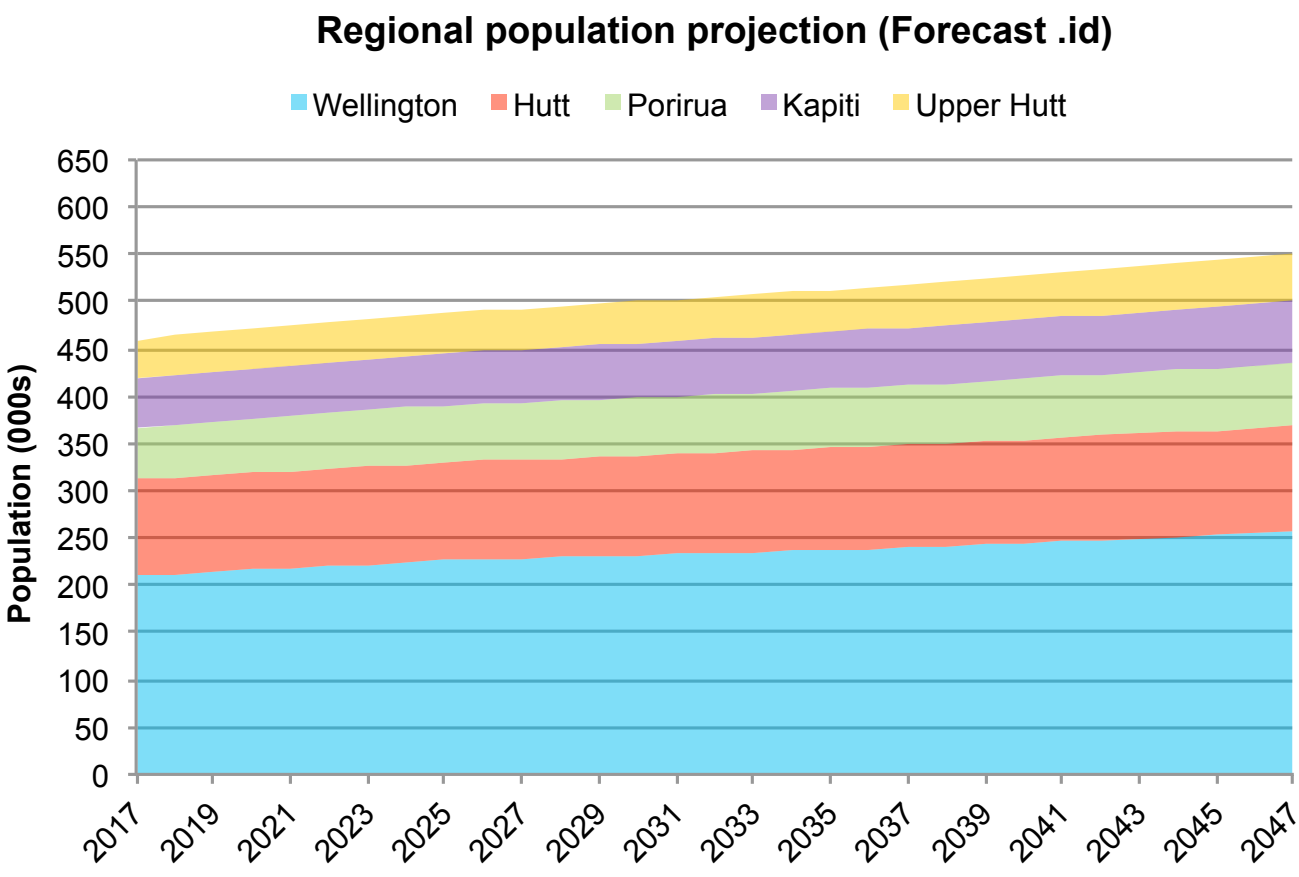


Figure 1.4. Regional population growth 2017-2047 (Forecast.id)

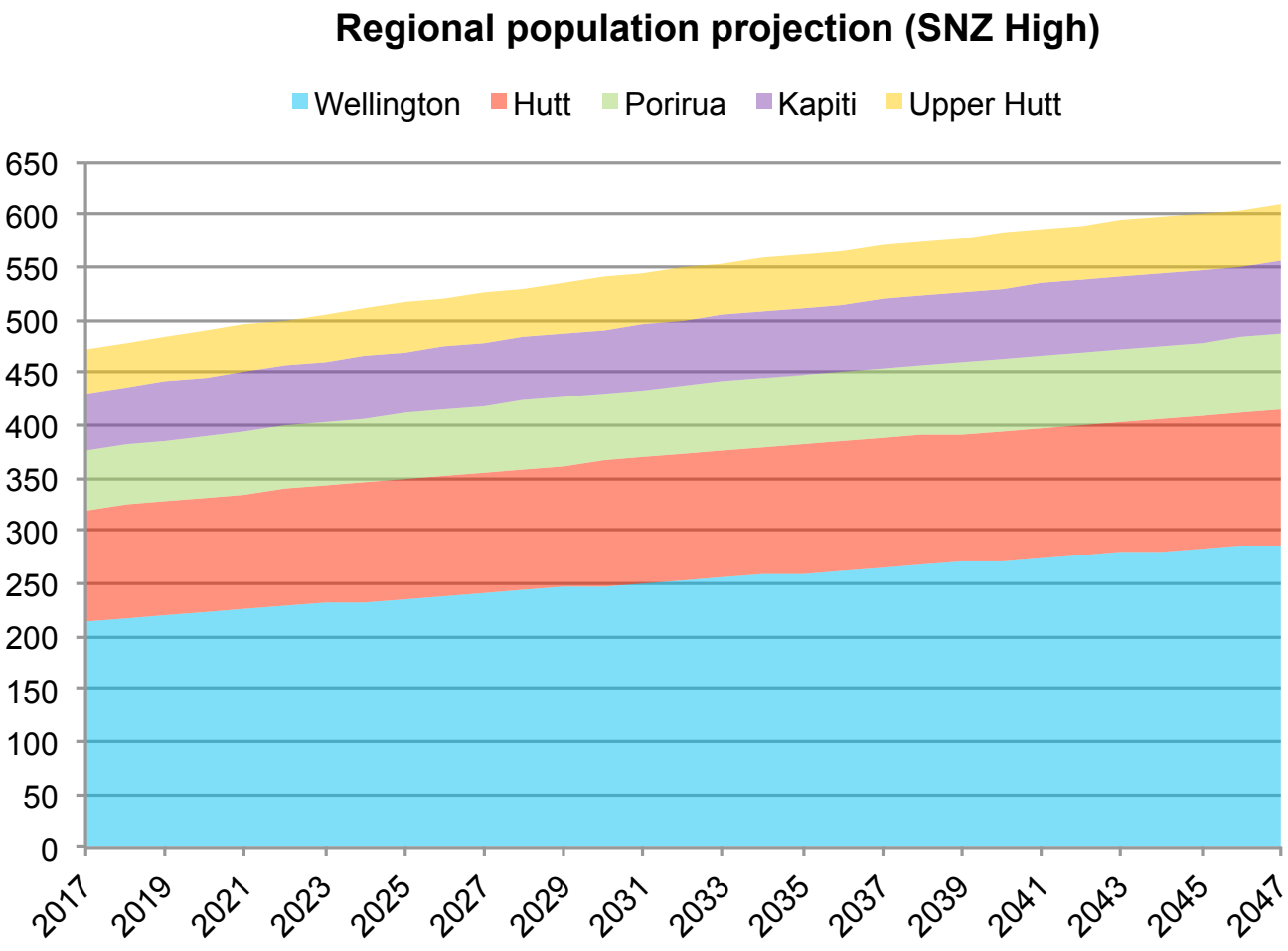


Figure 1.5. Regional population growth 2017-2047 (Statistics NZ High Series)

These projections outline two possible scenarios for the region. As regional projections they are inherently a product of their parts, and subsequent chapters provide a more detailed analysis of these projections for each individual Council.

2.2 Housing Growth

Key Findings

- An additional 49,292 - 61,233 dwellings will be required to accommodate the two population growth scenarios.

Population growth can be translated into growth in dwelling numbers based on the number of households and changes in household size. Based on the population projections set out above, over the next 30 years regional housing demand is projected to be:

	2017	2017-2020	2020-2027	2027-2047	2047	Change
Forecast i.d	178,161	4,486	10,636	27,083	220,367	42,205
SNZ High	182,776	7,230	16,378	37,625	244,010	61,233

Table 1.3. Regional housing growth (number of dwellings), 2017-2047.

Breaking down that regional growth by Council area provides the following projections:

Dwellings

	Forecast.id				SNZ High			
	2017-2020	2020-2027	2027-2047	Total	2017-2020	2020-2027	2027-2047	Total
Wellington	2,106	5,680	13,553	**21,339**	3,342	8,117	20,878	**32,337**
Upper Hutt	431	1,079	2,902	**4,412**	780	1,754	3,411	**5,945**
Hutt City	522	1,215	3,496	**5,233**	1,362	2,825	5,420	**9,606**
Kapiti	535	1,208	3,916	**5,659**	846	1,830	4,031	**6,707**
Porirua	894	1,454	3,215	**5,563**	899	1,853	3,886	**6,639**
Total	**4,486**	**10,636**	**27,083**	**42,205**	**7,230**	**16,378**	**37,625**	**61,233**

Table 1.4. Regional Housing Growth by territorial authority, 2017-2047.

The following charts show the same growth projections for the Wellington region over the 30-year period that this report covers:

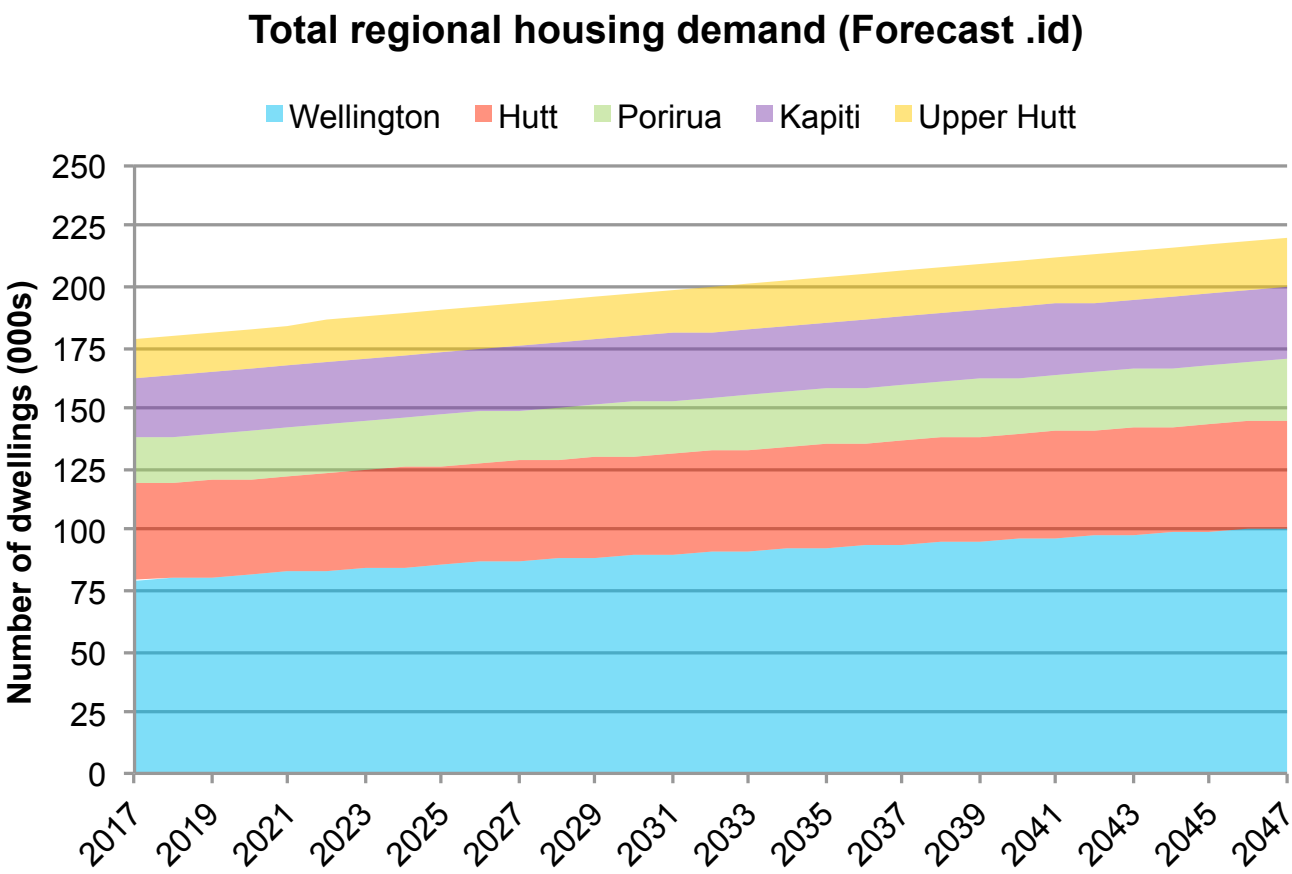


Figure 1.6. Regional housing growth, 2017-2047, Forecast.id

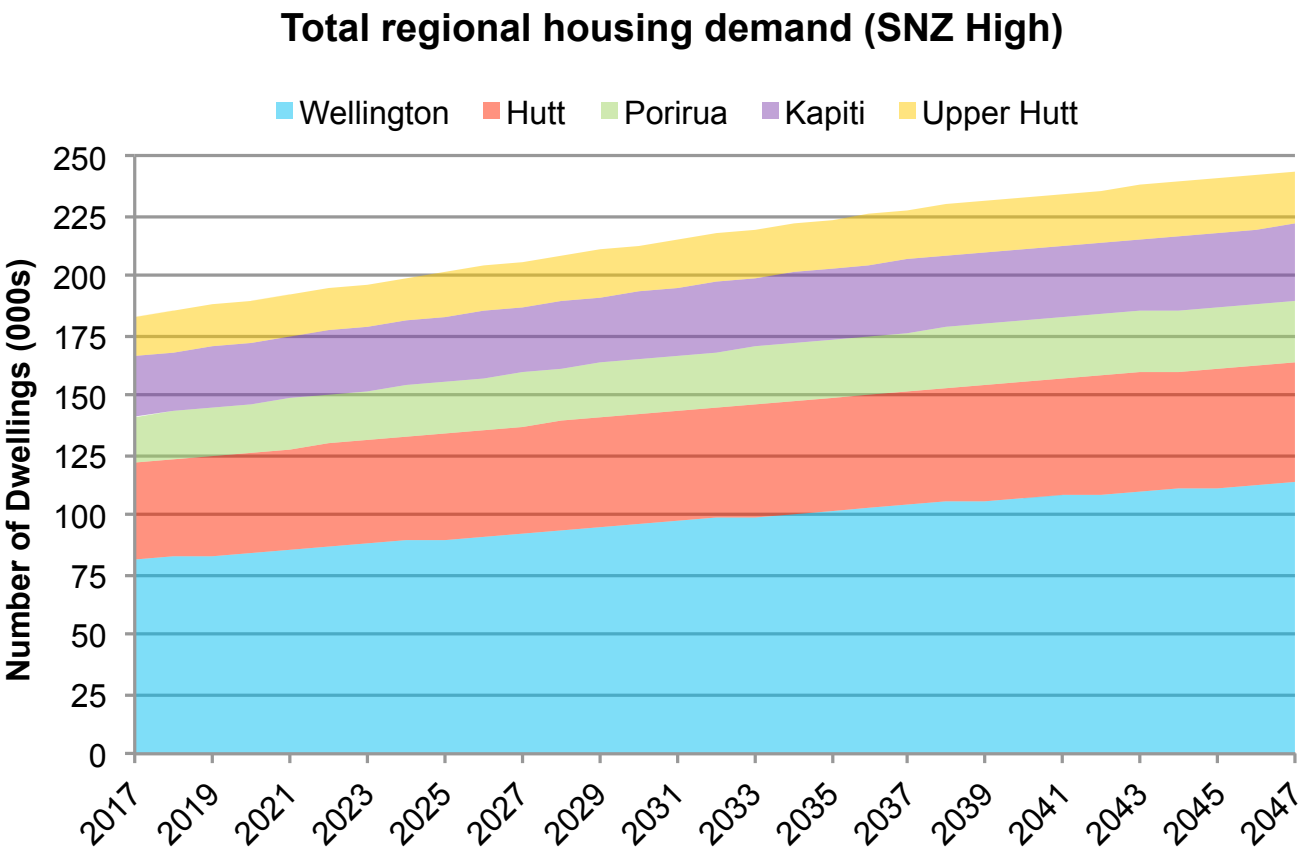


Figure 1.7. Regional housing growth, 2017-2047, Statistics NZ High Growth.

Policy PC1 of the NPS requires that an oversupply is provided to account for uncertainty in demand and in supply being available. This HBA has inflated dwelling demand projections in accordance with this policy but only for the base Forecast.id scenario. It has not done so for the SNZ High Growth series given that this is already a higher order scenario. The policy directs that an over-supply[10] of 20% is provided over the short and medium term, and 15% over the long termin order to account for a percentage of supply that will not be developed.

10. Policy PC1 requires an inflation of the supply side numbers. The HBA has chosen to inflate the demand side numbers which has the same effect of needing to meet this supply side requirement.

Adjusting the numbers in Tables 3 and 4, produces the following adjusted demand requirements:

	2017	2017-2020	2020-2027	2027-2047	2047	Change
Forecast i.d	178,161	5,384	12,763	31,145	227,453	49,292
SNZ High	182,776	7,230	16,378	37,625	244,010	61,233

Table 1.5. Regional housing growth, inflated, 2017-2047.

Dwellings

	Forecast.id				SNZ High			
	2017-2020	2020-2027	2027-2047	Total	2017-2020	2020-2027	2027-2047	Total
Wellington	2,527	6,816	15,586	**24,929**	3,342	8,117	20,878	**32,337**
Upper Hutt	517	1,295	3,337	**5,149**	780	1,754	3,411	**5,945**
Hutt City	626	1,458	4,020	**6,105**	1,362	2,825	5,420	**9,606**
Kapiti	642	1,449	4,504	**6,595**	846	1,830	4,031	**6,707**
Porirua	1,073	1,745	3,698	**6,515**	899	1,853	3,886	**6,639**
TOTAL	**5,384**	**12,763**	**31,145**	**49,292**	**7,230**	**16,378**	**37,625**	**61,233**

Table 1.6. Regional housing growth, inflated, by territorial authority, 2017-2047.

Therefore, for the purposes of this HBA, the region needs to plan to accommodate between 49,292 and 61,233 new houses by 2047. The following section assesses the capacity of the region to accommodate that growth.

An overall demand number does not however provide any insight into the nature of that demand. To provide this HBA with a greater level of detail about residential demand, a model has been utilised that seeks to better:

- Determine where demand exists spatially within a city or district area;
- Consider the composition of households. For instance, it considers age, relationship status and whether a household has children or not; and
- Consider the nature of housing sought by those households, whether that is a stand-alone dwelling, multi-unit dwelling or apartment.

A detailed breakdown of demand by dwelling type at a sub-Council level is presented in each Councils separate HBA chapter.

Council	Standalone	Terrace / Apartments[11]	Apartments (WCC only)[12]	Other	Total
Wellington City Council	10,767	5,183	7,519	1,461	**24,929**
Hutt City Council	4,874	1,212	0	20	**6,106**
Upper Hutt City Council	3,882	1,002	0	264	**5,149**
Kapiti Coast District Council	5,520	793	0	281	**6,595**
Porirua City Council	5,808	643	0	64	**6,515**
Total	**30,851**	**8,833**	**7,519**	**2,090**	**49,292**

Table 1.7. Demand for dwellings by type (inflated), all Councils Forecast.id scenario.

Council	Standalone	Terrace / Apartments[13]	Apartments (WCC only)[14]	Other	Total
Wellington City Council	15,181	7,233	8,091	1,832	**32,337**
Hutt City Council	7,629	1,949	0	29	**9,606**
Upper Hutt City Council	4,490	1,153	0	301	**5,945**
Kapiti Coast District Council	5,607	811	0	288	**6,707**
Porirua City Council	5,883	694	0	61	**6,639**
Total	**38,790**	**11,840**	**8,091**	**2,511**	**61,233**

Table 1.8. Demand for dwellings by type (uninflated), all Councils Statistics NZ High Growth scenario.

This has been achieved by taking the Forecast.id projections which allocate growth spatially and combining those with a specific SNZ data request that cross tabulates a number of variables including household size, dwelling type and income.

Because of the level of specificity which the model attempts to achieve, it was necessary to group up census area units in order to provide suitable data from SNZ[15].

11. This uses the Statistics New Zealand dwelling category of Two or More Flats/ Units/ Townhouses/ Apartments/ Houses Joined Together. See footnote 14 for reference to Wellington City Council.
12. Wellington City Council identified all Terrace and Apartment development in the city's Central Area zone would be classed as apartment development. Futher explanation of this is provided in the Wellington City chapter of this HBA.
13. This uses the Statistics New Zealand dwelling category of Two or More Flats/ Units/ Townhouses/ Apartments/ Houses Joined Together. See footnote 14 for reference to Wellington City Council.
14. Wellington City Council identified all Terrace and Apartment development in the city's Central Area zone would be classed as apartment development. Futher explanation of this is provided in the Wellington City chapter of this HBA.
15. Because of the high level of cross-tabulation, attempting to obtain data at too small an area produced confidential results.

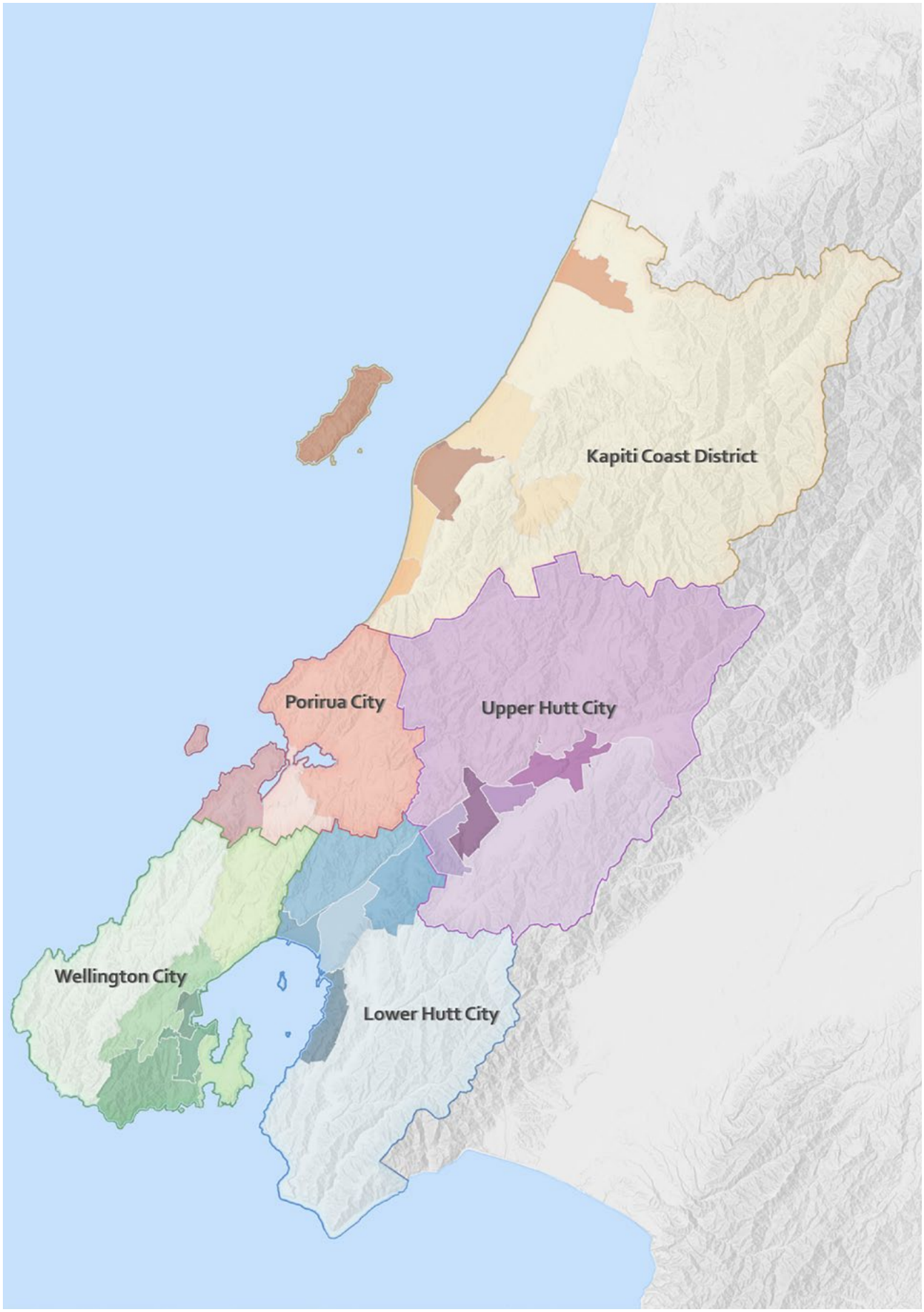


Figure 1.8. Division of respective TA's for residential demand projections.

The amalgamation of suburbs sought to combine areas into logical groupings that represent housing market geographies of the given city[16]. This greater level of demand information will provide a better evidence base for later policy decisions around how Councils plan for future residential growth.

The demand projections can therefore be matched with supply-side modelling to identify any shortages over the short, medium or long term, and this can be done at the sub-areas of the given Council area.

Further detail on the residential demand modelling and the population projections that underpins it is available in Appendix 1.2.

2.3 Other Demand - Commercial Accommodation

In addition to residential demand from owner-occupiers and renters, competition for development space and existing housing stock comes from commercial accommodation and private accommodation that is being utilised for commercial purposes such as through services like Airbnb.

Regionally, commercial accommodation is primarily centred in Wellington City. Smaller scale commercial accommodation is available in surrounding cities but they are not, currently, focal points for accommodation development. Commercial use of private accommodation through services such as Airbnb is a newer trend that is increasing in popularity and is occurring across all of the Councils party to this HBA. While the effects of these services on the availability of residential properties may be a bigger issue in other centres such as Queenstown, it is still important to consider the scale of impact in the Wellington region. This is further discussed in the following individual Council chapters.

Commercial accommodation in Wellington City is in high demand year-round. With the exception of certain periods of the year such as Christmas when occupancy drops, occupancy otherwise sits at an average of approximately 80%. Occupancy rates at such high levels have a consequential effect on room rates and general availability at times of peak demand. Ordinarily it would also be expected that such high occupancy rates would trigger a supply side response, however there has been little development in the commercial accommodation sector in recent years. This is discussed further in the following Wellington City specific chapter.

Regional growth in the Airbnb market has been significant. For instance, in January 2015 there were 1,822 'Entire Place' room nights available of which 1,003 were booked. In January 2019, that had grown to 75,790 listings of which 49,774 were booked. This growth is demonstrated in Figure 1.9 below. Figure 1.9 also shows that there is a plateauing of listings, with seasonal variations visible.

As the Airbnb market reaches a level of saturation and growth in listings flattens, and a number of key projects and events progress across the region, this provides impetus for additional development interest in the commercial accommodation sector.

As noted later, given that a shortage of development capacity for apartments is anticipated within the Wellington City central area, it is likely that any additional commercial accommodation development will be 'competing' with apartment development. It will be important to monitor developments in this area to better understand how this interaction plays out, but any development of commercial accommodation will potentially, in opportunity cost terms, take away from development capacity for private accommodation.

16. Generally the modelling processes for demand and capacity have excluded rural areas, such as Makara – Ohariu. However, some areas are identified as part of the greenfield capacity modelling.

Figure 1.9. Entire Place listings and bookings for the Wellington Region. Source: AirDNA

2.4 Other Demand - Student Accommodation

There are four tertiary institutions in the study area, being Victoria University, Massey University, Weltec/Whitireia and Te Wānanga o Raukawa. Otago University also has a smaller presence in Wellington City.

Students from these institutions place further pressure on residential capacity in the areas where they are located. The institutions are also competitors for development capacity. An example of this is in the Wellington City central area and inner suburbs where both Massey and Victoria Universities have student halls of residence.

Outside the halls of residence, which cater primarily for first year students, students also compete in the private market for residential accommodation. This is almost exclusively in the rental market.

The growth ambitions of both universities mean that as student numbers increase, there will be an increasing pressure on accommodation. This is already an issue for Wellington City where students are experiencing difficulty in obtaining rental accommodation due to an overall shortage which also leads to price increases. Students are therefore competing in a market where preference may be given to young professionals or families.

The impacts of this go beyond direct impacts on the students themselves. Accommodation shortages impact on the ability of the universities to attract and retain students, and therefore impacts on their growth ambitions. Longer term, graduating students may seek to move away from the area if they cannot find suitable and affordable accommodation.

While the scale of Te Wānanga o Raukawa and housing in Ōtaki is at a smaller scale compared to Wellington City, it is experiencing these same pressures.

Additional detail is provided in subsequent chapters, particularly the Wellington City Council HBA.

2.5 Housing Development Capacity

Key Findings

- The five Councils have a combined realisable infill and redevelopment capacity for 25,857 new dwellings.
- Realisable greenfield capacity across the five Councils comprises 14,018 new dwellings.
- Combined, the five Councils have a total realisable capacity for a further 39,875 new dwellings.

Residential capacity refers to the level of residential growth that a city can accommodate. For the purposes of this report, residential capacity refers to the following forms of residential development:

- Greenfield land
- Infill housing
- Intensification/redevelopment of existing residential areas
- Apartment development

Therefore, the analysis of capacity isn't solely focussed on land for urban expansion (greenfield land). The HBA also assesses the existing urban areas that provide for infill development, redevelopment (for example a multi-unit development replacing an existing single house with three or four new houses) and apartment development such as in the Wellington CBD.

The analysis of residential capacity has been undertaken by way of GIS based modelling. Specifically the analysis has been based on two models:

- Infill and Redevelopment[17]
- Greenfield[18]

A note on terminology:

In describing capacity, three terms are used –

- Plan Enabled Capacity – refers to what a relevant District Plan allows for in terms of the zoning of properties, subdivision standards, density standards etc. Essentially, plan enabled capacity refers to what the rules allow[19] for, if every property was developed to the maximum allowable extent under those rules.
- Feasible Capacity – refers to the amount of the plan enabled capacity that can be built in an economically feasible way at the point in time of the analysis.
- Realisable Capacity – refers to the fact that of all the feasible capacity, only some will be built within the 30-year duration of this assessment. Different types of development, undertaken by different people will attract different risk profiles, requiring higher or lower returns. This information is applied to the feasible capacity results to produce a statistical level of realisation.

17. The Infill and Redevelopment Model models all land parcels under 5 hecatres that are zoned for residential development.
18. The Greenfield Model is used to model all land parcels over 5 hectares in size that are zoned for residential development, and any parcels that may not currently be zoned but that are otherwise identified as future growth areas.
19. A number of assumptions have needed to be made as detailed in the methodology statement. For instance, District Plan provide for certain activities as discretionary or non-complying activities. These activities could contribute to development capacity. However, such activities cannot be modelled given the uncertainty involved in whether they can be consented or not. Regional Plans also place constraints on greenfield development capacity as policies and rules seek the avoidance of streambed and wetland reclamation, which will lower overall housing yield. Like District Plans, the effect of Regional Plan provisions is uncertain and therefore can't be modelled.

2.6 Plan Enabled Capacity

The modelling firstly sought to establish the capacity that is enabled by the respective District Plan of each Council:

Council	Total Plan Enabled Capacity	Infill/Redevelopment Capacity	Greenfield
Wellington City Council	106,411	103,783	2,628
Hutt City Council	41,240	39,030	2,210
Upper Hutt City Council	18,306	15,488	2,818
Kapiti Coast District Council	23,135	19,785	3,350
Porirua City Council	42,713	36,084	6,629
Total	**231,805**	**214,170**	**17,635**

Table 1.9. Regional housing capacity as enabled by District Plans.
Source: Wellington City Council; Property Economics.

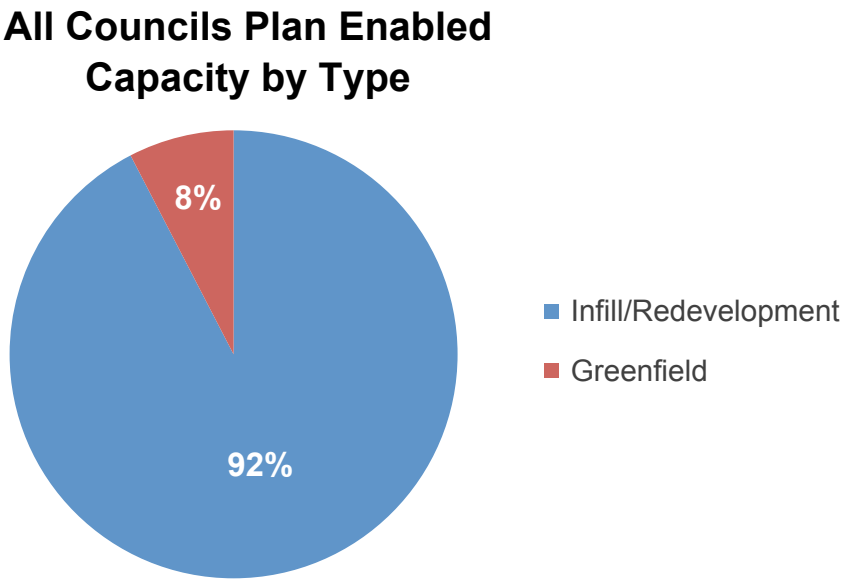


Figure 1.10. Regional housing capacity as enabled by District Plans.
Source: Wellington City Council; Property Economics.

Of the 232,177 dwellings enabled by the District Plans, 92% of that capacity comes from infill and redevelopment, with the remaining 8% coming from greenfield capacity.

2.7 Feasible and Realisable Capacity

At the core of modelling residential capacity under the NPS is the notion that it is not enough to model the capacity which is enabled by District Plans and their zoning and planning rules. Plan enabled capacity is relevant, but it is merely the jumping off point for a fuller examination of capacity.

That fuller examination starts with assessing the feasibility of developing the plan enabled capacity. Assessing the feasibility of development capacity enables a finer grained analysis of capacity and therefore paints a more realistic picture of what development that may be enabled by a District Plan can actually be built under today's market conditions. Feasibility is assessed in a consistent way across the region, adjusting the various inputs into the feasibility assessment based on each Council's particular details, local costs and local sales values.

After assessing the feasibility of development capacity, the assessment can then turn to what proportion of that capacity will be realisable. The relationship between plan enabled capacity, feasible capacity and realisable capacity is demonstrated in Figure 1.11 below.

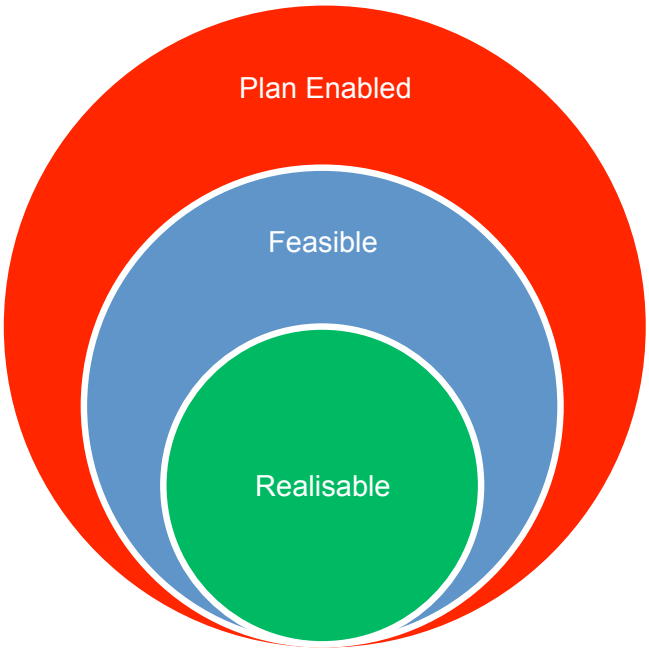


Figure 1.11. Relationship between the three types of capacity described.

Modelling Methodology

The following is a brief summary of the methodology applied to the residential modelling for this HBA. A full description of the modelling methodology is provided in Appendix 1.3, Appendix 1.4 and with further details provided in the subsequent chapters.

Infill and Redevelopment Model

The infill and redevelopment model is a Geographic Information System (GIS) based model. It applies to sites under 5 hectares in size. It works by:

- Determining the developable area of the site by assessing constraints such as slope, hazards, significant areas of vegetation etc.
- Applying the District Plan standards relevant to bulk and location[20]
- Based on those standards, modelling theoretical developments on all sites across each Council area
- Applying known building and other development costs, estimated sales costs, and testing whether a given development will be economically feasible
- Acknowledging that not all feasible development will actually be built and applying a realisation rate to the feasible development number.

The model tests various development types, from single house, multi-unit housing and apartments in a range of sizes to a single site, before selecting the development size and type that is most profitable.

Greenfield Model

The greenfield model applies to all sites 5 hectares and over in size, as well as future development areas identified in growth strategies, and the like. It tests whether a new subdivision is feasible. For a given site, it does this by:

- Determining the developable area of the site by assessing constraints such as slope, hazards, significant areas of vegetation etc.
- Determining a likely density of development and calculating a likely number of sections to be created from the subdivision.

From this, the feasibility of a given greenfield subdivision can be tested. A specific greenfield feasibility modelling tool[21] developed for the Councils is used for this purpose. The model:

- Applies likely development costs such as from earthworks and infrastructure servicing
- Applies financial inputs such as development contributions and finance costs
- Determines, based on those inputs and likely sales prices, whether a given development is feasible.

Limitations

It is important to note that there are limitations to such a modelling approach. Amongst those is the key issue of the model operating based on averages.

As noted in the detailed methodology statement, it is not possible to accurately model detailed development proposals for each site. Rather the model works on the basis of average build costs which are then adjusted for each suburb, average sales costs also adjusted for suburb, and generic building typologies. In other words, the model does not design a development on the basis of a site-specific proposal as would be undertaken by a given developer.

20. Bulk and location refers to standards that control the placement and size of buildings on a site such as maximum height, setbacks from boundaries and site coverage standards.

21. Refer to Appendix 1.4.

The outputs of these models are an evaluation of the available feasible capacity for greenfield development, infill development, redevelopment and apartment development across the five Councils.

That modelling shows that across the five Councils, there is feasible capacity for a total of 53,588 dwellings. That total number is composed of:

- 27,646 single dwellings
- 15,948 terrace dwellings
- 9,994 apartments

That capacity is split across greenfield capacity, and infill, redevelopment and apartment capacity as follows:

- 15,465 greenfield
- 38,123 infill, redevelopment and apartment

And that capacity is split across the following Council areas:

Council	Standalone	Terrace	Apartments	Total
Wellington City Council	9,624	8,345	9,985	**27,954**
Hutt City Council	3,326	2,150	0	**5,476**
Upper Hutt City Council	3,611	210	9	**3,830**
Kapiti Coast District Council	4,064	1,988	0	**6,052**
Porirua City Council	7,021	3,255	0	**10,276**
Total	**27,646**	**15,948**	**9,994**	**53,588**

Table 1.10. Feasible regional housing capacity by Council area, 2017-2047.

The capacity numbers presented above are based on the core assumptions of the two models. Some variables going into these models can be adjusted in order to test the model in various configurations. This is referred to as a sensitivity analysis.

Sensitivity Analysis

The capacity models operate on a number of core assumptions and accordingly those assumptions flow into the results that are presented in this HBA. Further detail on these assumptions is outlined in Appendix 1.3.

In this report are presented a series of headline numbers as representing a final capacity number. This is done in order to provide clarity to the reader. However, in practice capacity will always operate within a range depending on a number of factors.

This range has been tested through a number of sensitivity analyses. In terms of the infill and redevelopment modelling those analyses consider a number of changes such as increasing the economies of scale component of the model (therefore reducing building costs), increasing building value (therefore increasing sales values), increasing land values and reducing land values.

Applying a realisation test to the feasible capacity is also a sensitivity test in attempting to quantify the percentage of feasible capacity that is likely to come forward over the 30 year period of the HBA.

The details of these sensitivity analyses are presented in the Property Economics reports for each Council attached as appendices to this report.

For greenfield development this is explored through a series of changes on either the economic side, via changes to profit margins, longer development timeframes or section prices, or to the development design via density increases. The details to this are further explained in the MRCagney report in Appendix 1.4. The table below shows how these changes result in potential shifts to feasible capacity results in the greenfield areas.

Sensitivity testing undertaken for this HBA for infill and redevelopment suggests a capacity range for as follows:

Council	Standalone	Terrace	Apartments	Total	Feasibility
Wellington City Council	5,735 – 9,475	6,841 – 11,303	8,185 – 13,524	20,761 – 34,302	20-33%
Hutt City Council	1,979 – 2,691	2, 107 – 4,618	0	4,086 – 7,309	10-19%
Upper Hutt City Council	733 – 1,945	194 - 515	8 – 22	935 – 2,482	6-16%
Kapiti Coast District Council[22]	749 – 2,035	1,592 – 4,572	0 - 2	2,341 – 6,609	10-34%
Porirua City Council	1,141 – 2,563	554 – 5,276	0 - 11	1,695 – 7,850	9-19%
Total	**10,337 – 18,709**	**11,288 – 26,284**	**8,193 – 13,559**	**29,818 – 58,550**	

Table 1.11. Sensitivity analysis of regional infill and redevelopment capacity. Source: Property Economics.

22. Sensitivities for urban areas only.

And similar sensitivity testing was undertaken for greenfield development with the following results:

Scenario	Baseline	30% Gross Profit Margin	Alternative Net Density	Alternative Section Price Estimates	Longer Development Timeframe
Expected Impact	N/A	Negative	Positive	Positive or Negative	Negative
Wellington City Council	2,628	2,628	4,024	2,515	2,628
Hutt City Council	1,316	884	8,324	452	1,038
Upper Hutt City Council	2,818	2,726	5,291	2,620	2,818
Kapiti Coast District Council[23]	2,106	1,970	3,773	1,936	2,038
Porirua City Council	4,838	4,782	7,592	4,782	4,782
Total	**13,706**	**12,990**	**29,004**	**12,305**	**13,304**

Table 1.12. Sensitivity analysis of regional greenfield development capacity. Source: MRCagney.

And lastly, Table 1.10 above can be reproduced but this time showing likely realisation over the 30 years of the assessment. This assessment acknowledges that not all feasible capacity will be built as becomes evident in the reduction of capacity by slightly more than 10,000 dwellings from the feasible total. This is also reflective of specific profit margins for each development typology and model being applied at the realisation stage compared to generic profit margins being applied at the feasibility stage. This means that capacity shifts between various typologies. For instance, in Wellington City there is a greater amount of realisable capacity in standalone dwellings than there was assessed at the feasibility stage. This reflects market attractiveness to develop lower risk developments such as standalone dwellings. But there is a smaller number of terrace and apartment developments, reflecting that these types of development attract higher risks.

Council	Standalone	Terrace	Apartments[24]	Total
Wellington City Council	11,221	4,730	4,343	20,294
Hutt City Council	4,389	84	0	4,473
Upper Hutt City Council	3,499	10	0	3,509
Kapiti Coast District Council	4,935	0	0	4,935
Porirua City Council	4,875	1,789	0	6,664
Total	**28,919**	**6,613**	**4,343**	**39,875**

Table 1.13. Realisable regional housing capacity by Council area, 2017-2047.

23. This data excludes additional sites and model adjustments added after the completion of the MRCagney Report.

24. Excluding Wellington City Council, apartment capacity where realizable has been bundled with terrace housing.

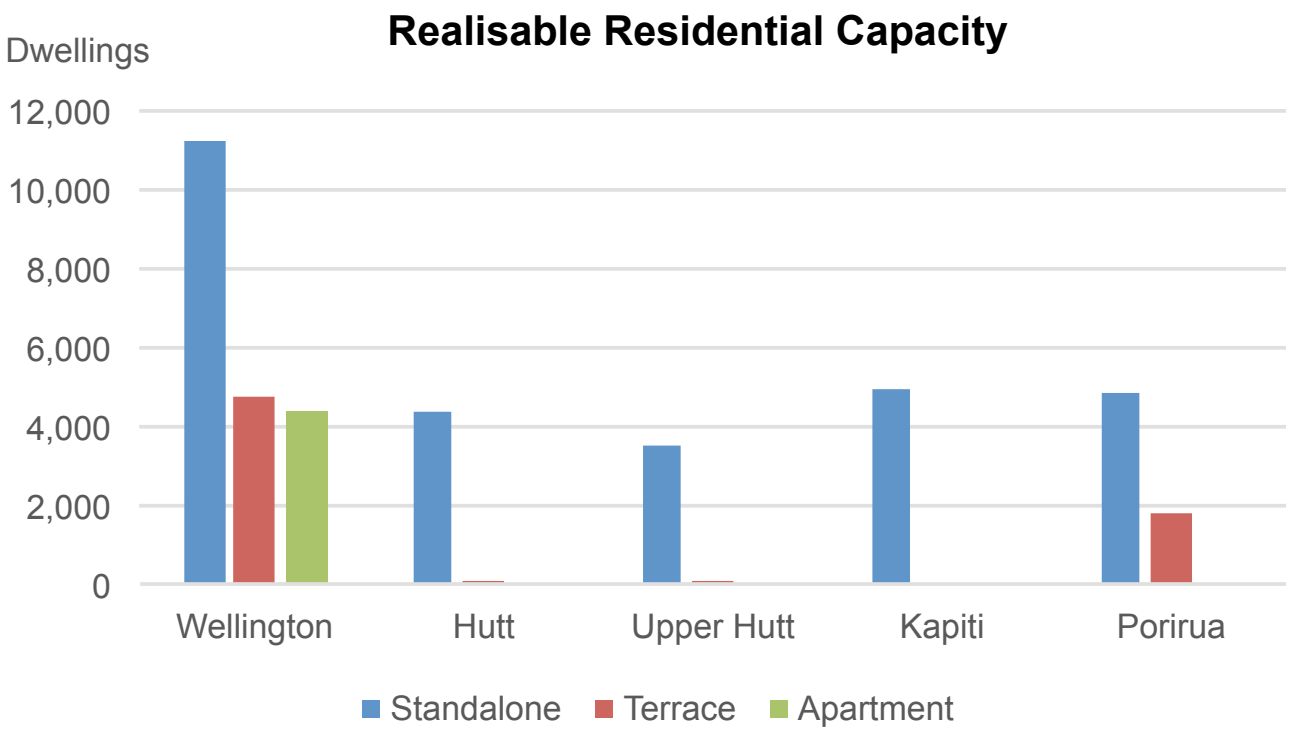


Figure 1.12 Realisable residential capacity by Council and housing type.

That capacity is split across greenfield capacity, and infill, redevelopment and apartment capacity as follows:

- 14,018 greenfield
- 25,857 infill, redevelopment and apartment

It is this realisable capacity that is ultimately used as the reported capacity in this HBA and which will be used to contrast against dwelling demand in the following section to determine the sufficiency of available development capacity.

Therefore, for the purposes of this HBA the Councils have a modelled collective realisable capacity of 39,875 new dwellings.

2.8 Housing Development Sufficiency

Key Findings

- On the basis of the Forecast.id base scenario, the Councils will have a shortage of capacity in the long term of 9,147 dwellings.
- On the basis of the Statistics NZ High Growth scenario, the Councils will have a shortage of capacity in the long term of 21,358 dwellings.

Having established the expected demand for new dwellings over the 30 years considered by this HBA, and established what capacity exists within each Council area, the two can be compared in order to understand whether there is sufficient capacity to meet demand.

At a regional level, capacity is reported as a static number rather than attempting to divide capacity over the short, medium and long term. Such an exercise attempts to predict development uptake which is influenced by a number of factors and cannot be adequately predicted.

Individual Council chapters look to further consider sufficiency by housing type, and where possible by sub-areas to provide a finer grained picture of capacity.

Capacity		**39,875**	
Wellington		20,294	
Hutt		4,473	
Upper Hutt		3,509	
Kapiti		4,935	
Porirua		6,664	
	2017-2020	**2020-2027**	**2027-2047**
Demand	5,384	12,763	31,145
Wellington	2,527	6,816	15,586
Hutt	626	1,458	4,020
Upper Hutt	517	1,295	3,337
Kapiti	642	1,449	4,504
Porirua	1,073	1,745	3,698
Balance	**34,491**	**21,728**	**-9,147**
Sufficient?	**YES**	**YES**	**NO**

Table 1.14. Regional housing demand and capacity sufficiency comparison, Forecast.id scenario (inflated).

Capacity		**39,875**	
Wellington		20,294	
Hutt		4,473	
Upper Hutt		3,509	
Kapiti		4,935	
Porirua		6,664	
	2017-2020	**2020-2027**	**2027-2047**
Demand	7,230	16,378	37,625
Wellington	3,342	8,117	20,878
Hutt	1,362	2,825	5,420
Upper Hutt	780	1,754	3,411
Kapiti	846	1,830	4,031
Porirua	899	1,853	3,886
Balance	**32,645**	**16,267**	**-21,358**
Sufficient?	**YES**	**YES**	**NO**

Table 1.15. Regional housing demand and capacity sufficiency comparison, SNZ High scenario.

Tables 1.14 and 1.15 confirm that the five Councils have sufficient capacity to meet growth requirements over the short and medium term, however modelled capacity is insufficient to meet demand requirements over the long term. A shortage of between **9,147 and 21,358** dwellings is modelled by this HBA.

It is important to again highlight the nature of this assessment as being undertaken at a single point in time based on a number of assumptions that are detailed throughout this report. It is also important to highlight that changes to those inputs will have a consequential effect on capacity. Over time therefore, the modelled capacity number will vary. This potential variance is also represented in the sensitivity analysis that was completed alongside the core feasibility and realisation analysis.

3.0 Regional Business Assessment

3.1 Business Land - Introduction

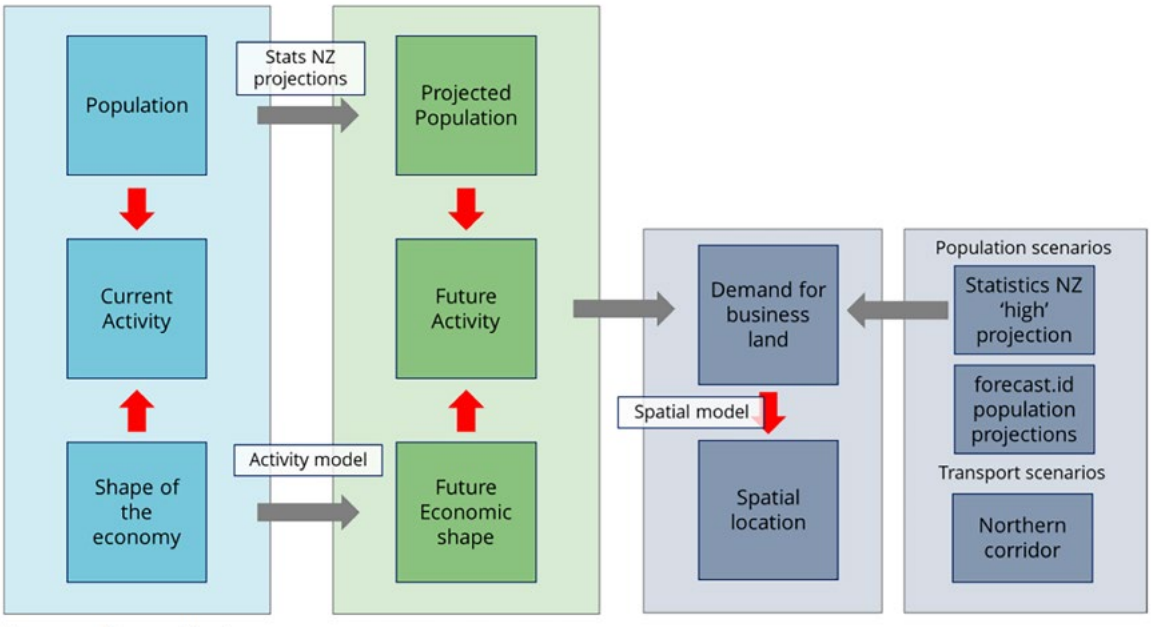
The NPS also requires consideration of the demand for, and supply of, business development capacity. The interrelationship between the two, business and residential, also needs to be considered. For example, is a shortage of residential land leading to increased pressure on business land to accommodate residential development? This consideration is undertaken in the subsequent individual Council reports.

Four of the Councils[25] commissioned economic consultancy Sense Partners to prepare a business land demand analysis to inform this HBA. The full report is attached as Appendix 1.5. Porirua City Council undertook a separate report on business demand due to timing of the District Plan Review process with further detail provided in Chapter 4.

The approach of these reports has been to:

- Understand the shape of the current economy:
  - Drivers of growth
  - Demographics
  - Sectoral composition
- Forecast the future economy based on sectors including:
  - Commercial
  - Government
  - Retail
  - Industrial
  - Health and Education
  - Other
- Convert future economic activity into floor space and land area.

The methodology is shown below:



Source: Sense Partners

Figure 1.13 Overview of business demand methodology.

25. Hutt City Council, Upper Hutt City Council, Kapiti Coast District Council and Wellington City Council.

This section will provide a broad overview of this demand side analysis on a regional scale. The following chapters will provide greater detail on a city-by-city basis.

3.2 The Wellington Regional Economy

The Wellington regional economy differs in several ways from other parts of New Zealand:

- Incomes are generally higher in Wellington with almost half of all jobs in the region earning $60,000 or more
- The workforce is highly educated, with a greater amount of tertiary qualifications, and a greater likelihood of having a higher degree
- Wellington firms have a competitive advantage borne of region's deep labour pool and high human capital
- In turn, firms operating in Wellington engage in complex industries
- However there has been a relative underperformance when compared to other centres and the national growth rate
- The 2008 Global Financial Crisis had a significant impact on the regional economy. Regional employment numbers only returned to pre-GFC levels in 2017; in the Hutt Valley at that time, employment numbers were yet to return to pre-GFC levels
- A key strength of the regional economy is the government sector which continues to bolster the regional economy in the face of decline in other sectors such as manufacturing
- The economies of the region are closely tied together highlighting the complementarities and also highlighting that a shock to one economy can reverberate through the region.

A more detailed analysis of the economy of each Council does highlight some variance in their individual fortunes, and variation in the demand for different types of business activities. This is reflective of the relative strengths and weaknesses of the various council areas.

3.3 Business Demand

Key Findings

- Land area demand is projected to be 346,162 square metres
- Floorspace demand is projected to be 1,340,472 square metres
- Demand for industrial floor area is negative in some Council areas as the nature of industrial activity changes and existing activity rationalises into new areas both in and out of the Wellington region.
- Conversely, other Councils see growth in industrial floorspace demand.

Demand for business capacity[26] is predominantly a product of economic performance. A growing economy will generally result in a greater demand for new business land or additional floor area to house new and growing businesses and their employees. At a regional scale, the Councils need to plan for continued growth in business land demand. However that growth differs between sectors, and between the Council areas.

The Sense Partners report utilised the Statistics New Zealand medium series projection as the base case for their assessment. This is broadly equivalent with the Forecast.id projection which is used in this report. The Forecast.id projection and SNZ high projection were also used as scenarios.

26. Noting that capacity can be by way of new land or floor area.

The Sense Partners report provides an assessment across the region[27] and draws a range of conclusions:

- There will continue to be a demand for business land across the region over the next 3, 10 and 30 years
- Regional transport projects will impact on the location and size of demand for business land
- Demand for land is tempered by some intensification in the use of existing floorspace and heavy industries will increasingly make way for lighter industry uses
- Generally, industrial activity will likely decline over the 30 year period of the HBA and existing uses are likely to move within the region in order to seek out areas with less constraints, such as areas that have a lower hazard risk
- Growth in business land demand is primarily driven by population growth
- Wellington is a complex economy, both in terms of size and diversification with a range of specialisations; with only Auckland being comparable
- The economies of the regions' Councils are different but complementary.

3.3.1 Land Area Requirement

Specific outcomes for each Council area are included in each Council's respective report. At a regional level, there will be demand for the following land requirements across the activity types set out below:

Land Area	2017-2020	2020-2027	2027-2047	TOTAL
Retail	12,180	5,642	40,324	58,146
Health, Education and Training	14,480	12,462	26,859	53,801
Commercial	60,692	23,917	56,403	141,012
Industrial	444,268	-560,484	-479,551	-595,766
Government	13,564	46,448	100,819	160,830
Other	14,164	15,230	34,746	64,139
TOTAL	**559,348**	**-456,785**	**-220,401**	**-117,838**

Table 1.16. Land area demand (square metres) for business activities, Wellington Region, 2017-2047. Source: Sense Partners.

The land area requirement over the next 30 years shows an overall negative result across Wellington City, Hutt City, Upper Hutt City and Kapiti Coast District Councils. This is caused by a net loss of industrial land demand.

Porirua City Council undertook its own separate demand assessment due to particular timing requirements. Further detail is provided in Chapter 4. The summary of demand for Porirua City Council is as follows:

27. Excluding Porirua City Council.

	Base Case				Transmission Gully Scenario			
	2017-2020	2020-2027	2027-2047	Total	2017-2020	2020-2027	2027-2047	Total
Industrial	1	7	26	**34**	2	19	63	**84**
Commercial	1	2	8	**11**	1	3	10	**14**
Retail	0	0	1.4	**1.4**	0	0	1.4	**1.4**
Total	**2**	**9**	**35.4**	**46.4**	**3**	**22**	**74.4**	**99.4**

Table 1.17. Porirua City Council Business Land Demand 2017-2047 (hectares). Source: Property Economics.

Applying the Porirua base case scenario adds an additional 464,000 square metres of demand. In the Porirua Transmission Gully scenario, that requirement would increase to nearly 1 million square metres, largely driven by industrial demand stemming from the new highway.

Overall applying the base scenario for each Council, a minimum of 346,162 square metres (34.6 hectares).

3.3.2 Floor Area Requirement

Business activities predominantly occur in multi-storey buildings and accordingly a land area measurement is insufficient to truly measure demand. A floor area measurement captures the multi-storey nature of business uses more accurately. A trend that is visible in making these conversions is that the square metre requirements for activities that would typically require multi-storey buildings such as government and commercial increase from their land area footprint, whereas industrial demand falls at a floor area level due to the yard based nature of many industrial activities.

Table 1.18 below sets out floor area requirements on the basis of the land area requirements set out above.

Floor Area	2017-2020	2020-2027	2027-2047	TOTAL
Retail	40,033	15,031	37,982	**93,045**
Health, Education and Training	17,881	57,143	115,127	**190,151**
Commercial	57,696	30,155	142,670	**230,521**
Government	46,276	47,385	109,760	**203,421**
Industrial	210,484	-141,605	-219,266	**-150,387**
Other	17,485	22,565	46,346	**86,396**
TOTAL	**389,855**	**30,674**	**232,619**	**653,148**

Table 1.18. Floor area demand (square metres) for business activities, Wellington Region, 2017-2047. Source: Sense Partners.

And in a similar vein, the land area requirements for Porirua can be converted to floor area requirements as follows:

	Base Case				Transmission Gully Scenario			
	2017-2020	2020-2027	2027-2047	TOTAL	2017-2020	2020-2027	2027-2047	TOTAL
Industrial	5,500	16,000	60,000	**81,500**	5,500	42,500	146,700	**194,700**
Commercial	1,500	7,500	28,000	**37,000**	1,600	9,000	34,000	**44,600**
Retail	93,500	101,150	142,600	**337,250**	93,500	101,150	142,600	**337,250**
TOTAL	**100,500**	**124,650**	**230,600**	**455,750**	**100,600**	**152,650**	**323,300**	**576,550**

Table 1.19. Porirua City Council Business Floor Space Demand 2017-2047 (square metres) Source: Property Economics.

In the same manner as for residential, Policy PC1 of the NPS requires that an oversupply be provided. Again, the demand side numbers are inflated[28] by 20% in the short and medium term, and 15% in the long term, and the following is the resultant floor area[29] requirement:

Floor Area	2017-2020	2020-2027	2027-2047	TOTAL
Retail	71,729	37,283	164,069	**273,081**
Health, Education and Training	55,534	56,860	126,225	**238,618**
Commercial	48,040	18,035	43,680	**109,755**
Industrial	253,562	-207,812	-186,376	**-140,626**
Government	21,948	68,571	132,396	**222,915**
Other	20,982	27,078	53,298	**101,358**
TOTAL	**471,793**	**15**	**333,293**	**805,102**

Table 1.20. Floor area demand (square metres) for business activities, Wellington Region, inflated, 2017-2047. Source: Sense Partners.

The same inflation is applied to the Porirua projection:

	Base Case				Transmission Gully Scenario			
	2017-2020	2020-2027	2027-2047	Total	2017-2020	2020-2027	2027-2047	Total
Industrial	6,600	19,200	69,000	**94,800**	5,500	42,500	146,700	**194,700**
Commercial	1,800	9,000	32,200	**43,000**	1,600	9,000	34,000	**44,600**
Retail	112,200	121,380	163,990	**397,570**	93,500	101,150	142,600	**337,250**

28. For Porirua City Council, only the base case is inflated and counted in the total floor area requirement given that the Transmission Gully Scenario is already a higher order projection.

29. This report focuses on floor area as (a) it encapsulates the land area on which it is built, and (b) is reflective of most business land uses being located in multi-storey buildings.

	Base Case				Transmission Gully Scenario			
	2017-2020	2020-2027	2027-2047	Total	2017-2020	2020-2027	2027-2047	Total
TOTAL	**120,600**	**149,580**	**265,190**	**535,370**	**100,600**	**152,650**	**323,300**	**576,550**

Table 1.21. Porirua City Council Business Floor Space Demand 2017-2047 (square metres) inflated (base case only). Source: Property Economics.

Therefore, for the purposes of this HBA, total demand for business floor area across the five Council's is **1,340,472 square metres**. This is comprised of 535,370 square metres in Porirua and 894,568 square metres across Wellington, Lower Hutt, Upper Hutt and Kapiti.

3.4 Business Capacity - Regional

Key Findings

- Existing business floorspace of all types across the five Councils currently measures 3.1 million square metres.
- Infill development of existing business sites to the maximum expected extent under District Plan standards could provide for an additional 3.3 million square metres of floor space.
- Redevelopment of all business zoned sites across the five Councils would provide for 14.4 million square metres of floor area.
- The assessment of feasibility of business areas was undertaken by way of a Multi Criteria Analysis. All of the Councils show above average feasibility scores based on the assessment undertaken.

In order to assess the existing capacity of business land, this HBA adopts an alternative approach to that adopted for residential development. This is because the underlying economics of developing business land and buildings is different, and more complex, to that of residential development. This in turn is due to the various types of buildings that may be constructed on business land such as specifically designed industrial buildings, tilt slab industrial units, office buildings, warehouses etc. Each have various development economics based on their use, occupancy and type of tenure.

Therefore, instead of utilising a typical 'residual value' calculation as applied to residential development, the approach adopted for modelling business capacity follows the guidance outlined in the National Policy Statement on Urban Development Capacity: Guide on Evidence and Monitoring. The following approach has been adopted:

- Identifying vacant business zoned land
- Identifying by way of a GIS model the plan enabled development capacity for both vacant and already developed sites (i.e. infill and redevelopment)
- Assessing areas of business zoned land by way of a Multi Criteria Analysis (MCA) in order to determine the likely feasibility of developing these areas for business use.

This analysis starts by determining the extent of vacancy across the Councils' business areas. The process then follows in much the same way as for residential land by determining what level of development a District Plan permits in a given zone. This is done both in terms of land area, and importantly for business development, in terms of floor area also.

Each Council identified a number of business areas to help support analysis of business development capacity. Each Council identified their own business areas reflecting their characteristics including zoning, uses and location. This assessment is conducted by each Council and verified internally, before the MCA assessment is undertaken. MCA panellists were then asked to score each area against a regionally-consistent set of criteria to determine the feasibility of business operation. The details of the MCA are recorded in Appendix 1.6.

By then comparing the capacity of the various business areas alongside MCA scores of these areas, the analysis can match areas of high capacity with areas that score highly on the MCA and provide a level confidence as to the estimated likely uptake of calculated capacity i.e. that the development is feasible. Conversely, areas with high capacity that score poorly on an MCA are unlikely to be feasible (at the current time). This exercise is undertaken in the following individual Council chapters.

The results of this assessment at a regional scale show that:

- The region has over 6 million square metres of existing business floorspace.
- Redevelopment of all business land to its likely District Plan enabled capacity could provide for over 15 million square metres of floor space.
- And infill development around existing business buildings could provide for an additional 6.7 million square metres of floor space.
- The business zoned areas across the region show various levels of likely development feasibility.

Table 1.22 below sets out results from the modelling process, specifically the existing floorspace across the business zones (existing floorspace), the floorspace that would be available should all sites in that zone be redeveloped (redevelopment floorspace), and the additional floorspace available should all sites be developed to their maximum capacity while retaining existing buildings (infill floorspace).

Some sites that may be zoned for business purposes may never be redeveloped or are highly unlikely to be redeveloped over the duration of this assessment. Examples may include a quarry site, or a fuel storage site. The results presented below have been filtered accordingly, with the exclusions specified in the methodology attached as Appendix 1.7. The amended results are as follows:

Council and Zone	Existing Building Floorspace (m^2)	Redevelopment Floorspace (m^2)	Infill Floorspace (m^2)
Wellington City Council			
Business 1	280,725	1,044,227	322,481
Business 2	312,847	392,063	179,448
Centres	1,675,811	3,066,346	-
Central Area	354,703	1,041,622	-
Total	**2,624,086**	**5,544,259**	**501,929**
Hutt City Council			
Avalon Business	19,942	45,387	3,730
Central Commercial	460,744	1,523,632	157,985
General Business	839,973	1,721,221	400,885
Petone Commercial A1	8,567	2,939	7,201
Petone Commercial A2	188,907	161,533	208,674
Special Business	439,590	2,520,244	860,856
Special Commercial	670	1,526	386
Suburban Commercial	100,647	64,705	40,850
Total	**2,059,040**	**6,041,187**	**1,680,567**
Upper Hutt City Council			

Council and Zone	Existing Building Floorspace (m^2)	Redevelopment Floorspace (m^2)	Infill Floorspace (m^2)
Business Commercial	194,522	483,370	281,179
Business Industrial	316,022	411,081	54,996
Total	**510,544**	**894,451**	**336,175**
Kapiti Coast District			
District Centre	66,427	194,404	89,350
Industrial	203,841	276,218	113,576
Local Centre	9,870	56,535	20,472
Outer Business Centre	43,307	187,696	110,434
Town Centre	110,166	157,366	90,739
Airport Mixed Use	16,420	0	0
Total	**450,031**	**872,219**	**424,571**
Porirua City Council			
City Centre	186,956	644,357	216,726
Industrial Zone	358,532	392,952	123,213
Suburban Zone - Shopping Centre Policy Area	30,446	41,133	14,166
Total	**575,934**	**1,078,442**	**354,105**
GRAND TOTAL	**6,219,635**	**14,430,558**	**3,297,347**

Table 1.22. Business floorspace development capacity. Source: Wellington City Council; Upper Hutt City Council

3.4.1. Vacant Sites

The results presented in Table 1.22 above are exclusive of sites that are currently vacant[30]. These sites provide an additional vacant capacity as follows:

Council and Zone	Number of Sites	Potential Floorspace (m^2)
Wellington City Council		
Business 1	9	710,248
Business 2	5	63,408
Central Area	14	7,577
Centres	19	11,741
Total	**47**	**792,973**
Hutt City Council		
Avalon Business	5	51,948
Central Commercial	7	16,666
General Business	43	129,463
Petone Commercial Area 1	5	3,283
Petone Commercial Area 2	7	15,211
Suburban Commercial	4	7,375
Total	**71**	**223,946**
Upper Hutt City Council		
Business Commercial	27	50,480
Business Industrial	50	111,273
Total	**77**	**161,753**
Kapiti Coast District		
District Centre	3	426,930
Industrial	48	154,605
Outer Business Centre	17	45,943
Town Centre	3	3,444
Airport	4	322,980[31]

30. Sites that were currently vacant at the time of assessment. Some sites may no longer be vacant at the time of publishing.

31. This figure includes the remaining floorspace enabled under the Proposed District Plan for the wider airport area (capped at a total of 339,400m^2).

Council and Zone	Number of Sites	Potential Floorspace (m^2)
Total	**71**	**953,902**
Porirua City Council		
City Centre	3	7,931
Industrial Zone	16	18,718
Total	**19**	**26,649**
GRAND TOTAL	**289**	**2,159,223**

Table 1.23. Business land vacant sites by Council area. Source: Wellington City Council.

The five Councils have a combined **289 vacant sites** in their business areas. The total floorspace that can be accommodated in these sites is **2,159,223 square metres**, or an average of 7,471 square metres per site.

Vacancy in Wellington City accounts for the single largest potential floor area of development. This is likely reflective of the height allowances of the District Plan providing for multi-storey buildings that enable a significant extent of floorspace in the Business 1 zone. Additionally, it should be noted that this also includes the area of Lincolnshire Farm, which is undeveloped as of time of reporting. Vacancy in the central area and in centres is minimal, reflecting the already heavily built up nature of these areas. It suggests that future demand in these areas will need to be met by redevelopment and infill development. Porirua has the smallest number of vacant sites both in terms of number and in terms of area at only 26,649 square metres.

Given the overall extent of industrial floorspace in Porirua, it suggests that Porirua industrial land is highly occupied.

The overall extent of vacancy in Kapiti is driven primarily by three sites in the District Centre zone and another four sites in the Airport zone, which together account for almost 80% of the vacant potential floorspace. The next highest contributor is industrial land, with 48 sites identified as vacant. On average those industrial sites would provide for 3,220 square metres of floor space each.

And in the Hutt Valley, Upper Hutt has 50 vacant sites in the industrial zone, while Hutt City has 43 vacant sites in the General Business area which provides for industrial and commercial activities.

3.5 Business Feasibility

Having established the capacity of the business zones, and vacant sites within those zones, the assessment can turn to the feasibility of development in these areas. As noted above, feasibility has been assessed by way of a Multi Criteria Analysis. Full details of this Multi Criteria Analysis process can be found at Appendix 1.6.

For the MCA process, an expert panel was assembled for each Council in order to undertake the assessment at a local level. The details of each panel are included as Appendix 1.6 also.

Each area was assessed against 14 criteria, based on a scoring system of 0-5. A score of either 0, or a relative low score was utilised by some Councils where an area was unable to score on the given criteria i.e. an area has no practical access to a rail route. Conversely, where panellists did not believe a criterion was relevant to an area (i.e. seaport for an inland area), a low score was applied after scoring across all sites for that criterion.

In total therefore, an area could score a maximum of 70 points and a low of 0 points. Across the region, average scores range from a high of 51.5 in Porirua to a low of 43.4 in Hutt City.

The output is a list of scored sites (Appendix 1.6) that provides guidance as to the feasibility of future development in those areas. Results are therefore relative to specific districts and should not be compared between council areas. Rather the results read as comparisons of distinct business areas within each city. The underlying logic in this approach is that the higher a site scores under the MCA, the greater the likelihood of development occurring in the area, and therefore the greater the feasibility of development within a given area relative to other areas.

Overall the results indicate that all areas provide some level of feasibility. Different areas also suit different business types and this is ultimately reflected in their district plan zoning. A detailed discussion of this is provided in each Council's subsequent report.

Proximity to major roading corridors	Access to rail routes	Access to airport	Access to seaport	Public transport accessibility	Parking availability & accessibility	Access to required labour force	Access to markets/consumers & reliance	Resilience to hazards	Supporting business/services in the area	Land & property cost	Developability/functionality	Separation from more sensitive activities	Community impact
Wellington City Council													
4	2.1	3.4	3.6	3.6	3.6	4.2	4.1	2.6	3.5	3.3	3.2	3.5	3.7
Hutt City Council													
2.8	1.5	2.4	3.1	3.2	4.1	4.3	4.1	2.5	3.4	3	2.7	3.1	3.2
Upper Hutt City Council													
4.5	2.8	0.3	0.3	3.5	4.3	4.7	4.5	4.1	2.9	4	2.9	3.9	3.9
Porirua City Council													
3.8	2.8	2	3.2	4.3	4.5	5	4.6	2.9	3.5	3.2	3.1	4.3	4.3
Kapiti Coast District Council													
3.9	0	3.6	2.7	4	3.1	3.7	3.9	2.7	4.3	3.9	1.4	3.7	3.7

Table 1.24. Average Multi Criteria Analysis scoring for each council.

On some measures, the Council's score poorly. Access to rail routes[32] are generally poor, and reflective of the nature of business uses in the area. Assessment of measures such as access to the airport or seaport reflect the distance between the business areas and the airport.

32. This is a measure not of whether a railway line passes through an area, but rather whether access for business purposes (i.e. the availability of sidings) is available.

3.6 Sufficiency

Key Findings

- The five Councils have a projected business floorspace demand of 1,340,471 square metres.
- Across the five Councils there is over 2.1 million square metres of floorspace available on vacant sites.
- In addition to vacant sites, a further 3.3 million square metres of floorspace is available through infill development.
- Redevelopment of existing business areas could provide a further 14.4 million square metres of floorspace.
- Overall the five Councils have sufficient business capacity to meet projected growth demands.

This section provides a sufficiency assessment of business capacity across the five Councils against demand for that capacity. It does so only on the basis of an aggregate demand number and does not take into account the nature of that demand i.e. whether that demand is for industrial, commercial or government needs. This is left to subsequent Council specific assessments. Nor does it make an assessment of the feasibility of that capacity, which is again left to individual Council assessments.

Sufficiency is measured in three ways: firstly, on the basis of vacant land; secondly, on the basis of infill capacity; and thirdly on the basis of redevelopment capacity. In practice capacity will be drawn from all three sources in various combinations which makes a detailed sufficiency comparison difficult to undertake.

The sufficiency assessment is undertaken by taking the given measure of capacity and deducting from it the demand for a given period. From that balance the next period of demand is deducted leaving a balance, before the third and last period is deducted leaving a final balance.

Across all three scenarios, the combined Councils have more than sufficient capacity to meet projected demand.

In practice, the determination of sufficiency will not be as clear cut. Much like with residential realisation, not all capacity will be available at a given point in time. Also, this level of analysis does not provide any detail on the type of demand (i.e. large lot industrial) and whether the capacity available meets particular demand requirements i.e. proximity to a motorway or the availability of fibre. A more detailed analysis is undertaken in subsequent chapters.

	2017-2020	2020-2027	2027-2047
Demand	**592,393**	**149,595**	**598,483**
Wellington	341,254	84,187	361,837
Hutt	62,939	-102,063	-99,769
Upper Hutt	50,043	7,063	18,911
Kapiti	17,558	10,829	52,314
Porirua	120,600	149,580	265,190
Capacity: Vacant		**2,159,223**	
Wellington		792,973	
Hutt		223,946	
Upper Hutt		161,753	
Kapiti		953,902	
Porirua		26,649	
Balance	**1,566,830**	**1,417,235**	**818,752**
Sufficient?	**YES**	**YES**	**YES**
Capacity: Infill		**3,297,347**	
Wellington		501,929	
Hutt		1,680,567	
Upper Hutt		336,175	
Kapiti		424,571	
Porirua		354,105	
Balance	**2,704,954**	**2,555,359**	**1,956,876**
Sufficient?	**YES**	**YES**	**YES**
Capacity: Redevelopment		**14,430,558**	
Wellington		5,544,259	
Hutt		6,041,187	
Upper Hutt		894,451	
Kapiti		872,219	
Porirua		1,078,442	
Balance	**13,838,165**	**13,688,570**	**13,090,087**
Sufficient?	**YES**	**YES**	**YES**

Table 1.25. Business sufficiency from three capacity sources (floor area in square metres).

4.0 Infrastructure

The NPS addresses infrastructure in two forms. Policies PA1 and PB3(c) of the NPS requires this HBA to assess the availability of development infrastructure and other infrastructure required to service development.

Development infrastructure refers to network infrastructure, being: water; wastewater; stormwater infrastructure; and roading infrastructure required to service development. This is the infrastructure that is essential for development to occur.

In addition to this core infrastructure, housing and business areas need additional infrastructure that the NPS refers to as 'other infrastructure'. This encompasses infrastructure such as parks which are important in contributing to a community's wellbeing by providing amenity space or space for sports and other recreation. Further examples include community facilities such as pools, libraries and community centres that provide for important community needs. Our assessment has not identified any critical constraints at a regional scale to the provision of such facilities or any acute shortages that would impact on development feasibility immediately.

The following sections provides an overview of infrastructure issues at a regional scale. It provides detailed discussion where this is most appropriately assessed at a regional scale such as for public transport.

4.1 Three Waters Infrastructure

Except for Kapiti Coast District Council, all the participating Councils in this assessment are partners in Wellington Water Ltd. Wellington Water is a Council Controlled Organisation responsible for the provision of three waters infrastructure for the Councils. Wellington Water has developed a framework for the assessment of three waters infrastructure for this HBA for the participant Councils, and KCDC have adopted a similar framework.

Details of the assessments undertaken for each Council are presented in each Councils individual reports that follow.

By way of summary, a clear theme emerging through each of the reports is that there are areas of pressure in the respective three waters networks of the Councils. Without intervention, these network constraints will impact negatively on the ability of the Councils to accommodate future growth. In some instances, these constraints apply now and will have an immediate impact on the ability of these areas to accommodate growth.

4.2 State Highway Network

The New Zealand Transport Agency (NZTA) has undertaken an assessment of the regional State Highway network and how any capacity constraints may impact future growth. The assessment is attached as Appendix 1.8.

NZTA highlight the fact that Wellington City is the main regional employment centre. This means that significant peak time demands are placed on the state highway network as large numbers of people are travelling to and from places of employment at the same time. A similar effect is had on public transport services. This results in travel time delays and unreliable journey times.

There are key congestion points across the network:

- State Highway 1 at Otaki
- State Highway 1 between Pukerua Bay and Paekakariki
- State Highway 1 at the Paremata roundabout
- State Highway 1 from Tawa to Ngauranga
- State Highway 1 from Ngauranga to the Wellington CBD and the airport
- Certain State Highway 2 intersections – Dowse, Melling and Kennedy Good
- State Highway 2 from Ngauranga to Petone

Continued increases in regional population will lead to ongoing increases in the demand for travel. The spatial distribution of that growth will be a key driver of the impact on the state highway network. Also impacting on the performance of the network will be projects that impact on its capacity. For example, the Transmission Gully project will add significant capacity to the network, however it will also cause increased demand and may cause further up or downstream congestion.

There are also limitations to options that may improve network performance caused by space constraints. This also has implications on the resilience of the network – whether from natural hazards or the impacts of a crash – and the lack of alternative routes compounds this resiliency issue.

A key intervention planned that will address part of the network is the Let's Get Wellington Moving project. Coupled with this are a number of other projects relevant to the state highway network. These include the completion of the Transmission Gully motorway and the Peka Peka to Otaki project in the short term, to the Petone to Grenada project in the long term.

Overall it is clear that there are capacity constraints across the network. In terms of future development, as noted in the NZTA assessment "the degree to which the state highway network performance will be affected will be dependant on the amount and spatial distribution of growth." It will also be affected by the currently planned and scheduled improvements, as well as those identified over the long term.

4.3 Public Transport infrastructure

Greater Wellington Regional Council (GWRC) has provided an assessment of the current public transport network which provides an overview of the current network, identifies existing pressure points, outlines planned upgrades, and provides a general commentary on the capacity of the network. This assessment is attached as Appendix 1.9.

The availability of public transport is critical to the provision of efficient transport options. This is particularly so in moving people at peak times. In turn, it provides benefits in reducing congestion.

Regionally, rail is important in transporting people into the Wellington CBD from northern residential areas. A priority is to improve rail's reliability, capacity and frequency. Bus services play a particularly important role within Wellington City. It is reaching capacity in certain corridors and significant investment will be required in infrastructure which includes mass transit options and bus priority measures. The Let's Get Wellington Moving project is addressing these issues.

There are however challenges facing the network. Providing additional capacity within Wellington City is difficult given the limited capacity of some corridors. Rail patronage has grown significantly and this puts pressure on capacity. Bus services outside of Wellington City are poorly utilised in some areas and better integration with land use planning is required.

Overall the report concludes that the existing network does not provide any critical capacity constraints that would inhibit additional growth areas in the short term.

4.4 Open Space

The Greater Wellington Regional Council administers a large area of public open space of some 33,000 hectares. The regional open space network is comprised of the following areas:

Name	Territorial Authority	Area
Akatarawa Forest	Upper Hutt City Council; Kapiti Coast District Council	15,500 hectares
Battle Hill Farm Forest Park	Porirua City Council	500 hectares
Belmont Regional Park	Wellington City Council; Porirua City Council; Lower Hutt City Council	3,500 hectares
East Harbour Regional Park	Lower Hutt City Council	2,000 hectares
Kaitoke Regional Park	Upper Hutt City Council	2,860 hectares
Pakuratahi Forest	Upper Hutt City Council	8,000 hectares
Queen Elizabeth Regional Park	Kapiti Coast District Council	638 hectares
Wainuiomata Regional Park	Lower Hutt City Council	340 hectares

Table 1.26. Regional open space.

Additional to these areas of parks and forests are river corridors which are used for recreation activities.

Overall the current network is considered to suitably meet the needs of the community. However, there are opportunities to improve the network through a range of interventions such as:

- Improving the visitor experience through the provision of facilities and interpretation
- Improving access to parks and linkages across the network
- The need to provide for a range of recreational needs across different locations
- Improving the ecological function of parks and forests.

A fuller assessment of the regional open space network is attached as Appendix 1.10.

4.5 Education

Planning for schools is undertaken by the Ministry of Education. New schools are planned and developed in concert with the planning and development of new growth areas and the Council's consult with the Ministry in developing plans for new growth areas. Planning for existing schools within suburbs that may be experiencing growth is the responsibility of the Ministry who monitor such pressures on an ongoing basis.

The Ministry of Education has provided information on existing school rolls to support this assessment. Each subsequent Council report provides a detailed account of the situation within its District. At a regional scale, it can be said that pressures exist across some parts of the education network with schools approaching or at capacity, and conversely other areas have significant latent capacity currently.

Overall it is not considered that there are any direct implications on development capacity stemming from education infrastructure. Further detail is provided in Appendix 1.11.

5.0 Conclusion

This HBA has been prepared to meet the requirements of the National Policy Statement on Urban Development Capacity. It has assessed the projected demand for residential and business development over the period 2017-2047.

Population projections indicate that the Council's can expect their collective population to increase by between 90,314 – 137,757 people over the study period. To accommodate that growth, the Council's will need to provide between 49,292 - 61,233 new dwellings over that same time.

The Council's will not have sufficient residential capacity to accommodate that demand under current settings. Modelling indicates that there is only sufficient capacity to accommodate 39,875 additional dwellings, leaving a shortfall of between 9,147 and 21,358 depending on population growth.

Collectively, the Councils have sufficient capacity to meet expected growth in business land and floorspace demand. This can be met from existing vacant capacity, along with infill capacity and redevelopment potential. A more detailed breakdown of sufficiency is undertaken in subsequent Council chapters.

There are a number of constraints on development capacity coming from the three waters network. These constraints are disparate and vary in the scale, severity and the time over which they will cause network constraints. However, without ongoing investment they could become significant. Future iterations of this report will likely be able to provide greater clarity on the scale of these challenges and their precise implications on development capacity.

The other principal source of pressure on infrastructure availability comes from the transport sector. Existing levels of service are under strain and investment is required across the spectrum of transport options to improve capacity, reliability and resilience. A range of investments, notably the Let's Get Wellington Moving proposal, seek to address these issues.

The HBA is a technical document that will be used by the Council's to inform their planning work including as an input into District Plan reviews, structure planning and non-RMA planning initiatives over the coming years.

The HBA provides a baseline to support Council's requirements to undertake on-going monitoring of development and market activity. The Council's will also need to update this report on a 3 yearly basis with the next HBA by the end of 2021. This ongoing review process is important in that the inputs used to inform the modelling will change, with resultant changes in development capacity. This and future HBA's will continue to inform Council planning decisions.