Wellington Urban Development Strategy
Working Paper 9

Quantifying the growth spine

supply, demand and capacity for residential development in Wellington City

Wellington City Council

September 2006

Report prepared by Paul Kos for
the Urban Development team
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Peer Review: Dougal List and
Adam Lawrence

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Executive Summary

Citywide

- The Urban Development Strategy is based on a 50 year time frame. For planning purposes and to ensure alignment with statistical data gathering processes, the statistical planning period is 2001 to 2051.
- Using latest Statistics NZ medium series population projections as a base, Wellington City should plan for population growth of approximately 33,000 over the 25 year period from 2001 to 2026, and a further 20,000 in the following 25 years to 2051. Combined, this points to a total population growth of approximately 53,000 in 50 years - similar to the City's past rates of growth over the course of its short history.
- In line with a declining household size, Wellington City will need to provide approximately 30,000 dwellings between 2001 and 2051.

Projected Population and Housing for the City

	2001 to 2026		2026 to 2051		2001 to 2051	
	people	dwellings	people	dwellings	people	dwellings
Total	33,000	19,000	20,000	11,000	53,000	30,000

- The Urban Development Strategy is also about directing growth – so while the Statistics NZ population projections are used as a guide, the population and dwelling numbers proposed for the 'growth spine' may not align with Statistics NZ projections for specific areas.

Application to the 'growth spine'

- Using demographic analysis[1] about the likely size, composition and housing preferences of future generations - combined with analysis of recent building development, it is expected that:
    - 36% of the total growth will demand high density housing based on a household size of 1.5
    - 30% will demand medium density housing based on a household size of 1.8
    - The remaining 34 % will demand low density mainly detached housing based on a household size of 2.0.

Higher density housing development

- For multi-unit high density development, it is considered likely that the majority of demand will be met in the Central Area and the first section of Adelaide Road where market demand is most evident. A small amount will be directed to Johnsonville, with the remainder dispersed to Oriental Parade areas and other town centres along the growth spine such as Kilbirnie and Newtown.

[1] MERA 2003, 2004, 2005, Property Economics 05, SGS 05

Multi-unit High Density

	2001 to 2026		2026 to 2051		2001 to 2051	
	people	dwellings	people	dwellings	people	dwellings
Central Area	8,208	5,472	4,752	3,168	12,960	8,640
Adelaide Road	1,026	684	594	396	1,620	1,080
Johnsonville	206	137	118	79	324	216
Other dispersed	820	547	476	317	1,296	864
Total	10,260	6,840	5,940	3,960	16,200	10,800

Medium Density Housing Development

- In terms of directing growth in line with the 'growth spine' concept, the most difficult to both realise and predict relates to medium density development. This is because there is considerable opportunity to development medium density in a wide range of areas of the city.
- For the purposes of this report, it is expected that two thirds of medium density housing development will be directed to key centres along the 'growth spine' - Johnsonville, Kilbirnie and Adelaide Road. The remaining demand will be met in other Suburban Centres (particularly those located within or close to the growth spine) and Inner Residential areas.

Multi-unit Medium Density

	2001 to 2026		2026 to 2051		2001 to 2051	
	people	dwellings	people	dwellings	people	dwellings
Johnsonville	2,052	1,140	1,188	660	3,240	1,800
Kilbirnie	2,052	1,140	1,188	660	3,240	1,800
Adelaide Road	2,052	1,140	1,188	660	3,240	1,800
Inner Residential	2,052	1,140	1,188	660	3,240	1,800
Other Suburban Centres	2,052	1,140	1,188	660	3,240	1,800
Total	10,260	5,700	5,940	3,300	16,200	9,000

Lower density housing development

- Just over half of demand for low density development is expected to be in the form of residential Greenfield subdivisions in the northern suburbs and in pockets of undeveloped land within the existing urban footprint.
- Reflecting a likely tightening up in residential infill, less than half of low density growth is expected to be in the form of residential infill. This will be encouraged in areas close to key centres and major public transport routes.
- It is expected that growth of lifestyle housing in the rural area will continue to be low.

Low density areas

	2001 to 2026		2026 to 2051		2001 to 2051	
	people	dwellings	people	dwellings	people	dwellings
Greenfield	6,864	3553	4466	2057	11,330	5610
Infill Housing	5,241	2713	3410	1571	8,652	4284
Rural lifestyle	374	194	244	112	618	306
Total	12,479	6,460	8,120	3,740	20,600	10,200

Combined Summary – Population and Housing for Wellington City

	2001 to 2026		2026 to 2051		2001 to 2051	
	people	dwellings	people	dwellings	people	dwellings
Central Area	8,208	5,472	4,752	3,168	12,960	8,640
Adelaide Road	3,078	1,824	1,782	1,056	4,860	2,880
Johnsonville	2,258	1,277	1,306	739	3,564	2,016
Kilbirnie	2,052	1,140	1,188	660	3,240	1,800
Inner Residential	2,052	1,140	1,188	660	3,240	1,800
Other Sub Centres & Dispersed	2,872	1,687	1,664	977	4,536	2,664
Greenfield	6,864	3,553	4,466	2,057	11,330	5,610
Infill Housing	5,241	2,713	3,410	1,571	8,652	4,284
Rural lifestyle	374	194	244	112	618	306
Total	33,000	19,000	20,000	11,000	53,000	30,000

1. Introduction

In July 2006 Wellington City Council finalised its Urban Development Strategy, one of seven strategies providing a common vision and a simple and clear strategic framework.

The Urban Development Strategy sets out Council's stated approach to managing growth and change for Wellington City and is built around a 50-year growth concept that reinforces the physical and spatial characteristics that make Wellington so distinctive. This concept is based around the idea of a 'growth spine' between Johnsonville and the airport along which more intensive urban development will be encouraged. The 'growth spine' concept suggests nodal intensification in Johnsonville, the Central Area, Adelaide Road and Kilbirnie, supported by improved public transport and roading solutions along the spine.

In developing the Urban Development Strategy and the concept of the 'growth spine', Council considered a range of factors including:

- the nature of recent past growth
- the likely size, composition and housing preferences of future generations[2]
- the suitability of the District Plan and other policies as a basis for on-going and long-term growth management[3]. These are generally considered to be sound and sustainable
- the Wellington Regional Strategy[4]. The emerging directions are entirely consistent with the Council's own thinking on future urban form
- contemporary national and international wisdom about sustainable urban form, including the New Zealand Urban Design Protocol[5], and summarised in the Urban Development Strategy working papers.

This report provides a clearer picture on the nature of recent growth and sets out the base growth assumptions in the Strategy for population and housing. These assumptions are fundamental to the quantification and staging of the 'growth spine' and are required to feed into other studies and projects related to the implementation of the 'growth spine' such as transport studies and town centre planning studies proposed for Johnsonville, Adelaide Road and Kilbirnie.

[2] MERA 2003, 2004, 2005, Property Economics 05, SGS 05
[3] Wellington City Council 2005, UDS Working Paper 1 – City Profile and Policy Stocktake, UDS Working Paper 2 – Preliminary Ideas Directing New Growth.
[4] Wellington Regional Strategy Forum 2005, Growth Framework Discussion Document, and WRS Forum Draft Regional Growth Framework
[5] Ministry for the Environment 2005

2. Information affecting demand for residential development for Wellington City

Factors affecting demand for dwellings include:
- population pressure
- net household formation (including size)
- income and wealth distribution
- cost of housing finance
- price level of dwellings
- government policy (eg public housing programs)
- changing preference in respect of dwelling type and location.

This section provides an assessment of housing demand by looking at population growth estimates, a report on expected housing demand prepared for the Wellington Regional Strategy, and by examining trends of new houses entering the market.

2.1. Population Growth

What we know about population is derived from Statistics NZ projections. While the Urban Development Strategy has a timeframe of 50 years, official Statistics NZ projections go out only to 2026 and are based on an 'estimated resident population'[6]. As part of the Wellington Regional Strategy, a further analysis was made to project regional population and household formation to 2051[7] however care needs to be taken as these projections are based on a 'usually resident population'[8].

While both projections use a different base, the amount of growth between periods is consistent and shows that Wellington City will continue to grow at a rate similar to the national average of around 0.7% per annum for at least the next 20 years. A slow down is expected around 2030 in concert with an ageing population and projected slowing of world population growth.

While population projections are vital for long term planning, they are inherently unreliable. For example, while the latest projections suggest an increase of 13,800 between 2001 and 2006, the provisional 2006 Census count for Wellington City shows an increase of 16,310 from 2001[9] - significantly higher than projected. These provisional counts also indicate that the majority of growth in this period has occurred in the Central Area and surrounding suburbs and greenfields areas, with perhaps less growth than expected in the Outer Residential areas. Note: The Central Area and Outer Residential Areas are defined on the map of District Plan zones attached at Appendix A.

The Urban Development Strategy assumes that growth will continue even if we are unsure of the pace. On this basis an estimate that is cognizant of, rather than reliant on, the official projections is considered most appropriate. The Urban Development Strategy is also about directing growth – so while the Statistics NZ population projections are used as a guide, the population and dwelling numbers proposed for the 'growth spine' may not align with Statistics NZ projections for specific areas.

This report suggests a growth scenario for planning purposes of 33,000 over the 25 year period from 2001 to 2026, and anther 20,000 in the following 25 years to 2051. A total of 53,000 in 50 years - which

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[6] Base from which estimates are derived is 2001 Census but includes adjustments for NZ residents temporarily overseas and residents 'missed' by the Census. Equates to an additional 7,276 residents in 2001.
[7] MERA 2004, 2005
[8] Usually resident population is derived from 2001 Census but does not include adjustments for NZ residents temporarily overseas and residents 'missed' by the Census.
[9] Statistics NZ, Census counts 2001& 2006 (provisional), Projections February 2005.

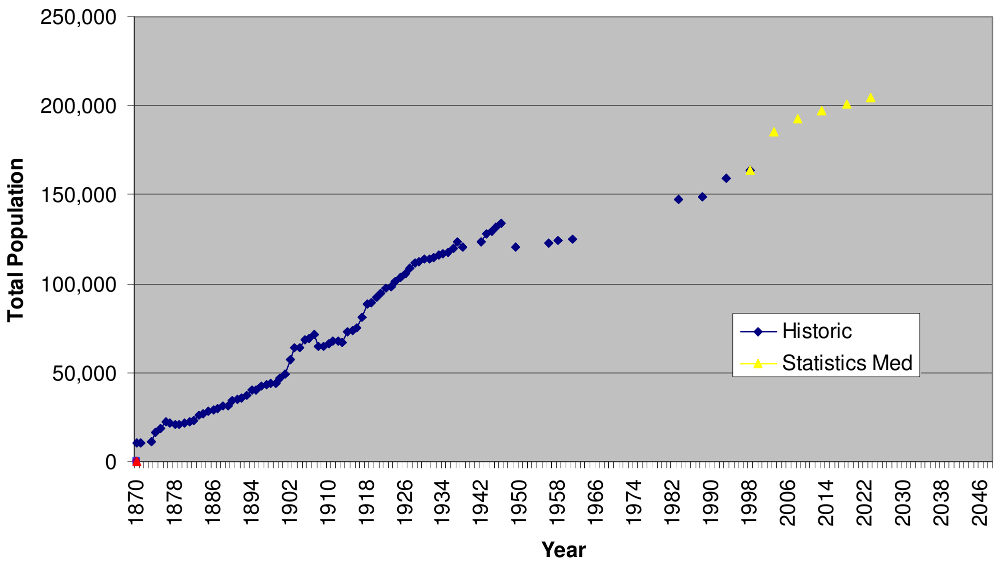
is slightly less than the City's past rates of growth over the course of its short history but in line with most recent medium projections to 2026.

This is in line with historical rates of growth calculated between 1870 and 2001 which give an average annual population growth rate of approximately 1100 per annum – refer to Figure 1.

Table 6: Statistics NZ projections for population growth in Wellington City 2001 to 2026[10]

	2001	2006	2011	2016	2021	2026	Number	Percent
High		188,000	199,000	207,200	214,700	221,800	50,700	30
Medium	171,100	184,900	192,500	197,200	201,100	204,500	33,400	19
Low		181,800	186,200	187,600	188,200	188,100	17,000	10

Figure 1: Historic and projected population growth for Wellington City[11]



2.2. Housing demand assessment by Property Economics Ltd

A report by Property Economics[12] carried out for the Wellington Regional Strategy provides information on expected housing demand based on Statistics NZ and MERA population projections, market data and a household survey.

The report and following tables indicate that, corresponding to a decreasing average household size (2.55 in 2001 to 2.4 in 2021) there will be increasing demand for medium and high density housing while demand for new traditional family dwellings on residential lots will decline. Overall, roughly 60% percent of future demand for new dwellings will be for apartments and terrace style dwellings in medium and high-density areas.

Note: a slightly higher ratio of apartments is suggested later in this report – see Section 2.3.

[10] Statistics NZ, estimated resident base, update May 2005
[11] Source: Historic Population, Wellington City Archives, Sub-national Population Projections, Statistics NZ, February 2005
[12] Property Economics 2005 (also Table 4)

Table 7: Forecast total households for Wellington City

1981	1986	1991	1996	2001	2006	2011	2016	2021	2031	2041	2051
54,770	55,360	56,090	59,850	62,320	66,260	69,940	73,610	77,460	84,220	89,010	91,920

Property Economics 2005

Table 8: Forecast household growth per annum by household structure for Wellington City

Year	Couple without Children	Two-parent Family	One-parent Family	Other multi-person	One person	Total (MERA)
2006	240	155	142	65	258	860
2011	318	-26	84	22	266	664
2016	429	-130	91	46	298	734
2021	477	-175	70	0	397	770
2031	419	-153	62	0	349	676
2041	297	-109	44	0	247	479
2051	180	-66	27	0	150	291

Source: Property Economics 2005

Table 9: Dwelling preference by household structure

Housing Type	Couple without Children	Two-parent Family	One-parent Family	Other multi-person	One person	Total
High Density	60%	10%	50%	30%	60%	42%
Low Density	40%	90%	50%	70%	40%	58%

Source: Property Economics - Survey of new dwelling buyers

The assumptions in Table 9 were based on a survey conducted by Property Economics of new dwelling buyers. The survey found that:

> *Couples without children and one-person households will exhibit a stronger preference for high density housing given its affordability, access to amenities, and low maintenance. One parent families are also likely to have a preference for high density for the same reasons. Two-parent families are likely to exhibit a low preference for high density housing, as this type of housing does not generally provide for their larger housing and outdoor living requirements. Other multi-unit households are likely to have a stronger preference for low density housing, given they are often comprised of young couples and singles that seek multi bedroom accommodation and larger homes.*

Table 10: Forecast demand for high density dwellings by household type for Wellington City

Year	Couple without Children	Two-parent Family	One-parent Family	Other multi-person	One person	Total (MERA)
2006	144	16	71	19	155	405
2011	191	-3	42	7	159	397
2016	257	-13	45	14	179	482
2021	286	-17	35	0	238	542
2031	251	-15	31	0	209	476
2041	178	-11	22	0	148	337
2051	108	-7	13	0	90	205

Source: Property Economics 2005

Table 11: Dwelling type demand forecast for Wellington City

Year	Apartment	Terrace / Unit	*Total high-density*	Detached	Lifestyle	Total
2006	202	202	404	455	0	860
2011	198	198	396	267	0	664
2016	241	241	482	252	0	734
2021	271	271	542	228	0	770
2031	238	238	476	200	0	676
2041	169	169	338	142	0	479
2051	102	102	204	86	0	291

Source: Property Economics 2005

Some key points to note from this data:

- the number of dwellings in Wellington City is expected to increase by approximately 29,600 between 2001 to 2051 – equating to 18,500 for the period to 2026, and a further 11,100 for the period from 2026 to 2051
- when compared to population projections for the same period, this equates to 1 dwelling for 1.8 people
- 60% of future demand will be for apartment and terrace style dwellings while only 40% will be for detached residential dwellings. *Note: a slightly higher ratio of apartments is suggested later in this report – see Section 3*
- Property Economics predict that there will be a 50/50 split between apartments and terrace/unit development. *Note: a slightly higher ratio of apartments is suggested later in this report – see Section 3*
- For detached dwelling, demand will primarily be taken up with greenfield development and infill, and there will be little demand for lifestyle dwellings.

The Urban Development Strategy recommends directing this growth along the 'growth spine' with the majority located in and close to the CBD where market demand and capacity is most evident. It also recommends directing some of this growth to other centres, in particular Johnsonville and Kilbirnie.

A significant challenge in this respect is the expected demand for <u>medium density terrace style housing.</u> We may find that the market wants to put this style of development in places outside the growth spine – particularly areas of high recreational amenity and coastal views. This could create issues and inefficiencies for transport and infrastructure if located in areas that are not in close proximity to main centres and public transport routes. The study on residential infill is of critical importance in this respect, as it will consider areas where residential infill and higher density development should be constrained.

For Suburban Centres zones, it is expected that medium density residential development is likely to continue in some areas (other than Johnsonville, Adelaide Road, and Kilbirnie), particularly where these are close to the growth spine and major public transport routes (such as Tawa). However, in accordance with the Wellington Regional Strategy, the upcoming review of Suburban Centres zones should consider constraining residential development in industrial based employment centres (also called 'work centres') to ensure there is sufficient supply and to retain a level of adaptability for future economic activities.

The Property Economics report expects demand for high density apartment style residences in the Central Area (and similarly the Adelaide road area) to continue due to changing household formation, proximity to work and entertainment, and lifestyle factors.

The extent of future demand for apartments in other mixed-use centres like Johnsonville and Kilbirnie is difficult to predict with demand perhaps more related factors such as 'affordability'. Another Wellington

Regional Strategy consultant report by SGS[13] is optimistic of demand for this style of development in sub-regional centres than is Property Economics. Relevant sections are quoted here as they are considered pivotal to the question of capacity planning for Wellington City.

> *According to Property Economics, apartment demand will be confined to the Wellington CBD and its immediate surrounds. A small amount of apartment demand will locate in sub-regional centres, for example the Johnsonville Shopping Centre and the Hutt City Centre, and other locations that offer views and natural environment qualities in high amenity zones outside commercial centres, for example Titahi Bay and Paraparaumu Beach.*
>
> *For other locations any –high density demand' is mainly for unit or terrace-style dwellings, as opposed to apartments….*
>
> *…From our experience there is latent demand for apartments in suburban centres from a number of groups. Key demographics that expressed an interest in non-CBD apartments included the 18-34 age group, single persons, couples without children, and adult share households. This is converse to Property Economics' assumption that multi person households were likely to have a strong preference for low density housing. The older population may also become more interested in apartments located in suburban centres once the product is established and demonstrated.*
>
> *…Intervention which increases the urban amenity of centres outside the Wellington CBD, via regeneration of town centres, could potentially foster the 'urbanity' that the apartment market desires. Introduction of higher density, good quality residential developments into these centres would also help establish critical population mass and urban character in non-CBD locations."*

Leaving aside some issues of definition such as the different interpretations of high and low density, the points made by SGS are along the lines that the future is to be created and is not solely a product of the past or even present trends.

Following on from these points, the implementation programme under the Urban Development Strategy recommends developing a vision and implementation plan for Adelaide Road, Johnsonville and Kilbirnie. It is hoped that growth will be encouraged by improving the design of key centres and by working with the private sector to stimulate market demand in these areas (eg. demonstration projects). Also, critically we need to ensure there is basic capacity (space) for the desired growth to occur - the focus of Section 3 of this report.

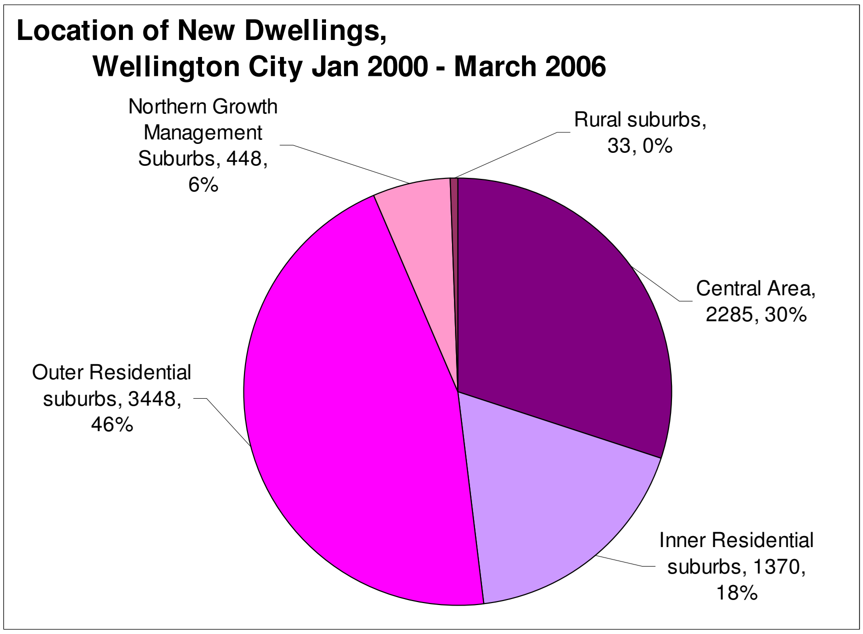
2.3. New houses entering the market

The historical nature of building consent data makes it useful tool for benchmarking future demand. The following information has been drawn from the District Plan monitoring programme on urban form.[14]

The assessment of new houses entering the market over the last few years shows new dwelling growth is dispersed throughout the city. The Central Area and Inner Residential areas account for almost half of all new dwellings in the period between January 2000 and March 2006[15]. This shows the dominance

[13] SGS Economics and Planning, May 2005. Report for the Wellington Regional Strategy on key policy levers.
[14] District Plan monitoring programme: Urban Form, May 2005.
[15] District Plan monitoring programme update: 2006

that the inner city area continues to have. New dwellings in the Outer Residential areas account for 46%, and dwellings in suburbs regarded as the Northern Growth Management Areas account for a further 6%. Total dwelling numbers in the rural area are low in comparison – less that 0.5%. However, there is a lower tolerance for new buildings in the rural area.



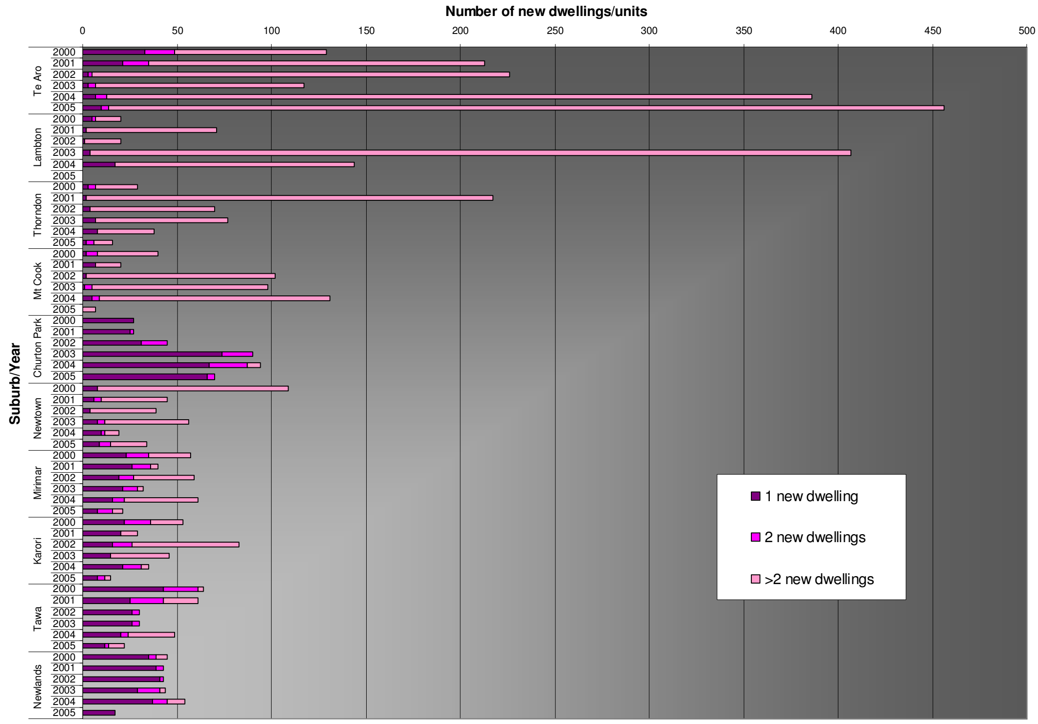
While the locations of new dwellings entering the Wellington market have been spread across the city, building consent data for this period shows a clear preference for high and medium density development (based on 2 or more dwellings on a site). To this effect, building consent data over the last 6 years shows approximately <u>one third are stand alone dwellings and two thirds terraces/units or apartments.</u> This suggests a considerably higher demand for medium/high density development than suggested by Property Economics which could also be a reflection of the decreasing availability of land (especially larger parcels of land) and the growing demand for smaller affordable housing, and more generally, an increasing acceptance of this form of housing.

These trends are illustrated in the Figure 4 showing the suburbs that have had the greatest number of new dwellings constructed, either stand alone dwellings, duplex dwellings or unit/apartment developments. Te Aro, Lambton, Thorndon and Mt Cook are experiencing the most growth in dwelling units. It is also clear that townhouses or apartments are the dominant type of dwellings being built in these areas.

Key Assumption: Based on the analysis of new houses entering the market over the last 6 years, the demand for high density housing is expected to be slightly higher than that projected by Property Economics. For the purposes of this report it is expected that 36% of total growth will demand high density housing, 30% medium density housing and the remaining 34% of demand being for single detached dwellings.

Note: The resultant slightly reduced demand for single detached dwellings fits with the assumption set out in Section 4 of this report regarding the likely reduced capacity for future infill development in residential areas.

Figure 4: New Dwellings - Top Ten Suburbs (2000-2005)



Source: Wellington City Council Building Consent data 2000-2005, District Plan Monitoring Report Update: 2006

Other data that further illustrates changes in housing types includes:

- In 2002, 40 percent of all new dwellings were for apartments – second only to Auckland with 53 percent. The majority of these are located in the Central Area.[16]
- In 2003, 925 out of a total of 1269 new dwellings were units. This represents a very high rate (73%) of urban housing intensification when compared to other cities.[17]
- By December 2003 there were approximately 4450 apartments in the CBD, an increase of 1000 units during 2003.[18]

[16] *Quality of Life in New Zealand's Eight Largest Cities 2003*, p 76
[17] Wellington City Council Building Consent data 2003
[18] Projected figures from Bayleys Research: Residential, 2003

3. Capacity and assumptions for residential development

Capacity is essentially a function of space derived from vertical and horizontal measures. The amount of space theoretically or practically able to be utilised depends on the rules of the particular zone (eg. site coverage) and a range of other variables such as topography, building stock and the existing uses on each available site. This section is just one small contribution to the analysis of capacity for residential growth. The findings are based on existing projects[19] that have considered capacity for residential growth, anecdotal evidence and for residential areas, the provisional GIS analysis on potential for residential infill.

The purpose of this section of the report is to provide a commentary on residential capacity for different parts of the city and draws out the key assumptions for the future growth as set out in the Urban Development Strategy.

3.1. Rural lifestyle

Capacity for rural lifestyle development in the Rural Area is considered to be relatively small under the current District Plan and directions proposed by the Urban Development Strategy. For the purposes of this report, rates of growth are expected to be low, with only a small amount of rural lifestyle development provided for in the northern areas of the city (Woodridge, Lincolnshire Farm).

Key Assumption: Rates of growth in rural areas will continue to be low and there is no proposal to amend the rules to facilitate intensive rural lifestyle development.

3.2. Greenfields development

The Northern Growth Management Plan provides for significant new areas to be developed in areas adjoining the northern suburbs. The space available corresponds to 3650 new dwellings and approximately 9,000 people, and this is expected to provide for at least 20 years of growth demand – which broadly fits in with the growth scenario to 2026 put forward in this report.

Smaller areas of greenfields development are expected to occur on the fringes of residential areas. The possible extension of Brooklyn Rise is an example of one such area although the extent of the proposed development has not yet been considered by Council.

Another possible area is Miramar Peninsular where a significant area of government owned land may become available for new residential development.

Between all these areas is would seem quite feasible to accommodate 5000 new dwellings over 50 years which is broadly in line with the number of dwellings in greenfields areas suggested in this report.

3.3. Outer residential areas

Initial GIS analysis indicates that existing Outer Residential neighbourhoods have at least 1200 hectares of potentially developable land (based on a minimum building footprint of 200 square metres). How many actual dwellings this land could provide for has not yet been analysed but the growth scenario for the next 50 years suggested by this report would require this area to accommodate approximately 4000 new dwellings or roughly 3 dwellings per hectare of available land. This would seem to indicate that there is considerable capacity for anticipated demand within this zone.

[19] WCC GIS study on potential for residential infill 2006, WCC District Plan assessment of Capacity in Te Aro, 2006, Land Use and Insulation Study, Wellington Airnoise Management Committee, 2006.

The issue of how to better manage residential infill is high on the Council's agenda. Through the residential infill study, the Council is keen to address the apparent effects of residential infill on suburban character and sense of place. The study will also look at targeting residential development to specific locations (and therefore constrain infill development in some places) – clearly an important consideration in determining capacity for growth. On the other hand, residential infill potentially provides a very positive stimulant to some less popular areas and has the added benefit of helping to maintain populations by counterbalancing the effect of decreasing household size.

Key Assumption: there will be some reduced capacity for residential infill development and medium/high density housing in outlying residential areas that are not well provided for in terms of public transport.

3.4. Inner residential areas

As would be expected, there is less infill capacity within existing inner city residential areas and any capacity may be further constrained by current and potential future Council initiatives to protect the valued characteristics of these older neighbourhoods. GIS analysis measures the available land area as a little under 65 hectares (based on a building footprint of $160m^2$). The proximity to the Central Area however, means there is likely to be continued demand for residential redevelopment in these areas, particularly in places such as Oriental Parade which has much more generous building heights than other inner residential areas.

Under the growth scenario used in this report, these areas would not be required to accommodate significant new growth as they are already achieving medium density and have characteristics that are too important to lose.

Key Assumption: There is capacity for a small amount of medium density within existing inner residential areas and a small amount of high density apartment living in Oriental Parade.

3.5. Potential new 'inner residential' areas

The relationship between the areas inside and outside of the ring of inner residential neighbourhoods is a complementary gradient of densities from low to high at the core Central Area. This pattern is not repeated around the other key centres but potentially could be, and this would help to provide the desired housing choices as well as the necessary capacity in Kilbirnie and Johnsonville in particular. The feasibility of instituting such a change to existing residential neighbourhoods is being considered and tested as part of the Johnsonville planning study. Johnsonville has a significant area of low to medium density housing within 600 metres walkability of Johnsonville Railway Station. Increasing density in this area would help support the Johnsonville line and complement other improvements to the adjoining Johnsonville town centre.

While Property Economics predict that future demand for terrace style housing will be about the same as demand for apartments, analysis of recent past building development indicates more preference for apartments. These categories together make up approximately two thirds of the dwellings under the 50 year scenario in this report. If 9,000 of these are terrace style dwellings then it may be desirable to provide new areas for this style of development around other key centres or elsewhere along the 'growth spine'.

Key Assumption: Some of the expected demand for medium density development will be directed to areas surrounding Johnsonville town centre and Kilbirnie town centre.

3.6. Suburban centres

There are over 25 Suburban Centres in the City – generally classified as 'town centres', 'local centres' and 'work centres'.

Under the current District Plan regime, the theoretical physical capacity of all suburban centre land for residential development could be very significant. However the practical capacity or desired level of use for such purposes is probably much smaller than the theoretical physical capacity due to the complex array of factors that might affect decisions to develop. The only area an attempt has been to calculate theoretical and practical capacity for residential development for Suburban Centres land is within the Airport Noise Zone as part of the Land Use Management and Insulation Study[20]. The results are hugely variable suggesting anything between 50 and 2192 dwellings for the three Suburban Centres areas located within the Airport Noise Zone.

Obviously the key areas along the 'growth spine' (Johnsonville, Adelaide Road and Kilbirnie) are priority areas for detailed analysis based on a mixed-use, quality urban design development scenario.

A review of Suburban Centres is proposed in the next few years. In accordance with the Wellington Regional Strategy, this should consider constraining residential development in industrial based employment centres (also called 'work centres') to ensure there is sufficient supply and to retain a level of adaptability for future economic activities.

Key Assumption: The majority of demand for medium density will be directed to Suburban Centres on the growth spine, in particular, Johnsonville, Kilbirnie and Adelaide road. There will be some demand for high density in Adelaide road, and to a lesser extent Johnsonville and other dispersed centres.

Key Assumption: Residential development will be discouraged in Suburban Centres where these centres are industrial based employment centres or 'work centres'.

3.7. The Central Area

As with Suburban Centres, determining capacity for residential development is very complicated due to the wide range of factors at play. Notwithstanding this, a GIS analysis was carried out in early 2006 to try to develop a feel for the expected type and scale of growth in Te Aro flat based on current building heights and an assumption of 80% total site coverage. The results are mapped out in the following diagram, and while indicative, show that there is significant capacity for office and residential development in this area.

[20] Land Use Management and Insulation Study (LUMIN's), Wellington Airnoise Management Committee, 2006.

Source: Wellington City Council 2006.

The potential for residential development in other parts of the Central Area are equally high – with the waterfront areas clearly being of high attractiveness for residential development. Building on this, the waterfront framework seeks to introduce an aspect of inner city living to parts of the waterfront.

Taking account of past rapid growth and expected high levels of future growth, it is expected that the Central Area will accommodate the majority of high density demand, with the remaining occurring in Adelaide Road and a small amount in Johnsonville and areas such as Oriental Parade.

Key Assumption: the majority of high density apartment style residences will be located in the Central Area, with the remaining occurring in Adelaide road, and a small amount in Johnsonville and other areas such as Oriental Parade.

3.8. Institutional precincts

These areas include the City's major educational institutions and represent unknown potential for special purpose residential development as they share similar rules in the District Plan. For example, while most student accommodation is provided off campus, Victoria University is aiming to provide a 200+ hall of residence on the west side of Kelburn Terrace and a smaller village style complex at FairlieTerrace.

Key Assumption: the majority of student accommodation will be provided off-campus and there will be minimal residential development within institutional precincts.

4. Application to the Urban Development Strategy and the 'growth spine'

The growth scenario in this report is consistent with and seeks to give effect to the proposed spatial directions for growth as expressed in the Urban Development Strategy. Figure 4 shows the key graphic containing the long term spatial direction for urban development and in particular the concept of a 'growth spine' linking the key centres from Johnsonville to the Airport. The 'growth spine' concept promotes a compact urban form and an emphasis on growth in key centres, as opposed to growth principally through residential infill and peripheral greenfields development.

Following on from the previous discussion about capacity and demand, this section attempts to place actual numbers to the 'growth spine' in relation to population and housing.

In doing this, a further complexity arises in relation to household size. The housing demand work carried out by MERA and Property Economics suggest that household size will decline from 2.55 in 2001 to 2.4 in 2021. Over the same period, the average household size for all expected new growth equates to approximately 1.8 people per household – but clearly household size is likely to be different depending on location and density of development. For this reason and to determine a more realistic indication of population relative to dwellings, a call needs to be made on the application of different household sizes for particular types of dwellings.

Key Assumption: For the purposes of this report, household size for all new growth in the city over the period 2001 to 2051 equates to approximately 1.8 people per household, which will be apportioned as follows to better reflect household formation relative to dwellings:

- **High density development : 1.5**
- **Medium density development: 1.8**
- **Low density development : 2.0**

4.1. Citywide

Using latest Statistics NZ medium series population projections as a base, Wellington City should plan for population growth of approximately 33,000 over the 25 year period from 2001 to 2026. Due to expected slowing down in population growth around 2038, Wellington City should plan for another 20,000 in the following 25 years to 2051. Combined, this suggests a total population growth of approximately 53,000 in 50 years - similar to the City's past rates of growth over the course of its short history.

Table 1: Population and Housing for the City

	2001 to 2026		2026 to 2051		2001 to 2051	
	people	dwellings	people	dwellings	people	dwellings
Total	33,000	19,000	20,000	11,000	53,000	30,000

4.2. Application to the 'growth spine'

Using demographic analysis[21] about the likely size, composition and housing preferences of future generations - combined with analysis of recent building development, this report assumes that 36% of the total growth will demand high density housing, and 30% will demand

[21] MERA 2003, 2004, 2005, Property Economics 05, SGS 05

medium density housing. The remaining 34 % will demand low density mainly detached housing.

As stated above, the household sizes apportioned to growth will be 1.5 for high density development, 1.8 for medium density development and 2.0 for low density development.

The Urban Development Strategy suggests that the majority of medium and high density housing should be directed to the 'growth spine' as follows:

4.2.1. Multi-unit high density

For the central part of the 'growth spine', it is considered likely that the majority of the high density apartment housing will occur in the Central Area (80% of 36%) and the first section of Adelaide Road (10% of 36%) where market demand is most evident. The remaining will be split between other areas such as Oriental Parade and town centres along the growth spine such as Kilbirnie, Newtown (8% of 36%) and Johnsonville town centre (2% of 36%). Table 2 summarises what this means in terms of people and dwellings.

Table 2: Multi-unit High Density

	2001 to 2026		2026 to 2051		2001 to 2051	
	people	dwellings	people	dwellings	people	dwellings
Central Area	8,208	5,472	4,752	3,168	12,960	8,640
Adelaide Road	1,026	684	594	396	1,620	1,080
Johnsonville	206	137	118	79	324	216
Other dispersed	820	547	476	317	1,296	864
Total	10,260	6,840	5,940	3,960	16,200	10,800

4.2.2. Multi-unit medium density

In terms of directing growth in line with the 'growth spine' concept, the most difficult to both realise and predict relates to medium density development. This is because there is considerable opportunity to development medium density in a wide range of areas of the city.

To this effect, the numbers in Table 3 are based on the following assumptions:

- The majority of multi-unit medium density development will be encouraged in key centres along the 'growth spine' - Johnsonville (20% of 30%), Kilbirnie (20% of 30%), Adelaide Road (20% of 30%)
- There will continue to be some multi-unit medium density development in other Suburban Centres particularly those located on the growth spine (20% of 30%)
- There is no capacity for residential development in Suburban Centres where these are industrial based employment centres
- There will continue to be some multi-unit medium density development in Inner Residential areas (20% of 30%)

Table 3: Multi-unit Medium Density

	2001 to 2026		2026 to 2051		2001 to 2051	
	people	dwellings	people	dwellings	people	dwellings
Johnsonville	2,052	1,140	1,188	660	3,240	1,800
Kilbirnie	2,052	1,140	1,188	660	3,240	1,800
Adelaide Road	2,052	1,140	1,188	660	3,240	1,800
Other Suburban Centres	2,052	1,140	1,188	660	3,240	1,800
Inner Residential	2,052	1,140	1,188	660	3,240	1,800
Total	10,260	5,700	5,940	3,300	16,200	9,000

4.3. Low density

Using demographic analysis[22] about the likely size, composition and housing preferences of future generations, combined with latest building consent data and assumptions on infill development, it is expected that 36% of the total growth will demand low density, mainly detached housing.

To this effect, the numbers in Table 4 are based on the following assumptions:

- The majority (55% of 36%) of low density development is expected to be in the form of residential Greenfield subdivisions in the northern suburbs and in pockets of undeveloped land within the existing urban footprint.
- Reflecting a likely tightening up in residential infill a smaller amount (42% of 36%) of low density growth is expected to be in the form of residential infill. This will be encouraged in areas close to key centres and major public transport routes.
- Growth of lifestyle housing in the rural area will continue to be low (3% of 36%).

Table 4: low density areas

	2001 to 2026		2026 to 2051		2001 to 2051	
	people	dwellings	people	dwellings	people	dwellings
Greenfield	6,864	3553	4466	2057	11,330	5610
Infill Housing	5,241	2713	3410	1571	8,652	4284
Rural lifestyle	374	194	244	112	618	306
Total	12,479	6,460	8,120	3,740	20,600	10,200

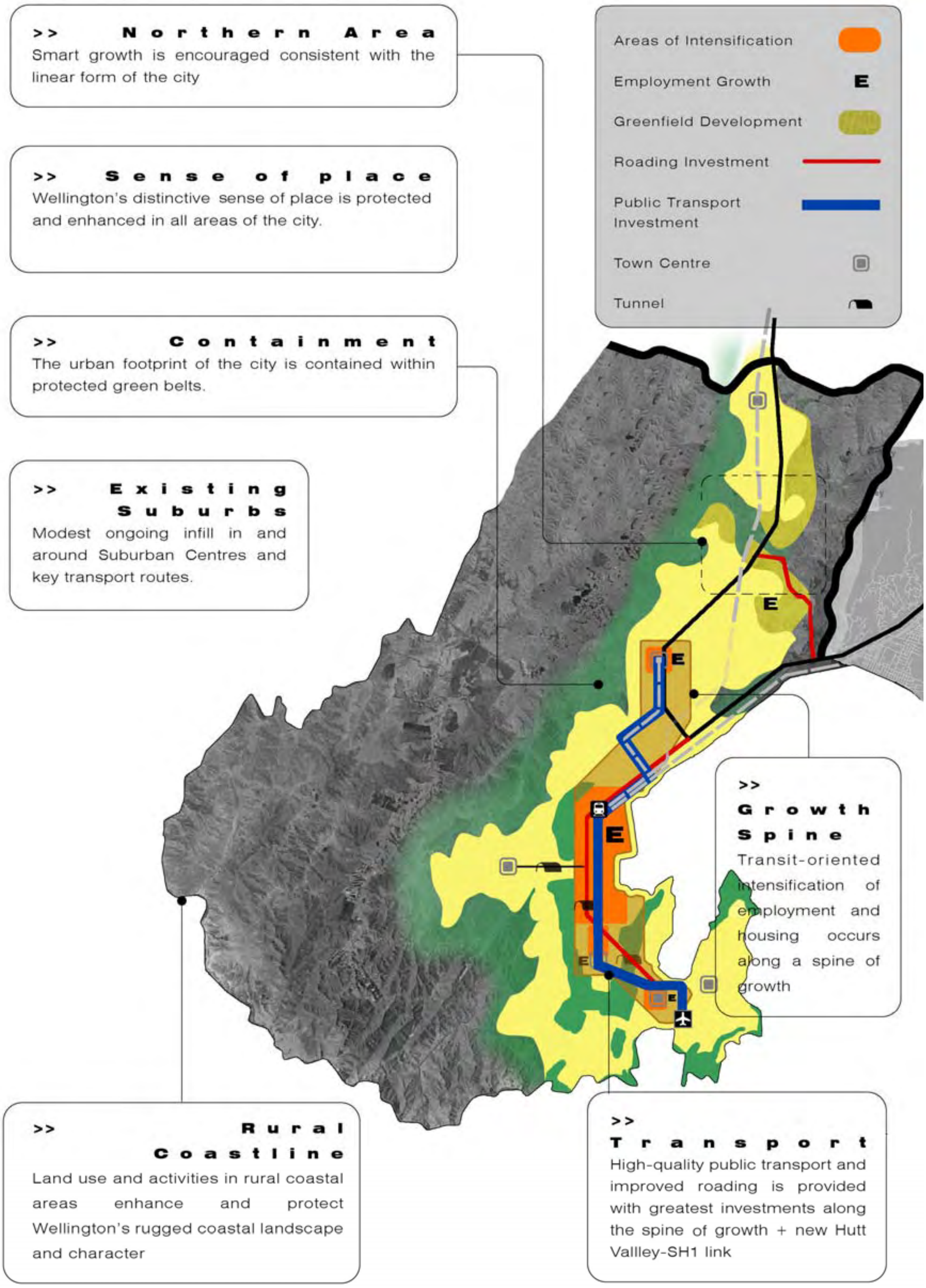
[22] MERA 2003, 2004, 2005, Property Economics 05, SGS 05

4.4. Combined summary

Table 5: Combined Summary – Population and Housing

	2001 to 2026		2026 to 2051		2001 to 2051	
	people	dwellings	people	dwellings	people	dwellings
Central Area	8,208	5,472	4,752	3,168	12,960	8,640
Adelaide Road	3,078	1,824	1,782	1,056	4,860	2,880
Johnsonville	2,258	1,277	1,306	739	3,564	2,016
Kilbirnie	2,052	1,140	1,188	660	3,240	1,800
Inner Residential	2,052	1,140	1,188	660	3,240	1,800
Other Sub Centres & Dispersed	2,872	1,687	1,664	977	4,536	2,664
Greenfield	6,864	3,553	4,466	2,057	11,330	5,610
Infill Housing	5,241	2,713	3,410	1,571	8,652	4,284
Rural lifestyle	374	194	244	112	618	306
Total	32,999	19,000	20,000	11,000	53,000	30,000

Figure 4. Long Term Direction for Urban Development in Wellington City

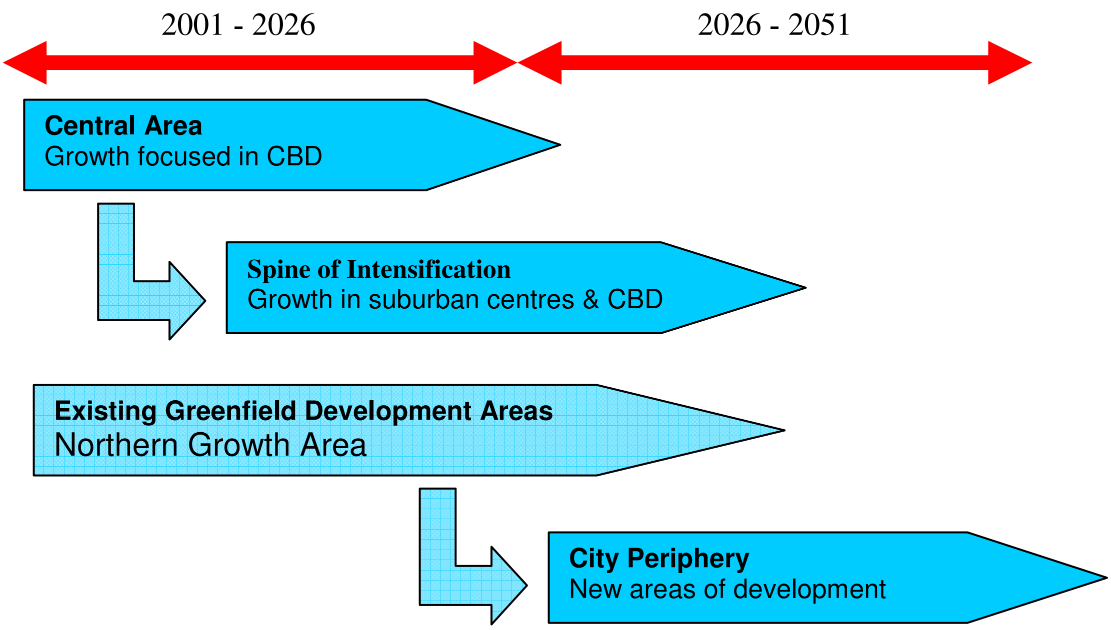


5. Relation to planning period

The key issues or assumptions relating to the planning period are:

- Growth will slow in the second half of the planning period (from 2031 to 2051) based on projections of World population growth and its effect locally within the Wellington Region.
- The supply of land for Greenfield developments under the Northern Growth Management Plan will be fully utilised around the middle of the planning period (if not before) and new peripheral growth will need to be identified - this is most likely in Takapu Valley which is an extension of the Northern Growth Management Area and generally within the existing urban footprint
- Initially the focus for high density growth will continue in the Central Area but that within ten years significant progress needs to be made on providing growth opportunities elsewhere in the Growth Spine for the concept to become a reality. Without this a significant section of the market (medium density or high density outside of the Central Area), and the necessary overall capacity may not be provided for or may be provided for by the market outside the Growth Spine in areas that are not desirable in terms of long term sustainability.

Figure 5. Possible development phases for growth in Wellington City[23]



[23] adapted from draft Urban Development Strategy

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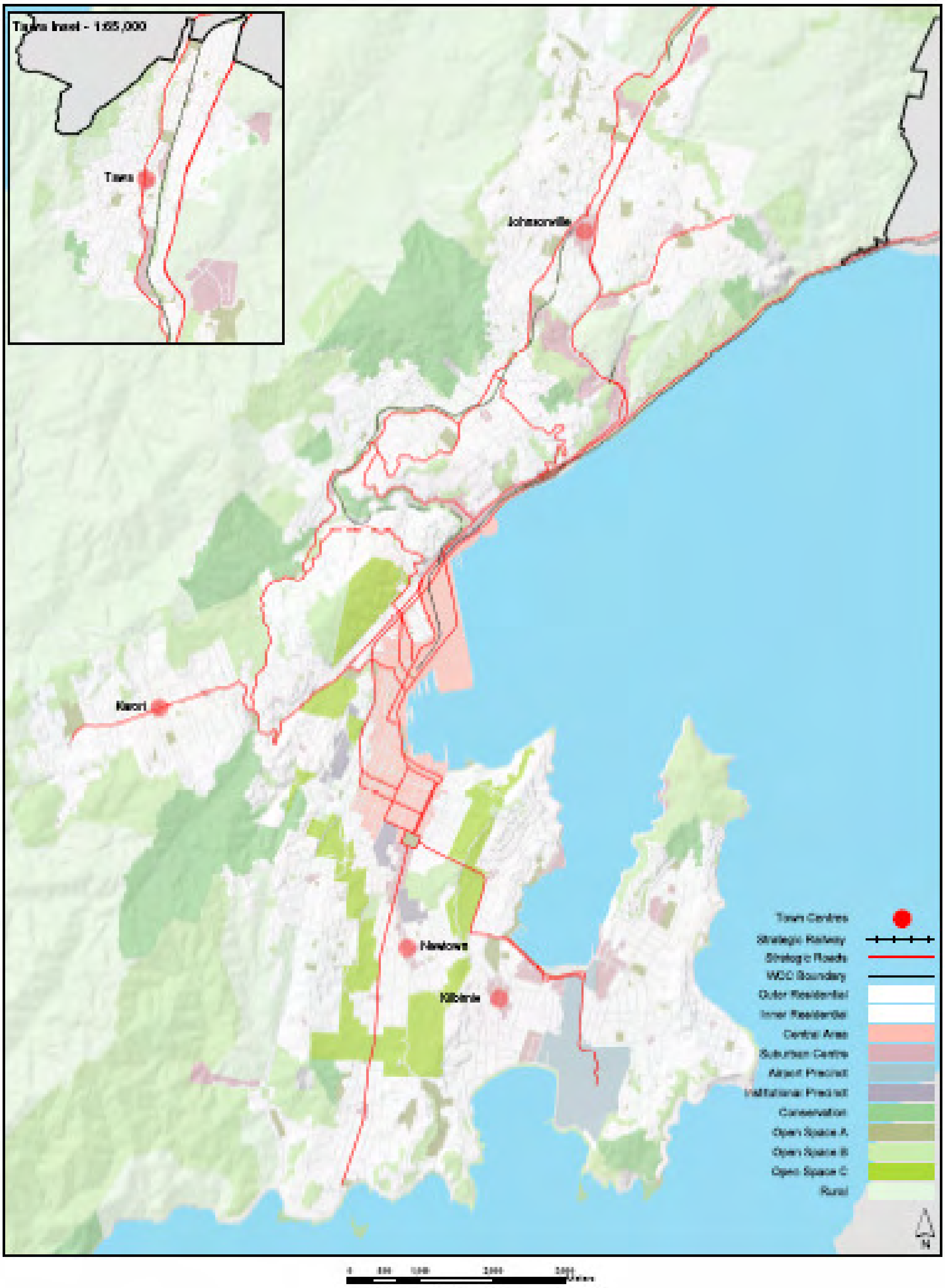
Attachment A - District Plan Zone Map



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District Plan Activity Map