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Capacity for Growth Study 2006

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Capacity for Growth Study 2006

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The Capacity for Growth study monitors and reports on residential, business and rural land availability within the Auckland region. All residential, business and rural zoned land has been assessed based upon the policies and rules of the region's territorial authority district plans, as at March 2006. Conclusions have been drawn as to how long Auckland's capacity will last under current planning policy by combining past development trends and future projections with the capacity survey results.

For residential capacity the report finds that:

- Regional residential capacity exceeds the 15 years of supply required by the Auckland Regional Policy Statement.
- For metropolitan Auckland the 15 year supply is not guaranteed as a range of development outcomes are possible under the current zone rules. The supply of residential capacity may be as low as 11 years (as at 2006) – well below the 15 year Auckland Regional Policy Statement requirement.
- The capacity available in Rural Towns and Coastal Settlements is consistent with the Auckland Regional Growth Strategy in terms of location (centred upon existing towns), quantity (it can provide for up to a 100% increase in the number of occupied dwellings) and housing type (the majority being stand alone dwellings, with some opportunity for intensification in the future).
- A significant proportion of rural area capacity exists as countryside living (rural residential) and as vacant titles (7,389). This capacity is scattered widely across the whole rural area.
- There is significant residential capacity in the planning process (i.e. Pipeline Capacity). The form and scale of this capacity varies widely and includes: greenfield and brownfield land inside and outside the Metropolitan Urban Limits, mixed use activity within business areas, and the intensification of existing town centres.

For business land capacity the report finds that:

- The region's district plans provide capacity for the development of a further 2,406 hectares of business land.
- Business land capacity in the Auckland metropolitan area will provide for 19 years of development. However, an assessment of capacity in terms of being readily realisable for development suggests that this figure could be considerably lower and that capacity could be exhausted sooner – i.e. by 2021, providing just 15 years of capacity as at 2006.
- Business land capacity is generally well located in terms of proximity to the regional freight network.

- Some metropolitan locations now have very limited stocks of vacant business land (North Shore 6 years and Waitakere city 13 years). A significant component of Auckland city capacity (75%) is by way of brownfield land.
- Brownfield land provides significant capacity within existing urban areas. The re-use and intensification of underutilised business land is consistent with the objectives of the Auckland Regional Growth Strategy. However, significant constraints to the development of this land have been observed so these will need to be addressed before the brownfield land supply can be considered "readily realisable".
- There is significantly more Group 1 (land extensive industrial activities) vacant land available than Group 2 (land intensive activities). However, Group 2 land has significant potential for further intensification (multi storey development), to which the activities are well suited.
- The majority of land zoned for Future or Special business is for Group 1 activities (382 hectares in the metropolitan area and 112 hectares within Rural Towns and Coastal Settlements). Additional Group 2 land is planned for the new town centres at Westgate, Hingaia and Takanini.
- Group 1 business sector activities tend to require larger land holdings however, a significant proportion of vacant metropolitan Group 1 parcels are less than 0.5 hectares in area.
- There is significant business land capacity in the planning process i.e. Pipeline Capacity, with the majority providing for Group 1 activities.

2 Introduction

The Capacity for Growth study monitors and reports on residential, business and rural land availability within the region. The capacity assessment is based on the operative[1] policies and rules of the region's district plans as at March 2006.

The Auckland Regional Policy Statement (ARPS) requires that Capacity for Growth surveys be undertaken once every five years for the purposes of managing urban containment (Section 2.6.3.6). The Capacity for Growth study is also required for monitoring the progress and implementation of the Auckland Regional Growth Strategy (ARGS) and has been a significant part of the Growing Smarter Evaluation 2007. This is the third study in the series with previous reports prepared and reported to the council in 1998 and 2003.

This report presents the results for residential capacity and business land capacity as two separate sections. Within each of the sections the results are summarised by geographical area; first as a regional overview and then by the metropolitan area, rural towns and coastal settlements and the rural area (residential capacity only)[2]. Conclusions have been drawn as to how long Auckland's current capacity will last under current planning policy by combining past trends and future projections with capacity data.

The survey results are analysed against recognised issues, for example; for residential capacity this includes a breakdown by housing-type, parcel size, period vacant, patterns of tenure and capacity uptake between 1996 and 2006. For business land this includes a break down by potential business sector use (Group 1 - Land extensive industrial activities or Group 2 - Land intensive activities), parcel size, location relative to the regional freight network, period vacant and capacity uptake 1996 to 2006.

The report includes an assessment of how the capacity results align with the Auckland Regional Growth Strategy's Growth Concept - a snapshot of how the region could look in 2050[3]. The report also introduces the concept of 'Modified Capacity' - a short-term, more market orientated, view intended to represent capacity that is readily realisable, i.e. as opposed to the longer-term view that assumes that all surveyed capacity is available and will be developed. The assessment is based upon observed development trends of the past 10 years (1996-2006) combined with identified development constraints. The purpose of this assessment is to provide policy makers with a more complete understanding of capacity supply issues as well as to identify where policy actions may be best directed.

'Pipeline Capacity' is another concept introduced in this report. The concept has been used to refer to capacity that was in the planning processes at the time of the study

[1] Operative means policies and rules that have passed through the planning process and have either been approved or are no longer subject to appeal.
[2] The geographical areas are described in the Background section.
[3] The Growth Concept seeks to focus the majority of future development within the current metropolitan area in town centres aligned with high quality passenger transport. Areas of urban expansion and the development of rural and coastal settlements were also identified as means of providing for future growth, as well as housing and lifestyle choice. Improving access to jobs and between businesses was also a goal (ARGS 1999, pg 2-3, and 34-35).

(March 2006) but not in district plans; for example, capacity in proposed district plan changes or strategic growth management documents. Again the concept has been introduced to provide policy makers with a more complete picture of capacity.

A summary of the capacity results is presented as tables in Appendix A and as a series of maps in Appendix D.

A full description of the methodology and assumptions used to generate the capacity results are outlined in a separate companion report; Capacity for Growth 2006 Study: Methodology and Assumptions Summary. Auckland Regional Council. Technical Report 2010/015).

3 Background

The study was conducted and managed by the Auckland Regional Council's Social and Economic Research and Monitoring team. The process of confirming methodologies and checking results has involved officers from each of the region's seven territorial authorities.

Where possible, measures have been kept consistent with the previous studies. Where measures have varied, or new measures have been added, agreement on the methodology applied was reached by the regional working group (which consists of land-use and economic development planners from the territorial authorities).

3.1 Geographical Study Areas

This report has adopted the approach of previous Capacity for Growth studies surveying capacity for the metropolitan, rural towns and coastal settlements and for the rural area. These geographically based study areas are defined as follows:

The Auckland Region:

For the purposes of this study the Auckland region includes the Auckland Metropolitan Area, the Rural Towns and Coastal Settlements and the Rural Area. Each of these areas is described in the following paragraphs as well as being shown on Map 1: Capacity for Growth Study Areas, page 8.

The Metropolitan Area:

The metropolitan area includes all the residential and business zoned land that falls within the Metropolitan Urban Limit (MUL) as defined by the ARPS (as at March 2006). Waiheke Island has been summarised under the Rural Town results.

Rural Townships and Coastal Settlements:

There are in excess of 150 rural-based settlements in the Auckland region. These range in size from towns with over 5,000 dwellings to those with just a few. Due to limited available resources, not all the settlements have been assessed. Thirty-three rural towns and coastal settlements were included in the final study.

The towns were selected based upon the following criteria:

- Included in the 1996 capacity study and defined as 'Regional Significance',
- have significant growth potential,
- be subject to potential growth pressure (i.e. located within commuting distance of Auckland's metropolitan area),
- be located on an existing (or proposed) significant transport route (i.e. State Highway or rail),
- be identified and requested by territorial authorities, and

- included in the Capacities Review report prepared by Urbanista Ltd (August 2005).

Rural Towns and Coastal Settlements

Rodney District		Waitakere City		Manukau City	
1	Wellsford	17	Herald Island	25	Beachlands/Maraetai
2	Warkworth	18	Huia	26	Clevedon
3	Leigh	19	Parau	27	Kawakawa Bay
4	Omaha	20	Piha	28	Orere Beach
5	Point Wells	21	Waitakere Village	29	Whitford
6	Matakana	22	Whenuapia Coastal		
7	Snells/Algies	23	Whenuapai Village	Franklin District	
8	Puhoi			30	Pukekohe
9	Waiwera	Auckland City		31	Waiuku
10	Stillwater	24	Waiheke Island	32	Patemahoe
11	Helensville			33	Tuakau[4]
12	Parakai				
13	Muriwai				
14	Waimauku				
15	Kumeu/Huapai				
16	Riverhead				

The Rural Area:

For this study the Rural Area is defined as all the non-urban land in the region outside the Metropolitan and Rural Towns and Coastal Settlement areas. It includes all rural zoned land, countryside living areas, landscape and ecological protection areas.

3.2 Land Area Classifications referred to in the Study

Residential Land by Housing Type

There are 85 residential zones in the Auckland region. These zones guide the intensity and scale of residential development. To provide an understanding of the range of housing that may result from the surveyed capacity the zones have been grouped according to the Auckland Housing Choices guide typologies and densities (see guide at Figure 31). The groupings are summarized in Table 1below.

For a full explanation of the assumptions and methodology applied refer to the Land Area Classification section of the Capacity for Growth Study 2006, Methodology and Assumptions Summary Report TR2010/015.

[4] Tuakau is outside the Auckland region however, it has been included for transport planning purposes.

Table 1: Residential Housing Type and Intensity

Residential Intensity	Residential Housing Typology	Dwellings per ha (Gross)
Urban Low to High Density	Low-rise to High-rise	30+ dwelling units per ha
Suburban High Density	Terrace to Low-rise	36 to 100 dwellings per ha
Suburban Medium Density	Town House to Terrace	25 to 33 dwellings per ha
Suburban Conventional Density	Conventional Suburban to Town House	10 to 22 dwellings per ha
Suburban Low Density	Low Density Suburban	7 to 8 dwellings per ha
Large Lot	Large Lot	1 to 5 dwellings per ha
Rural Lifestyle	Rural Lifestyle	1 dwelling per ha and less

Centres and Non Centres:

Centres were selected based upon territorial district plan zone classifications and included sub-regional, local and neighbourhood centres (mixed-use type zonings). Non-centres were the balance business zoned areas. Non-centres are characterised by industrial, manufacturing or single-use type zonings. Small business zones, e.g. local shops are not included in the study. A full list of the business areas by centre and non-centre classification is listed in Table 81 Appendix D. For a full explanation of the assumptions and methodology applied refer to the Land Area Classification section of the Capacity for Growth Study 2006, Methodology and Assumptions Summary Report TR2010/015.

Group 1 and Group 2 Business Sector Classification:

The region has adopted a business sector classification which groups activities by their land area requirements[5]. Classification Group 1 Business Sectors include land extensive industrial activities such as manufacturing, construction, wholesale trade and transport and storage. Classification Group 2 Business Sectors includes activities that are land intensive for example, retail trade, accommodation, cafes, and restaurants, communication services, finance and insurance, property and business services, government administration and defence and personal and other services. The Capacity for Growth study has taken these useful groupings and applied them to the region's business zonings in order to identify the supply of vacant land available to each Grouping. For a full explanation of the assumptions and methodology applied refer to the Land Area Classification section of the Capacity for Growth Study 2006, Methodology and Assumptions Summary Report TR2010/015.

Rural Land by Generalised Zone Type:

There are 42 rural zones within the region's rural area. To simplify analysis these zones have been classified into one of four types based upon the objectives of the individual zone. These general zone types are:

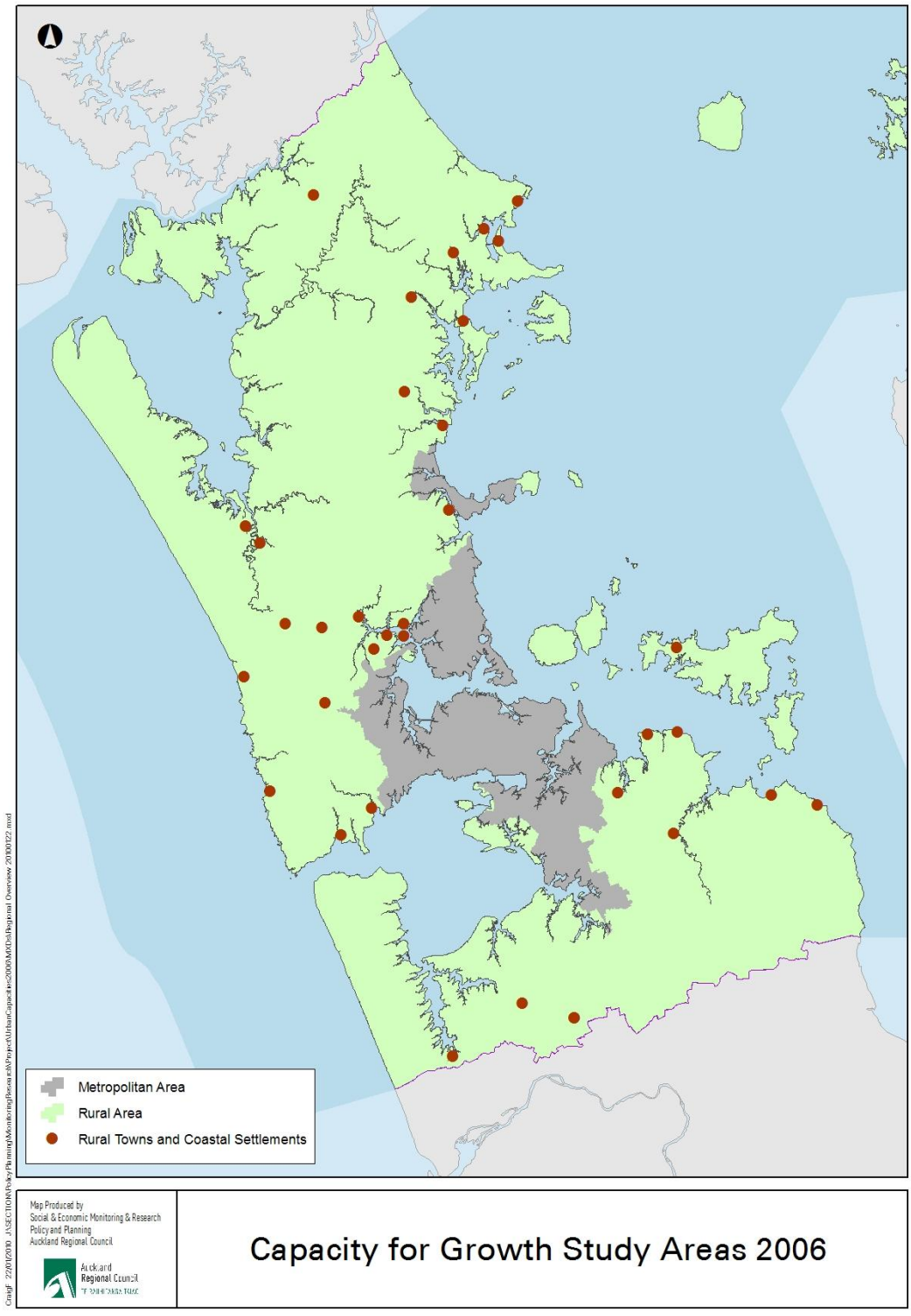
- Rural Residential/Countryside Living (7 individual zones),
- Rural General (11 individual zones),
- Landscape or Ecological Protection (23 individual zones), and

[5] The Auckland Region Business Land Strategy October 2006.

- Special Rural (1 individual zone).

For a full explanation of the assumptions and methodology applied refer to the Land Area Classification section of the Capacity for Growth Study 2006, Methodology and Assumptions Summary Report TR2010/015.

Map 1: Capacity for Growth Study Areas



3.3 Glossary of Terms

Modified Capacity Assessment:

A short-term, more market orientated view intended to represent capacity that is readily realisable, i.e. as opposed to the longer-term view that assumes that all surveyed capacity is available and will be developed. The assessment is based upon observed development trends of the past 10 years (1996-2006) combined with identified development constraints. The purpose of this assessment is to provide policy makers with a more complete understanding of the capacity supply issues as well as to identify where policy actions may be best directed.

Pipeline Capacity:

Refers to capacity that was in the planning processes at the time of the study (March 2006) but not in district plans; for example, capacity in proposed district plan changes or strategic growth management documents. Again the concept has been introduced to provide readers with a more complete picture of capacity.

Surveyed Capacity:

Refers to the capacity results collected from the: Vacant land, Brownfield, Infill and Refill, Redevelopment of Business land and Rural vacant titles and titles with subdivision potential surveys.

3.4 Limitations

The following limitations apply:

- The Capacity for Growth study is a desktop exercise. Extensive land information databases are entered into a GIS application tool which is then used to analyse the development potential of each individual land parcel (there are 470,000 plus parcels within the region). Parcels with potential are then checked and confirmed (including checks with each of the territorial authorities). Aerial imagery is used as a part of the land information base.
- The Capacity for Growth study is based on the permitted and controlled activity rules of the regions' district plans (and in some cases discretionary activities where territorial authority experience shows these are regularly granted). Any non-complying activities will affect the final outcomes (generally by exceeding identified capacity). It is not a market assessment of capacity.
- The potential for minor residential units[6] has not been assessed.

[6]A Minor Residential Unit is a residential unit on a site in addition to another larger residential unit on the same site. Typically a minor residential unit cannot be disposed of separately to the main house (i.e. it cannot be given a separate title) and may include a maximum floor space limit. A minor residential unit is sometimes referred to as a "Granny Flat".

3.5 Interim Capacity for Growth Report

An Interim Capacity for Growth Study was published in May 2008. The Interim report did not include survey results for the region's rural towns and coastal settlements.

This final report builds upon the findings of the Interim report as well as including the following additions and amendments:

- A capacity survey of the region's rural towns and coastal settlements, including residential and business land capacity.
- Regional residential and business land capacity results.
- An assessment of capacity against the objectives of the Auckland Regional Growth Strategy (ARGS).
- A Modified Capacity Assessment based upon assumptions of how available or readily realisable district plan capacity is.
- The identification of future or Pipeline Capacity within the planning process but not in district plans (as at March 2006).
- An analysis of the characteristics of land with capacity; for example, for vacant land, parcel size, zone type, location, and period vacant.
- An analysis of existing vacant titles in rural area.
- Terminology:
    - "Refill" replaces the term "Infill-redevelopment".

4 Residential Capacity Results

This section summarises the residential capacity study results. Regional results are presented first followed by the more detail results for each of the three sub-study areas: Metropolitan Auckland, Rural towns and coastal settlements and the general Rural Area. Summary result tables for each of the sub-study areas have been grouped together in Appendix A. Maps portraying the information spatially are in Appendix D.

4.1 The Auckland Region

This section provides regional scale residential capacity results and includes high level observations associated with this capacity.

The region's district plans provide capacity for an additional 193,660 to 239,973 residential dwelling units. Existing dwellings number 437,988 (Census 2006). Therefore, in total, the region has capacity for between 631,648 and 677,961 residential units. This total could provide for a population of 1.89 to 2.03 million people (based on the average household size of 3 persons per dwelling). Statistics New Zealand's population projections indicate that Auckland's population could reach two million people by 2036 (under a medium growth rate). Under this scenario the region has between 23 and 30 years of capacity remaining (as at 2006) see Table 2 below.

Table 2: Auckland Region Residential Capacity Summary

Metropolitan Area Capacity	148,935 to 192,784
Rural Town Capacity	20,272 to 22,736
Rural Area Capacity	24,453
Total Capacity	193,660 to 239,973
Existing Dwellings (Census 2006)	437,988
Total Capacity	631,648 to 677,961
Total population	1.89 to 2.03 million (@ 3 persons per dwelling)
Years to Population of 2million (Statistics NZ Medium Growth Rate)	2036 (23 to 30 years of capacity as at 2006)

- Regional residential capacity could provide for between 23 and 30 years of growth and therefore exceeds the 15 years of supply required by the ARPS. (Under a high growth rate this capacity would provide for between 18 and 23 years of supply, i.e. 2024 to 2029.)
- Residential capacity is split 80% to the metropolitan area and 20% to the rural area. The ARGS, although not specifying an urban-rural split did allocate 70% growth of to the metropolitan area and the remaining 30% to the rural area.

- Development trends indicate a strong preference for vacant land and infill/refill opportunities. These opportunities are declining rapidly. This could result in a misalignment between expectation and supply.
- There is a misalignment between the distribution of Refill Capacity (the redevelopment of existing parcels to the maximum permitted density) and the ARGS. Some Refill Capacity is located within town centres and will support intensification outcomes; however a large proportion is located outside of centres and could result in significant changes to those neighbourhoods.
- The period 1996 to 2006 was one of rapid residential growth across the region. Greenfield land identified by the ARGS for future urban capacity was released and consumed ahead of, and therefore out of sync with, the other capacity sources (i.e. residential intensification within centres and corridors). This could result in greater than expected demand for additional greenfield land.
- Residential capacity on business land (low to high rise apartments) is a very high proportion of the overall capacity (47%). The past uptake of this type of capacity has been low yet the ARGS expects it to be a significant source of future capacity. If this development potential cannot be unlocked then there will be increasing pressure to release additional land on the urban periphery (or to consider new settlements in the rural area). This could threaten the success of the regional growth concept.
- Forty six percent of total residential capacity in the metropolitan area is multiunit in style (i.e. terrace and/or apartment dwellings). This compares to the current housing situation where multi-units make up just 25% of all dwellings (stand alone dwellings are 69%[7]). As such the region's future housing choices will need to shift considerably towards multi-units if they are to fit the capacity available, or a considerable mismatch will emerge.
- Rural Town and Coastal Settlement capacity is consistent with the ARGS in terms of location (centred upon existing towns), quantity (can provide for up to a 100% increase in the number of occupied dwellings) and housing type (the majority being stand alone, with some opportunity for intensification)
- There is significant capacity within the Rural Area for the creation of small lot titles (titles with areas of 8 hectares). A large proportion of this capacity is dispersed widely across the region. This does not align with the ARGS, which generally shows rural residential development supporting existing rural towns or on the periphery of the metropolitan area.

A modified assessment of residential capacity suggests capacity could be 41,000 to 89,000 less than the surveyed total. This lesser figure would provide for a population of 1.77 million. Under a medium population growth rate this capacity would be exhausted by 2024, five years earlier than the initial assessment. See Table 3 below

[7] Census 2006.

Table 3: Residential Modified Capacity Assessment (Region)

Metropolitan Area Capacity	121,044
Rural Town Capacity	15,644
Rural Area Capacity	15,275
Region Capacity Total	151,923
Existing Dwellings (Census 2006)	437,988
Total Capacity	589,911
Total population	1.76 million (@ 3 persons per dwelling)
Years to Exhaustion (as at 2006) (Statistics NZ high to low growth rate)	2020 to 2031 (14 to 25 years)

- Under a high population growth rate and a Modified Capacity assessment the region could be facing capacity constraints by 2020. This is under the 15 years of supply required by the ARPS.
- The provision of residential capacity through district plans provisions alone may not be sufficient to achieve the intended outcomes. (Consequently, additional mechanisms may need to be investigated.)

There is significant residential capacity in the planning process. This additional or "pipeline" capacity lacks the certainty of district plan provision but does indicate that supply issues are being constantly considered by local authorities and it is extremely unlikely that supply will simply "run out" in reality. See Table 4 below.

Table 4: Residential Pipeline Capacity (Region)

Metropolitan Area:	
Silverdale South Structure Plan Area	
Orewa East Structure Plan	(reduced capacity -797 dwellings)
Whangaparaoa Structure Plan Area	
Albany Structure Plan Area (PC32)	Double capacity Zone A&B
Chelsea Sugar Works	550 dwellings
NSCC Business 12 Mixed Use Zone	
NSCC Infill Housing effects (PC17)	
Milford, Highbury and Takapuna town centres	
Hobsonville Airbase	8,000 to 9,000 residents
Hobsonville Corridor Stage 1: Hobsonville Village	
Hobsonville Corridor Stage 2: Trig Road	4,000 residents
Massey North	4,000 residents
Red Hills	
New Lynn	
ACC Plan Change 58: Residential 8 (Intensive Residential Zone)	
Takanini Structure Plan	131 hectares + village and lifestyle
Hingaia Structure Plan	5,170 residents

Rural Towns: Warkworth Structure Plan Area Wellsford Structure Plan Area Waimauku Structure Plan Area (40 hectares) Waitoki Structure Plan Matakana Structure Plan Area Beachlands Village New Avenues Pine Harbour Marine Whitford Rural	 40 hectares (reduced capacity by -64 dwellings)
Rural Area: Coatesville Countryside living Point Wells and Omaha Flats Franklin Rural Plan Change	

(A detailed Pipeline Capacity inventory, which includes capacity status, is recorded within each sub study section).

4.2 The Metropolitan Area

The first part of this section presents the residential capacity results and findings for the metropolitan area as a whole[8]. The subsequent parts of the section present and investigate the results of the three individual study measures:

- Vacant and Vacant Potential,
- Infill and Refill, and
- Residential development on business land[9].

4.2.1 Residential Capacity Results

The combined metropolitan area capacity available from all residential measures is 148,935 to 192,784 residential dwelling units.

Based upon future household projections[10] and assuming all land is developable the capacity from all metropolitan residential sources is projected to provide for between 14 to 20 years of growth where Infill is included or 18 to 30 years if Refill emerges as the dominant typology (see Table 5 below).

The Refill increases total capacity by 43,849 residential dwelling units. This has the effect of extending supply by a further four to 10 years.

[8] See Section 3.1Geographical Study Areas for a definition of metropolitan area.
[9] For a full description of the capacity study measures, the survey methodologies and assumptions used refer to the Capacity Study Measures and Methodologies section of the Capacity for Growth Study 2006, Methodology and Assumptions Summary Report TR2010/015.
[10] ARC and Statistics NZ Population and household projections are included in Capacity for Growth Study 2006, Methodology and Assumptions Summary Report TR2010/015.

Table 5: Total Residential Capacity by Type (Metropolitan Area)

Metropolitan Area	Occupied Dwellings 2006	Vacant and Vacant Potential	Structure Plan Areas	Infill	Refill	Residential on Business Zoned Land	Total Household Capacity 2006	Years to Exhaustion (as at 2006)
With Infill	388,863	28,990	30,273	20,302		69,370	148,935	14-20
With Refill	388,863	28,990	30,273		64,151	69,370	192,784	18-30

4.2.2 Modified Capacity Assessment

The results of the Modified Capacity assumptions suggest that there is less than the 15 years of capacity required by the ARPS (significantly less if a high rate of growth is experienced, i.e. capacity exhausted by 2017).

The Modified Capacity supply and assumptions[11] are shown in Table 6 below:

Table 6: Modified Residential Capacity by Type (Metropolitan Area)

Metropolitan Area	Vacant and Vacant Potential	Structure Plan Areas	Infill /Refill Total	Residential on Business Zoned Land	Total Household Capacity 2006	Years to Exhaustion (as at 2006)
Modified Residential Capacity Total	24,233	30,273	28,138	38,154	120,798	11-16
Modified Capacity Assumptions	VP 75% Vac 90%	100%	75/25 split less 10%	55%	-	-

Figure 1 and Figure 2 illustrate how both surveyed and modified residential capacity could be consumed based upon past development trends and future household projections.

Modified Capacity will be consumed far earlier than the surveyed capacity (2016-21 compared with 2031-36). The main reason for this is the significant reduction assumed in residential capacity on business land. The surveyed capacity results show that in the later years (2016+) residential capacity from business land becomes the dominant form of supply. Past rates of take up for this type of capacity have been limited.

Infill/Refill capacity is the smaller component of capacity under both assumptions and will be first to be completely consumed (2011-2016). Vacant capacity is significant under both assumptions and will provide development opportunities to at least 2016-2021.

[11] The Modified Capacity supply assumptions are based upon the research findings of the three residential capacity studies –Vacant, Infill and Refill and the Redevelopment of Business Land.

Figure 1: Surveyed Residential Capacity by Residential Dwelling Unit Type and Years to Exhaustion (Metropolitan Area)

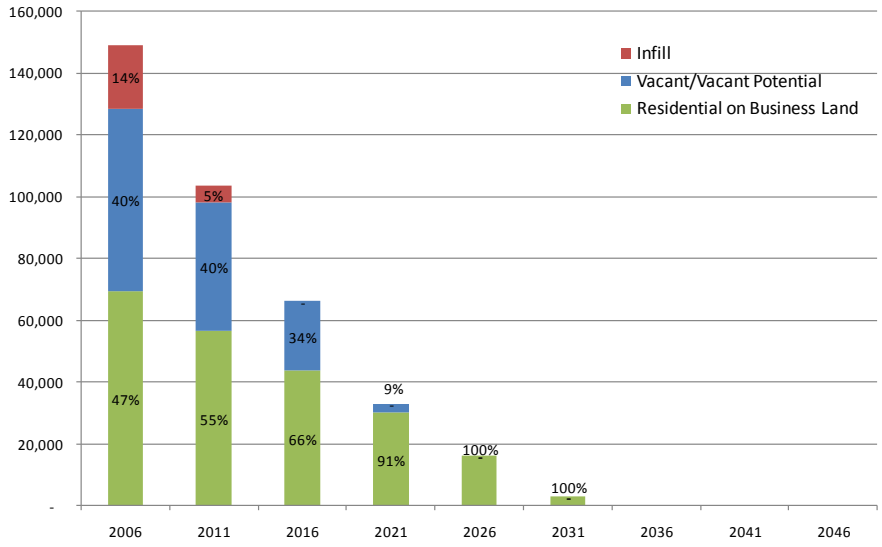
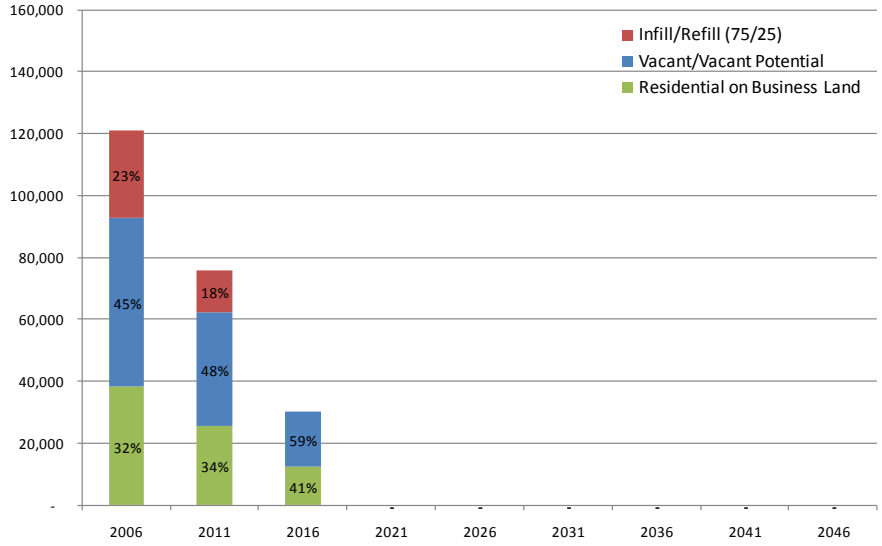


Figure 2: Modified Residential Capacity by Residential Dwelling Unit Type and Years to Exhaustion (Metropolitan Area)



4.2.3 Pipeline Residential Capacity

There is significant residential capacity in the planning process. This is shown by the following inventory of Pipeline Capacity by territorial authority:

Rodney District

- Silverdale South Structure Plan Area: Includes rural residential (minimum 4,000m^2 lots), medium density (350m^2 to 700m^2 per unit, single standing dwelling units) and high density zonings (150m2 to 350m^2 per unit, apartments and /or townhouses). (Status: In District Plan.)

- Whangaparaoa Structure Plan: Two large blocks of land to be rezoned from industrial to medium residential. (Status: Adopted by Council not in District Plan.)
- Orewa East Structure Plan: existing residential areas rezoned for a mixture of high intensity and medium intensity development. (Status: Adopted by Council not in District Plan.)
- Variation 137. Orewa West Structure Plan Area: approximate yield 2000 dwellings. This is a reduction in capacity from that reported in summary tables. (Status: draft structure plan)
- Hatfields Beach- Proposed shift of MUL to allow land zoned general rural to Medium density. (Status: Appeal settled but with no change in zoning. -No application to shift the MUL has been made yet.)

North Shore City

- Plan Change 32: Albany Structure Plan Area – a doubling of capacity within zones A and B. (Status: The Plan Change has been heard and is awaiting a decision.)
- Chelsea Sugar Works (Plan Change 16) - an additional capacity for no more than 550 new dwellings at Chelsea. (Status: A consent order in 2007 which inputted new dwelling figure into the district plan should a comprehensive development Plan be drawn up for the site.)
- Proposed Plan Change 17: Addressing the effects of infill housing on the character of residential areas. (Status: Adopted November 2009.)
- Plan Change 19: Business 12 mixed-use zone. Change 19 seeks to create a new zoning to encourage mixed-use development to occur in small and appropriate areas of two town centre areas, Browns Bay and Albany Village. (Status: Decision released in 2008.)
- Upcoming Plan change in Milford: Aims to revitalise the town centre by providing for mixed-use developments. (Status: not yet notified.)
- Upcoming plan change in Highbury: Aims to revitalise the town centre providing for mixed-use developments. (Status: not yet notified.)
- Upcoming changes to Takapuna town centre. – This is a series of plan changes addressing 7 precincts and their redevelopment to allow increased business and residential density. (Status: not yet notified.)

Waitakere City

- Proposed Plan Change 13: Hobsonville Airbase. As a former airbase this is a brownfield's site. The plan change identifies a range of uses including residential development, and a concept plan identifies subdivision and development densities – 8,000 to 9,000 residents. (Status: Subject to Environmental Court Appeals.)

- Proposed Plan Change 14: Hobsonbville Village Centre (Hobsonville Corridor Stage 1). A mixed use town centre that will provide opportunities for residential development. (Status: Outstanding Appeals.)
- Trig Road (Hobsonville Corridor Stage 2): Land-use assumptions include a mixed-use local centre with medium density housing accommodating around 1,600 new households (4,000 residential) to be completed at around 2036. (Status: Preliminary planning is underway.)
- Proposed Plan Change 15: Massey North. Based around a sub-regional high density mixed-use town centre providing up to 4,000 residents. (Status: Outstanding Appeals.)
- Proposed Plan Change 17 – New Lynn. Introduces specific rules and supporting policies intended to facilitate and encourage the intensification of development in and around the New Lynn town centre. (Status: Subject to Environmental Court Appeals.)
- Red hills area. 300 hectares of land some of which lends itself to more intensive commercial or residential development. (Status: Development not planned until after 2021 and dependent upon uptake of Massey North and Hobsonville Corridor.)

Auckland City

- Plan Change 58 – Residential 8 Zone, Residential Intensification. Zoning is designed to facilitate residential intensification, making it easier to develop residential units by identifying specific areas where intensive residential development can occur, previously not allowed for in the District Plan. (Status: Zoning has been applied to areas in Mt Wellington, Glen Innes, Newton, Parnell and Grafton. Zoning can be applied to other appropriate locations.)

Papakura District

- Takanini Structure Plan: Future Stage areas outside MUL (Stage 2a, 2b. 2c, 6a, 6b = total area 131 hectares, Alfrison Village and Lifestyle development. (Status: Outstanding Appeals.)
- Hingaia Structure Plan, Future Stage areas outside MUL, Envisaged population 5,170. (Status: unknown.)

4.2.4 Residential Capacity Uptake 1996 to 2006

Residential capacity has been assessed at 1996, 2001 and 2006. Table 7 below summarises and compares the total residential capacity assessed for each of these periods.

Table 7: Total Residential Capacity 1996 to 2006 (Metropolitan Area)

All Sources (Residential Dwelling Units)		Total Household Capacity 1996	Total Household Capacity 2001	Total Household Capacity 2006	Change 2001-2006 (Actual)	Change 2001-2006 (%)
Metropolitan Area	With Infill	131,122	137,951	148,935	10,984	+8%
	With Refill	n/a	180,566	192,784	12,218	+7%

Even though the region has experienced significant growth between 1996 and 2006, total residential capacity has increased more rapidly. Additional capacity results from new land being made available through extensions to urban limits (e.g. Long Bay and Flat Bush), increases in residential densities (e.g. RDC high density residential zone) or changes in the assumptions in cases where a range of residential outcomes are possible (e.g. apartment development in town centres, are becoming more and more popular) . The detail of these increases is examined in the vacant land, Infill and business land redevelopment study sections that follow.

4.2.5 Residential Capacity by Housing Type

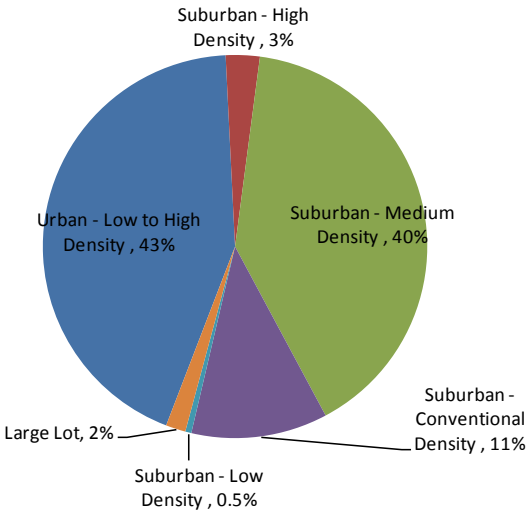
Residential development comes in many shapes and sizes; for example, stand alone dwellings on large lots, townhouses, terrace housing and apartment blocks. The following section describes the likely housing outcomes that could be expected from the residential capacity surveyed.

Table 8: Residential Capacity by Housing Type (Metropolitan Area)

Capacity by Type	Urban Low to High Density (low to high rise apartments)	Suburban High Density (terrace to low rise apartments)	Suburban Medium Density (townhouse to attached housing)	Suburban Conventional Density (stand alone dwelling on lot 600-1000m2)	Suburban Low Density (stand alone dwelling on lot 1000m2+)	Large Lot (lifestyle block)
Vacant		2,878	14,766	9,144	163	2,038
Structure Plan Areas		650	27,543	800	660	620
Infill		*421*	*14,590*	*5,291*		
Refill		*2,877*	*43,577*	*17,691*		*6*
Infill/Refill estimate (75/25)		1,035	21,837	8,391		
Residential on Business zoned land	69,370					
Total	69,370	4,563	64,146	18,335	823	2,658
Total as %	43%	3%	40%	11%	<1%	2%

The metropolitan area includes a range of residential zonings. Each zone typically includes rules controlling the density of residential development that may occur. Using the 'Auckland Housing Choice'[12] as a guide each residential zone has been assigned a housing typology based upon its density. By mapping residential capacity to zoning it is possible to describe capacity in terms of likely housing outcomes. Table 8 and Figure 3 summarises the results.

Figure 3: Residential Capacity by Housing Type (Metropolitan Area)



Multi unit style development (i.e. terrace and apartment dwellings) could be as high as 46% of total residential capacity (43% Urban low to high density and 3% Suburban High density). The majority of this capacity is on business zoned land and although intensification has been experienced in a few of the metropolitan centres (the CBD, Newmarket, Takapuna, Manukau, New Lynn and Henderson) relative to stand alone dwelling, this style of living is still very relatively recent (within past 15 years).

The 2006 split between multi-unit and stand alone dwelling in metropolitan Auckland was 69% and 25% respectively (Census 2006[13]). This means that either future housing choice will need to shift considerably to fit the supply profile or there will be a considerable mismatch.

Infill or Refill will result in an intensification of existing residential parcels with townhouses and in cases of Refill, possibly as intense as terrace housing (see the Auckland Housing Choices guide for examples of townhouses and terraced development).

4.2.6 Residential Capacity by Territorial Authority

The following table (Table 9) presents the Residential Capacity results and estimated years to exhaustion by territorial authority.

[12] Auckland Regional Growth Forum, Auckland Housing Choice, A guide to housing definitions commonly used in the Auckland Regional Growth Strategy, August 2003 –see Figure 31 Appendix C
[13] 6% of dwellings are classified as "not further defined"

Table 9: Total Residential Capacity by Territorial Authority (Metropolitan Area)

Capacity by TA	Occupied Dwellings 2006	Capacity including Infill or Refill	Total Household Capacity 2006	Change 2001-2006 (Actual)	Change 2001-2006 (%)	Capacity increase on 2006 Dwellings (%)	Years to Exhaustion (as at 2006)
RDC	14,478	Infill	10,784	-1,059	-9%	75%	23 to 50
		Refill	11,676	-453	-4%	80%	26 to 50
NSC	71,679	Infill	24,620	-613	-2%	34%	13 to 21
		Refill	33,862	-1,357	-4%	47%	19 to 40
WCC	55,995	Infill	19,013	-4,150	-18%	34%	12 to 17
		Refill	28,032	-3,365	-11%	50%	18 to 31
ACC	144,285	Infill	56,961	9,609	20%	40%	14 to 20
		Refill	69,914	11,240	19%	48%	18 to 26
MCC	89,979	Infill	30,284	3,979	15%	34%	10 to 15
		Refill	41,045	4,179	11%	45%	14 to 23
PDC	12,447	Infill	7,091	3,036	75%	57%	31 to50
		Refill	8,981	2,700	43%	72%	40+
Total Metro Area	388,863	Infill	148,935	10,802	8%	38%	14 to 20
		Refill	192,784	12,944	7%	50%	18 to 29

4.2.7 The Vacant Land Study Results

There are 28,139 hectares of residential zoned land in the metropolitan area. Of this 2,205 hectares (8%) were assessed as vacant[14].

The Vacant Land Study identified capacity for a further 59,000 dwelling units within the metropolitan area. This is a net increase in capacity of 268 dwelling units over the 2001 total (see summary Table 10 below).

Based upon past development patterns and future household projections the vacant land resource is projected to provide capacity for 16 to 24 years[15].

Table 10: Residential Dwelling Unit Capacity on Vacant Land (Metropolitan Area)

Residential Land (Residential Dwelling Units)	Vacant Land Capacity 1996	Vacant Land Capacity 2001	Vacant Land Capacity 2006	Change 2001-2006 (Actual)	Change 2001-2006 (%)	Years to Exhaustion (as at 2006)
Metropolitan Area	70,686	58,803	59,071	268	+1%	16 to 24

A net increase in vacant land capacity occurs when more capacity is added to the metropolitan total than is consumed in that period. In Auckland, the supply of additional vacant land capacity is through extensions of the MUL and through the

[14] Vacant land in Structure plan areas is not included in either of these two totals.
[15] Between 2001 and 2006, 40% of all residential development occurred on vacant land. See Development patterns and future household projections in the Capacity for Growth Study 2006, Methodology and Assumptions Summary Report TR2010/015.

identification of new structure plan areas (i.e. areas of land which are in the process of receiving active residential zonings).

In the 2001 to 2006 period, structure plan areas added a net total of 16,850 dwelling units to the region's vacant land capacity total.

Since the 2003 study, five new structure plan areas have been included in district plans:

- Babich (1,050 dwelling units),
- Flat Bush East (7000 dwelling units),
- Stonefields (Mt Wellington Quarry) (2,600 dwelling units),
- Hingaia Stage 1 (1,966 dwelling units), and
- Takanini Stages 1A,1B and 3 (2,310 dwelling units).

Two of the 2001 Structure Plan areas have had their capacity yield assessments increased:

- Birdwood (increased by 873 dwelling units), and
- Orewa West (increased by 1050 dwelling units).

Two of the 2001 Structure Plan areas have had the original capacity yields reduced:

- Long Bay (reduced by 209 dwelling units), and
- Silverdale North (reduced by 1,243 dwelling units).

Capacity within structure plan areas only becomes available for development once the area receives an operative residential zoning. This can take a number of years.

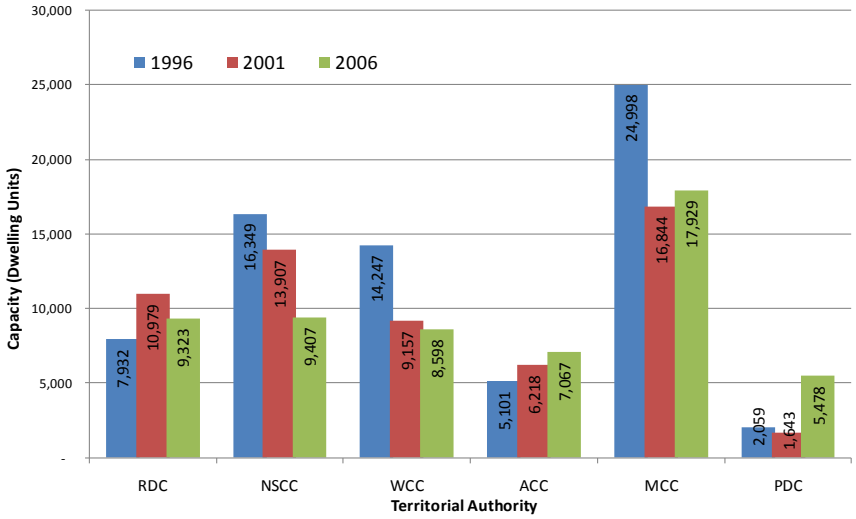
Three structure plan areas became fully operative in the 2001 to 2006 period. (Any capacity in these areas is now recorded under the active zoning area vacant land measure). These areas were:

- Albany (3,275 dwelling units),
- Greenhithe (3,389 dwelling units), and
- Harbourview (500 dwellings units).

The results of the Vacant Land Study are shown by territorial authority in Figure 4. Papakura District, with the staged introduction of structure plan areas at Hingaia and Takanini, has more than tripled its vacant land capacity since 2001. Manukau City has increased capacity by 6% and Auckland City by 14%. Manukau with the inclusion of Flat Bush East, previously outside the MUL, and Auckland City with the inclusion of Stonefields (former Mt Wellington quarry land).

The remaining territorial authorities have all experienced a loss in vacant land capacity; North Shore City has had the greatest decline, down 22%, followed by Rodney District, a decrease of 15%. Waitakere City decreased by 7% even with the inclusion of the Babich structure plan area (capacity for 1050 dwelling units).

Figure 4: Residential Vacant Land Capacity Trends by Territorial Authority 1996-2006 (Metro Area)



Overall net capacity available from vacant land within the metropolitan area has remained relatively unchanged between the 2001 and 2006 periods. This compares to an overall decrease of 17% in the previous period, 1996 to 2001.

Based upon past development patterns and future household projections the following table summarises the years of capacity the vacant land resource is projected to provide in each territorial authority area.

Table 11: Residential Dwelling Unit Capacity on Vacant Land, Years to exhaustion by Territorial Authority (Metropolitan Area)

Residential Land (Residential Dwelling Units)	**Vacant Land Capacity 2006**	**Years to Exhaustion** (as at 2006)
RDC	9,295	37 to 45+
NSCC	10,823	12 to 21
WCC	8,593	12 to 16
ACC	7,058	19 to 28
MCC	17,894	12 to 18
PDC	5,408	28 to 45+

The Vacant Land Study capacity results are summarised by territorial authority against all other sources of capacity in Table 51 and Table 52 in Appendix A. The results are mapped by for the Metropolitan area and by territorial authority in Map 1to Map 8 in Appendix D.

4.2.8 The Characteristics of Vacant Residential Land

Vacant land has three measures: vacant land, partly vacant land (Vacant Potential) and new urban land (Structure Plan or Future Urban) (see Table 12).

The uptake and development of vacant residential land is influenced by a number of factors. The following vacant land attributes have been investigated and any constraints to uptake are recorded as modifications to capacity (i.e. provide the assumptions behind the Modified or Readily Realisable Capacity assumptions).

- Parcel size
- Period vacant
- Patterns of tenure.

Table 12: Sources of Vacant Land Capacity (Metropolitan Area)

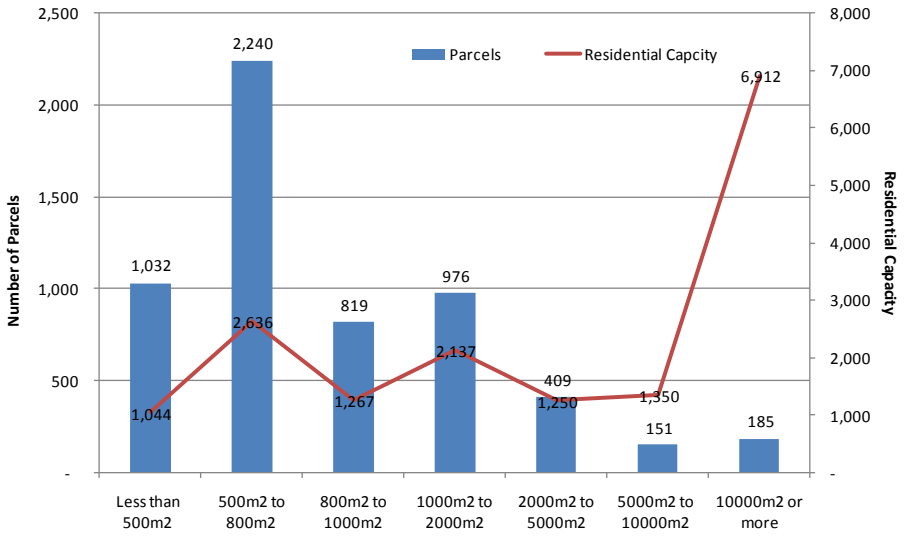
Capacity by Type	Number of Parcels	Land Area (ha)	Residential Capacity
Vacant land	5,812	1,243	16,596
Vacant Potential land	3,661	1,271	12,394
Structure Plan areas	n/a	n/a	30,273

Vacant land within structure plan areas is not further analysed as it is assumed that it will develop consistent with the structure plan outline.

4.2.8.1 Vacant land by Parcel Size

Vacant parcels were sorted by seven parcel size bands (see Figure 5). The parcel size bands were based upon the common residential parcel sizes across the region.

Figure 5: Residential Vacant Land by Parcel Size (Metropolitan Area)



Commentary:

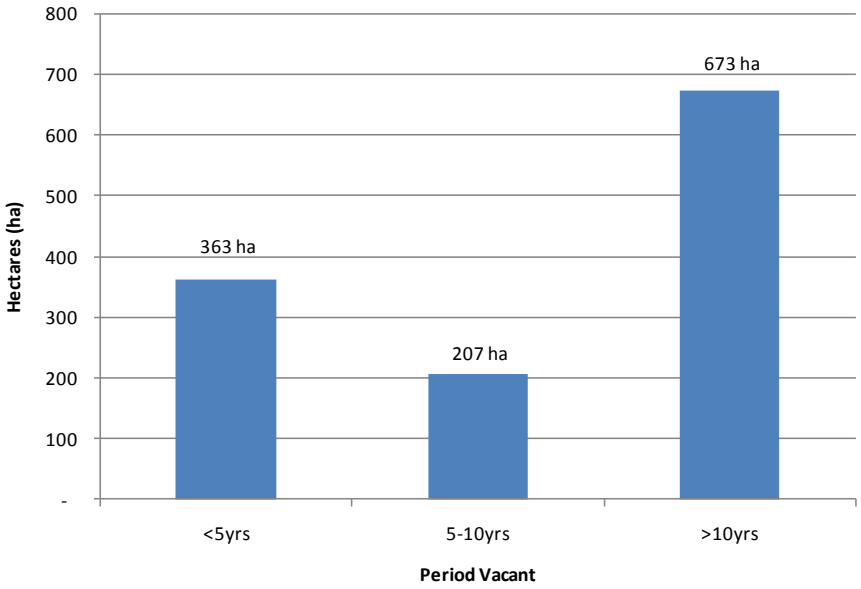
- Thirty percent of vacant land capacity is on parcels of 1,000m^2 or less. In general these parcels are available for immediate development (assuming no infrastructural constraints exist).
- Vacant parcels smaller than 1,000m^2 are scattered across the metropolitan area. These parcels range from being the result of a single site subdivision to recently completed large scale subdivisions.
- Seventy percent of vacant land capacity is situated on parcels 1,000m^2 in size or greater. Generally, capacity from these parcels will take longer to come to the housing market due to the time necessary to complete the subdivision, design and consent processes.
- Vacant parcels greater than 1,000m^2, although scattered, do tend to be more intensive towards the periphery of the metropolitan area. There are two main reasons for this distribution; firstly, it results from newly created capacity from greenfield land (previously identified as structure plan or future urban – Albany, Greenhithe). And secondly, these larger peripheral parcels are also the result of landscape or bush protection zoning.

As the commentary above indicates there are no significant impediments to the development of vacant land.

4.2.8.2 Vacant land by period vacant

In 2006 there were 1,243 hectares of vacant residential land. Of this land, 673ha (54%) has been vacant for at least 10 years, 207 ha (17%) has been vacant for 5 to 10 years and 363 ha (29%) has been vacant for less than 5 years (see Figure 6).

Figure 6: Residential Vacant Land by Length of Vacancy (Metropolitan Area)



Parcels that have been vacant for 10 years or longer have been mapped by territorial authority area in Appendix D Maps Map 56 to Map 61.

Commentary:

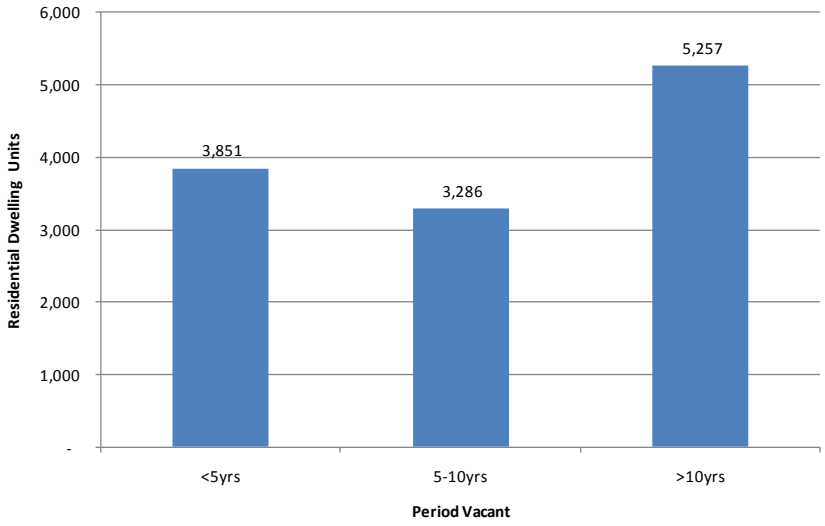
- Land that has been vacant for less than five years is, in most cases, the result of structure plan areas taking on an active residential zoning, e.g. Greenhithe and Albany.
- Land that has been vacant for 10 years or greater falls into one of four categories:
    - Large new residential areas under development,
    - large residential land holdings in peripheral areas (often with existing low yield zoning e.g. landscape protection),
    - smaller parcels scattered across the region, or
    - other (possibly land banked)[16].

The above commentary does not identify any significant impediments to the development of vacant land. A 5% reduction to the surveyed capacity is suggested to allow for unique situations (e.g. lack of infrastructure).

4.2.8.3 Vacant potential land by period vacant

Parcels assessed for vacant potential capacity are by definition greater than 2,000m^2, and have at least one residential dwelling unit present. The vacant proportion of the parcel is recorded and assessed for additional development based upon the density provisions of its zoning. The vacant proportion does not have a title (if it did it would of course be assessed as a vacant site).

Figure 7: Residential Vacant Potential Capacity by Length of Vacancy (Metro Area)



[16] This database lends itself to further investigation; especially the larger more strategic land holdings.

In 2006 capacity from vacant potential land was assessed at 12,396 residential dwelling units. Of this capacity 5,257 (42%) has been vacant potential for 10 years or greater, 3,286 (27%) has been vacant potential for between five and 10 years and 3,851 (31%) has become vacant potential between 2001 and 2006.

Vacant Potential sites face additional delays in coming to the market. These parcels need to go through the subdivision and development process and, in cases of multiple ownership, need to gain the agreement of all owners. Sites that have been vacant potential for a long period may indicate limited interest in further development – otherwise subdivision to secure this right would have been exercised and the parcel would be identified as vacant.

4.2.8.4 Vacant potential land by tenure

Multiple ownership of existing vacant potential sites is a barrier to future development (i.e. subdivision would require agreement of all owners). Of the 3,662 Vacant Potential sites 16% (1,946) are in some form of multiple ownership, see Table 13 below.

Table 13: Vacant potential sites and capacity by ownership type (Metropolitan Area)

Dwellings per Parcel	Sites with Vacant Potential	Residential Capacity
Single	3,159	10,450
Multiple	503	1,946
Total	3,662	12,396

Based upon the above findings it is estimated that the readily realisable yield from Vacant Potential capacity could be between 15 and 40% lower than the theoretical yield.

4.2.9 The Residential Infill and Refill Study Results

The 2006 Infill study shows a metropolitan capacity of 20,300 dwelling units. This is 41% lower than the 2001 figure (34,185).

Based upon past development patterns and future household projections the infill land resource is projected to provide capacity for six to 10 years[17].

Table 14: Residential Dwelling Unit Capacity Infill (Metropolitan Area)

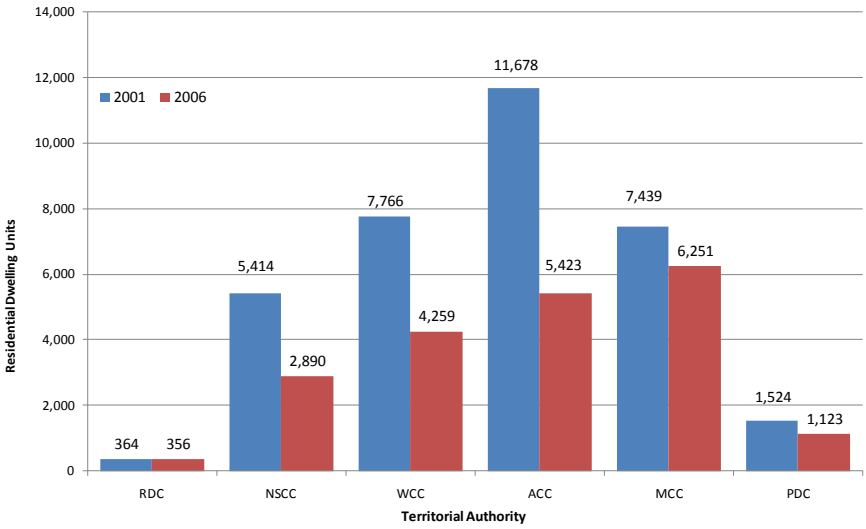
Residential Land	Residential Infill 1996 (estimate)[18]	Residential Infill 2001	Residential Infill 2006	Change 2001-2006 (Actual)	Change 2001-2006 (%)	Years to Exhaustion (as at 2006)
Metropolitan Area	35,732 (est)	34,185	20,302	(-13,883)	(-41%)	6 to 10

[17] Between 2001 and 2006, 32% of all residential development occurred by way of infill - see Development Patterns and Future Household Projections in Capacity for Growth Study 2006, Methodology and Assumptions Summary Report TR2010/015.

[18] The 1998 Infill study methodology was sample based and not parcel by parcel (as it was in 2003 and 2006). Therefore care should be taken when comparing results between periods.

All metropolitan territorial authorities experienced a decrease in infill capacity. However, the larger territorial authorities (NSC, WCC and ACC – but not MCC) experienced very sharp declines, on average between 45-55%. **Figure 8** illustrates these territorial authority changes.

Figure 8: Residential Infill Capacity Trends by Territorial Authority 2001 to 2006 (Metropolitan Area)



Based upon past development patterns and future household projections the Table 15 below summarises the years of capacity Infill is projected to provide in each territorial authority area.

Table 15: Residential Dwelling Unit Capacity Infill and Years to exhaustion by territorial authority (Metropolitan Area)

Residential Land	Residential Infill 2006 (Residential Dwelling Units)	Years to Exhaustion (as at 2006)
RDC	349	3 to 5
NSCC	2,907	5 to 7
WCC	4,260	7 to 11
ACC	5,423	6 to 8
MCC	6,250	8 to 12
PDC	1,123	45+

Commentary:

- Auckland City's infill capacity is 5,400 residential dwelling units. This is a 54% decrease from the 2001 figure (11,700) and is the largest decrease of any territorial authority. North Shore City at 2,900 and Waitakere City at 4,260 experienced decreases in capacity of 46% and 45% respectively.
- Net infill capacity in Rodney District (Hibiscus Coast) has remained relatively static between the two study periods (4% decrease). However, this figure has been influenced by a change to the Rodney District Plan which up-zoned areas

from medium intensity to high intensity, thereby introducing additional infill capacity.

- Manukau City has a remaining infill capacity of 6,250 dwelling units. This is the highest remaining infill capacity of all the territorial authorities. Manukau City's infill capacity has reduced by 16% in the five years since 2001. This reduction is lower than the metropolitan average and considerably lower than the 45-55% reduction experienced by other similarly sized territorial authorities. This slower rate is likely due to the stormwater servicing limitations which restrict further infill on a large number of sites.
- Papakura District has infill capacity of 1,120. This is down 18% from 1,520 in 2001. The take-up of infill capacity within Papakura has slowed markedly from the proceeding period (1996 to 2001). The availability of additional vacant land through the Hingaia and Takanini structure plan areas appears to have been an influence here.
- Residential infill continues to be a very popular form of residential development across all territorial authorities. However, under current policies it is becoming a limited resource, and based upon past development patterns and future household projections, is only expected to be a source of capacity for a further six to 10 years (as at 2006). For areas such as Rodney District (Hibiscus Coast), North Shore City, and Auckland City infill capacity could be exhausted within the next five years. (This assumes any future plan changes add no further infill capacity.)

The 2003 Capacity study identified Refill Capacity as an emerging trend. Refill Capacity is described as the "removal of the existing dwelling and redevelopment to the maximum allowed density". An example of Refill is shown in Figure 9. In this Auckland City example, the large older houses have been removed and replaced by a higher density terrace-style development.

The 2006 Capacity for Growth study has identified that Refill Capacity continues to be a growing residential development option. In the 2003 study, redevelopment was associated with the higher valued suburbs. In the 2006 study this has been witnessed more widely and is now probably the result of the limited number of traditional infill opportunities remaining, combined with a general increase in land values, population growth and improvements in house relocation methods. (This study recommends that the trends in redevelopment be investigated further; see Section 8)

The 2006 Refill study identified a metropolitan area capacity of 65,100 additional dwelling units. This is more than three times the capacity identified from Infill.

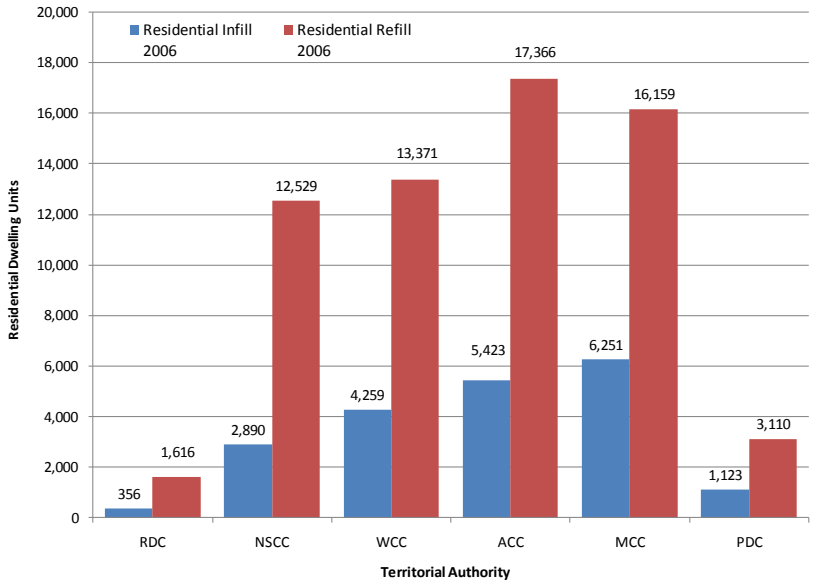
Not surprisingly, the larger urban territorial authorities dominate the figures; Auckland City has the largest capacity with 18,400, Manukau City 17,000, Waitakere City 13,300, North Shore City 12,150, Papakura 3,000 and Rodney 1,240. (Refer to Figure 10 for distribution by territorial authority).

Refill and Infill are two measures of residential capacity from the same land resource. As such, they can be viewed as defining the range of likely outcomes, with Infill sitting at the lower end of the range and Refill at the upper.

Figure 9: Refill, Alpers Ave, Newmarket, ACC 2001 and 2006

Refill, by its nature does have the potential to change the face of existing neighbourhoods. In cases where territorial authorities have planned for higher density communities, Refill will be supportive in achieving such outcomes (and by contrast, Infill will compromise this outcome by creating a fragmented pattern of ownership with densities lower than permitted but at a level where redevelopment to the higher density is then no longer economically viable). However, in neighbourhoods where communities expect little change, except for the occasional infill dwelling at the rear of a property, Refill could result in significant change (i.e. the original dwellings are replaced by townhouses).

Figure 10: Residential Refill compared to Infill by Territorial Authority (Metropolitan Area)



Based upon past development patterns and future household projections the following table summarises the years of capacity Refill is projected to provide in each territorial authority area.

Table 16: Refill Capacity and Years to Exhaustion by Territorial Authority (Metropolitan Area)

Territorial Authority	Residential Refill 2006 (Residential Dwelling Units)	Years to Exhaustion (as at 2006)
RDC	1,241	7 to 15
NSCC	12,149	19 to 40+
WCC	13,279	23 to 40+
ACC	18,376	18 to 26
MCC	17,011	21 to 40+
PDC	3,013	45+

Based upon the above the findings and observations made during the Infill study it is estimated that the readily realisable yield from Infill and Refill capacity could be 75% Infill and 25% Refill. This total is then reduced by 10% to account for sites that are in multiple ownership, and are therefore less likely to develop, and for those sites that will not be developed at all.

The Infill and Refill capacity results are summarised by territorial authority against all other sources of capacity in Table 51 and Table 52 in Appendix A.

The infill and refill capacity results are summarised by territorial authority for 2001 and 2006 in Table 75 Appendix B.

4.2.10 The Residential Redevelopment on Business Zoned Land Study Results

The Residential Redevelopment study has estimated that there is capacity for a further 69,370 dwelling units on business zoned land within the metropolitan area.

Based upon past development patterns and future household projections, the residential capacity from business land is projected to provide for 21 to 40 years[19].

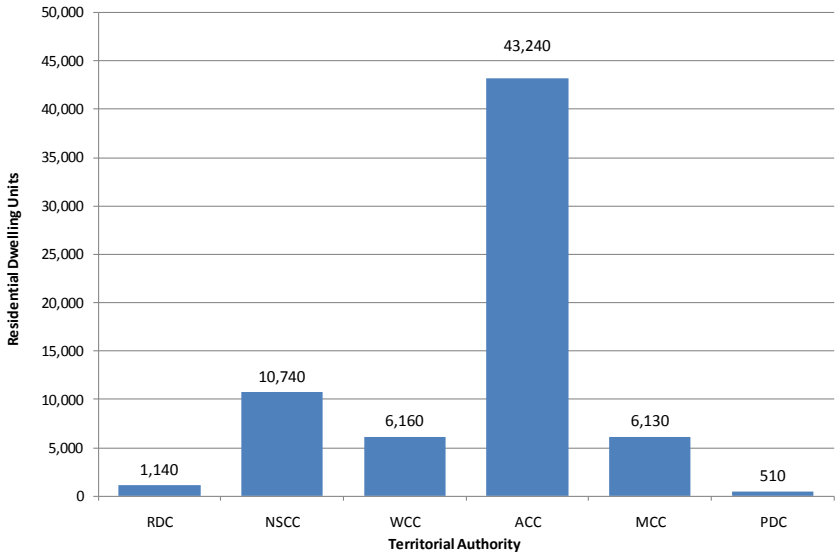
Table 17 Residential Redevelopment on Business Zoned Land (Metropolitan Area)

Business Land (Residential Dwelling Units)	**Residential Redevelopment on Business Land 2001**	**Residential Redevelopment on Business Land 2006**	**Change 2001-2006** (Actual)	**Years to Exhaustion** (as at 2006)
Metropolitan Area	45,000	69,370	(results not comparable)[20]	21-40

Auckland City has the largest business land residential capacity at 43,240 residential dwelling units; 21,260 (49%) of which are within the CBD. North Shore City has capacity for 10,700, of which 5,000 are located in the Albany Centre and 2,145 in Takapuna. Waitakere and Manukau cities both have capacity for 6,160 (New Lynn 3,100, Henderson 2,000 and Manukau City Centre 2,800). Rodney District (Hibiscus Coast) has capacity for 1,140 and Papakura 510.

For a summary of residential redevelopment totals by territorial authority refer to Figure 11 below.

Figure 11: Residential Redevelopment Capacity on Business Zoned Land by Territorial Authority 2006 (Metropolitan Area)



[19] Between 2001 and 2006, 28% of all residential development occurred on business zoned land see the Development patterns and future household projections in the Capacity for Growth Study 2006, Methodology and Assumptions Summary Report TR2010/015.

[20] Different methodologies were used to assess residential capacity on business land in 2001 and 2006. Therefore a numerical comparison between the two totals is not valid.

Commentary:

- Residential redevelopment on business zoned land is currently the largest source of residential capacity by type - 46% of total capacity, compared with 40% vacant land and 14% infill. However, residential development rates between 2001 and 2006 show that as a capacity type, residential redevelopment experienced the slowest rate of take-up (i.e. 28% of all residential development compared to vacant land at 40% and infill 32%). This apparent mismatch will need to be addressed if an efficient and effective supply to demand profile is to be achieved.
- The 2006 results are higher than those recorded in the 2003 study. This difference is explained by a difference in the methodology used between the two studies. The 2003 study methodology resulted in a best estimate for the demand for residential dwellings on business land. The 2006 study worked to understand what development potential existed on business land under current district plans and then identified the best estimate of residential supply.

Based upon past development patterns and future household projections Table 18 summarises the years of capacity Residential Redevelopment on Business Land is projected to provide in each territorial authority area.

Table 18: Residential Dwelling Unit Capacity on Business Zoned Land and Years to exhaustion by Territorial Authority (Metropolitan Area)

Residential Land (Residential Dwelling Units)	Residential Redevelopment 2006	Years to Exhaustion (as at 2006)
RDC	1,140	40+
NSCC	10,890	40+
WCC	6,160	40+
ACC	44,480	22 to 36
MCC	6,140	31 to 40+
PDC	560	40+

It is estimated that the readily realisable capacity yield from Residential Development on Business Land Capacity would be 55% of the theoretical total (i.e. 38,155 compared with 69,370). This assessment is based upon the assumption that only selected centres exhibit the range of attributes likely to encourage residential development. These attributes include: regional or sub-regional status, existing residential development, high levels of accessibility, high local amenity and active promotion by the territorial authority.

The residential redevelopment on business land capacity results are summarised by territorial authority against all other sources of capacity in Table 55 Appendix A.

4.2.11 Concluding Comments

- The 15 years of residential capacity supply required by the ARPS is not met under a high growth scenario for both the surveyed assessment (14 years) and the modified assessment (11 years). Some commentators suggest 15 years is not sufficient enough given the time required for new capacity to traverse the planning process (Jones Lang LaSalle 2007, p 36).
- Residential capacity on business land is a very high proportion of overall capacity (36 to 47%). The past uptake of this type of capacity has been low yet it is expected to be a significant source of future capacity. This combination could compromise the success of the ARGS.
- A significant amount of future capacity is in the centres; where the ARGS seeks more intensive residential and employment development aligned with passenger transport. However, there is lack of certainty associated with this outcome (for example: residential development must currently compete with commercial activities in these areas) and past rates of take-up have been low. Furthermore, peer reviews and developer surveys have highlighted that there are a range of barriers to this form of development, including the need for site amalgamation for quality comprehensive development.
- The current provisions within district plans that allow Infill and Refill Capacity allow for a wide range of development outcomes including the eventual intensity and location of development. This level of flexibility means outcomes may or may not support the ARGS (i.e. the level of intensity achieved by refill should be directed to support town centres and transport hubs and away from suburban neighbourhoods but currently the opposite is just as possible an outcome).
- The dynamics of continued residential growth in a situation where little greenfield land is available for release are unknown – i.e. will a limited supply of vacant land and traditional infill opportunities and rising land values push up rates of refill development? How much intensification will occur? (This study recommends establishing a programme of on-going development and development proposal monitoring as the best means of keeping pace with this change. Such programmes are in place at Sydney and Melbourne councils – see Section 8).

4.3 Rural Town and Coastal Settlements

Three measures are used to record residential land capacity within rural towns and coastal settlements (RTCS)[21]:

- Vacant and Vacant Potential land,
- Infill and Refill capacity, and
- Residential development on business land[22].

4.3.1 Residential Capacity Results

Total additional residential dwelling unit capacity available from all sources is between 20,272 and 22,736 dwellings – see Table 19 below. This capacity provides the potential for the current number of occupied dwellings to double.

Table 19: Total Residential Capacity Rural Towns and Coastal Settlements (RTCS)

Rural Towns and Coastal Settlements	Dwellings Census 2006		Vacant and Vacant Potential	Structure Plan or Future Urban	Infill	Refill	Residential on Business Land	Total Additional Household Capacity 2006
All Settlements	Occupied	21,333	9,741	6,330	1,272	-	2,928	20,272
	Un-occupied	4,434			-	3,737		22,736
	Total Dwellings	25,767						

The number of un-occupied dwellings[23] in rural and coastal towns is significant; 21% of the total number of dwellings. The majority of these unoccupied dwellings are likely to be bachs and holiday homes. The presence of these dwellings means there are many more structures in some settlements than the number of occupied dwellings first suggests (e.g. Omaha has 153 Occupied Dwellings, 585 Unoccupied and capacity for 342 additional dwellings). These dwellings may provide capacity for future full-time occupants however, they have not been assessed as such in this study (seaside towns such as Orewa, Whangaparaoa and Beachlands/Maraetai have all transitioned from temporary inhabited holiday settlements to predominately permanent townships).

Refill, as discussed under the metropolitan residential results - Section 4.2.9, is an emerging trend; a site is cleared of its existing dwellings(s) and "refilled" to the maximum density permitted in the zone. Until this trend is researched further no real

[21] See Section 3.1Geographical Study Areas for a definition of Rural Towns and Coastal Settlements.

[22] For a full description of the capacity study measures, the survey methodologies and assumptions used refer to the Capacity Study Measures and Methodologies section of the Capacity for Growth Study 2006, Methodology and Assumptions Summary Report TR2010/015.

[23] Statistics New Zealand define Un-occupied Dwellings as; an empty dwelling (has no current occupants and new occupants are not expected to move in on or before 5 March), unoccupied at all times during the twelve hours following midnight on the night of the data collection and suitable for habitation http://www.stats.govt.nz/methods_and_services/surveys-and-methods/classifications-and-standards/classification-related-stats-standards/dwelling-occupancy-status.aspx

understanding of what proportion of sites will be 'refilled', as opposed to 'infilled', is available.

4.3.2 Modified Capacity Assessment

Modified Capacity is approximately 25% less than the surveyed total. While the uptake of vacant and structure plan area capacity is assumed to be similar to the surveyed counts Infill, Refill and Residential on Business land are significantly lower. This is based upon the observation that little of this type of capacity has been developed to date and that less intensive development is associated with these areas (i.e. a lifestyle choice).

The Modified Capacity supply profile and assumptions[24] are shown in Table 20 below:

Table 20: Modified Residential Capacity by Type (RTCS)

Rural Towns and Coastal Settlements	Vacant and Vacant Potential	Structure Plan Areas	Infill /Refill	Residential on Business Zoned Land	Total Household Capacity 2006
Modified Residential Capacity Total	8,324	6,330	698	293	15,644
Modified Capacity Assumptions	VP 75% Vac 90%	100%	95/5 split less 50%	10%	-

4.3.3 Pipeline Residential Capacity

What follows is an inventory of pipeline residential capacity by territorial authority:

Rodney district council

- Wellsford Structure Plan Area: Approximately 200 additional residential dwelling units (over and above that identified as at Feb 2006). (Status: in District Plan. Awaiting completion of bypass.)
- Warkworth Structure Plan Area: Approximately 1460 additional residential dwelling units (over and above that identified as at Feb 2006). (Status: in District Plan. Awaiting completion of bypass.)
- Matakana Structure Plan Area: Approximately 200 dwellings over and above that identified in the Summary Table 59, Appendix A. (Status: Consultation stage.)
- Kauakapakapa Structure: (Status: Consultation stage.)
- Riverhead Structure Plan: The total number of dwellings, 536, is a reduction in capacity from the 600 dwellings shown in the Summary Table 59, Appendix A . (Status: Appeals now settled.)

[24] The Modified Capacity supply assumptions are based upon the research findings of the three residential capacity studies –Vacant, Infill and Refill and the Redevelopment of Business Land.

- Waimauku Structure Plan: Future expansion post 10 years to support town centres and rail, approximately 40 hectares (Status: Consultation stage.)
- Waitoki Structure Plan: (Status: Consultation stage.)

Manukau city council

- Wairoa River Maritime Village: Plan Change 13 establishment of a new coastal settlement based around canal housing. (Status: outstanding appeals.)
- Beachlands Village: New Avenues plan change provides for 800 dwellings over approximately 125ha. (Status: MCC expect to notify this plan change in March / April 2010.)
- Pine Harbour Marine: Private Plan Change estimated to provide for 500 apartments. (Status : This private plan change has been 'accepted' by MCC and is planned to be notified in March / April 2010 with the Beachlands Village: New Avenues plan change.)

Franklin district council

- Plan Change 14 - Rural Plan Change: Directs growth to particular villages (Status: subject to appeal.)

4.3.4 Residential Capacity 1996 to 2006

The 1996 study identified an additional capacity of 9,855 dwellings within regionally significant settlements. Since the 1996 study the capacity of these settlements has nearly doubled to between 16,334 to 18,174 dwellings – see Table 21 below. The majority of this "new" capacity is from greenfield land identified since the 1996 study[25].

Table 21: Capacity in Regional Significant Rural Towns 1996 to 2006

All Sources (Residential Dwelling Units)	Dwellings 1996	Total Additional Household Capacity 1996	Dwellings 2006 (Occupied)	Total Additional Household Capacity 2006 (incld. Infill / Refill)
Regional Significant Settlements	13,934	9,855	16,797	16,334 to 18,174

4.3.5 Residential Capacity by Type

Residential development comes in many shapes and sizes, for example; stand alone dwelling on large lots, townhouses, terrace housing and apartment blocks. The

[25] The 2006 Study has included an assessment of Infill and Refill capacity within rural towns and coastal settlements. The 1996 Study did not include this assessment. Therefore some of the additional capacity is a result of this more detailed approach – an additional 914 to 2,754 dwellings.

following section describes the likely housing outcomes that could be expected from the residential capacity identified.

Table 22: Residential Capacity by Housing Type (RTCS)

Residential Capacity by Type	Urban Low to High Density (low to high rise apartments)	Suburban High Density (terrace to low rise apartments)	Suburban Medium Density (townhouse to attached housing)	Suburban Conventional Density (stand alone dwelling on lot 600-1000m2)	Suburban Low Density (stand alone dwelling on lot 1000m2+)	Large Lot (lifestyle block)
Vacant	-	231	3,992	2,074	1,221	2,301
Structure Plan Areas	-	273	870	4,576	336	275
Infill	-	-	1,053	174	46	-
Refill	-	71	3,202	367	110	-
Infill/Refill estimate (95/5)	-	18	1,160	183	49	0
Residential on Business zoned land	2,928	-	-	-	-	-
Total	2,928	522	6,452	6,872	1,619	2,576
Total as %	14%	2%	29%	33%	8%	13%

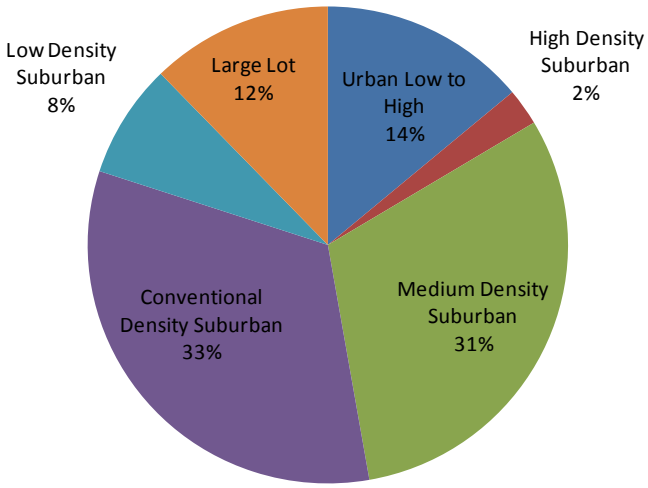
Rural Towns include a range of residential zonings. Each zone typically includes rules controlling the density of residential development that may occur. Using the 'Auckland Housing Choice'[26] as a guide each residential zone has been assigned a housing typology based upon its density. By mapping residential capacity to zoning it is possible to describe capacity in terms of likely housing outcomes. Table 22 and Figure 12 below summarise these results.

Stand alone and townhouse type dwellings dominate rural town capacity (70% i.e. Suburban Medium + Suburban Conventional + Suburban Low). Higher density housing capacity in the form of terrace and apartments makes up 14% of future capacity however there has been little evidence of this style of development in rural towns to date (the majority of this capacity is within the Pukekohe township). Low density and lifestyle lots make up 20% of capacity.

Very little Infill and Refill development has been witnessed within rural towns. This preference for larger lots and an open living environment is most likely a lifestyle choice associated with living and moving to a rural town. As such the occurrence of Infill development will probably remain limited and Refill, although possible under the rules, is most unlikely. The Modified Capacity assumption for Infill and Refill is therefore assessed to be a split 95% Infill and 5% Refill with and an overall reduction by 50% - i.e. (Infill 95% +Refill 5%) x 50%.

[26] Auckland Regional Growth Forum, Auckland Housing Choice, A guide to housing definitions commonly used in the Auckland Regional Growth Strategy, August 2003 see Figure 31 Appendix C.

Figure 12: Residential Capacity by Housing Type (RTCS)



4.3.6 Results by Territorial Authority

The following section presents the residential capacity results by territorial authority area.

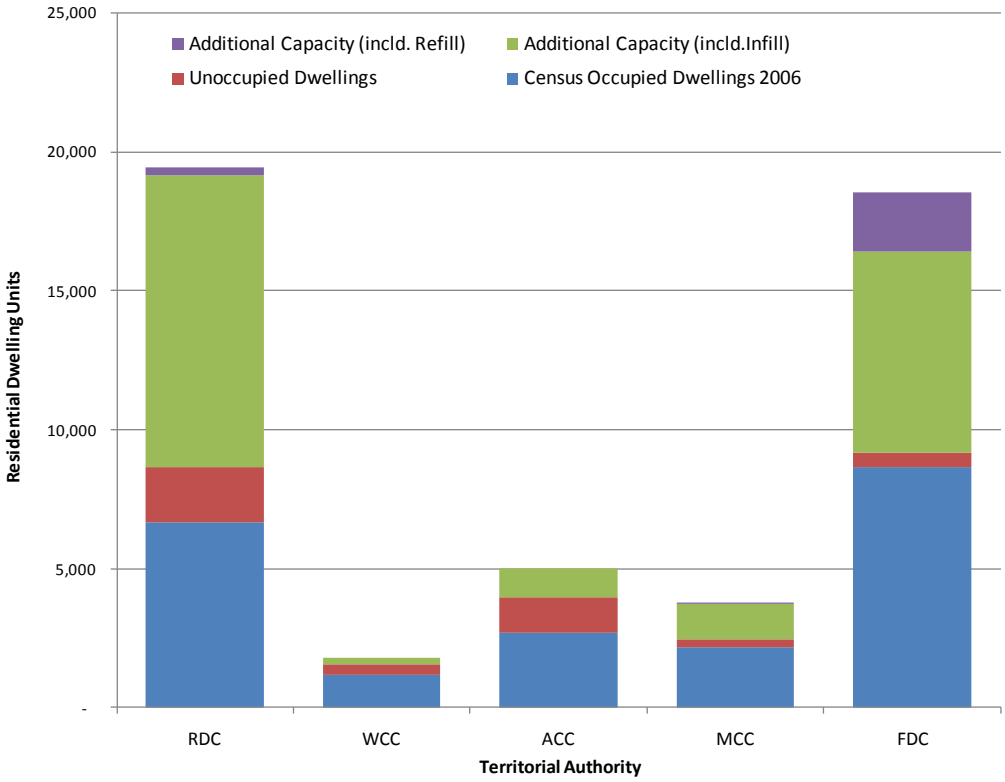
Rodney and Franklin districts account for the majority of the region's rural area. These districts include the majority of the region's significant rural towns and coastal settlements – Wellsford, Warkworth, Snells-Algies, Pukekkohe, Waiuku and Tuakau. Additional residential capacity in these districts is significant; and could provide for more than a doubling of the number of occupied dwellings.

Table 23: Residential Capacity by Type by Territorial Authority (RTCS)

Territorial Authority	Census 2006	Un-occupied Dwellings	Vacant	Future Urban	Infill	Refill	Residential on Business Land	Total (incl. Infill)	Total (incl. Refill)
RDC	6,639	2,001	3,053	5,740	174	434	1,549	10,516	10,776
WCC	1,155	402	209	-	-	-	-	209	-
ACC	2,697	1,269	1,040	-	-	-	-	1,040	-
MCC	2,181	264	799	420	46	105	-	1,265	1,324
FDC	8,661	498	4,640	170	1,053	3,198	1,379	7,242	9,387

A significant proportion of capacity within Rodney district is in the form of future urban or structure plan areas (approximately 50%).

Figure 13: Residential Capacity by Territorial Authority, 2006 (RTCS)



Commentary:

- Rodney and Franklin are the only two territorial authorities with capacity for higher density residential development; as shown by the capacity on business land results.
- Rodney district has a high proportion of un-occupied dwellings mostly in the seaside settlements of Omaha, Leigh and Snells-Algies.
- Franklin has significant capacity available from Infill or Refill capacity (1,053 to 3,198 residential dwellings units). However, this capacity seems to have been relatively untapped.
- Auckland city's Waiheke Island capacity is all by means of vacant land. Infill is not permitted. About one in three Waiheke Island dwellings is unoccupied.
- Capacity within Manukau city is mainly within Beachlands Maratai (1,182 to 1,241 residential dwelling units) and mainly within Kellys Cove (420 residential dwellings units) and on vacant parcels (599). A very limited amount of Infill/Refill is possible (46 to 109 residential dwelling units).
- Waitakere city has very limited additional capacity. What capacity it does have is generally on a few small vacant parcels. Development of these will, more than likely, result in single family detached housing.

4.3.7 Concluding Comments

- In general the capacity available in Rural Towns and Coastal Settlements is consistent with the ARGS in terms of location (centred upon existing towns), quantity (can provide for up to a 100% increase in the number of occupied dwellings) and housing type (the majority being stand alone, with some opportunity for intensification).
- The majority of capacity is by way of vacant land (including Future urban and Structure plan areas).
- Opportunities for intensification do exist (Refill and Residential development on business land). However, there is little evidence of this form of housing being developed. This appears to be consistent with the generally lower intensity of development experienced within town centres and maybe associated with a lifestyle choice (compared with metropolitan Auckland).
- The number of unoccupied dwellings within rural towns and coastal settlements is significant (21% of total dwellings). Occurring predominantly as baches and holiday homes these have not been considered as capacity within this study.

The residential capacity results and Maps are presented for each individual rural town and coastal settlement in Table 58 to Table 63 Appendix A and Map 16 to Map 47 Appendix D.

4.4 Rural Area Capacity

The first part of this section presents the residential capacity results and findings for the rural area as a whole[27]. The subsequent parts of the section present and investigate the results by territorial authority area and by the significant issues of existing vacant titles and countryside living.

4.4.1 Rural Land Capacity Results

The Rural Capacity survey has identified that there is capacity for a further 24,453 residential dwelling units on rural land within the Auckland region[28]. Rural capacity is available from two main sources[29]; existing vacant titles (30%) and from the subdivision opportunities available under district plan rules (70%) see Table 24 below.

[27] See Section 3.1Geographical Study Areas for a definition of Rural Area area.

[28] Franklin District is likely to have much more capacity than is shown in this study. The operative plan at the time of the data capture contained rules that were unable to be successfully modelled using a GIS approach (e.g. boundary relocations). As a result, these rules were not assessed in the study.

[29] For a full description of the rural are capacity study measures, the survey methodologies and assumptions used refer to the Capacity Study Measures and Methodologies section of the Capacity for Growth Study 2006, Methodology and Assumptions Summary Report TR2010/015.

Table 24: Total Residential Capacity by Source (Rural Area)

Capacity source	Vacant titles with no subdivision potential	Vacant titles with subdivision potential	New titles	Total
Rural Area	5,736	1,653	17,064	24,453

4.4.2 Modified Rural Capacity

The Modified Capacity assumption for the rural area is 15,275 additional residential dwelling units or 62% of the surveyed total. The Modified Capacity results (Table 25) and assumptions are presented below.

Table 25: Modified Rural Capacity Assumptions and Totals

TA	Modified Capacity Assumptions	Modified Capacity
RDC	50%	8,427
NSCC	95%	390
WCC	95%	1,492
ACC	95%	789
MCC	75%	1,307
PDC	75%	523
FDC	100%	2,347
Total	62%	15,275

Rodney District: 50% of capacity available. Much of the rural land capacity in the Rodney district is remote from urban service centres. Most of the subdivision provisions are incentive-based rather than land area-based and in some cases would require a substantial investment in order to qualify. The 2009 Rodney District Council Rural Capacity Study examined rural land capacity using two assessment criteria; distance to key markets, and ease of subdivision which reduced the total by 50%. This study accepts that methodology.

North Shore City: 95% of capacity available. North Shore city's rural areas are very close to existing urban areas. The subdivision rules are land-area based rather than performance based. Therefore, it is considered that most subdivision opportunities will be taken up in the long term.

Waitakere City: 95% of capacity available. Waitakere city's rural areas are very close to existing urban areas. The subdivision rules are land-area based rather than performance based. Therefore, it is considered that most subdivision opportunities will be taken up in the long term.

Auckland City: 95% of capacity available. Auckland city's rural area is located on Waiheke Island. This is a popular and attractive location. The subdivision rules are land-area based rather than performance based. Therefore, it is considered that most subdivision opportunities will be taken up in the long term.

Manukau City: 75% of capacity available. Some of Manukau city's rural areas are remote from service centres. A number of the subdivision rules are incentive-based and would be more challenging to successfully implement. This is considered to reduce the number of opportunities likely to be taken up.

Papakura District: 75% of capacity. Papakura district's rural areas are close to urban areas, however, there are a number performance based subdivision rules which may be more difficult to successfully achieve. This is considered likely to reduce the number of opportunities taken up.

Franklin District: 100% of capacity. As has been noted this study underestimates Franklin District's rural capacity due to methodological constraints. As a consequence, it is considered that quantum of assessed capacity is likely to be taken up.

4.4.3 Pipeline Rural Area Capacity

What follows is an inventory of pipeline rural area capacity by territorial authority:

Rodney district

- Coatesville Countryside Living Group Appeal. Change in zoning from General Rural to Countryside Living. (Status: Appeal has been granted by the Court subject to a concept plan. Interim decision stage awaiting final concept plan can decision.)
- Point Wells and Omaha Flats: Approximately 99 additional countryside living opportunities (Status: consultation stage.)
- Hatfields Peninsular appeal - Proposal to increase the density of land at Hatfields Peninsular from General Rural to 2ha blocks. (Status: at appeal.)

Papakura district

- Plan Change 13: The Rural Plan Change.. A review of the rural section of the district plan. (Status: at appeal.)

Franklin district

- Franklin Rural Plan Change: Plan Change 14 directs growth to particular villages. (Status: subject to appeal.)

4.4.4 Results by Territorial Authority

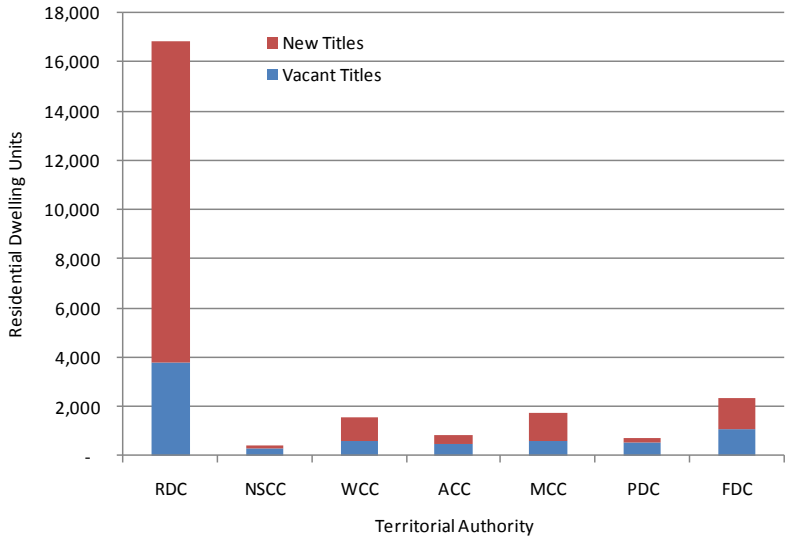
The following section presents the rural area capacity results by territorial authority area.

Rodney and Franklin districts account for the majority of the region's rural area. Available capacity reflects this land area dominance with 69% of total rural capacity in Rodney district and 10% in Franklin district. Both districts also have large proportions of vacant titles (discussed in more detail in the following section).

Table 26: Residential Dwelling Unit Capacity by Territorial Authority (Rural Area)

	Vacant titles with no subdivision potential	Vacant titles with subdivision potential	New titles	Total Capacity
RDC	2,661	1,097	13,096	16,854
NSCC	267	21	123	411
WCC	512	112	947	1,571
ACC	442	34	354	830
MCC	479	140	1,124	1,743
PDC	465	57	175	697
FDC	910	192	1,245	2,347
Total	5,736	1,653	17,064	24,453

Figure 14: Rural Area Residential Dwelling Unit Capacity by Territorial Authority



4.4.5 The Characteristics of Rural Area Capacity

The following section examines rural area capacity in terms of

- Zoning,
- Vacant Titles, and
- Countryside Living.

There are 42 rural zones within the region's rural area. To simplify analysis these zones have been classified into one of four categories or types based upon the objectives of the individual zone. These general zone types are:

- Rural Residential/Countryside Living (7 individual zones),
- Rural General (11 individual zones),
- Landscape or Ecological Protection (23 individual zones), and

- Special Rural (1 individual zone).

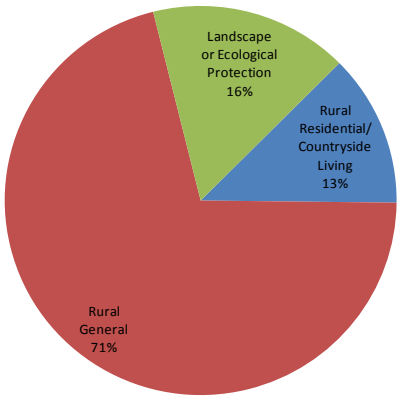
4.4.5.1 Rural Area Capacity by Rural Zone Type

Based upon rural zone type, rural area capacity falls predominantly within the general rural areas of the region, 17,345 residential dwelling units or 71%. Rural residential or countryside living zones provide capacity for a further 3,100 residential dwellings units (13%) while areas set aside for Landscape and Ecological protection have capacity for 4,006 (16%) units – see Table 27 and Figure 15.

Table 27: Rural Area Capacity by Rural Zone Type

TA	Rural Residential/ Countryside Living	Rural General	Landscape or Ecological Protection	Special Rural	Total
Total	3,100	17,345	4,006	2	24,453

Figure 15: Rural Area Capacity by Rural Zone Type



4.4.5.2 Vacant Titles

It is estimated that there are 7,389 vacant rural titles in the region. The vast majority, 3,758 (51%), are within Rodney district. Vacant titles can, in most cases, accommodate a dwelling as of right with no subdivision consent required. Vacant title capacity cannot be removed by changes to district plan rules[30]. In some cases a vacant title may also have potential for further subdivision (22% of vacant titles have further subdivision potential).

Table 28 below identifies how existing vacant titles are split between rural zone types. Sixty four percent of all vacant titles are on land with a general rural zoning, 22% on land zoned for landscape or ecological protection and 14% on land zoned specifically for countryside living or rural residential activities.

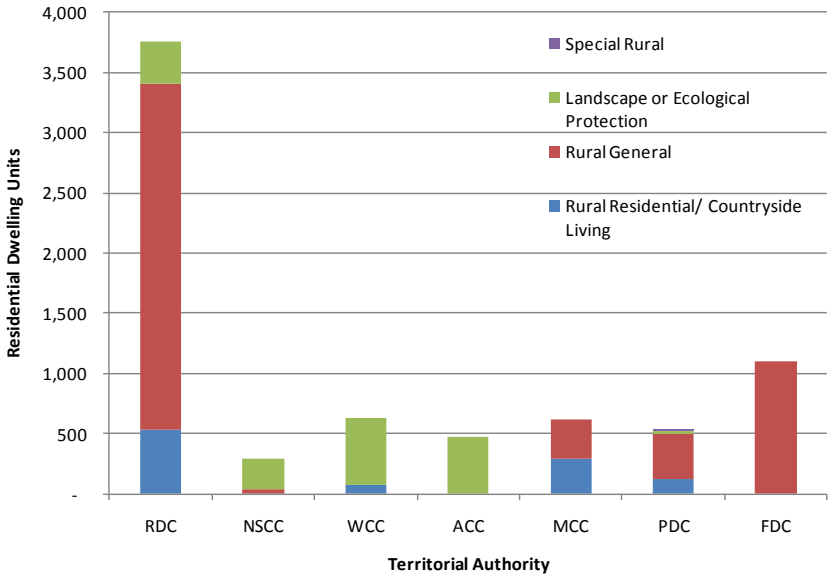
[30] Some territorial authorities have used Transferable Development Rights as a means of directing this capacity to locations considered more consistent with district plan objectives

Table 28: Existing Vacant Titles by Rural Zoning Type (Rural Area)

TA	Rural Residential/ Countryside Living	Rural General	Landscape or Ecological Protection	Special Rural	Total
Total	1,029	4,713	1,646	1	7,389

When examined by territorial authority area vacant titles fall predominantly within the general rural zones of Rodney district (76% of all titles), Manukau city (52%), Papakura district (72%) and Franklin (100%). Vacant titles are mostly within the landscape and ecological protection zones of North Shore, Waitakere and Auckland cities - see Figure 16 below.

Figure 16: Existing Vacant Titles by Rural Zoning Type and Territorial Authority (Rural Area)



4.4.5.3 Countryside Living

Policy makers have indicated that the effects of "countryside living" are an issue within the rural area (i.e. the impacts on rural character, pressure on roading and other infrastructure, and conflicts between lifestyle and farming activities, etc). To assist policy makers with their understanding of the issues this study provides both quantification and location information about countryside living capacity.

The ARPS defines countryside living as "low density residential development on rural land. It includes the concepts of rural-residential development, scattered rural-residential lots, farmlets, residential bush lots, retirement lots, large-lot residential development and the like. It is similar to low density residential development where it occurs within urban areas."

Countryside living is currently provided for across the region in two ways:

1. by way of specific countryside living or rural residential zones, and

2. by way of incentive or performance provisions in other rural type zones.

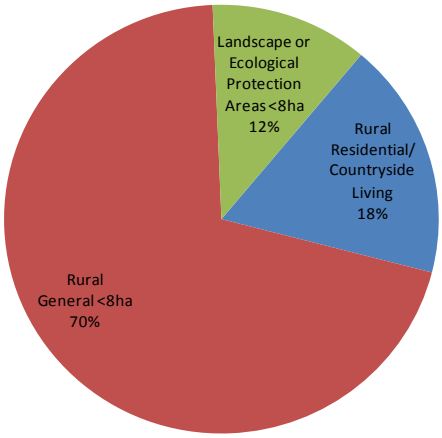
An area limit of eight hectares or less has been applied to further define countryside living activities within the general rural area[31].

When combined, the two definitions of countryside living give a total capacity figure of 17,326 residential dwelling units see Table 29 below. Based upon past rates of take up (650 additional residential dwelling units per year[32]) this capacity is likely to provide for 26 years of development (as at 2006).

Table 29: Countryside Living Opportunities within the Rural Area

Rural Zone Type	Countryside Living Opportunities		Balance Capacity	Total
Rural Residential/ Countryside Living	All capacity	3,100		3,100
Rural General	New titles <8ha	12,189	5,156	17,345
Landscape or Ecological Protection Areas	New titles <8ha	2,036	1,970	4,006
Special Rural Areas	New titles <8ha	1	1	2
Total		17,326	7,127	24,453

Figure 17: Countryside Living Capacity by Rural Zone Type (Rural Area)



Commentary:

- Seventy one percent of rural capacity can be classified as Countryside Living.
- Of the Countryside Living total 18% is located within zones designed specifically for rural residential or countryside living activities. The majority of countryside living opportunists exist in rural general zone (70%).

[31] Parcels with a land area of eight hectares or under are assumed to be more likely used for countryside living activities and parcels over 8 hectares are assumed to be more likely used for general rural activities.
[32] LGAAA evidence presented by David Lindsey in the matter of Countryside Living changes to District Plans, 2007.

- Some of the capacity not defined as Countryside Living may include vacant titles less than 8 hectares in area and therefore the actual Countryside Living capacity total could be higher. (Information on vacant title area is not available from in current survey database.)

4.4.6 Concluding comments

- A significant proportion of rural area capacity fits the definition of countryside living. This capacity is scattered widely across the whole rural area. While the ARGS provides for rural residential opportunities, the scale and distribution of this capacity means that it does not support the overall growth concept of compact towns and city (i.e. smaller rural lot capacity could be directed to the peri-urban areas at the fringe of city/towns).
- A significant proportion of rural area capacity is in the form of existing vacant titles (7,389 titles). Generally existing vacant titles can be developed as of right (with district plan rules limited to controlling the location and appearance of dwellings). In many cases this capacity is dispersed and therefore does not support the ARGS compact city concept. Some territorial authorities have used transferable development rights to relocate this capacity.
- Modified Capacity, capacity that is readily realisable, has been estimated at 62% of the surveyed total. The balance capacity is considered less likely to be developed as it is remotely located and/or requires the meeting of performance standards that are challenging and currently not economic (e.g. enhancement planting). However, economic viability can change rapidly, for example; an improvement in accessibility due to proposed motorway extensions, so this situation will require on-going monitoring to remain current.

The rural land capacity results are summarised by territorial authority in Table 71 to Table 73 Appendix A. The results are mapped by territorial authority in Map 49 to Map 55 in Appendix D.

5 Business Land Capacity Results

This section summarises the business land capacity study results. Regional results are presented first followed by more detail results for each of the three sub-study areas; Metropolitan Auckland, Rural towns and coastal settlements and the general Rural area. Summary result tables for each of the sub-study areas have been grouped together in Appendix A. Maps portraying the information spatially are in Appendix D.

5.1 The Auckland Region

This section provides a regional summary of the business land capacity results as well as some high level observations associated with this capacity.

The region's district plans provide 7,910 hectares of business zoned land[33]. Of this total 2,406 hectares have been identified as having capacity for further development (i.e. vacant, vacant potential or Brownfield land). Within the metropolitan area it is anticipated that this capacity will provide for 19 years of development, see Table 30 below.

Table 30: Business Land Capacity Summary (Region)

	Total	Business Sector		
		Group 1 (Land extensive industrial activities)	Group 2 (Land intensive activities)	Group 1 and 2 (Mixed)
Metropolitan Area Capacity	2,162 ha	1,435	608	86
Rural Town Capacity	244 ha	169	21	54
Total Capacity	2,406 ha	1,609	629	140
Total Business Land (ha) (as %of total)	7,910	4,260 (54%)	2,587 (33%)	919 (12%)
Capacity as a Percentage of total land available	30%	38%	24%	15%
Annual average uptake Metropolitan area	113ha / year	*Assessment not available by business sector due to data limitations*		
Years to exhaustion Metropolitan area	19			

(Note: Land areas for Business Sector Groups may not equal Total area as some land is not able to be classified)

- Business land capacity is generally well located in terms of proximity to the regional freight network; 78% of metropolitan and 59% of rural town vacant business land capacity is within 1km of the regional freight network.

[33] Business zoned land includes all land identified by district plans for business activities. The zones included in the assessment are listed in Appendix E of the Capacity for Growth Study 2006, Methodology and Assumptions Summary Report TR2010/015.

- Some metropolitan locations now have very limited stocks of vacant business land (North Shore 6 years and Waitakere city 13 years). A significant component of Auckland city capacity (75%) is by way of brownfield land.
- Brownfield land provides significant new capacity within existing urban areas. The re-use and intensification of underutilised business land is consistent with the objectives of the ARGS. However, significant constraints to the development of this land have been observed so these will need to be addressed before the brownfield land supply can be considered "readily realisable".
- There is significantly more Group 1 (land extensive industrial activities) vacant land available than Group 2 (land intensive activities). However, Group 2 land has significant potential for further intensification (multi storey development), to which it is well suited.
- The majority of Future and Special zoned business land is Group 1.
- A significant proportion of vacant Group 1 parcels are less than 0.5 hectares in area. Of the larger parcels a significant proportion are brownfield and therefore may not be readily realisable.

An analysis of the surveyed capacity results showed that from a market perspective the uptake of some land was highly constrained in the short term. Therefore in order to provide policy makers with a broader understanding of the business land capacity situation a modified assessment of capacity has been developed.

The modified assessment of business land capacity within the metropolitan area suggests capacity could be 453 hectares less than the surveyed total. At past rates of business land consumption this modified total would be exhausted by 2021 (as at 2006), providing just 15 years of capacity the minimum required by the ARPS. Insufficient data means a modified assessment of rural town capacity has not be possible, however given the capacity is largely from vacant land and future urban land little modification is expected, see Table 31 below.

Table 31: Business Land Modified Capacity Assumption (Metropolitan Auckland)

	Total	Business Sector		
		Group 1 (Land extensive industrial activities)	Group 2 (Land intensive activities)	Group 1 and 2 (Mixed)
Metropolitan Area Capacity	1,709 ha	1,158	491	50
Annual average uptake Metropolitan area	113ha / year	*Assessment not available by business sector due to data limitations*		
Years to exhaustion Metropolitan area	15			
Rural Towns and Coastal Settlements	*Insufficient data available for assessment)*			

(Note: Land areas for Business Sector Groups may not equal Total area as some land is not able to be classified)

There is significant business land capacity in the planning process. This additional or "Pipeline Capacity" lacks the certainty of district plan provision but does indicate that supply issues are being constantly considered and that capacity will not simply "run out". Table 32 provides a summary of business land Pipeline Capacity and indicates the likely business sector it will provide for.

Table 32: Business Land Pipeline Capacity (Region)

Pipeline Capacity	By Business Sector		
Region	Group 1 (Land extensive industrial activities)	Group 2 (Land intensive activities)	Group 1 and 2 (Mixed)
Metropolitan Area			
Orewa East Structure Plan	Yes	Yes	
Silverdale West Structure Plan	Yes		
Silverdale North Structure Plan	Loss		
Whangaparaoa Structure Plan	Loss		
Hibiscus Coast Gateway			
Massey North /Westgate	Yes	Yes	
Hobsonville Corridor (Stage 1 and 2)	Yes		
Hobsonville Peninsula	Yes		
Whenuapai Industrial Future Urban Area	Yes		
Red hills area	Yes		
Rural Towns			
Wellsford Structure Plan Area	Yes		
Huapai South Future Urban (reduced to 53.6ha)	Yes		

(A detailed Pipeline Capacity inventory is recorded under the Metropolitan Area Business Land Results section.)

The majority of Pipeline Capacity identified is targeted at providing capacity for Group 1 activities in the Hibiscus Coast and Hobsonville corridor area.

(Pipeline Capacity is subject to change as it travels through the planning process i.e. submissions, hearings, environment court etc. As such Pipeline Capacity should be viewed as a guide rather than an absolute measure of additional capacity.)

5.2 Metropolitan Area: Business Land Results

The first part of this section presents the business land capacity results and findings for the metropolitan area as a whole[34]. The subsequent sections present the results of the three individual surveys:

- Vacant land (includes Vacant, Vacant Potential, Future Urban and Special Zone),

[34] See Section 3.1Geographical Study Areas for a definition of metropolitan area.

- Brownfield land, and
- Redevelopment of business land (i.e. intensification)[35].

The survey results, including analysis and commentary, are presented at a territorial authority scale. The key characteristics of each measure are also presented as well as any constraints that these may have on the future supply of capacity.

It is important to note that the Vacant and Brownfield Land surveys assess capacity in terms of available land area (hectares). The Business Land Redevelopment study assesses the capacity of selected business areas in terms of further intensification which is measured in additional floor space and employment. In many cases the two studies will overlap thereby providing a range of capacity data for the same area, i.e. a business area may include areas of vacant or brownfield land and areas with redevelopment capacity, in other cases a business area may have little to no vacant land but significant intensification capacity.

5.2.1 The Vacant and Brownfield Land Study Results

The Metropolitan area currently has 6,814 hectares of land zoned for a range of business activities[36]. An additional 474 hectares has been earmarked in territorial authority district plans for "future business activity".

Total business land capacity available from all sources is 1,620 hectares – see Table 33 below. Based upon past rates of business land up-take (113ha/annum) and assuming all the land is developable this level of capacity could provide for 14 years of development (i.e. to 2020).

Table 33: Total Business Land Capacity by Type 2006 (Metropolitan Area)

Business Land	Total Business Zoned Land (ha)	Vacant and Vacant Potential (ha)	Brown field (ha)	Future Urban or Special zoned areas for business use (ha)	Total Business Land Capacity (ha)	Years to Exhaustion (as at 2006)
Metropolitan Area	6,814	1,146	-	474	1,620	14

If Brownfield land is included in the total then the land available for development increases to 2,162 hectares, see Table 34 below. This total would provide for 19 years of growth (i.e. Brownfield land would extend supply by five years).

[35] For a full description of the business land capacity study measures, the survey methodologies and assumptions used refer to the Capacity Study Measures and Methodologies section of the Capacity for Growth Study 2006, Methodology and Assumptions Summary Report TR2010/015.
[36] Business zoned land includes all land identified by district plans for business activities. The zones included in the assessment are listed in Appendix E of the Capacity for Growth Study 2006, Methodology and Assumptions Summary Report TR2010/015.

Table 34: Total Business Land Capacity including Brownfield Land 2006 (Metropolitan Area)

Business Land	Total Business Zoned Land (ha)	Vacant and Vacant Potential (ha)	Brown field (ha)	Future Urban or Special zoned areas for business use (ha)	Total Business Land Capacity (ha)	Years to Exhaustion (as at 2006)
Metropolitan Area	6,814	1,077	611	474	2,162	19

However, the inclusion of Brownfield Land Capacity is new to the 2006 study and knowledge of its development dynamics is limited and further study is recommended in this area[37].

5.2.2 Modified Capacity Assessment

The Modified Capacity assumption identifies that there could be 15 years of capacity available Table 35. This is the minimum required by ARPS.

The Modified Capacity assumptions are based upon an analysis of the surveyed business land results. This analysis showed that while business land zoned Future Urban or with a Special zoned could be similar to the surveyed count (as large greenfield sites continue to be attractive to the market) Vacant and Brownfield counts could be lower. Land that has been vacant for greater than 10 years and is further than two kilometres from the freight network has been removed, while Brownfield Land Capacity has been discounted by 70% in recognition of the range of constraints the redevelopment of this land faces.

Table 35: Modified Business Land Capacity by Capacity Type (Metropolitan Area)

Metropolitan Area	Vacant and Vacant Potential (ha)	Brownfield Land (ha)	Future Urban or Special zoned areas for business use (ha)	Total Business Land Capacity 2006 (ha)	Years to Exhaustion (as at 2006)
Modified Business Land Capacity Total	1,052	183	474	1,709	15
Modified Capacity Assumptions	Less 25 ha	30%	100%	-	-

5.2.3 Pipeline Business Land Capacity

What follows is an inventory of pipeline business land capacity by territorial authority:

Rodney District council

[37] Brownfield land is subject to a number of development constraints - see the Brownfield methodology section in the Capacity for Growth Study 2006, Methodology and Assumptions Summary Report TR2010/015.

- Orewa East Structure Plan: land to the north and north west of town centre be rezoned Mixed Business and land to the west zoned Future Business. (Status: Adopted by Council, not in District Plan.)
- Silverdale West Structure Plan: Investigates the feasibility of the provision of land for future business development, primarily Group One activities (large floor plate). (Status: Not adopted by Council nor in District Plan.)
- Whangaparaoa Structure Plan: Two large blocks of land be rezoned from industrial to medium residential. (Status: Adopted by Council not in District Plan.)
- Hibiscus Coast Gateway: Special 26 Zone Recreation and Entertainment Zone 91 hectares. Contains some existing entertainment uses (Status: consultation stage and application to shift the MUL has also been received by the ARC.)
- Silverdale North (Special 19 Zone): A total of approximately 80ha (53 ha for knowledge economy and 27ha for commercial/retail). This is a reduction from the 84ha in Summary Table 53, Appendix A. (Status: in District Plan.)

Waitakere City council

- Massey North /Westgate: Includes a proposal for town centre and industrial area (Massey North Employment Special Area) providing up to 5,770 full time jobs. (Status: A comprehensive development application (CDP), to develop Precinct A (town centre) and Precinct B (town centre special area), is being processed by WCC. No CDP has been lodged for the Employment Special Area.)
- Hobsonville Corridor (Stage 1 and 2): Stage 1 preliminary estimates - 52 hectares of industrial land and a mixed-use town centre. Stage 2 preliminary estimates 1,800 jobs. (Status: Stage 1 includes Plan Changes 14 and 15. Preliminary planning for Stage 2 is underway.)
- Hobsonville Peninsula: Hobsonville Marine Industry Special Area 20 hectares. (Status: This special area is part of Plan Change 13. A comprehensive development application (CDP) is required for development of this area.)
- Whenuapai Industrial Future Urban Area: Approximately 400 hectares 15-20,000 jobs. (Status: Preliminary planning is underway, with a plan change possible by the end of 2010.)
- Red hills area. 300 hectares of land some of which lends itself to more intensive commercial or residential development. Development not planned until after 2021 and dependent upon uptake of Massey North and Hobsonville Corridor. (Status: Only preliminary planning has occurred.)

Manukau City council

- Plan Change 33 – Campus Precinct and other City Centre zoning changes rezone 5.37ha of Hayman Park's Public Open Space 2 to Business 3 zone and 5,433m^2 of land behind the Manukau Court being to the Business 4 zone. (Status: notified early December 2009.)

5.2.4 Vacant Business Land Capacity Uptake (1996 to 2006)

Between 1996 and 2006, 1,135 hectares of vacant business land has been consumed in the metropolitan area. This equates to an average annual uptake 113 hectares, see Table 36 below.

Table 36: Vacant Business Land Up-take 1996 to 2006 (Metropolitan Area)

Business land	Vacant Business Land Capacity (ha) 1996	Vacant Business Land Capacity (ha) 2001	Vacant Business Land Capacity (ha) 2006	Change 1996-2006 (Actual)	Change 1996-2006 (%)	Average Annual Up-take 1996-2006
Metropolitan Area	2,253	1,601	1,118[38]	1,135	-50%	113ha/ annum

In the 2001 and 2006 period 483 hectares of vacant business land was consumed (25% of 2001 total vacant land). In the same period, 109 hectares of new land was added by way of MUL extensions (i.e. new structure plan areas at Silverdale North - 70 hectares, Hingaia - 15 hectares and Takanini - 24 hectares).

The 2006 study has included 294 hectares of vacant land within the Auckland International Airport designation[39]. This land was not included in the earlier studies as it was outside the MUL. However, because the land is available for airport related commercial activities under the airport designation (which is subject to an application to bring the area within the MUL), and because a range of commercial activities have set up in the area, it has been included in the 2006 study.

5.2.5 Business Land Capacity by Territorial Authority

The following section identifies and compares business land capacity trends across the six metropolitan territorial authorities. Table 37 below provides a business land capacity profile for each territorial authority.

Table 37: Business Land Capacity by Territorial Authority 2006 (Metropolitan Area)

Business Land	Total Business Zoned Land (ha)	Vacant and Vacant Potential (ha)	Brown field (ha)	Future Urban or Special zoned areas for business use (ha)	Total Business Land Capacity (ha)	Business Land absorption rate*	Years to Exhaustion (as at 2006)
RDC	170	50	10	84	144	2	50+
NSC	798	151	19	-	170	27	6
WCC	714	99	29	-	128	10	13
ACC	2,345	109	293	3	405	17	25
MCC	2,455	608	217	348	1,173	50	24
PDC	331	61	42	39	142	3	16

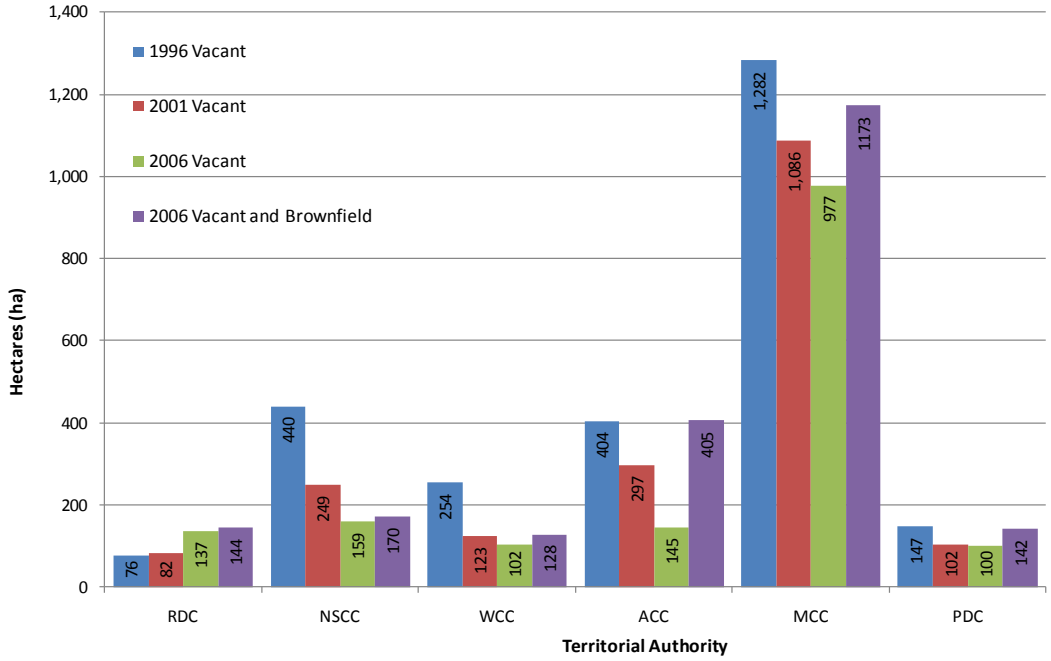
*Based upon the annual average business land absorbed between 1996 to 2006.

[38] The vacant business land total used to calculate business land take-up differs to the surveyed total. Business land added between 2001 and 2006 has been removed to avoid distorting take up rates, this includes 28ha in the Special Albany zone.

[39] The extent of both the airport designation and the vacant land was confirmed with MCC officers (May 2007).

Total vacant land trends by territorial authority between 1996 and 2006 are shown in Figure 18 below. The chart includes two results for 2006; capacity without brownfield land (green columns) and capacity with brownfield (purple columns).

Figure 18: Business Land Capacity Trends by Territorial Authority 1996-2006 (Metropolitan Area)

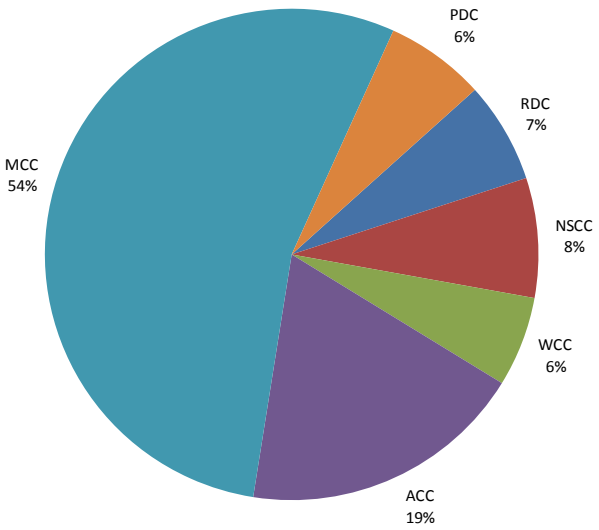


Commentary:

Manukau City

- Manukau City has 1,173 ha of business land capacity. At past rates of development, this capacity could provide for a further 24 years of development.
- Manukau City is the single largest source of vacant business land in the metropolitan area (54% of the metropolitan total). Refer to Figure 19 for territorial authority share (%) of total business land capacity 2006.
- Between 2001 and 2006, 339 ha of vacant business land was consumed (38% of 2001 vacant land). Over the 1996 to 2006 period, Manukau City has experienced the greatest rate of business land consumption within the metropolitan area (56ha/yr). It is the only territorial authority to have experienced an increase in development rates between the 1996 - 2001 and 2001 - 2006 periods.
- A significant increase in capacity has resulted from the inclusion of the vacant land at the international airport terminal (294 ha).
- Two hundred and seventeen hectares of brownfield land have been identified within Manukau City. Removing this category from the business land capacity reduces capacity by four years i.e. from 24 to 20 years.

Figure 19: Total Business land capacity by territorial authority (includes Brownfield Land) (Metropolitan Area)



Waitakere City

- In the 2003 study both North Shore City and Waitakere City were identified as having as little as seven years of capacity remaining, and both were experiencing the highest rates of vacant land loss (48% and 42% respectively). Over the past five years these consumption rates have eased. However, with no further land introduced, both areas continue to have limited capacity remaining.
- Waitakere City has 128 hectares of business land capacity remaining. At past rates of development this capacity could provide for a further 13 years of development.
- Between 2001 and 2006, 15 hectares of business land was consumed in Waitakere City (13% of 2001 vacant land). This compares to the previous five years where 84 hectares were consumed.
- Waitakere City and Papakura District have the least amount of available business land in the metropolitan area. For Waitakere this total is expected to be increased with the extension of the Westgate/Massey North/ Hobsonville area (approximately 70 ha). (This extension is subject to the LGAAA process – Regional Policy Statement Plan Change 6, and was not a part of the district plan zoning at the time of this assessment.)
- Twenty nine hectares of brownfield land has been identified within Waitakere City. Removing this land from the final total would reduce capacity by three years, i.e. from 10 to 13 years.

North Shore City

- North Shore City has 170 hectares of business land capacity remaining. With continued high consumption rates (27ha/year 1996 to 2006, second only to

Manukau City) North Shore City's capacity is projected to provide for only six more years of demand.

- Between 2001 and 2006, 80 hectares of vacant business land were consumed (38% of 2001 vacant land). In the 1996 to 2001 period 191 hectares was consumed. In total, between 1996 and 2006, North Shore City's vacant business land has been reduced by 67% (271 ha). This is the highest percentage decrease of any territorial authority area and is second only in actual land area to Manukau City.
- There is virtually no opportunity for North Shore to add further vacant business land to its total stock. The intensification of existing business land will have to be considered if further business development opportunities are to be accommodated (see 5.2.7 The Redevelopment Capacity on Business Zoned Land Study Results for redevelopment opportunities and capacity).
- Nineteen hectares of brownfield land have been identified within North Shore City. Removing this land from the final total has the effect of reducing capacity by only a matter of months (i.e. less than one year).

Auckland City

- Auckland City has 405 hectares of business land capacity remaining. At past rates of development this capacity could provide for a further 25 years of development. Between 2001 and 2006, 58 hectares of vacant business land were developed (29% of 2001 vacant land). This is a considerable slow down from the previous period, 1996 to 2001, where 107 hectares were developed. In total, over a 10 year period, over 50% of Auckland City's vacant business land has been developed.
- The previous two capacity studies identified the Mt. Wellington quarry area (96 ha) as special business land. Development of this area commenced in the 2001 to 2006 period under the Stonefields Development Master Plan. This plan shows a predominantly residential development with three hectares of business land available as a local town centre.
- Two hundred and ninety hectares of brownfield land has been identified in Auckland City. This is the largest amount of brownfield land of any territorial authority and is consistent with Auckland being home to some of the older and larger business areas within the metropolitan area (ports, railways, breweries and freezing works etc). The identification of brownfield land in Auckland City increases its total business land capacity by 16 years, i.e. vacant land alone would provide only nine years of capacity.
- Like North Shore City, Auckland City has a limited ability to grow its vacant business land resource and alternative means of providing development opportunities, such as brownfield redevelopment and intensification, will need to be continually identified.

Rodney District

- Rodney District (Hibiscus Coast) has 143 hectares of business land capacity. Historically, business land uptake in Rodney has been low, averaging two to three hectares a year. At these past rates of up-take, current capacity is projected to provide for over 50 years of demand. However, as this area consolidates, the population continues to grow and a wider range of business land becomes available, this growth rate is expected to increase.
- Between 2001 and 2006, 15 hectares of vacant business land was consumed in Rodney District (23% of 2001 vacant land total). In the same period, 70 hectares of business land were introduced through the Silverdale Structure Plan area (targeted for knowledge based industries).
- Brownfield land adds just nine hectares of land to Rodney District's total, the least of all the territorial authorities.

Papakura District

- Papakura District has a total of 142 hectares of available business land. At past rates of development this capacity could provide for a further 16 years of development.
- Between 2001 and 2006, 41 hectares of vacant business land were consumed in Papakura, 41% of the 2001 vacant land total. This was the highest rate of business land up-take of all the territorial authorities. In the same period 39 hectares of vacant business land was added to the total by way of local business centres within the Hingaia and Takanini Structure Plan areas (15ha and 24ha respectively).
- Forty two hectares of brownfield land has also been identified within Papakura. Removing this land from the final total would reduce capacity by four years (i.e. from 16 to 12 years).

Table 53 in Appendix B summarises vacant business land by territorial authority from 1996-2006. The results are mapped by territorial authority in Map 56 to Map 61 in Appendix D.

Table 76 in Appendix C summarises the business land take-up rates by territorial authority for the period 2001-06.

5.2.6 The Characteristics of Vacant and Brownfield Land

The uptake and development of vacant business land is influenced by a number of factors, the more significant of which are:

- the range of activities permitted on a parcel (i.e. zoning rules),
- parcel size,
- parcel location relative to the transport network, and

- period vacant.

These factors are investigated in the following section.

5.2.6.1 Business Land Capacity by Group 1 and Group 2 Classification

The region has adopted a business sector classification that groups business activities by their land area requirements[40]. For example: Group 1 includes land extensive industrial activities such as manufacturing and transport and storage. Group 2 includes land intensive activities such as retail trade, finance and insurance, property and business services. This classification has been applied to the region's 70 business-type zones in order to identify the supply of vacant land available to each Grouping[41].

Table 38, below, summarises the region's business zoned land and available capacity by the Group 1 and Group 2 business sector classification.

Table 38: Business land by Category Group 1 and 2 (Metropolitan Area)

Business Land	Total Business Zoned Land (ha)	Vacant and Vacant Potential (ha)	Brownfield	Future Urban or Special zoned areas for business use (ha)	Total Business Land Capacity (ha)
Group 1 (Land extensive industrial activities)	3,585	662	391	382	1,435
Group 2 (Land intensive activities)	2,405	382	136	90	608
Group 1 and 2 Mix	680	33	51	2	86
Unclassified	144	-	33	-	33
Total	6,814	1,077	611	474	2,162

In total, of the 6,814ha of business zoned land in the metro area, just over half is available for Group 1 activities (53% or 3,585ha), 35% is available for Group 2 Activities (2,405ha) and 10% is available for a mix of Group 1 and Group 2 (680ha). One hundred and forty four hectares are not classifiable.

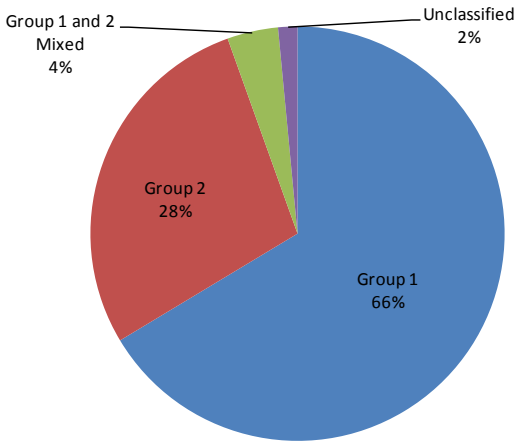
Future or Special Zoned business areas will increase the total business land stock by 474ha or 7%. The majority of this future land (81%) is designated for Group 1 type activities (382ha).

In total, of the 2,162ha of land available for business development, 66% is classified as Group 1 (1,435ha), 28% as Group 2 (608ha) and 4% is available for a mix of Group 1 and 2 (86ha) – see Figure 20 below.

There is no reliable data on the uptake of business land by business sector i.e. uptake by Group 1 and 2. This is an area recommend for further research.

[40] The Auckland Region Business Land Strategy October 2006.
[41] For a full explanation of the assumptions and methodology applied refer to the Land Area Classification section of the Capacity for Growth Study 2006, Methodology and Assumptions Summary Report TR2010/015.

Figure 20: Vacant Business Land by Group 1 and 2 (Metropolitan Area)



5.2.6.2 Business Land Capacity by Parcel Size

There are 2,039 vacant and brownfield parcels within Metropolitan Auckland. Of this total 1,453 (71%) are less than 0.5ha in area. There are 320 parcels with an area of 1ha or greater, with 49 parcels having an area of greater than 5ha – see Table 39 and Figure 21 below.

Table 39: Total Vacant and Brownfield Business Zoned Land by Parcel Size (Metropolitan Area)

Parcels	Total land area (ha)	Total number of Parcels	<0.5ha	0.5-1ha	1-3ha	3-5ha	>5ha
Total	6,814	2,039	1,453	265	220	52	49
Vacant	1,077	1,481	1,108	177	136	33	27
Brownfield	610	558	345	88	84	19	22
Group 1	3,585	1,081	742	154	127	28	30
Group 2	2,405	689	501	79	72	19	18
Group 1 & 2 (mixed)	680	185	143	24	15	2	1

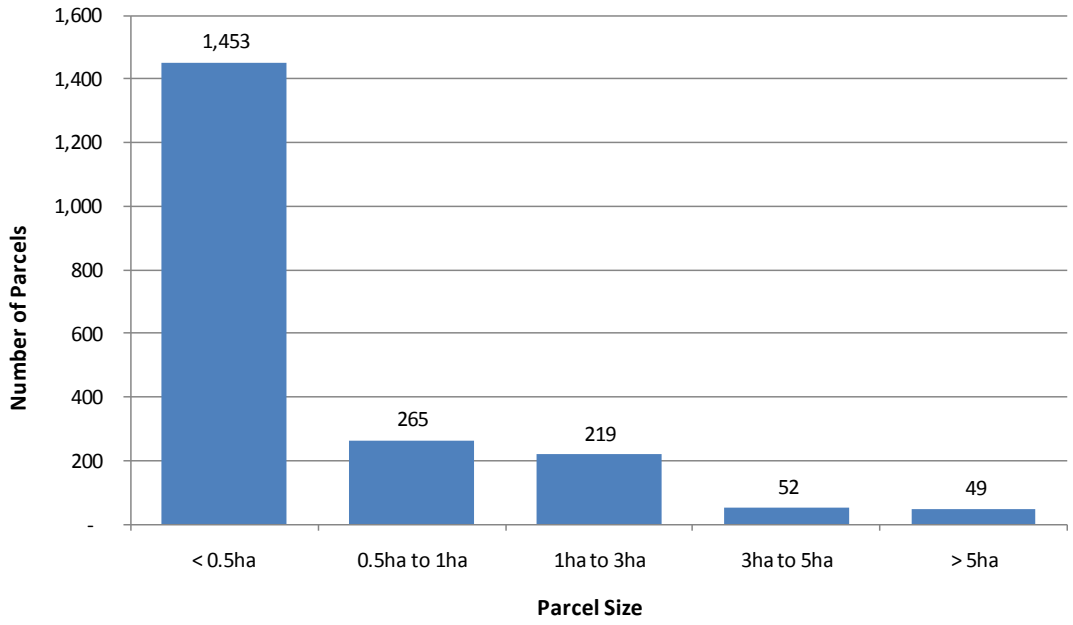
Brownfield sites make up a significant proportion of the 1ha plus parcels (125 parcels or 64% of total parcels available).

The land areas identified for Future Urban or Special business use, namely Silverdale North, Stonefields, Favona Road and Flat Bush, Hingaia and Takanini Town Centres have not been included in this analysis. All of these areas do include larger sized parcels.

Group 1 business activities tend to be land extensive. The average metropolitan Group 1 business parcel is 5,000m2 (0.5 hectare). This average varies across the city; Manukau City 1.5 hectares, Rodney District (HBC) 0.5ha, Auckland City and Papakura District 0.4ha and Waitakere and North Shore Cities 0.3ha. Of the vacant Group 1

parcels 339 (31%) are 0.5ha or greater and 185 (17%) are greater than 1ha. A large portion (41%) of the larger Group 1 parcels (3ha+) are brownfield.

Figure 21: Vacant Business Zoned Land by Parcel Size (Metropolitan Area)



5.2.6.3 Business Land Capacity by Proximity to the Auckland Regional Freight Network[42]

The majority of Metropolitan Auckland's vacant, vacant potential and brownfield parcels are situated within 1km of the Regional Freight Network (1,634 or 80%). Three hundred and sixty six parcels are between 1 and 5km and only 39 parcels are situated further than 5km from the network – see Table 40 below.

Table 40: The Proximity of Vacant, Vacant Potential and Brownfield Land Parcels to Regional Freight Network (Metropolitan Area)

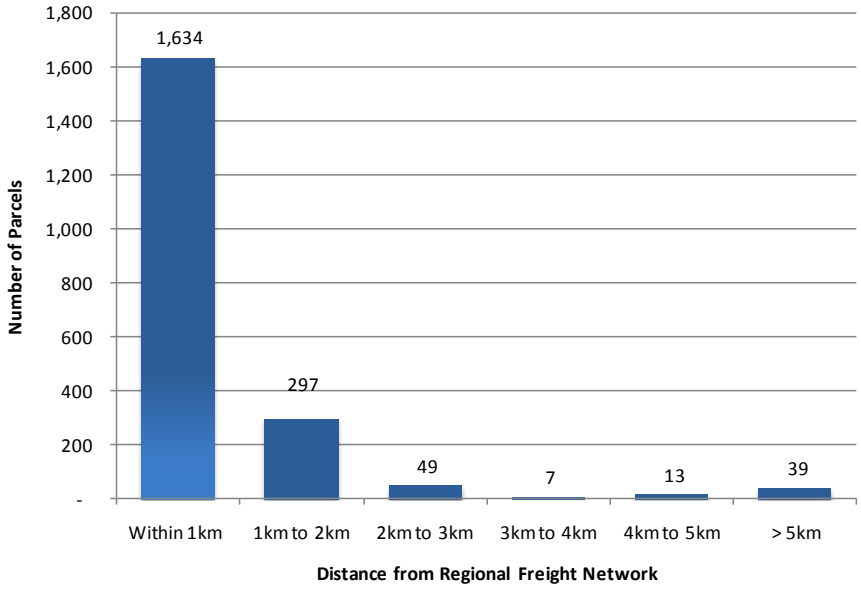
Business Land	Total number of Parcels	Within 1km	1-2km	2-3km	3-4km	4-5km	>5ha
Total	2,039	1,634	297	49	7	13	39
Vacant	1,481	1,164	224	36	7	13	37
Brownfield	558	470	73	13	-	-	2
Group 1	1,081	923	149	9	1	-	-
Group 2	689	472	131	28	6	13	39
Group 1 & 2	185	161	14	10	-	-	-

Brownfield parcels are particularly well located in terms of the freight network with 84% of parcels situated within 1km of the network.

Within the metropolitan area 78% of all business parcels are within 1km of the freight network, 15% are between 1-2km and 7% are at 2km or beyond.

[42] Provisional Regional Freight Network see Appendix D Map **62**.

Figure 22: The Proximity of Vacant Business Land parcels to the Regional Freight Network (Metropolitan Area)



5.2.6.4 Business Land Capacity by Period Vacant

The Vacant Land Study identified 592 hectares of vacant land. Of this land 426ha (72%) has been vacant for 10 years or longer, 17 hectares (3%) has been vacant for between five and 10 years and 149 hectares (25%) has been vacant for less than five years see **Figure 23** below.

Parcels vacant for 10 years or longer have been mapped by territorial authority area in Appendix D Map 56 to Map 61. The maps show longer term vacant land is located in:

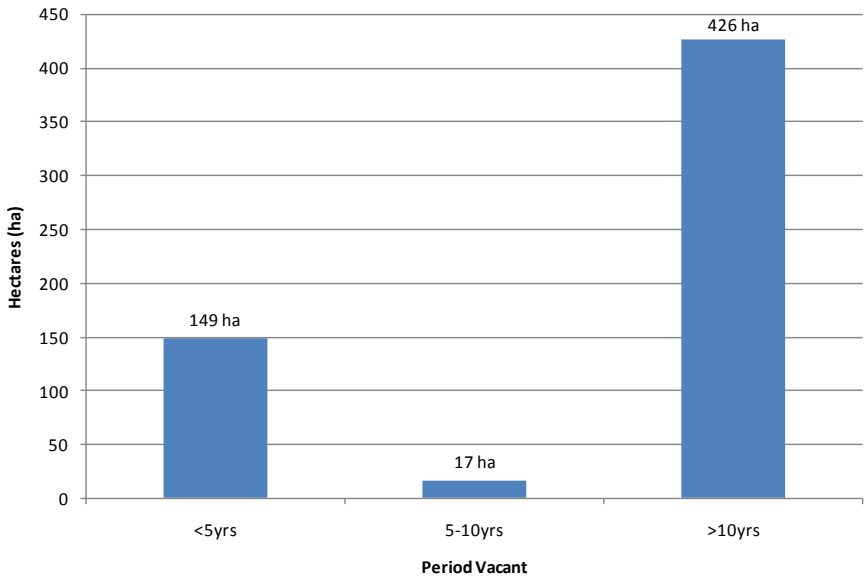
- large new business areas under development,
- older business areas with poor accessibility to the regional freight network, and
- business land in areas of transition.

Parcels that have been vacant for 10+ years tend to be smaller (63% of all parcels less than 0.5ha, 80% less than 1ha). This could indicate that fragmentation delays development.

When examined in terms of Group 1 and 2 business activity classification, 60% of parcels vacant for 10+ years are Group 1, 33% Group 2 and 7% Group 1 and 2 Mixed.

An analysis of vacant parcels by proximity to the freight network and period vacant showed that 25 hectares of business land that is further than 2km from the network has been vacant for 10+ years.

Figure 23: Vacant Business Land by Period Vacant (Metropolitan Area)



5.2.7 The Redevelopment Capacity on Business Zoned Land Study Results

Redevelopment on business zoned land is a measure of the additional capacity available from the intensification of currently developed business areas.

Regional policy makers identified that this was a potential capacity source that was poorly understood.

To survey Redevelopment Capacity the development potential of every business zone in the region was assessed based upon the district plan development control rules (e.g. height limits, coverage controls etc). A full explanation of the methodology and assumptions applied is provided in the Capacity for Growth Study 2006, Methodology and Assumptions Summary Report TR2010/015.

This is the first time a region wide assessment of redevelopment capacity has been undertaken.

The supply of redevelopment capacity is subject to a number of constraints and significant uncertainty. These constraints will impact upon the timing and extent (if any) of the capacity that is actually taken-up or realised. Constraints include the pattern of existing activities and ownership, infrastructure, accessibility, land banking, owner preference, and the economic viability of redevelopment.

The Redevelopment Capacity on Business Land study concluded that, assuming all the areas of intensification could be developed, there is capacity for approximately twice the level of business floor space and employment that currently exists (2006) and five times the current number of residential dwelling units – see below.

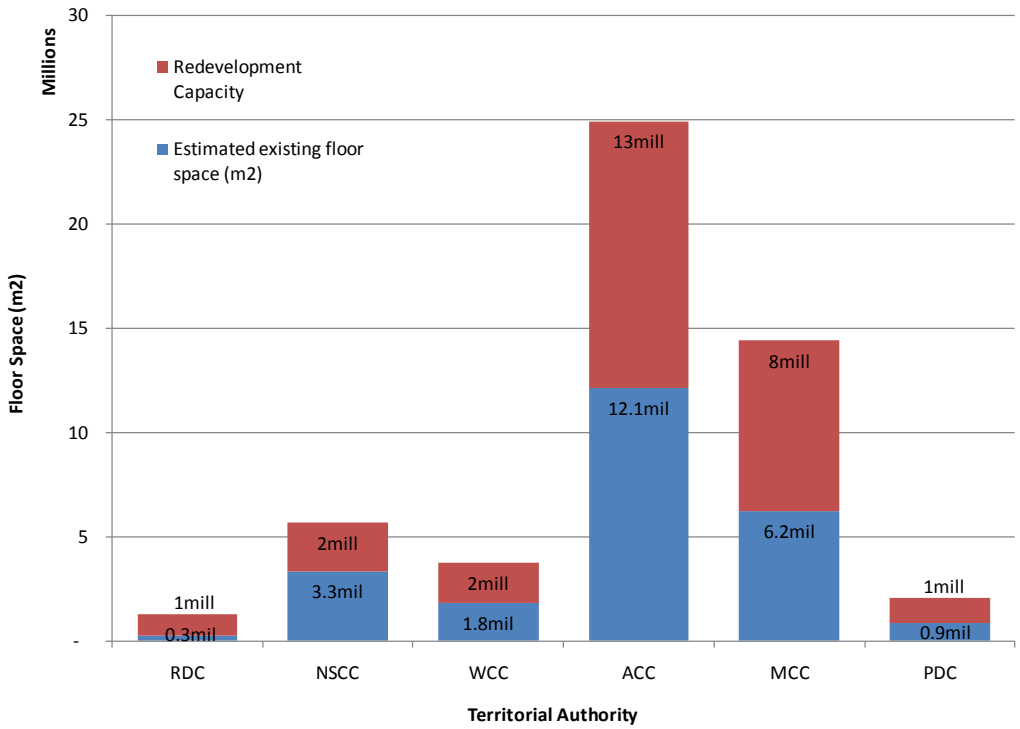
The capacity results were compared against past rates of development (commercial building consents), and against future employment projections[43]. Both showed that capacity was sufficient to beyond 2031.

Table 41 Total Redevelopment Capacity on Business Zoned Land (Metropolitan Area)

Business Zoned Land 2006		Business Zoned Land Assessed (hectares)	Business Activity Floor Space (m^2)	Employment Capacity (ECs)	Residential Dwelling Unit 2006	Years to Exhaustion Business Activity Floor Space (as at 2006)
Metro Area	Existing	6,223 ha	24,635,000 m^2	427,125	18,500	26 years +
	Additional Capacity		27,468,000 m^2	511,320	67,370	

All the territorial authorities, except for North Shore city, have the capacity to at least double current business activity floor space. Auckland city and Manukau city dominate in an absolute sense while Rodney district has redevelopment capacity to increase floor space by more than fourfold (refer to Figure 24 below).

Figure 24: Redevelopment Capacity on Business Land 2006 (Metropolitan Area)



[43] Economic Futures Mode (EFM) source ARC and Market Economics Ltd; (2008)

5.2.7.1 Redevelopment capacity results by centre and non-centre locations

Regional policy makers have identified two distinct business land activity groups:

- activities that tend to be land intensive and tend to locate in centres[44]. (Group 2 Business Sector[45]), and
- activities that tend to be land extensive and locate in non-centre business areas (Group 1 Business Sector).

To assist continued business land policy development the Redevelopment Capacity results have been analysed in terms of their centre or non-centre location.

Results of this analysis indicate that there is considerable potential for additional intensification of business activities across all the region's centres (an overall increase of 144%) and non-centres (a 97% increase) see Table 42 and Table 43 below.

Table 42 Total Redevelopment Capacity within Centres (Metropolitan area)

Business Land		Business Zoned Land (hectares)	Business Activity Floor Space (m^2) 2006	Employment (ECs) 2006	Residential Dwelling Unit 2006
Metropolitan Area - Centres	Existing (as at 2006)	1,055 ha	7,432,000 m^2 (est)	169,700	13,470
	Additional Capacity		10,736,200 m^2	249,800	55,910

Table 43: Total Redevelopment Capacity within Non-centres (Metropolitan Area)

Business Land		Business Zoned Land (hectares)	Business Activity Floor Space (m^2) 2006	Employment (ECs) 2006	Residential Dwelling Unit 2006
Metropolitan Area – Non-centres	Existing (as at 2006)	5,168 ha	17,202,800 m^2 (est)	257,400	5,040
	Additional Capacity		16,731,600 m^2	261,500	13,460

Figure 25 compares existing floor space to capacity within centres by territorial authority. Figure 26 does the same but for non-centre business areas.

A significant intensification of centres can occur across all the territorial authorities – all, except for Auckland City, have the capacity to at least double the intensity of development.

[44] Centres were selected based upon territorial district plan classifications and included sub-regional, local and neighbourhood centres (mixed-use type zonings). Non-centres were the balance business areas. Non-centres are characterised by industrial, manufacturing or single-use type zonings. Small business zones e.g. local shops are not included in the study. See Section 3.2 Land Area Classifications referred to in the Study for further detail

[45] The terms Group 1 and Group 2 activities have been adopted by the region's policy makers as a means of differentiating between low-density land-extensive industrial type activities: Group 1 (e.g. industrial, manufacturing logistic activities) and more land intensive Group 2 activities (e.g. office, retail and service sector) See Section 3.2 Land Area Classifications referred to in the Study for further detail.

However, the intensification of non-centre areas is more varied. North Shore City and Waitakere City stand out as areas with limited capacity for further intensification. For these territorial authorities this has particular implications for the possibilities of growth in manufacturing, storage and logistics type industries (i.e. Group 1 activities).

Figure 25: Redevelopment Capacity Floor Space by Metropolitan Centres

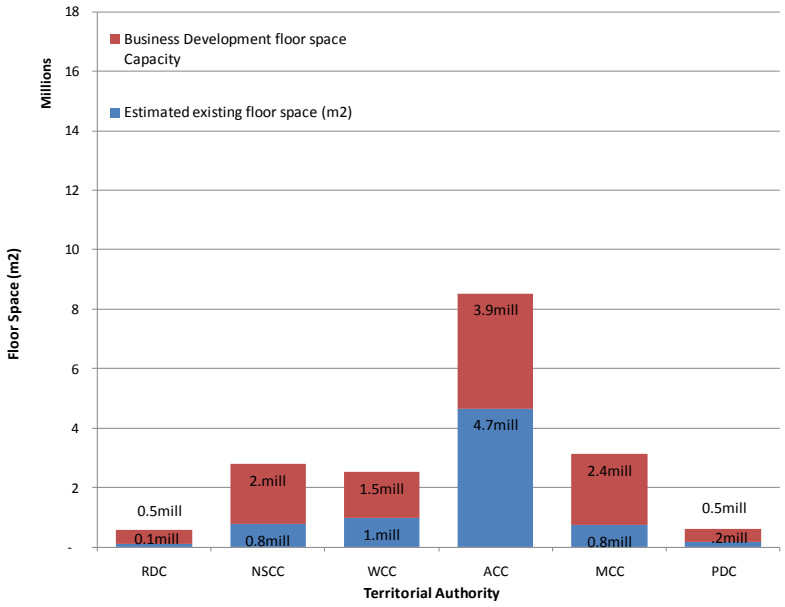
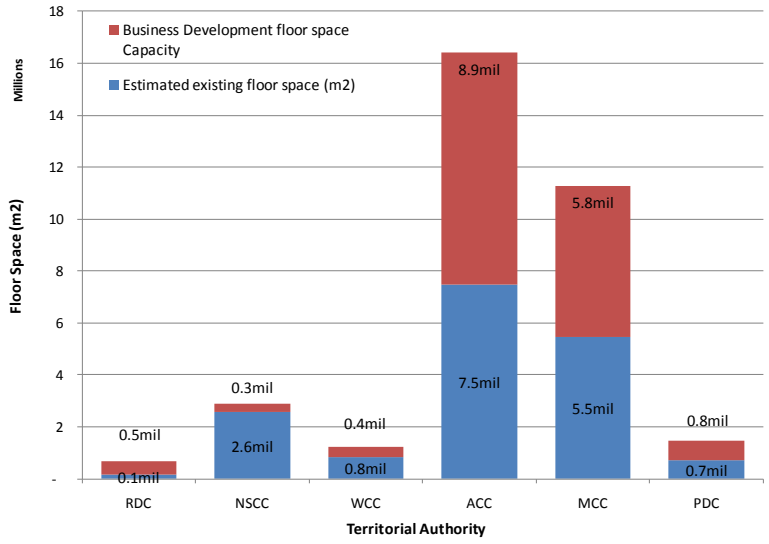


Figure 26: Redevelopment Capacity Floor Space by Metropolitan Non-centre Business Areas



The metropolitan area redevelopment capacity results for business floor space and employment are summarised by territorial authority in Table 55 Appendix A.

5.2.8 Concluding Comments

- The Modified Capacity assumptions identify that there is 15 years of capacity available (as at 2006). This is the minimum required by the ARPS.
- There is significantly less Group 2 vacant land available than Group 1. However, existing Group 2 land has significant potential (> 100% increase) for further intensification (multi storey development), which it is well suited to, unlike Group 1 activities.
- There is a limited supply of large Group 1 land parcels remaining.
- The majority of Future and Special zoned business land is Group 1 (81% or 382ha) as is the majority of Pipeline Capacity. Additional Group 2 land is planned for the new town centres at Westgate, Hingaia and Takanini.
- Brownfield land provides significant capacity within the existing urban area. It is typically well located in terms of the regional freight network and a large proportion is in parcels greater than 0.5 hectares. However, constraints to the development of this land have also been observed and will need to be addressed before the brownfield land supply can be considered "readily realisable" (the Modified Capacity assumption is 30% of brownfield is "readily realisable").
- Some metropolitan locations now have very limited stocks of vacant business land (North Shore 6 years and Waitakere city 13 years). A significant component of Auckland city capacity (75%) is by way of brownfield land.
- The inclusion of Brownfield Land Capacity is new to the 2006 Study. The 2006 Study identified that while some brownfield land could be readily redeveloped, other parcels would face significant obstacles to redevelopment; e.g. potential contamination, existing industrial or commercial activities and site reconfiguration. To account for these uncertainties capacity could be modified to 30% of the surveyed total.

5.3 Rural Towns and Coastal Settlements: Business Land Study Results

Three measures are used to record business land capacity within Rural Towns and Coastal Settlements[46]:

- Vacant and Vacant Potential land (includes Future Urban or Special Zones),
- Brownfield land, and
- Redevelopment Capacity[47].

[46] See Section 3.1Geographical Study Areas for a definition of Rural Towns and Coastal Settlements.
[47] For a full description of the business land capacity study measures, the survey methodologies and assumptions used refer to the Capacity Study Measures and Methodologies section of the Capacity for Growth Study 2006, Methodology and Assumptions Summary Report TR2010/015.

5.3.1 Vacant and Brownfield Land Studies

Rural towns and coastal settlements currently have 509 ha of business zoned land. An additional 112.6ha of land has been earmarked for future business activity; increasing the overall business land stock by 27%.

Total additional business land capacity from all sources is 243.5 hectares – see Table 44 below. This capacity represents a 48% increase in the current level of business land development.

Table 44: Total Business Land Capacity, 2006 Rural Towns and Coastal Settlements (RTCS)

Settlements	Total Business Zoned Land (ha)	Vacant and Vacant Potential (ha)	Brownfield (ha)	Future Urban or Special zoned areas for business use (ha)	Total Business Land Available for Development (ha)
All Settlements	509	119.3	11.6	112.6	243.5

Unlike the metropolitan area business land up-take rates are not available for the rural towns so no estimate as to the years of capacity remaining has been made (historic vacant land data is only available for a limited number of rural towns).

5.3.2 Modified Capacity Assessment

The capacity figures assume that all capacity is available and will be taken up for development. However, this will not always be the case. Some capacity, although theoretically available, may be significantly constrained and therefore the actual business land capacity available for development will be less. However, as the depth of vacant business land data available for rural towns is limited, no assessment of a Modified Capacity can be made.

5.3.3 Pipeline Business Land Capacity

What follows is an inventory of pipeline business land capacity by territorial authority:

Rodney district council

- Wellsford Structure Plan Area: Business land. (Status: included in District Plan), and
- Huapai South Future Urban: Industrial area 56.6ha. Note, this is a reduction in capacity from that shown in Summary Table 64 and Table 65 (Status: Consultation).

5.3.4 Business Land Capacity Up-take 1996 to 2006

The 1996 Capacity Study identified 10 regionally significant rural and coastal towns and assessed their vacant business land. Between 1996 and 2006 vacant business land reduced by 29% (46ha) – see Table 45 below. This equates to an annual absorption rate of approximately five hectares per year.

Table 45: Change in Vacant Business Land Capacity 1996-2006 (RTCS)

Settlements	Total Vacant Business Land 1996 (ha)	Total Vacant/Vacant Potential and Brownfield Land 2006 (ha)	% Change	Annual Absorption	Future Urban or Special zoned areas for business use (ha)
Regional Significant Settlements	156.9	110.8	29%	5ha/year	112.6

Since the 1996 study 112.6ha of additional business land has been identified as future business land. As such, the overall total vacant business land available for development within the 10 regional significant towns is 223.4ha.

5.3.5 Business Land Capacity by Territorial Authority

The following table and chart provides an overview of business land zoning and capacity of the rural towns and coastal settlements by territorial authority.

Rodney and Franklin districts are large rural areas. These areas support substantial rural service towns and a significant number of smaller townships and coastal settlements. The size and number of settlements is reflected in the total business zoning in those districts (RDC 45% and FDC 47% of all business zoned land). As such these areas tend to dominate the statistics.

Rodney district rural towns and settlements have significant business land capacity across all three measures; especially land zoned for future business use.

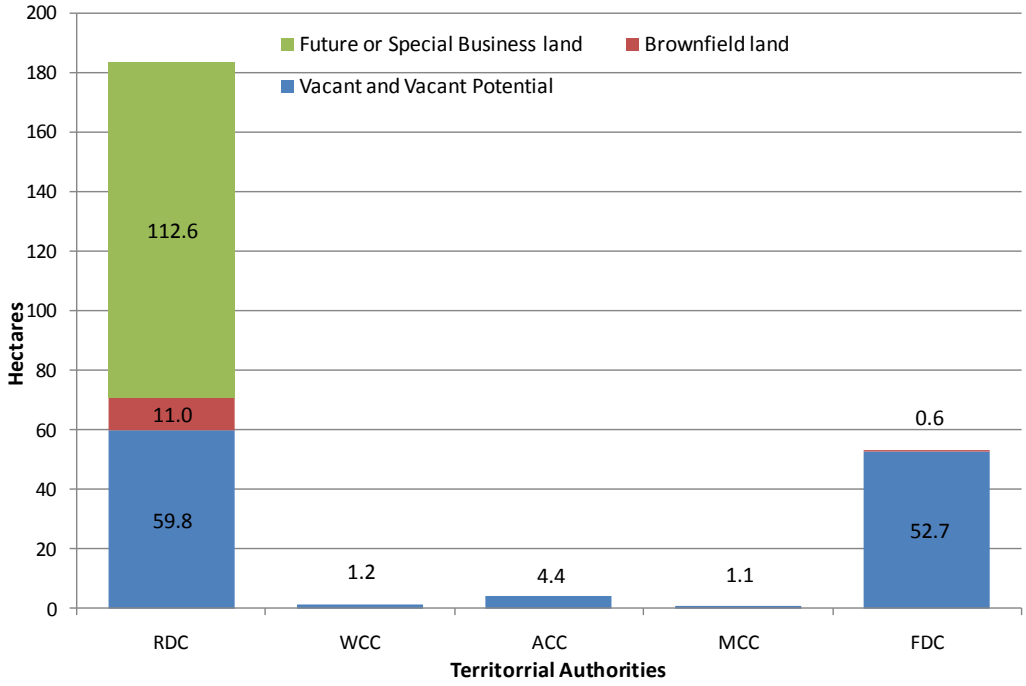
Rodney district's Future zoned land will increase the district's overall supply of business land by nearly 50% (from 228.5ha to 341ha).

Table 46: Business Land Capacity By Territorial Authority (RTCS)

Settlements	Total Business Zoned Land (ha)	Vacant and Vacant Potential (ha)	Brownfield (ha)	Future Urban or Special zoned areas for business use (ha)	Total Business Land Capacity (ha)
RDC	228.5	59.8	11.0	112.6	183.4
WCC	4.7	1.2	-	-	1.2
ACC	29.3	4.4	-	-	4.4
MCC	9.0	1.1	-	-	1.1
FDC	237.4	52.7	0.6	-	53.3
Total All Settlements	509	119.3	11.6	112.6	243.5

Current rates of vacant land are RDC (31%), WCC (25%), ACC (15%), MCC (12%) and FDC 22%). The average across all rural settlements is 26%.

Figure 27: Vacant, Brownfield and Future Business Land by Territorial Authority (RTCS)



The business land capacity results are presented by individual rural town and coastal settlement in Table 64 to Table 69 in Appendix A and as Map 16 to Map 47 in Appendix D.

5.3.6 The Characteristics of Vacant and Brownfield Land

The uptake and development of vacant business land is affected by a number of significant factors, these include; the range of activities permitted on a parcel (i.e. zoning rules) and parcel size and location (i.e. are the parcels available of sufficient size and located well to transport). These factors are investigated in the following analysis.

5.3.6.1 Business Land Capacity by Group 1 and Group 2 Classification

The following table summarises the region's business zoned land and available capacity by the Group 1 and Group 2 business sector classification[48].

Of the 509ha of business zoned land the majority has a zoning that allows use by both Group 1 and 2 activities (237ha)[49]. One hundred and eighty hectares is available solely

[48] Classification Group 1 Business Sectors include land extensive industrial activities such as manufacturing and transport and storage. Classification Group 2 Business Sectors includes activities that are land intensive for example, retail, office and the hospitality service sector – see Section 3.2Land Area Classifications referred to in the Study for a full explanation.

for Group 1 activities (35%) and 92ha for Group 2 (18%). The Future business land identified (112.6ha) has been designated for Group 1 type activities. This has the effect of increasing the Group 1 stock by 63%.

Table 47: Business Land and Capacity by Industry Type (Group1 and 2) (RTCS)

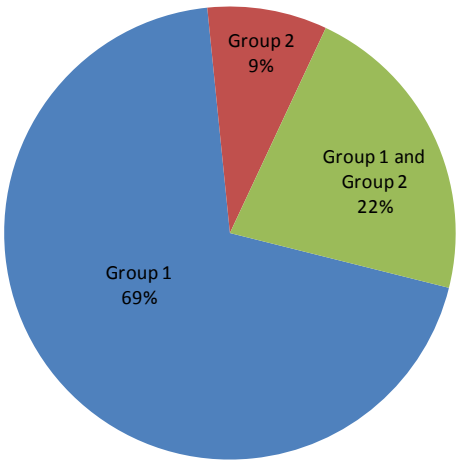
Settlements	Total Business Zoned Land (ha)	Vacant and Vacant Potential (ha)	Brownfield (ha)	Future Urban or Special zoned areas for business use (ha)	Total Business Land Available for Development (ha)
Group 1	180	48	8	112.6	169
Group 2	92	18	3	0	21
Group 1 & 2 Mix	237	53	1	0	53
Total	509	119	12	112.6	244

In total, of the 244 hectares of land available for business development, 70% is classified as Group 1 (169ha), 9% as Group 2 (21ha) and 22% is available for a mix of Group 1 and 2 activities (53ha) – see Figure 28 below.

There is no reliable data on the uptake of business land by business secor i.e. uptake by Group 1 and 2. This is an area recommended for further research.

Brownfield land is currently a minor component of rural town business land capacity.

Figure 28: Vacant Business Land by Group 1 and Group 2 Classification (RTCS)



[49] Where the rules of a business zone do not distinguish clearly between Group 1 and Group 2 activities then the zoning is classified into the Group 1 and 2 category. This category has been applied to all the Business Zoned land in FDC.

5.3.6.2 Business Land Capacity by Parcel Size

There are 372 vacant and brownfield parcels within the rural and coastal settlements. Of these parcels 324 (87%) are less than 0.5ha in size –see Table 48 below.

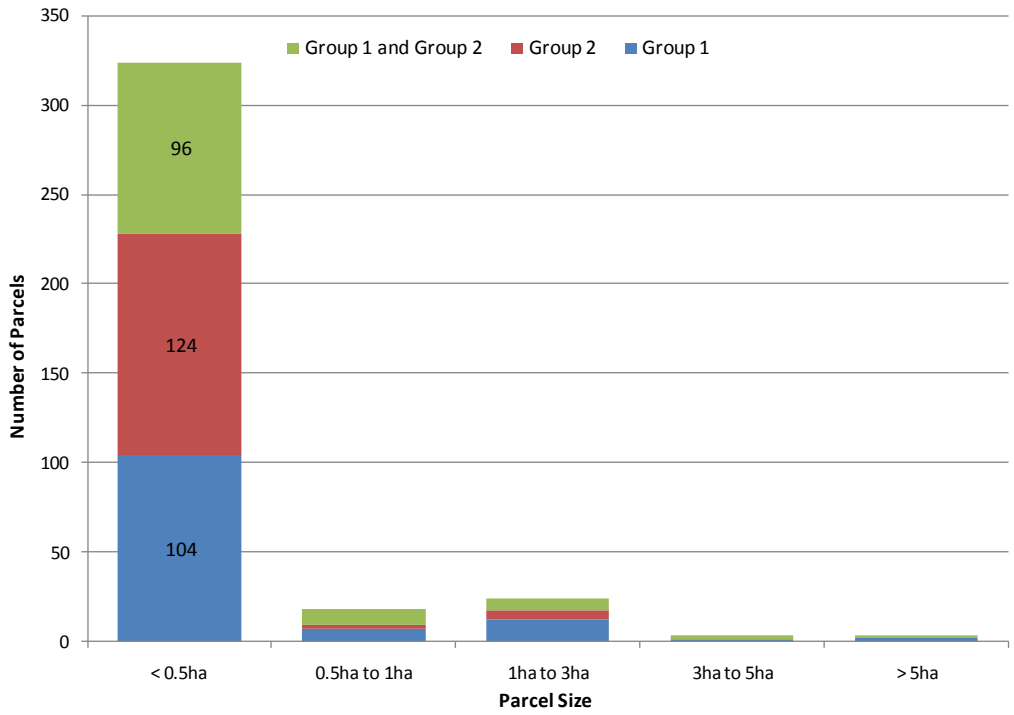
Table 48: Vacant or Brownfield Business Zoned Land by Parcel Size (RTCS)

All Settlements	Total Number of Parcels	<0.5ha	0.5-1ha	1-3ha	3-5ha	>5ha
Total	372	324	18	24	3	3
Vacant parcels	360	322	16	16	3	3
Brownfield parcels	12	2	2	8	0	0

There are 30 parcels with a land area of 1ha or greater. Of these, 15 parcels are available for Group 1 only activities, five for Group 2 and 10 under the mixed Group 1 or 2 category – see Figure 29 below.

The areas identified for Future Urban business use (Wellsford, Warkworth and Kumeu-Huapai) all include larger parcel sizes.

Figure 29: Vacant and Brownfield Business Zoned Land by Parcel Size and Group Type (RTCS)



5.3.6.3 Business Land Capacity by Proximity to the Auckland Regional Freight Network[50]

The majority of vacant and brownfield parcels within rural and coastal towns are either within one kilometre of the regional freight network (50%) or greater than five kilometres (44%). Only 6% of vacant parcels fall between one and five kilometres from the network – see Table 49 and Figure 30 below.

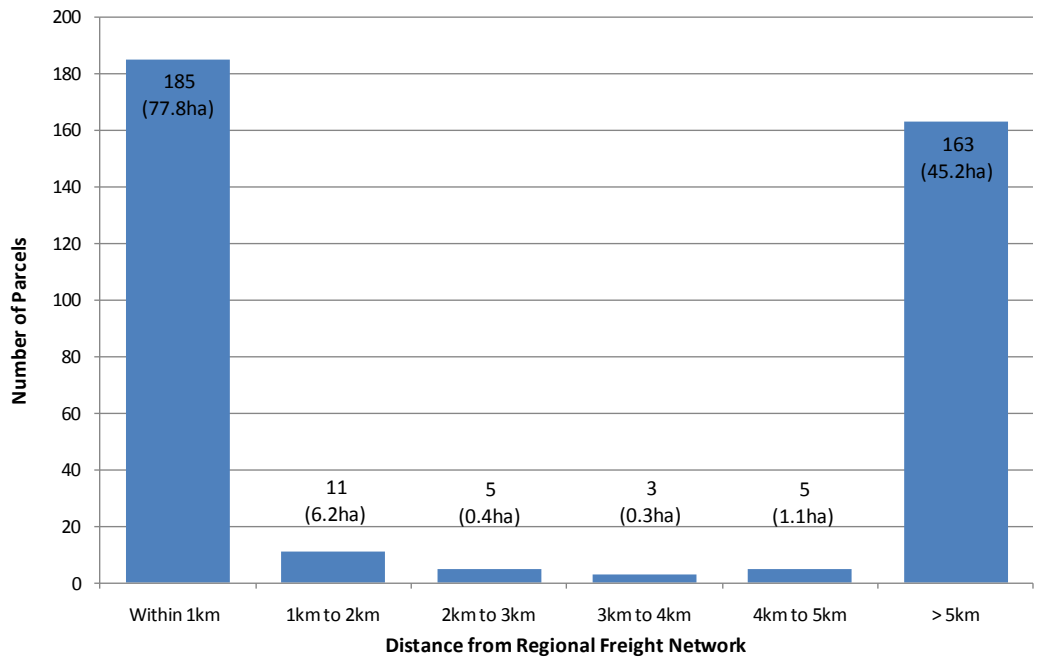
Table 49: Proximity of Vacant and Brownfield Land Parcels to the Regional Freight Network (RTCS)

Area	Total Number of Vacant or Brownfield Parcels	Within 1km	1-2 km	2-3 km	3-4 km	4-5 km	>5 km
All Settlements	372	185	11	5	3	5	163

Vacant land parcels within 1km of the regional freight network total 77.8 hectares or 59% of the total vacant land available. Parcels greater than 5km from the network total 45.2ha or 35% of the total.

The land identified for Future Urban business use (Wellsford, Warkworth and Kumeu-Huapai) is all within 1 kilometer of the regional freight network.

Figure 30: The Proximity of Vacant and Brownfield Business Land parcels to the Regional Freight Network (RTCS)



[50] Provisional Regional Freight Network see Appendix D Map XX

5.3.7 Redevelopment of Business Zoned Land

Redevelopment on business zoned land is a measure of the additional capacity available from the intensification of currently developed business areas.

Regional policy makers identified that this was a potential capacity source that was poorly understood. This is the first time a region-wide assessment has been undertaken.

The supply of redevelopment capacity is subject to a number of constraints and significant uncertainty. These constraints will impact upon the timing and extent (if any) of the capacity that is actually taken-up or realised. Constraints include the pattern of existing activities and ownership, infrastructure, accessibility, land banking, owner preference, and the economic viability of redevelopment.

The Redevelopment Capacity on Business Land study identified that, assuming all the intensification could be developed, there is capacity for nearly three times the level of business floor space and employment that currently exists (2006) and over 20 times the current number of residential dwelling units –see Table 50 below.

Table 50: Total Redevelopment Capacity on Business Zone Land (RTCS)

Business Land		Business Zoned Land assessed (hectares)	Business Activity Floor Space (m^2) 2006	Employment (ECs) 2006	Residential Dwelling Unit 2006
Rural Towns	Existing	344 ha	600,400 m^2 (est)	10,204	111
	Additional Capacity		1,701,600 m^2	32,205	2,995

The redevelopment capacity results for business floor space and employment are summarised by territorial authority in Table 70 Appendix A.

5.3.8 Concluding Comments

- Almost half of the currently zoned Rural Towns and Coastal Settlements business land has capacity for further development (48%).
- Future urban zoned land will add significant capacity to business land within rural towns especially in Rodney district.
- The majority of vacant and brownfield business land is available for Group 1 activities.
- There are a limited number of larger vacant parcels available (>1 hectare), and of these about half are available for Group 1 activities.

6 Concluding Comments and Next Steps

The Capacity for Growth study is a significant research undertaking. The data collected provides a solid evidence base for considering growth management and strategic as well as local planning issues.

The principle findings have been summarised in the Executive Summary.

Measuring capacity is complex. District plans often provide for a range of development outcomes. To assist policy makers understand this range the study has included two sets of results; the surveyed capacity results and the Modified Capacity results. The study also includes a list of future planning proposals that may affect overall capacity (referred to as Pipeline Capacity).

For residential capacity the study finds that, when measured against the ARPS objective of maintaining a 15 year supply of capacity; the metropolitan area capacity supply is between 11 and 30 years, that the number of dwellings within Rural Towns and Coastal Settlements could increase by between 15,644 (60%) and 22,736 (88%) and that capacity within the Rural area could provide for between 23 and 37 years of residential growth. There is significant pipeline residential capacity in the planning process.

For business land capacity the study finds that, when measured against the ARPS objective of maintaining a 15 year supply of capacity; the metropolitan area capacity supply is between 14 and 19 years and that Rural Towns and Coastal Settlements have 243.5 hectares of land available for business development. Business land development faces the following constraints; the limited number of large parcels available to Group 1 business activities (land extensive industrial activities), the usability of brownfield land and the intensification of centres. Again, there is significant pipeline business land capacity in the planning process.

The detailed findings are listed within each section.

The study acknowledges that the final form of development will be shaped by a range of factors not solely capacity; for example, market demand, owner preferences to sell or hold land, infrastructure and other, often immeasurable, factors. Furthermore these factors are not static and change over time and therefore regular and consistent monitoring will be required to identify actual trends and shifts.

As with all surveys, users of the information need remain aware of the study's limitations, i.e. in some cases district plan rules are complex and the range of development outcomes quite broad so assumptions have had to be made (all methodologies and assumptions are recorded in the separate Capacity for Growth Study: Methodology and Assumptions Summary TR 2010/015).

As well as recommending on-going monitoring the study identifies capacity issues that would benefit from an improved understanding and makes recommendations as to how this may be addressed (see Section 7 Recommended for Further Investigation).

With the proposed new governance structure Auckland is at an interesting time in its history. An integrated planning framework or "Spatial Plan" is promised. Again the capacity study will be available as an evidence base for that work. Furthermore, the results of the Capacity for Growth study have been made available to central government which has progressed a range of work streams looking at affordable housing, including the adequacy of land supply in the Auckland region.

7 Recommended for Further Investigation

Outlined below is a list of actions recommended for further investigation. These actions have been drawn from the Capacity for Growth Report 2006 and from the capacity data collection process.

7.1 Monitoring

- Explore a real-time capacity monitoring process (with a five yearly comprehensive review). The new Auckland Council presents an opportunity to create a comprehensive monitoring programme i.e. an alignment of IT systems and subsequent databases.
- On-going monitoring and a comparison of residential yields from vacant land (Greenfield and Structure Plan area) to assumed yields.

7.2 Research

7.2.1 Residential Land

- Site amalgamation: Identify and develop a methodology for assessing likely capacity in zones where higher density is encouraged through site amalgamation (e.g. NSC Residential 6 zones).
- Refill: Identify the trends, drivers, and impacts of refill. Analyse split between Infill and Refill.
- Vacant land: Identify any long-term vacant land (i.e. five years plus) and examine the constraints affecting this land coming to the development market.
- Development densities: Identify where development densities are under or over achieved. Analyse trends, drivers and constraints.
- Strategic land holdings: Identify large strategic land holdings that have likely short to medium terms redevelopment potential. Examine the possible uses and capacity potential of these holdings.
- Capacity outside survey: Assess significance and implications of non-complying and other non-surveyed capacity sources (e.g. boundary relocations, amalgamations).
- 15 year Capacity supply timeframe: Assess whether this timeframe or approach is most appropriate method of managing capacity.
- Unoccupied dwellings: Examine the role unoccupied dwellings could play in providing future capacity.

7.2.2 Rural Land

- Rural area capacity uptake: Examine capacity uptake rates including rats for countryside living.

7.2.3 Business Land

- Business land survey: Report on the Business land survey as a separate and more regular report (suggest annually). Reason: The Business Vacant, Vacant Potential and Brownfield land studies should be undertaken more frequently and separately to the Residential Study. The number of business land parcels is significantly less than the number of residential parcels which means this study can be completed in less time and would not be held up waiting on the residential study. During periods of high economic activity business land can be consumed very quickly and so it is important to maintain an up to date knowledge base.
- Vacant land: Identify any long term vacant land (i.e. five years plus) and examine the constraints affecting this land coming to the development market.
- Brownfield land: Monitor and understand the development dynamics associated with Brownfield land.
- Business land by Group 1 and 2 classification. Examine Group 1 and Group 2 business land take up rates.
- Strategic land holdings. Identify large strategic land-holdings that have likely short to medium term redevelopment potential. Examine the possible uses and capacity potential of these holdings.

7.2.4 General

- Realisable capacity. Examine the trends and drivers of site redevelopment (residential and business land) in order to estimate the probability of land redevelopment occurring over time.
- Infrastructure. Identify any current infrastructure limitations to the supply of available vacant land and consider a categorisation of this land (i.e. available short, medium or long term). Track major infrastructure projects and their projected impact on future land supply.
- Rating, title, building consent and dwelling data. Advocate and work to improve the quality and linkages between these key property databases. Improving these databases will allow accurate monitoring to occur, and improve the reliability of the capacity studies that draw heavily on them, such as the Rural Capacity study or the Infill and Redevelopment study.

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9 Appendices