



**Greater Christchurch
Partnership**

Te Tira Tū Tahī
One Group, Standing Together

Greater Christchurch Housing Development Capacity Assessment

30 July 2021

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Definitions and Abbreviations

The following table defines commonly used terms, acronyms and abbreviations in this document.

Term	Definition
BDM	MBIE/MfE Build development tool
CCC	Christchurch City Council
Development Capacity	As defined in the NPS-UD, means: the capacity of land to be developed for housing or for business use, based on: <ul style="list-style-type: none"> a) the zoning, objectives, policies, rules and overlays that apply in the relevant proposed and operative RMA planning documents; and b) the provision of adequate development infrastructure to support the development of the land for housing or business use.
FDS	Future Development Strategy
Feasible or Feasibility	As defined in the NPS-UD, means: <ul style="list-style-type: none"> a) for the short term or medium term, commercially viable to a developer based on the current relationship between costs and revenue b) for the long term, commercially viable to a developer based on the current relationship between costs and revenue, or on any reasonable adjustment to that relationship.
FUDA	Future Urban Development Areas identified through Our Space
GC	Greater Christchurch
GCP	Greater Christchurch Partnership
GIS	Geographical Information System
HCA	Housing Capacity Assessment
LDM	MBIE/MfE Land development tool
LTP	Long Term Plan
MBIE/MfE feasibility tool	Refers to the feasibility tool provided in excel format to the Greater Christchurch Partnership. The reference may be to part of the tool, indicated as (land development) or (building development).
NPS-UD	National Policy Statement on Urban Development 2020
QV	Quotable Value
RV	Rateable value, as recorded by Councils' for rating purposes.
SA2	Stats NZ's Statistical Area 2
SDC	Selwyn District Council
TA	Territorial Authority
UDS	Urban Development Strategy
WDC	Waimakariri District Council

1. Housing Sufficiency

1.1. Overview

The National Policy Statement on Urban Development 2020 (NPS-UD, see Appendix 1) requires tier 1 local authorities, every three years¹, to provide at least sufficient development capacity in their region or district to meet expected demand for housing: (a) in existing and new urban areas; (b) for both standalone and attached dwellings; and (c) in the short, medium and long term. The relevant sections of the NPS-UD are found in Appendix 1. Christchurch is defined as a Tier 1 urban environment and includes the local authorities of Canterbury Regional Council, Christchurch City Council, Selwyn District Council, and Waimakariri District Council.

The Greater Christchurch Partnership has worked collaboratively since 2003 to manage growth in the Greater Christchurch area. The existing settlement pattern was first outlined in the Greater Christchurch Urban Development Strategy (UDS), implemented under Chapter 6 to the Canterbury Regional Policy Statement and District Plans. An update to the settlement pattern was undertaken in 2019 to manage growth within the 2018-2048 period and to address the policy requirements of the National Policy Statement for Urban Development Capacity, including the first Housing Capacity Assessment (HCA).

This 2021 HCA includes an assessment of expected housing demand to 2051 for Christchurch, Selwyn and Waimakariri, and the sufficiency of development capacity. It builds upon the 2018 Housing Capacity Assessment undertaken under the previous National Policy Statement on Urban Development Capacity (NPS-UDC), and responds to key changes in the policy requirements between the NPS-UDC and NPS-UD (refer to Appendix 2).

The assessment findings are based on the best available information and models. For expected demand, this is based principally on Statistics New Zealand's population estimates and projections, and in terms of supply utilises Council's respective growth and land development models, and feasibility models developed from the MBIE/MfE Feasibility Tool. Housing capacity figures presented within this assessment should be treated with some caution because factors that influence housing demand and supply, such as population growth, government policy, economic conditions, or the ability to achieve commercially attractive returns on development, may change significantly over the next thirty years.

Expected demand is reported as urban and rural demand, and demand for both standalone and multi-unit housing types. Key demand trends for Greater Christchurch include:

- resident population is projected to grow from 536,880 in 2021 to 705,600 in 2051, an increase of 168,720 people;
- the number of households is projected to increase by 77,100 or 37%;
- demographic profile is projected to change with an aging population resulting in strong growth in the number of 'couple only' and one person households.

¹ In time to inform the development of council long-term plans.

1.2. Urban capacity and sufficiency

In the short term (next three years) there is sufficient urban capacity within each territorial authority (see Table 1). There are however shortfalls in the medium term (next ten years) approximately 2,000 households within Selwyn and approximately 3,100 households within Waimakariri (see Table 2).

Table 1: Urban Housing Sufficiency within Greater Christchurch in the Short Term (2021 – 2024)

Area	Feasible Capacity	Short term demand + 20% Margin	Surplus / Shortfall
Waimakariri	2,273	1,833	440
Christchurch	101,994	6,372	95,622
Selwyn	4,578	2,714	1,864
Total	108,845	10,919	97,926

Table 2: Urban Housing Sufficiency within Greater Christchurch in the Medium Term 2021 – 2031 – excluding Selwyn and Waimakariri Future Urban Development Areas

Area	Feasible Capacity	Medium term demand + 20% short term margin	Surplus / Shortfall
Waimakariri	2,273	5,410	-3,137
Christchurch	101,994	18,215	83,779
Selwyn	6,452	8,541	-2,089
Total	110,719	32,166	78,553

In response to the medium term shortfall, Future Urban Development Areas (FUDA's) were identified under "Our Space – Greater Christchurch Settlement Pattern Update 2019". On the 28 July 2021, the Minister for the Environment approved Proposed Change 1 to Chapter 6 of the CRPS which identifies new urban housing development (FUDA) areas in Rolleston (additional capacity of 5,756 at 12.5hh/ha and 7,050 at 15hh/ha), Rangiora and Kaiapoi (combined at 12hh/ha is 5,400 and at 15hh/ha is 6,850). Change 1 also adds associated policy provisions to enable Selwyn and Waimakariri District Councils to consider rezoning land within these areas through their district planning processes to meet shortfalls in housing capacity.

Our Space (2019) provided density scenarios and anticipated yields from the FUDAs at 12hh/ha and 15hh/ha². On the basis that the FUDA's are rezoned within the medium term at density yield of 15hh/ha, Table 3 provides an adjustment (scenario) for the medium term sufficiency calculation. A 15hh/ha density yield has been selected based upon an independent review of greenfield densities commissioned by the Greater Christchurch Partnership and undertaken by Harrison Grierson Limited. This report concluded that any identified constraints and issues can be overcome to enable the minimum net densities to be increased to 15hh/ha to optimise greenfield land and meet the longer term housing demand profile³.

² Our Space – Greater Christchurch Settlement Pattern Update 2019, Table 5, page 28

³ Harrison Grierson Greenfield Density Analysis Technical Report – 4 February 2021, page 98

Table 3: Adjusted Urban Housing Sufficiency within Greater Christchurch in the Medium Term 2021 – 2031 including Selwyn and Waimakariri Future Urban Development Areas at 15hh/ha.

Area	Feasible Capacity + FUDA 12/12.5hh/ha	Feasible Capacity + FUDA 15hh/ha	Medium term demand + 20% medium term margin	Medium term Surplus / Shortfall @ 15hh/ha	Medium term Surplus / Shortfall @ 12/12.5hh/ha
Waimakariri	7,673	9,123	5,410	3,713	2,263
Christchurch	101,994	101,994	18,215	83,779	83,779
Selwyn	12,208	13,502	8,541	4,961	3,667
Total	121,875	124,619	32,166	92,453	89,709

Over the long term (next 30 years) across the Greater Christchurch area as a whole, there is sufficient capacity and a significant surplus of some 48,000 feasible households. At a District level however, there is a small shortfall of 867 households in Waimakariri should the FUDA's be at a density of 12hh/ha, but a surplus of 580 households if a density of 15hh/ha is achieved. Within Selwyn over the long term there is a shortfall of between 11,800 and 13,000 depending on FUDA density yield of either 12.5hh/ha or 15hh/ha.

Table 4: Housing Urban Sufficiency within Greater Christchurch in the Long Term 2021-2051 including Selwyn and Waimakariri Future Urban Development Areas at 15hh/ha.

Area	Feasible Capacity + FUDA 12/12.5hh/ha	Feasible Capacity + FUDA 15hh/ha	Long term Demand + 15% long term margin	Long term Surplus / Shortfall @ 15hh/ha	Long term Surplus / Shortfall @ 12/12.5hh/ha
Waimakariri	12,192	13,642	13,059	583	-867
Christchurch	101,994	101,994	41,231	60,763	60,763
Selwyn	12,208	13,502	25,338	-11,836	-13,130
Total	126,394	129,138	79,628	48,344	46,766

1.3. An alternative (policy intervention) expected demand scenario

As noted expected demand has been based principally on the Stats NZ estimates and projections, which are based upon a number of assumptions. Whilst these statistics provide a sound base for demand projects, this does not negate the consideration of alternative scenarios. The demand assessment undertaken by Livingston and Associates Limited and underpinning this Housing Capacity Assessment, notes a key assumption is that there is no significant changes to the institutional and structural settings in the local housing markets.

The strategic direction to manage long term urban growth within Greater Christchurch is set out in the Greater Christchurch Urban Development Strategy, further endorsed under Our Space⁴ and implemented through the Canterbury Regional Policy Statement and District Plans. An underlying principle is urban consolidation achieved by enabling greenfield development but over the long term facilitating a greater share of new households through redevelopment in the City and townships. More specifically under Our Space, beyond 2028 71% of Greater Christchurch's housing growth will be supported in Christchurch City, with the remaining 16% in Selwyn and 13% in Waimakariri.

⁴ Our Space Greater Christchurch Settlement Pattern Update 2019, page 14

This approach is founded on maintaining a well-functioning urban environment; optimising transport and infrastructure efficiencies; locating a greater proportion of the resident population closer to existing employment areas and services; and avoiding the unnecessary loss of highly productive soils. The Greater Christchurch Partnership are progressing business cases for short to medium term public transport improvements to the existing bus network, and longer term investment opportunities in mass rapid transit. Together with other on-going investment into medium to high density areas (including the Central City) and townships, it is reasoned that such investment (with other future initiatives and interventions) may influence locational demand in a manner more aligned to the strategic direction. On this assumption, an alternative future demand scenario has been considered which adjusts the base demand and margin figures for the period beyond 2028 (see Table 5).

When 71% of growth beyond 2028 is supported in Christchurch City and the capacity in the FUDAs at 15 households per hectare is included, there is a surplus in WDC over the long term, and the shortfall in SDC is reduced significantly.

Area	Feasible Capacity	Alternative Demand Scenario + Margin	Surplus / Shortfall
Waimakariri	13,642	11,246	2,396
Christchurch	101,994	53,542	48,452
Selwyn	13,502	14,840	-1,338
Total	129,084	79,628	49,510

This assessment will also be used to help inform work on the Greater Christchurch Spatial Plan (which will comply with the requirements for a Future Development Strategy under the NPS-UD). The Spatial Plan will consider this scenario alongside other scenarios to determine the preferred direction where and how the area should grow and develop into the future and help address long term capacity shortfalls.

1.4. Demand by Typology

The following table shows the demand by different typologies. The only remaining sufficiency shortfall based on the alternative expected demand scenario discussed in 1.3 occurs in Selwyn in the long term (i.e. 1,338 as per Table 5) which is less than the demand for multi-unit housing in Selwyn in the long term as per Table 6 (1,452).

	Short Term		Medium Term		Long Term	
	Stand Alone	Multi-Unit	Stand Alone	Multi-Unit	Stand Alone	Multi-Unit
Waimakariri	2,299	273	6,822	952	16,495	2,203
Christchurch	4,533	1,941	13,008	5,556	29,112	12,636
Selwyn	3,063	132	9,539	477	28,204	1,452
Total	9,895	2,346	29,369	6,985	73,811	16,291

2. Study Area

The study area is the extent of the Christchurch, Selwyn, and Waimakariri territorial authority boundaries. This has been expanded beyond the Greater Christchurch boundaries for the 2019 HCA on the grounds that:

- the areas of the three TAs outside of the Greater Christchurch boundary still require strategic planning and the TAs will have to do this work at some point;
- the indicative national legislation change is leading towards regional spatial plans and an expansion is a step towards a regional plan⁵; whilst still being achievable in the timeframe;
- expanding the scope recognises the inter-relationship of the housing market⁶; and
- travel time data from Stats NZ shows areas around Greater Christchurch (especially Darfield and Leeston) are operating as part of the wider functional urban area, (see classifications of a Stats NZ has Functional Urban Area Classification where at least 40% of workers commute to urban areas⁷ and Urban Accessibility Classification showing what areas have access to larger urban areas⁸).



Figure 1: Greater Christchurch boundary for the 2021 Housing Capacity Assessment

⁵ <https://environment.govt.nz/what-government-is-doing/key-initiatives/resource-management-system-reform/r/>

⁶ <https://www.motu.nz/assets/Documents/our-work/urban-and-regional/housing/Single-Housing-Market.pdf>

⁷ <https://statsmaps.cloud.eaglegis.co.nz/portal/apps/Minimalist/index.html?appid=7bad0be7cfe949388f71cbc90b8916ca>

⁸ <https://www.stats.govt.nz/methods/urban-accessibility-methodology-and-classification>

3. Involvement with Development Sector

Policy 10 of the NPS-UD requires engagement with the development sector to identify significant opportunities for urban development. Implementation 3.21 states that councils must seek information and comment from (a) expert or experienced people in the development sector, and (c) anyone else who has information that may materially affect the calculation of the development capacity. The partner councils identified parties most actively involved in the development sector and significant landowners (that could develop over 20 or more dwellings) and asked these parties to undertake a market demand and intentions survey. Forty one developers, landowners and some involved in the real estate sector completed an online survey in late June/early July 2021. They responded to questions about their views on the demand and supply of land for residential and business development within the Greater Christchurch area, supply issues or barriers to development, and development intentions and possible timing for these. The low response rate to the survey means it is difficult to draw informed conclusions, however, there are some clear, common views expressed across the survey that reflect some elements of the development sector's interests and opinions. A more detailed summary and analysis of the responses is provided in a separate supporting report.

Residential development

- Key factors that drive residential developers' interest in development are demand for residential new builds, location (e.g. proximity to transport), the availability, cost and condition of land and zoning, and predictability of consenting processes.
- A wide range of areas were signalled of interest to respondents, across all three territorial authorities.
- Developers prefer to build standalone single and two storey dwellings, single and two storey multi-unit complexes, with smaller interest in other housing types. These preferences are driven primarily by high market demand.
- Key attributes that residential buyers look for in a property are house design (2-3 (or 4) bedrooms and layout), lifestyle factors (near the beach or park), streetscape, neighbourhood character and school zoning, section size and landscaping. Internal garage and other off-road parking, privacy and orientation to the sun, ease of heating and freehold title appeal.

Smaller homes and higher density living

- Developers anticipate increased demand for smaller-sized dwellings, and in single storey, easily accessible and elderly persons' housing. They expressed interest in higher density developments, preferring 3-4 storeys rather than higher. Financing higher density developments is an issue, along with consenting.
- Privacy, private outdoor space, natural light and house design, including internal garage are key considerations people look for in higher density developments. Lack of these features deter buyers, along with developments that are too high or seem crowded.

Greenfield development

- Developers reported having greenfield development underway or intending to start within the next 1-3 or 4-10 years. A small number said they intended selling within the next decade; only one indicated they did not intend doing anything with their greenfield land.
- Solid staging of greenfield residential developments is occurring at most phases of development over the next three years (from stage 1 – stage 5 developments).
- Difficulties with restrictive or complicated District Plan rules and regulatory processes were cited as barriers to development of greenfield land, with some mention also of infrastructure capacity and timing issues and difficulties developing some land.
- Standalone detached, single storey dwellings are the preferred housing type by developers as this is where they consider the market demand lies.
- A few respondents commented on the extent to which respective district plans enable greenfield development and made suggestions for how councils could better support it.

Other comments and responses

- A very small number of respondents were from the real estate sector – their views mirrored those of land owners and developers.

- Several respondents provided additional final comments on their perspectives of the overall development sector and issues they have experienced.

In addition to the survey, Christchurch City Council held interviews with the most prominent multi-unit developers. Two main questions asked were:

- Why are you choosing to develop in the areas you currently do and with your current typologies and;
- If the District Plan was not an impediment, where would you choose to develop, what would you like to build and why?

Whilst there were varied responses largely in response to their current development models, some consistent feedback included:

- Preferred location to develop was the central city and inner city suburbs and any area with good street appeal and close proximity to amenities.
- St Albans, Edgware, Spreydon, Papanui, Riccarton, Waltham, University surrounds, Merivale were the most commonly cited preferred areas to develop.
- Existing (large site sizes) were important as they enabled redevelopment without site amalgamation.
- The RMD zone (and zone provisions) were the most favoured locations by developers, in preference to the RSDT zone.
- Areas not seen as so desirable to develop, despite plan enablement were Hornby and Linwood.

In regard to housing typologies:

- Two to three storey townhouses remained the preferred typology, due to strong market demand and next comparative offer to the three-bedroom detached dwelling that can be acquired in suburban and greenfield developments for a similar price.
- General consensus was that the local market was not ready for apartment typologies due to lower land prices, the additional development costs of 4+ stories and low buyer demand.
- Buyers still demand private amenity space, freehold title and car parking spaces (other than for the investor client (where it was not so important)).

4. Housing Demand

The following section outlines housing demand and typology to meet Policy 3.24 of the NPS-UD. It outlines the projection range and the most likely projection along with the underlying assumptions and uncertainties associated with it. This draws on the separate 2021 housing demand report prepared by Livingston and Associates Limited which underpins this HCA.

4.1 Demand Projection Ranges

Identifying Base Projection Data - The initial starting point is the Stats NZ 2018 subnational population projections (low, medium and high projections), as it is the latest information available and achieves consistency in terms of methods and consistency with national-level projections⁹. These provide an indication of future population change based on assumptions about future demographic behaviour (birth rates, death rates, net migration). For more information on different Stats NZ terms and measures on population, visit <https://www.stats.govt.nz/methods/population-statistics-user-guide>. The Stats NZ 2018 Estimate is the starting point for these projections and this shows the 3 Territorial Authorities (TAs) have 508,400 population and the range of projections show, by 2048, the projected population is between 557,700 to 752,100.

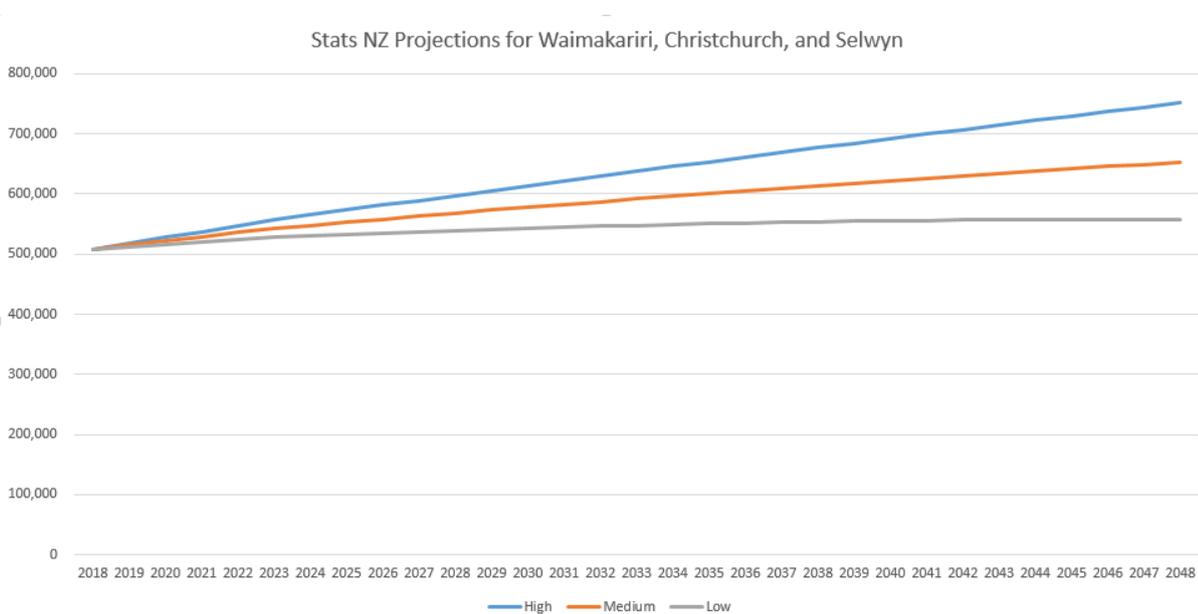


Figure 2: 2018 Medium Projections for Waimakariri, Christchurch, and Selwyn combined.

⁹ <https://www.stats.govt.nz/methods/population-statistics-user-guide>

Comparison with Stats NZ 2013 Projections - Our Space used the 2013 projections as its base projection data. The following figure compares the 2013 and 2018 projections. This shows the recent 2018 projections closely align with the 2013 projections for the same periods. However, the 2013 projections included a higher initial level of growth in the first five years of the projection. Figure 4 shows the difference between the annual growths over the thirty years of each projection, using Selwyn Council as an example.

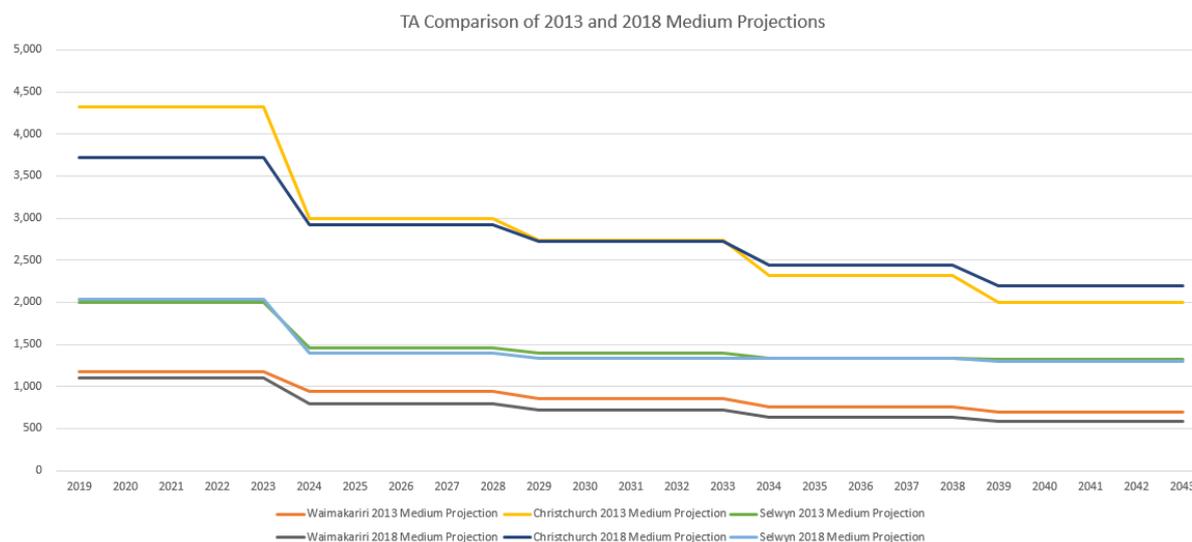


Figure 3: Comparison of 2013 and 2018 Medium Annual Growth in Projections for Waimakariri, Christchurch, and Selwyn.

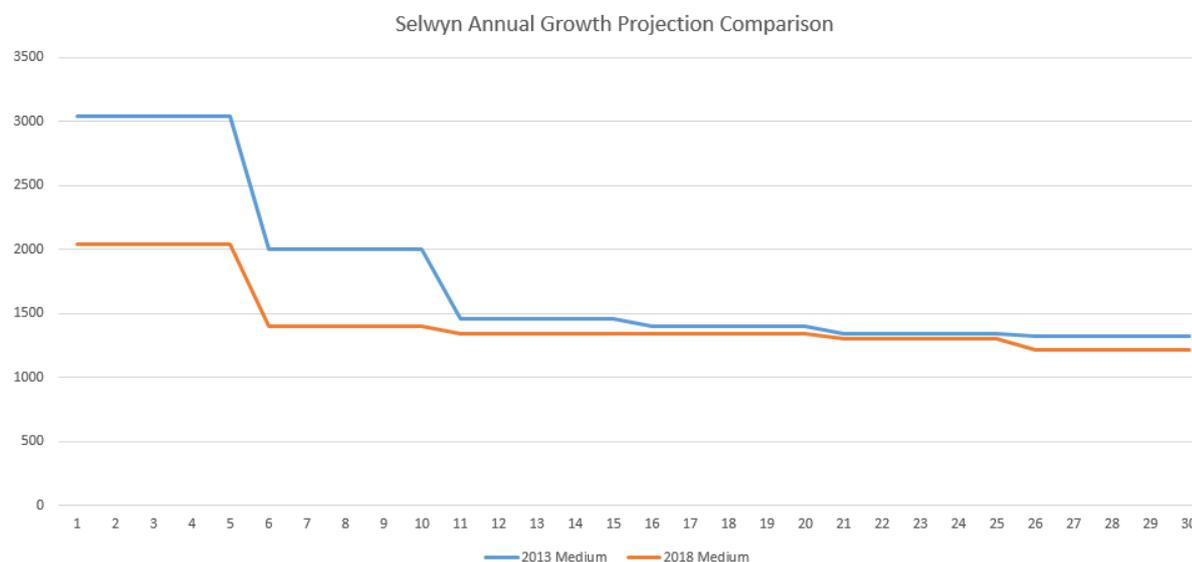


Figure 4: Comparison of 2013 and 2018 Annual Growth of Medium Projections for Selwyn.

Higher projections in the first five years are based on more certainty in growth from recent take-up with lower growth in the longer term because of the uncertainty of migration. The difference between the two projections is the forecast of a decrease in international migration based on the restrictive migration Covid-19 policies. This had led to a lower level of overall growth for the country and subsequently a lower level of growth for the regions. Further, to assume a higher level of migration for the GC area would be inconsistent with the national projections, meaning if a more people were assumed to arrive in Canterbury, another region or regions would need to have lower growth.

Overall, the use of 2018 is appropriate because it relies on the most recent census data and is up-to-date on recent migration trends. There are concerns that the Stats NZ projections are conservative, especially in the short-term, however the reason (Covid-19 migration restrictions) is uncertain and its impact is consistent across the country.

Identify Range of Projections - The initial range of projections are based on Stat NZ's 2018 subnational population projections. The following table (that are the same as Figure 1) outlines the additional population projected for Waimakariri, Christchurch, and Selwyn combined, and shown over the NPS-UD timeframes.

Table 7: Range of Projections for the Combined Greater Christchurch Area				
Combined Area	Short 2021 – 2024	Medium 2024 - 2031	Long 2031 – 2051	Total 2021 - 2051
High	27,560 (9,187 p.a.)	56,600 (8,086 p.a.)	152,640 (7,632 p.a.)	236,800 (7,893 p.a.)
Medium	18,840 (6,280 p.a.)	34,820 (4,974 p.a.)	81,340 (4,067 p.a.)	135,000 (4,500 p.a.)
Low	10,300 (3,433 p.a.)	13,760 (1,966 p.a.)	13,360 (668 p.a.)	37,420 (1,247 p.a.)

The range of projections are based on assumptions about fertility rate, life expectancy and net migration. Fertility is the average number of births that women would have. Life expectancy is the average length of life. Net migration is the arrivals minus departures.

Table 8: Range of assumptions for Waimakariri estimates and projections					
Waimakariri	Range	Fertility	Life Expectancy Male	Life Expectancy Female	Net Migration
High	2023	2.05	83	86.5	6,000
	2048	2.09	87.3	90.3	5,000
Medium	2023	1.94	82.5	86	4,500
	2048	1.88	86	89.1	3,500
Low	2023	1.83	82	85.5	3,000
	2048	1.67	84.4	87.8	2,000

Table 9: Range of assumptions for Christchurch estimates and projections

Christchurch	Range	Fertility	Life Expectancy Male	Life Expectancy Female	Net Migration
High	2023	1.63	80.8	84.4	18,500
	2048	1.68	85.2	88.3	15,000
Medium	2023	1.54	80.3	83.9	11,000
	2048	1.5	83.9	87.1	7,500
Low	2023	1.45	79.8	83.4	3,500
	2048	1.32	82.3	85.7	0

Table 10: Range of assumptions for Selwyn estimates and projections

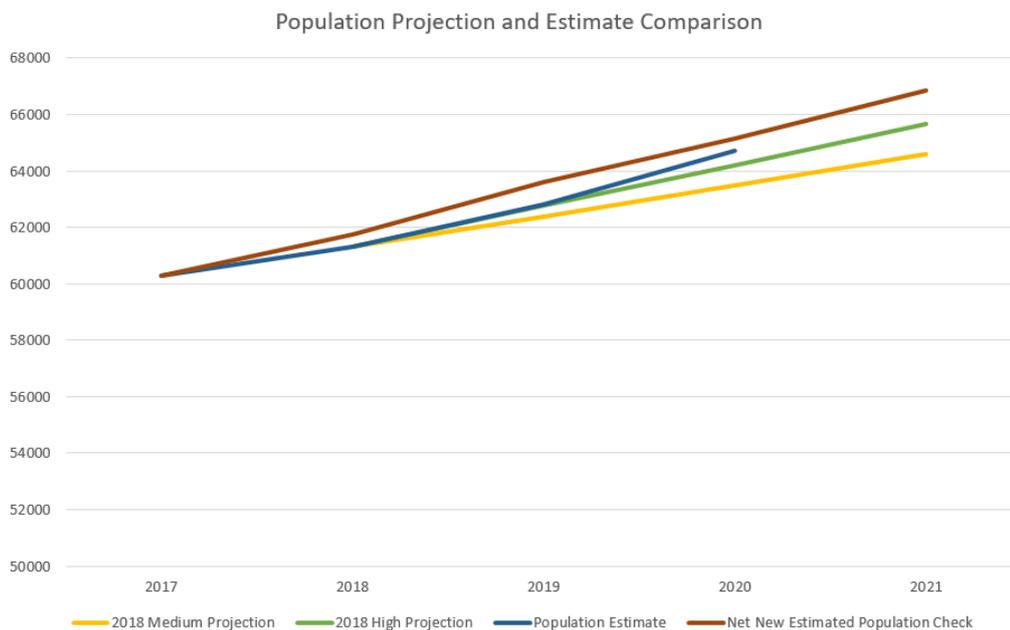
Selwyn	Range	Fertility	Life Expectancy Male	Life Expectancy Female	Net Migration
High	2023	1.94	84.8	88.3	10,000
	2048	1.99	89	92	7,000
Medium	2023	1.84	84.3	87.8	7,500
	2048	1.78	87.7	90.8	4,500
Low	2023	1.73	83.8	87.3	5,000
	2048	1.58	86.1	89.4	2,000

4.2 Most Likely Projection

The most likely projection sits within the projection range identified above. To identify the most likely projection, the growth of each TA was compared to the projections within each TA. The following figures show the 2018 Medium and High Population Projections with the Stats NZ Population Estimates. This is then sense-checked with a comparison to Stats NZ Net New Dwelling data. This Stats NZ Net New Dwelling data is converted to population using the Stats NZ Household Projection Average Household Size¹⁰ for comparison. These converted Stats NZ Net New figures are not used for calculating population as they are generally higher for each TA as a result of using a slightly older average household size and the data not checked and filtered to make sure it is only counting new dwellings. This is supported by internal monitoring of new dwellings that shows Stats NZ count being slightly higher than actual dwellings. However, the Net New data shows a growth trend to consider when identifying the most likely projection. There is potential to explore more customized projections within this range, exploring different rates over the short term that can be explored in subsequent reviews.

¹⁰ This is from the 2013 Household Projection data

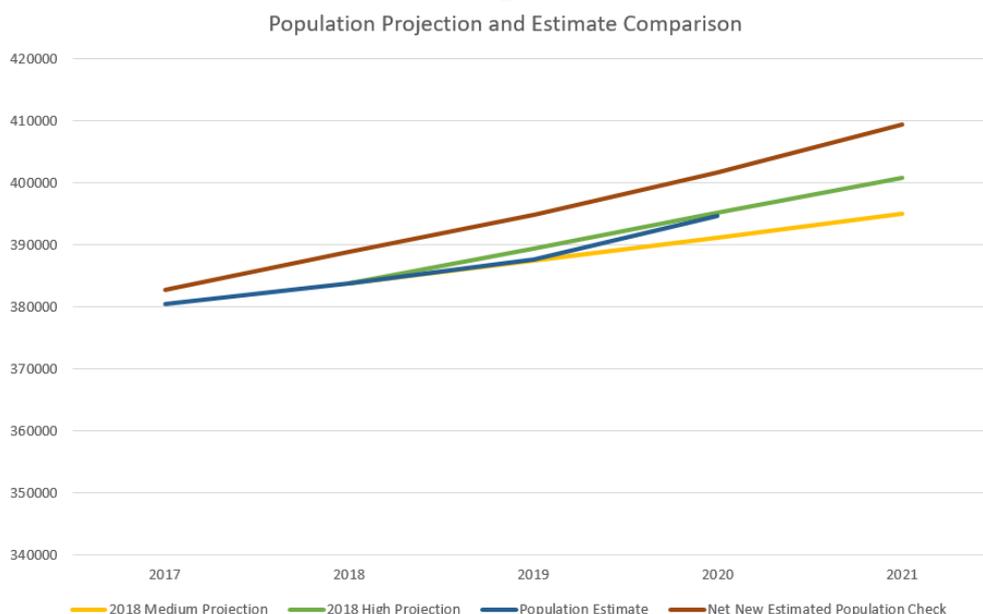
Waimakariri - Waimakariri has seen higher annual population growth than projected over the past 20 years. The following figure shows population trends within Waimakariri. It shows the current 2020 Population Estimate higher than the 2018 High Projection. The 2021 Net New Estimated trend shows similar rates of growth to the High Projection. Therefore, the most appropriate projection for Waimakariri is 2018 High.



NB: Graph doesn't start at 0.

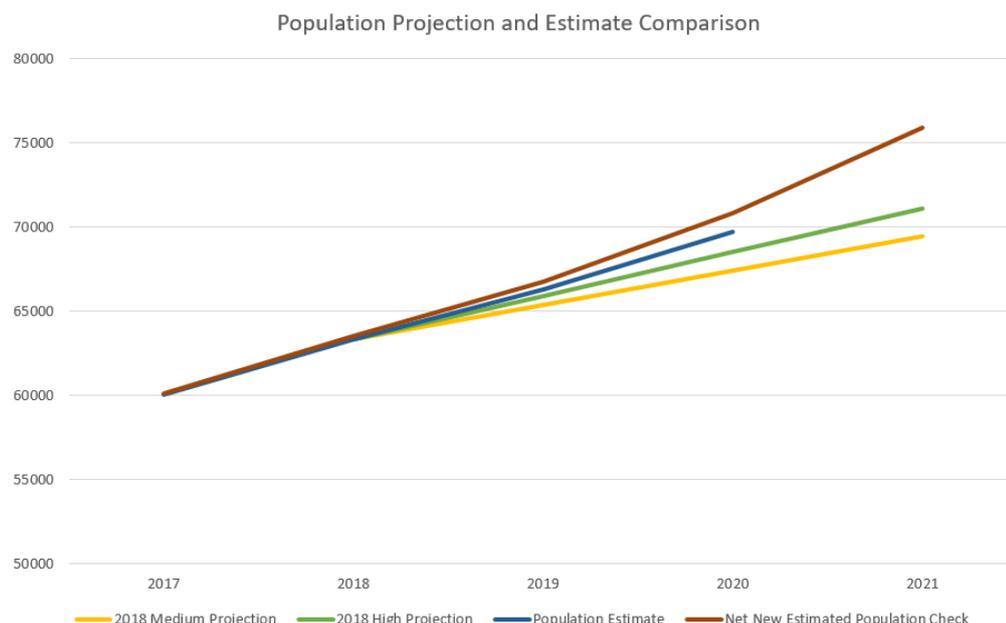
Figure 5: Waimakariri District Comparison of Stats NZ Population Estimate and Projections with comparison of Net New Estimated

Christchurch - The following figure shows population trends within Christchurch. It shows the current 2020 Population Estimate just under the 2018 High Projection. The 2021 Net New Estimated trend shows similar rates of growth nearer to the High Projection. The Net New line here does not align with any current projections making it harder to rely on. Therefore it is more pertinent to rely on historical understanding of population trends within Christchurch, which is always around Medium Projection. Therefore, the most appropriate projection for Christchurch is 2018 Medium.



NB: Graph doesn't start at 0. **Figure 6:** Christchurch City Comparison of Stats NZ Population Estimate and Projections with comparison of Net New Estimated

Selwyn - The following figure shows population trends within Selwyn. It shows the current 2020 Estimate higher than the 2018 High Projection. The 2021 Net New Estimated trend shows very high rates of growth even compared to the High Projection. Therefore, the most appropriate projection for Selwyn is 2018 High.



NB: Graph doesn't start at 0.

Figure 7: Selwyn District Comparison of Stats NZ Population Estimate and Projections with comparison of Net New Estimated

Identifying a Starting Population Projection - The 2020 Stats NZ Population Estimate is used as the starting point. This is because they are the best known population point. The preferred projections are then recalibrated to this starting point.

Table 11: Stats NZ TA Population Estimate	
Area	2020 Population Estimate
Waimakariri	64,700
Christchurch	394,700
Selwyn	69,700
Combined Area	529,100

Assumptions and Uncertainties - The most significant uncertainty is the impact of Covid-19 on international migration and on where people decide to live and move within New Zealand. Key assumptions are that there are no isolated impacts on the region, such as natural disasters, and no impacts on other regions that force or encourage people to move to the region. There are other government policies that could encourage or discourage where people live and what types of houses are built. This could be around transport, subsidies for different housing typologies, lending practices etc.

Table 12: Greater Christchurch Projection					
	2021	2024	2031	2051	Total Change
Total 3 TAs	536,880	558,540	600,580	705,600	+168,720

4.3 Population to Household Conversion

The population was then converted to households. This uses Stats NZ Average Household Size Projection from the 2013 Household projection assumptions. The declining rate reflects the changing demographics of more older households and changing family structures. The higher Selwyn figure reflects the current younger demographic.

Table 13: Stats NZ Average Household Size		
Area	2021 Average HH Size	2051 Average HH Size
Waimakariri	2.52	2.34
Christchurch	2.54	2.45
Selwyn	2.9	2.65

Table 14: Greater Christchurch urban areas Projection			
Household Demand	Short 2021 - 2024	Medium 2021 - 2031	Long 2021 - 2051
Waimakariri	1,528	4,508	11,160
Christchurch	5,310	15,180	35,194
Selwyn	2,262	7,118	21,724
Total 3 TAs	9,100	26,806	68,078

Table 15: Greater Christchurch rural areas Projection			
Household Demand	Short 2021 - 2024	Medium 2021 - 2031	Long 2021 - 2051
Waimakariri	616	1,970	4,818
Christchurch	85	291	437
Selwyn	401	1,229	3,701
Total 3 TAs	1,102	3,490	8,956

4.4 Household Demand by Typology

As with location above, the NPS-UD allows local authorities discretion in defining typologies, however it sets a minimum of standalone and attached dwellings. The capacity assessment uses standalone and attached (semi-detached and terraced) dwellings for typology. This is because the level of other typologies (e.g. apartments) currently in the area (and especially in Selwyn and Waimakariri) are not sufficient to distinguish from attached.

Table 16: Greater Christchurch urban areas and typology Projection

Household Demand by Typology	Short 2021 - 2024		Medium 2021 - 2031		Long 2021 - 2051	
	Stand alone	Multi-unit	Stand alone	Multi-unit	Stand alone	Multi-unit
Waimakariri	1,307	221	3,730	778	9,313	1,847
Christchurch	3,691	1,619	10,556	4,624	24,414	10,780
Selwyn	2,177	85	6,805	313	20,617	1,107
Total 3 TAs	7,175	1,925	21,091	5,715	54,344	13,734

Table 17: Greater Christchurch rural areas and typology Projection

Household Demand by Typology	Short 2021 - 2024		Medium 2021 - 2031		Long 2021 - 2051	
	Stand alone	Multi-unit	Stand alone	Multi-unit	Stand alone	Multi-unit
Waimakariri	609	7	1955	15	4784	34
Christchurch	87	-2	285	6	431	6
Selwyn	376	25	1,144	85	3562	139
Total 3 TAs	1,072	30	3,384	106	8,777	179

4.5 Including Competitiveness Margin

Following the demand analysis, the competitiveness margins outlined in the NPS-UD are applied. These are 20% in the short (to 2024) and medium (to 2031) term, and 15% in the long term (from 2031 – 2051).

Table 18: Greater Christchurch urban areas and typology Projection plus Competitiveness Margin

Household Demand by Typology	Short 2021 - 2024		Medium 2021 - 2031		Long 2021 - 2051	
	Stand alone	Multi-unit	Stand alone	Multi-unit	Stand alone	Multi-unit
Waimakariri	1,568	265	4,476	934	10,896	2,163
Christchurch	4,429	1,943	12,666	5,549	28,602	12,629
Selwyn	2,612	102	8,166	375	24,050	1,288
Total 3 TAs	8,609	2,310	25,308	6,858	63,549	16,080

Table 19: Greater Christchurch rural areas and typology Projection plus Competitiveness Margin

Household Demand by Typology	Short 2021 - 2024		Medium 2021 - 2031		Long 2021 - 2051	
	Stand alone	Multi- unit	Stand alone	Multi- unit	Stand alone	Multi-unit
Waimakariri	731	8	2,346	18	5,599	40
Christchurch	104	-2	342	7	510	7
Selwyn	451	30	1,373	102	4,154	164
Total 3 TAs	1,286	36	4,061	127	10,263	211

5. Analysis of Housing Market and Impact of Planning

Section 3.23 seeks information regarding market indicators and how planning and infrastructure decisions impact affordability for different community groups. There is also a need for a specific focus on Māori housing demand. This section will provide analysis of house prices and tenure, affordability, social housing, Māori housing, locational preferences, national and international trends, migrant demand, household crowding, and demand for visitor accommodation.

5.1 Monitoring

The following information is available on the MHUD Urban Development dashboard¹¹. The dashboard contains information around supply, prices, rents, volume, and land value as a ratio of capital value, however some of the information hasn't been updated in a few years.

Prices - This figure shows the 12-month rolling sales price. This does not consider size or quality of dwelling and is not adjusted for inflation. There is a steep increase over the last year after around 5 years of almost stable pricing. The increase is seen across the country and reflects broader trends in monetary policy (low interest rates) and increased demand.

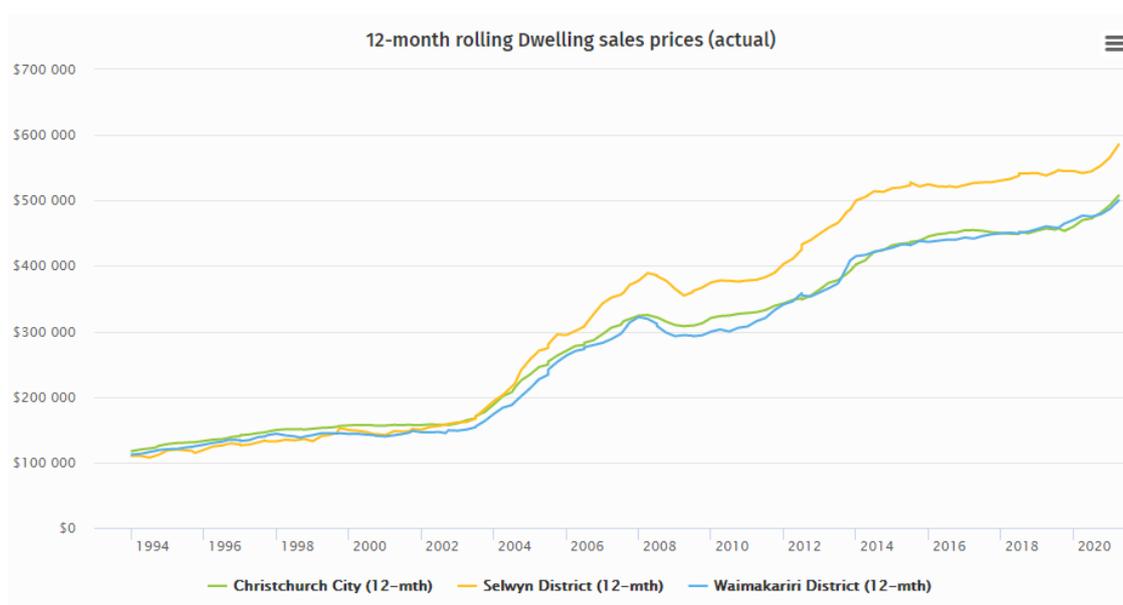


Figure 9: Dwelling Sales Price from MHUD Dashboard

TA	31 st March 2015	31 st March 2020	31 st March 2021	Change from 2015 to 2020	Change from 2020 to 2021
Waimakariri	432,500	477,000	500,000	44,500 (10%)	23,000 (5%)
Christchurch	434,000	470,000	507,500	36,000 (8%)	37,500 (8%)
Selwyn	520,000	541,500	585,500	21,500 (4%)	44,000 (8%)
Auckland	647,500	855,000	946,000	207,500 (32%)	91,000 (11%)

¹¹ <https://huddashboards.shinyapps.io/urban-development/>

The table above shows the change in house sales price for the 3 TAs compared to Auckland. The increase in house prices between 2015 and 2020 was relatively stable for the 3 TAs (between 4% and 10%) compared to 32% in Auckland. The increase last year for the 3 TAs was significant when compared to the combined growth of the previous years but still below Auckland's increase.

Rents - This figure shows the 12-month rolling rent for the three TAs. Between 2015 and 2020 rents dropped in Christchurch and Selwyn, and rose in Waimakariri. This is probably because of higher rents through 2015 following the Earthquakes with homes being repaired and residents needing short-term accommodation. In that same timeframe Auckland rent rose 16%. Between 2020 and 2021, rents are rising fairly consistently across the country.

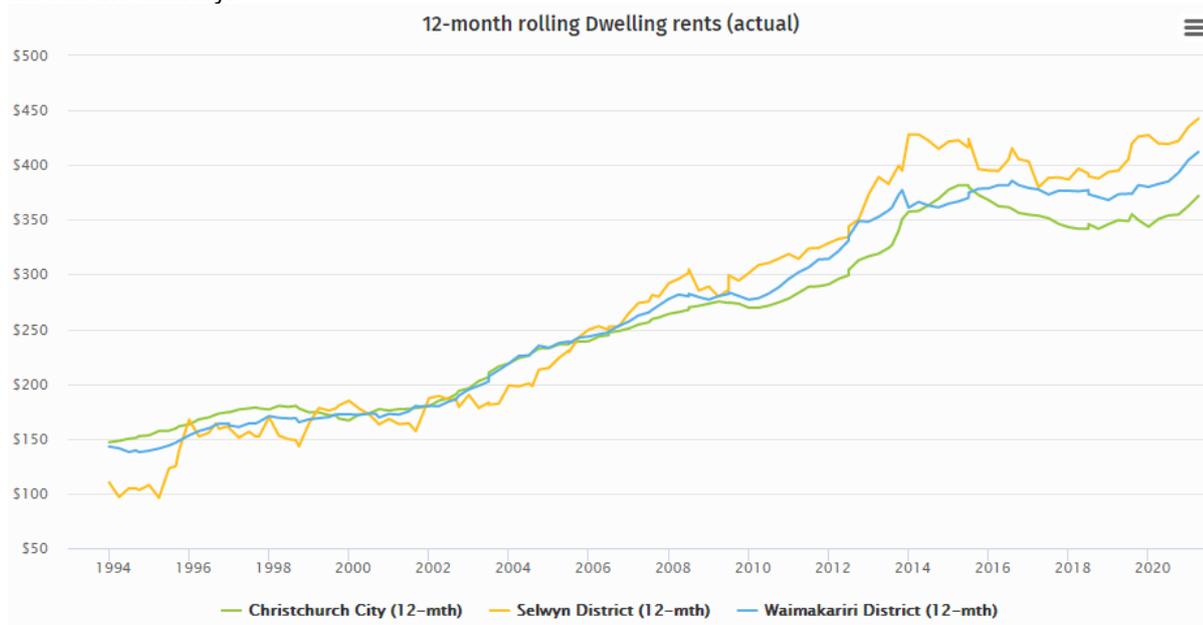


Figure 10: Dwelling Weekly Rents from MHUD Dashboard

Table 21: Dwelling Weekly Rents Comparison					
TA	31 st March 2015	31 st March 2020	31 st March 2021	Change from 2015 to 2020	Change from 2020 to 2021
Waimakariri	367	383	412	16 (4%)	29 (8%)
Christchurch	382	351	372	-31 (-8%)	21 (6%)
Selwyn	423	420	442	-3 (-1%)	22 (5%)
Auckland	452	524	548	72 (16%)	24 (5%)

The table above shows a similar story as house prices. Rents between 2015 and 2020 ranged from increasing by 4% to decreasing by 8% compared to a 16% increase in Auckland. This could be because of higher rents in 2015 from earthquake repair demand and stable house prices. The change from 2020 to 2021 is similar across the 4 TAs.

Dwellings Sold - This figure shows the 12-month rolling total of dwellings sold in the 3 Territorial Authorities. This includes all dwellings sold, irrespective of whether this is growth related or not. This number is helpful in showing turnover and broad demand in the housing market. It shows a fairly consistent number of dwellings sold.

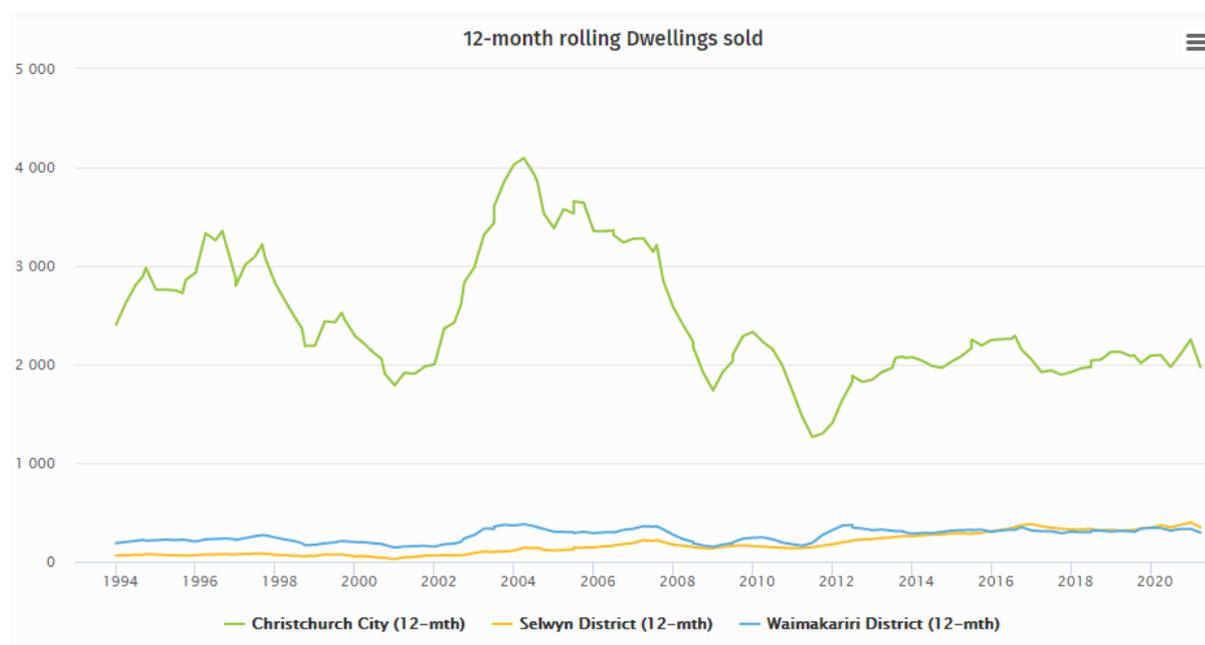


Figure 11: Total Dwellings Sold from MHUD Dashboard

Table 22: Total Dwellings Sold Comparison					
TA	31 st March 2015	31 st March 2020	31 st March 2021	Change from 2015 to 2020	Change from 2020 to 2021
Waimakariri	320	341	295	21 (7%)	-46 (-13%)
Christchurch	2,088	2,097	1,973	9 (1%)	-124 (-6%)
Selwyn	286	369	347	83 (29%)	-22 (-6%)
Auckland	8,886	7,397	7,151	-1,489 (-17%)	-246 (-3%)

Growth in total sales has been rising within Waimakariri, Christchurch, and Selwyn, with especially Selwyn seeing high levels from 2015 to 2020. In the past year sales are down across the country potentially reflecting the government changes to restrict investment property speculation.

Dwelling Growth - This figure shows dwelling consents and household growth, noting that typically growth will be higher as one building consent may include multiple dwellings (the case in particular for Christchurch City). Dwelling consents showing total number of dwellings whereas household growth takes into account replacement of dwellings. There is a large dip in household growth between the years 2010 and 2012 for Christchurch City as dwellings were demolished following the earthquakes.



Figure 12: New Dwelling Consents and Household Growth from MHUD Dashboard

Table 23: New Dwelling Consents and Household Growth Comparison						
TA	30 th June 2015		30 th June 2020		Change from 2015 to 2020	
	Consents	Growth	Consents	Growth	Consents	Growth
Waimakariri	961	962	638	731	-323	-231
Christchurch	4,389	3,040	2,686	2,800	-1,703	-240
Selwyn	1,318	1,207	1,288	1,172	-30	-35
Auckland	7,632	10,800	15,154	12,333	7,522	1,533

Table 23 shows that consents and growth has slowed slightly from 2015 to 2020 for Waimakariri and Christchurch with Selwyn holding fairly steady. However, Auckland has seen a large increase in consents though slightly lower increase in household growth.

House Size - The figure below shows the changing median house size for Canterbury. In the early 1990s, the median size was around 150m², with median size peaking at around 2007 to around 225m². Since 2011 the median size has been steadily decreasing, potentially due to an increasing number of multi-units being built.

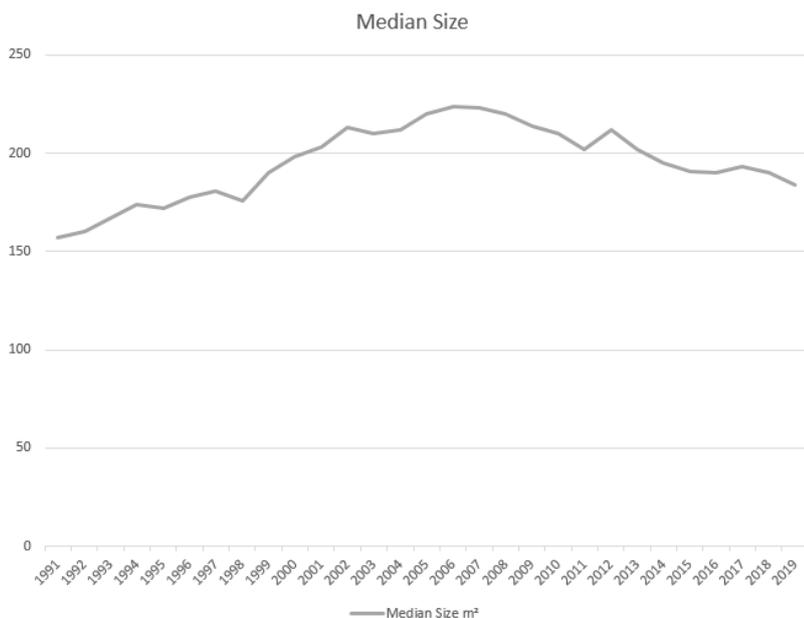


Figure 13: Canterbury Median Dwelling Size by Stats NZ

Table 24: Median Dwelling Size Comparison					
	1993	2003	2013	2018	2019
Canterbury	167m ²	210m ²	202m ²	190m ²	184m ²
Waimakariri				197m ²	183m ²
Christchurch				185m ²	182m ²
Selwyn				194m ²	186m ²
Auckland	178m ²	192m ²	225m ²	200m ²	187m ²

Location of Growth - The figures below show the net new dwelling counts, as monitored by the respective TAs, from 2007 to 2013. The detailed table of information can be found in Section 7.5. Generally, all TA's are seeing higher levels of consents than pre 2011 (pre earthquakes). SDC and CCC are seeing record levels of consents in 2020.



Figure 14: Net New Dwelling Consents by TA

5.2 Home Ownership and Housing Affordability

The level of owner occupation like the rest of the country has declined and this trend is expected to continue, particularly in younger age groups. Ownership rates in Christchurch are projected to slowly drop below 60% in 2051, whereas for Selwyn and Waimakariri, ownership drops from around 80% to nearer 75%. Conversely the number of renter households will rise.

The figure below shows the change in proportion of age group and whether they own or rent. The key points are that the ageing demographic is driving a lot of demand, especially for owner occupier, whereas rental demand is rising for all demographics.

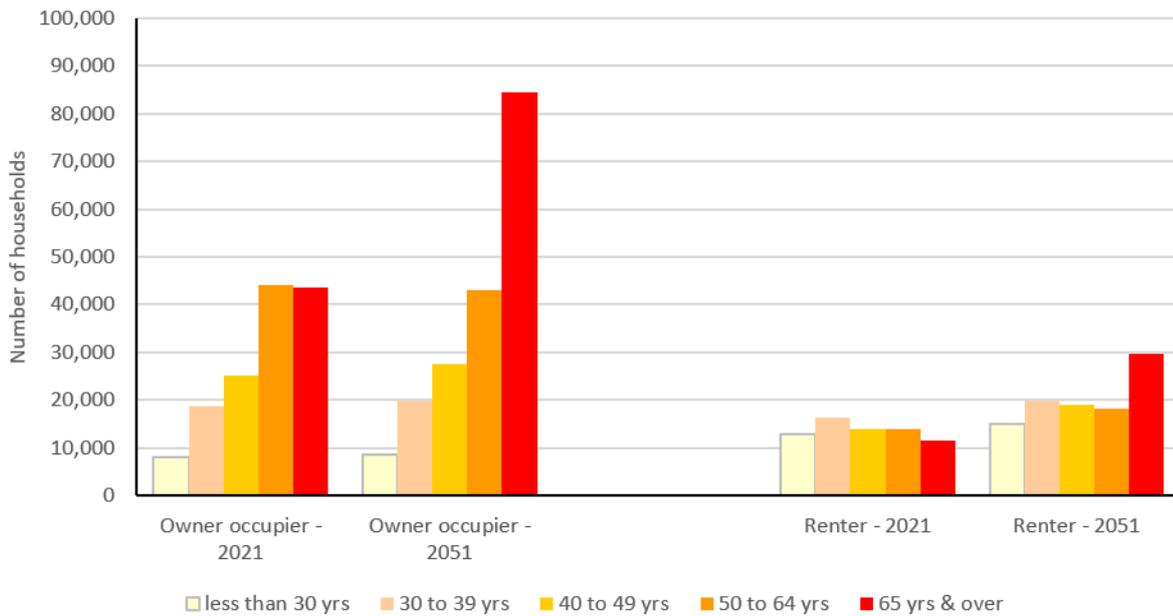


Figure 15: Change in Households by Tenure and Age Group

There is a similar trend in household composition, with large growth in one person households and 'couples without children' households, for both ownership and rental. In terms of housing typology, Greater Christchurch's aging population leads to significant growth in the number of one person and couple only households, resulting in a significant increase in the demand for smaller and multi-unit dwellings. Demand for additional social housing dwellings per annum will be required if the current ratio of social renter dwelling to total housing need is maintained. Standalone dwellings account for 66% of the projected growth from owner occupiers and 56% of the renter household growth. Demand for standalone dwellings is predominately for units with three or more bedrooms. Multi-unit demand is typically for units with fewer bedrooms. Renters have a higher propensity to rent multi-unit dwellings relative to standalone dwellings, however this may be influenced by other factors such as lower rents and proximity to central city.

Results from national and international studies indicate that residents give priority to the number of bedrooms when choosing a dwelling. The number of bedrooms required depends on the size of the household. There is currently a gap in information regarding the relationship and trade-offs between the size of the dwelling and the typology, made by different household groups.

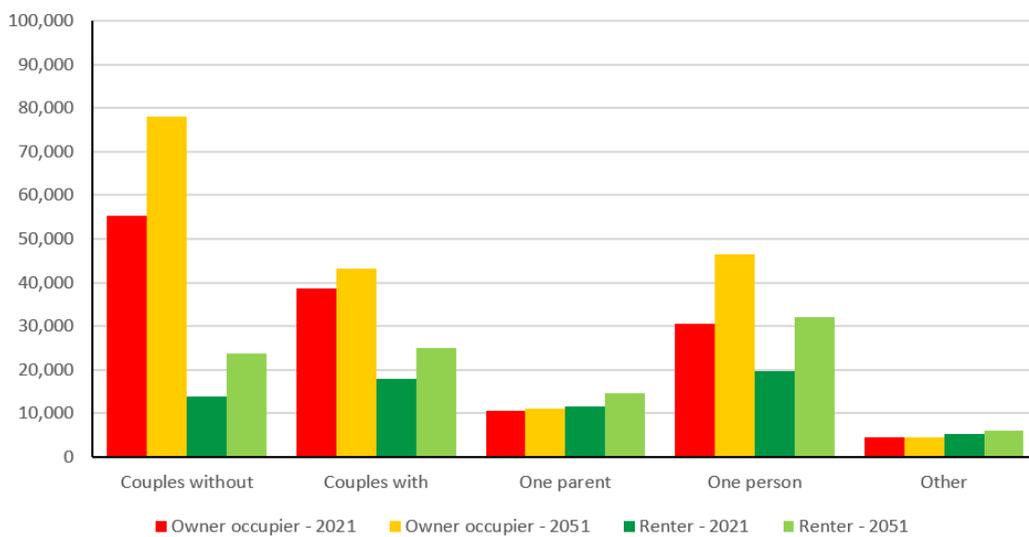


Figure 16: Change in Households by Tenure and Composition

The following figure shows where typology demand is likely to occur. Rental and multi-unit demand is largely occurring within Christchurch city. Historically, there is low levels of multi-unit development in Selwyn and Waimakariri that means low levels of projected demand.

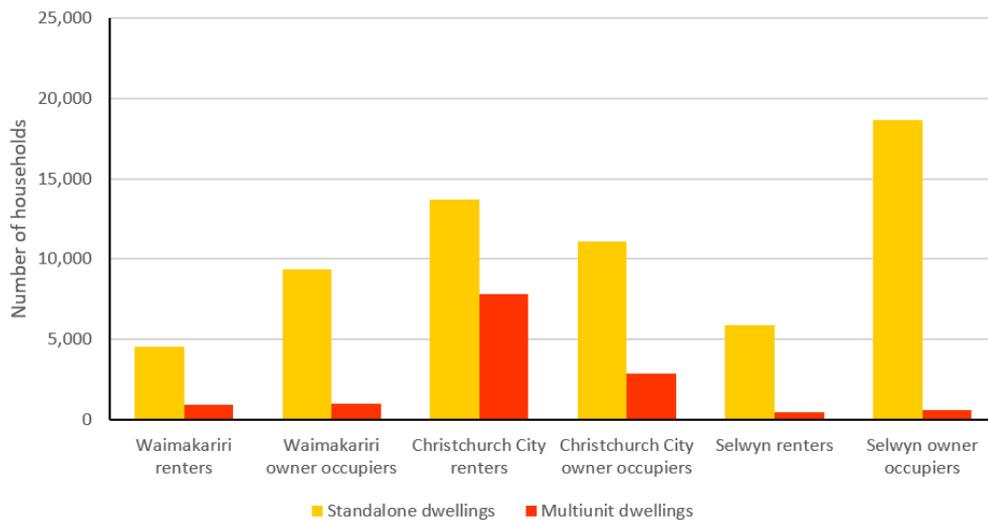


Figure 17: Demand by typology and tenure

Housing Affordability - Market rents increased marginally faster than household incomes between 1991 and 2020. However, Selwyn District house prices increased 3.4 times faster than median household incomes between 1991 and 2020. Similar trends occurred in Waimakariri District (house prices increased 2.2 times faster than median household incomes) and Christchurch (house prices increased 2.7 times faster than median household incomes). The faster growth in house prices, relative to household incomes has continued to place pressure on housing affordability for first home buyers.

	Waimakariri District			Christchurch City			Selwyn District		
	Median rent	Lower Quartile HP	Median household income	Median rent	Lower Quartile HP	Median household income	Median rent	Lower Quartile HP	Median household income
1991	\$146	\$80,000	\$31,100	\$147	\$68,000	\$31,100	\$134	\$61,000	\$35,500
1996	\$157	\$95,000	\$34,700	\$171	\$115,000	\$32,900	\$164	\$90,000	\$39,100
2001	\$181	\$110,500	\$39,700	\$171	\$126,800	\$36,500	\$168	\$104,000	\$47,200
2006	\$246	\$240,000	\$50,900	\$244	\$253,000	\$48,200	\$266	\$266,000	\$62,500
2013	\$394	\$325,000	\$68,800	\$356	\$336,000	\$65,300	\$435	\$399,500	\$85,100
2018	\$381	\$380,000	\$81,700	\$345	\$344,500	\$77,600	\$406	\$481,500	\$101,100
2019	\$400	\$385,000	\$84,600	\$345	\$345,000	\$80,300	\$432	\$457,750	\$104,600
2020	\$420	\$402,000	\$87,600	\$400	\$380,000	\$83,100	\$468	\$487,000	\$109,200
2021 Est	\$460	\$435,000	\$90,700	\$420	\$431,000	\$86,000	\$500	\$540,000	\$113,000
Change									
91 to 96	8%	19%	12%	16%	69%	6%	22%	48%	10%
96 to 01	15%	16%	14%	0%	10%	11%	2%	16%	21%
01 to 06	36%	117%	28%	43%	100%	32%	58%	156%	32%
06 to 13	60%	35%	35%	46%	33%	35%	64%	50%	36%
13 to 18	-3%	17%	19%	-3%	3%	19%	-7%	21%	19%
18 to 19	5%	1%	4%	0%	0%	3%	6%	-5%	3%
19 to 20	5%	4%	4%	16%	10%	3%	8%	6%	4%
91 to 20	188%	403%	182%	171%	459%	167%	248%	698%	208%

Source: HUD, MBIE, Headway Systems, [Corelogic](#) and Statistics New Zealand

Table 25: Rents, House Prices and Income over Time¹²

The proportion of median household income in Selwyn District required to pay the median market rent has fluctuated between 19% and 27%. The peak of 27% occurred after the 2010/2011 earthquakes and coincides with a significant housing shortage in Greater Christchurch. Subsequently, these pressures have eased and rents as a proportion of household incomes have fallen back to 22% in 2020. The proportion of median household income required to service a mortgage (assuming a dwelling is purchased at the lower quartile house sale price with a 10% deposit) has varied between 19% and 40% between 1991 and 2020. The peak (40% of household income) coincided with a peak in mortgage interest rates in the mid-2000s. Historic lows in mortgage interest rates have offset the growth in house prices at this stage of the housing market cycle.

5.3 Housing Need

Demographic, tenure, employment and welfare trends, i.e. the 'perfect storm' of an ageing population, falling home ownership, less secure employment, and restricted access to welfare, are drivers for the current and projected increase in demand for social housing. The Salvation Army released a report in August 2017 analysing the future need for social housing in New Zealand¹³. The report states that current capacity of Social Housing in New Zealand is 'just over 82,000' units, with the majority owned by Housing New Zealand (62,500 units). In March 2020, the Greater Christchurch Partnership commissioned Community Housing

¹² From Livingston Report

¹³ Johnson, Alan (2017); *Taking Stock, the demand for Social Housing in New Zealand*; www.salvationarmy.org.nz/TakingStock

Aotearoa to provide advice and recommendations to collaboratively develop an action plan to enable social and affordable housing provision across Greater Christchurch. The *Social and Affordable Housing Action Plan Report*¹⁴ identified a current supply of 9,768 social and affordable homes (local authority and third sector owned homes) as at 30 June 2020. The spatial distribution of social and affordable housing is uneven across the three Councils and almost entirely concentrated in Christchurch (95%) as shown in the table below.

	Public housing	Transitional housing	Assisted rental	Progressive home ownership	Total
Christchurch	7,168	335	1,896	51	9,450
Selwyn	13	0	14	0	27
Waimakariri	174	0	117	0	291
Total	7,355	335	1,690	51	9,768

An indication of future supply was also gained through interviews with providers and other work Community Housing Aotearoa has completed to identify projects in their development pipelines for potential COVID-19 recovery funding. The interviews identified 125 new units under construction in Christchurch, but none underway in Waimakariri or Selwyn. Fourteen future projects, providing 428 new affordable homes, were identified, mainly located in Christchurch.

In addition to community housing providers, Kāinga Ora's current construction intentions across Greater Christchurch indicates a commitment to public and supported homes to be delivered between 2021 and 2024. As at July 2021, Kāinga Ora has 330 homes currently under construction, 250 are currently at pre construction phase and a further 740 homes are in planning.

The Livingston and Associates report also analyses the changes in affordability across Greater Christchurch. The data shows that the rate of increase in house prices and rents has outpaced increases in household incomes. The result is a declining rate of home ownership and an increasing rate of housing stress amongst renter households.

The impact of these trends is most pronounced on lower income households. One indicator of how the lowest income households are faring is the Public Housing Register. This register is maintained by the Ministry of Social Development to prioritise placement of eligible households into public housing supported by the Income Related Rent subsidy. The chart below shows the number of households on the Register since March 2015. While Christchurch has the largest number on the register, Selwyn has experienced the highest growth (500%), then Waimakariri (450%) and Christchurch (379%).

¹⁴ Community Housing Aotearoa (September 2020), Greater Christchurch Partnership Social and Affordable Housing Action Plan Report.

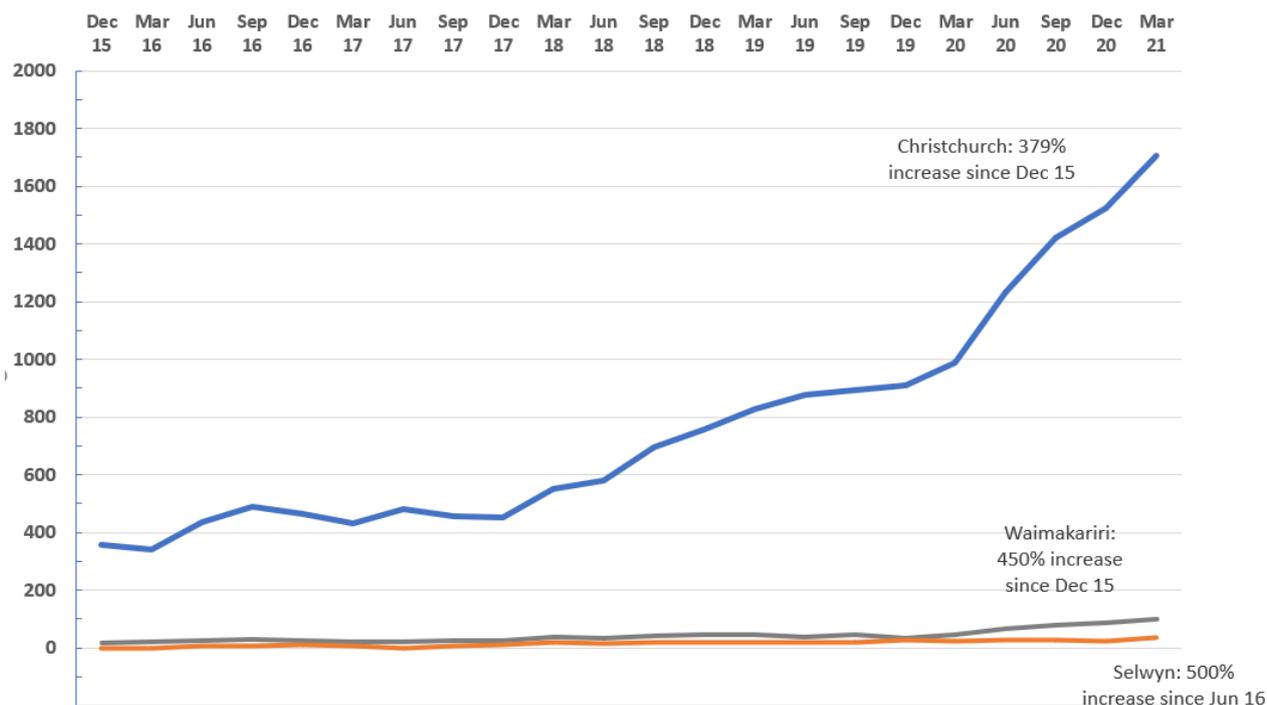


Figure 18: Ministry of Social Development, Public Housing Register 2015 – 2021

The table below shows the number of applicants on the Housing Register as at March 2021, within Priority A and Priority B groups. Priority A refers to applicants who are considered at risk and includes households with a severe and persistent housing need that must be addressed immediately. Priority B refers to applicants who have a serious housing need and includes households with a significant and persistent need.

TA	Housing Priority		Total
	A	B	
Christchurch City	1,566	141	1,707
Selwyn District	36	3	39
Waimakariri District	90	9	99

TA	Bedrooms required					Total
	1	2	3	4	5+	
Christchurch City	1,113	339	138	42	15	1,707
Selwyn	24	12	0	0	0	36
Waimakariri	60	24	12	3	0	99

The table above illustrates that most households require smaller, one or two bedroom homes. The available data does not provide a breakdown of bedroom requirements by Priority A or Priority B groups. The analysis by Community Housing Aotearoa concluded that, viewed together, data demonstrates a continuing lack of sufficient social and affordable housing supply. Public Housing Register has increased significantly in both percentage and total numbers of households. In addition, the need for Emergency Housing Special Needs

¹⁵ Ministry of Social Development, Housing Register March 2021

Grants was rising prior to COVID-19 and has increased rapidly since March 2020 (from \$1,593,966 in March 2020 to \$3,172,929 in June 2020).¹⁶ Demand is expected to further increase as the economic impacts of the pandemic start to bite.

Total '*renter housing need*' is assessed by encapsulating those financially stressed private renter households, together with those who are homeless or living in crowded dwellings, with those whose housing requirements are met by social, third sector and emergency housing providers. The relative level of housing need is expected to increase across Greater Christchurch, but it will be significantly greater in Christchurch City. This is a reflection of the low income renters and social renters living in the city and projected to continue to live in the city, comparative to the outer districts.

Private renter housing stress is experienced by households that have insufficient income to affordably pay their housing costs. This can occur because either housing costs are high relative to market norms or incomes in an area are low. Renter housing stress is defined as those households that are paying more than 30% of their gross household income in rent. The proportion of households paying unaffordable levels of rent increased in Waimakariri and Christchurch City and decline in Selwyn District. The proportion of renters paying high levels of rent relative to their incomes is concentrated in households with lower incomes.

	Modelled number of stressed private renters 2020	Stressed renters as a % of all households
Waimakariri District	2,500	10%
Christchurch City	22,350	14%
Selwyn District	1,680	7%
Total greater Christchurch	26,530	13%

Source: Modelled based on data from Statistics New Zealand

NB: Numbers are rounded to the nearest 10 in the modelling & consequently total households may vary between tables.

Table 29: Number of stressed renters

¹⁶ Community Housing Aotearoa (September 2020), Greater Christchurch Partnership Social and Affordable Housing Action Plan Report.

5.4 Māori Housing Demand

The HCA is required to identify demand for Papakāinga housing, development trends on Māori land, the impediments to living on or developing Māori land, or barriers to using traditional housing options. Home ownership rates for Māori are lower than the NZ average and trending lower. Combined with lower incomes this makes it harder to get into housing and stay there. Homelessness is an outcome from both historical issues and incomes. The Livingston and Associates report does not provide an analysis of housing need by ethnicity. However, the interviews provided confirmation that Māori make up a significant portion of the households seeking housing. Nationally, Māori make up half of the households on the Public Housing Register. Providers indicated similar percentages of whanau seeking assistance in their interviews¹⁴. (Page 14)

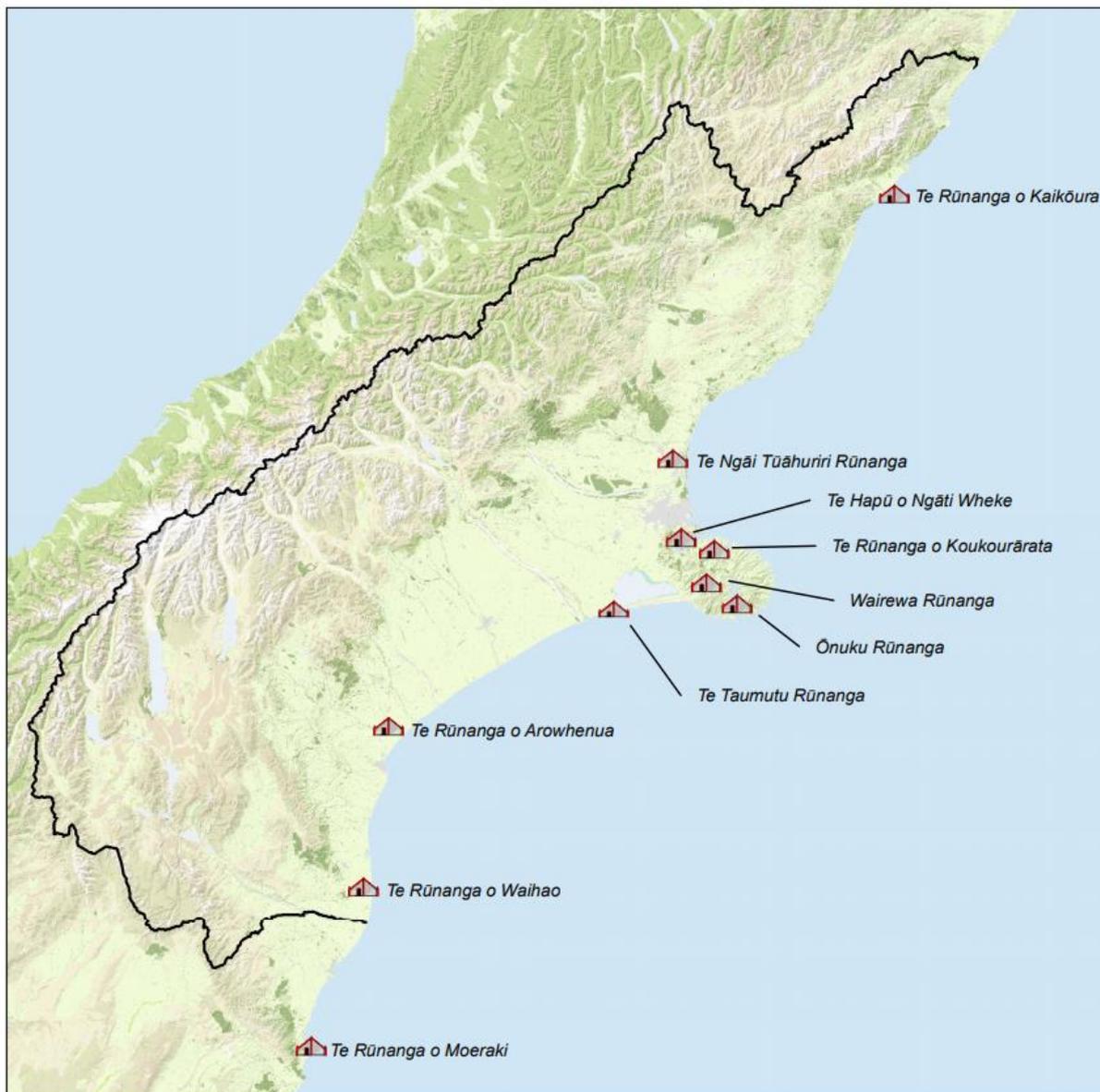


Figure 19: Map of Pāpatipu marae names and locations within the Canterbury Region¹⁷.

The Mahaanui Iwi Management Plan 2013 outlines the desire to occupy and use ancestral lands. It seeks to work with local government in removing District Plan and other barriers to development on Maori land, in particular on land which was set aside as Maori Reserves, and in providing for papakāinga development.

¹⁷ From Christchurch District Plan Chapter 1.2.18.

Maori Reserve land was intended to provide an economic base for Ngāi Tahu living in particular (primarily rural) areas as follows:

- The right to dwell on land, and that right to remain in place in perpetuity to descendants.
- The right to mahinga kai, including the right to hunt, harvest and to develop mahinga kai resources.
- The right to develop land to achieve the above, including subdivision, and setting aside land for communal facilities or other activities to support the community.
- The right to develop a sustainable and growing economic base within the community that would sustain future generations^[1].

Aspirations for the development of Māori land not only focus on creating housing opportunities, but also the provision of commercial, social and community facilities and opportunities to allow Ngāi Tahu whānui to fully occupy and use ancestral lands. Councils are in the process of reviewing District Plan provisions for Māori land and Papakāinga housing with a view to making them more enabling. Other land development impediments result from susceptibility to sea level rise and other natural hazards in some areas, and lack of access to infrastructure and bulk services. This will impact how much and how quickly housing and supporting facilities can be built as well as the viability and longevity of the infrastructure needed to support development. Further work is required on potential design and servicing solutions and funding to facilitate land development.

5.5 Locational Preferences and Trade-Offs

The settlement pattern of Greater Christchurch has principally been shaped from the creation and expansion of the colonial settlements laid down in the nineteenth Century. Whilst once focused around a strong Central City, during the 20th century the urban area expanded outwards and around a number of nodes, this development being largely enabled by the change in dominant transport mode from foot, bicycle and tram to the private car. The availability of significant areas of flat land that were relatively easy to subdivide and service, resulted in traditionally lower urban densities than other New Zealand cities. More recently, the impacts of the earthquakes has seen a relocation of households and businesses from the more damaged eastern side of the City and eastern Kaiapoi to areas to the west.

The dynamics of the housing market are complex, and there are many factors that contribute to why any particular area experiences strong or weak demand and consequently growth. Locational preference may be driven by many reasons, including the availability of sections and houses, lifestyle, job, education, family, financial circumstances, and at least in part, to where people want to go, and how often these trips need to be taken. Location features were identified as one of the most desirable features when looking for a house, as per the Grattan Institute Study (2011)¹⁸. These features included, but were not limited to, safety of people and property, attractiveness of the surrounding environment and convenience and access to work, healthcare services and schools.

Very little, if any, information is available in Greater Christchurch about what are the current and possible future factors that drive where people choose to live. Research is required to identify the trade-offs residents are willing to make, such as how far people are willing to travel for work, in terms of location of house. Furthermore, whether these reasons are likely to change over time, for example as one ages, their financial circumstances change, and or other conditions change such as transport costs or major improvements to an area are completed, i.e. rebuild of the central city, revitalisation of older commercial centres, the Otakaro Avon River Corridor, and Kaiapoi regeneration areas, and operation of rapid public transit routes. Research has been undertaken that may provide some insight as to why the demand for greenfield development has been consistently strong. A study carried out by Kusumastuti and Nicholson (2017) on mixed-use development in Christchurch, pointed out a similar trend. Surveyed residents wanted to live near supermarkets and parks, but less so near offices. Both studies show that people want a balance between housing features and location.

Importantly for Greater Christchurch as relative to other major cities, most housing settlement areas are highly accessible to places of work, leisure and education, therefore transport and travel times are less influential when deciding where to live. Where people have chosen to live has, to a large part, been dictated by where

[1] From Kāinga Nohoanga Baseline Report for SDC's DPR found here - <https://www.selwyn.govt.nz/property-And-building/planning/strategies-and-plans/selwyn-district-plan/selwyn-district-plan-review/supporting-information/baseline-reports>

¹⁸ The Housing We'd Choose, Grattan Institute, 2011

housing markets have been enabled with supporting infrastructure and an area has been developed (as decided and determined by property developers). Proportionally there was more new dwellings being consented in greenfield areas than within the existing urban area. There was significant rezoning of greenfield land for new neighbourhoods in 2000 and again post-earthquake.

Further market analysis is however required on the relationship between greenfield and infill development (namely whether one offsets the other) to draw any further conclusions on what specifically has driven the historical demand for new neighbourhoods (i.e. house design, section size, price, and/or amenity) and whether these greenfield area drivers are the same or different between spatial areas (i.e. a new subdivision within Waimakariri compared to new neighbourhoods in Selwyn or Christchurch City). Furthermore, whether the greenfield area demand drivers are the same or different than for redevelopment areas, or do some demand aspects such as proximity to schools, come more into play.

As a location the Christchurch Central City has historically accommodated a decreasing share of the overall population. This is more a product of an expanding urbanised area but nevertheless population growth in the Central City has, until recently, lagged the rate of population growth elsewhere and was reduced immediately post the 2010-2011 earthquakes. Public and private sector investment in the Central City over the last decade has seen increased popularity as a location. In the last two years population growth and new home completions have reached a decade high and there is a strong pipeline of new housing development projects currently in planning phases to meet current demand. There continues to be strong interest in the Central City from the development community and from potential buyers. It remains a priority growth area for the Christchurch City Council and continues to attract public investment activity.

Greater Christchurch will be affected by climate change and this will have an effect on future housing demand, as well as the current housing stock. While data has been collected and analysed regarding some impacts of climate change, such as coastal inundation and ground water flooding, further analysis is required to ascertain how the current housing stock will be affected and where new housing should be built. Research needs to be carried out to determine public perception of climate change impacts and how this will affect future housing demand in Greater Christchurch.

5.6 National and International Trends and Influencing Factors

It is useful to understand what other cities are experiencing in terms of housing demand, and whether similar findings might be applicable to Greater Christchurch, if not in the short term, but the longer term. There is a range of information regarding what other cities are doing in order to meet the growing population. Tension around development in Sydney and Melbourne show that this issue is not unique to New Zealand. There are several key points that relate to Greater Christchurch. A two part study in Melbourne and Sydney, carried out by the Grattan Institute illustrates that housing stock and housing demand do not meet. There is a large shortage of semi-detached homes and apartments in the middle and outer areas. In Sydney 7.4% would choose semi-detached, however only 2.8% are supplied. In the study, when people were asked to choose anything they want, then they chose a large detached house near the centre of the city, which is an unlikely outcome and it is acknowledged that there are trade-offs in real life (specifically price). In this study, closeness to work did not rank highly and people were more concerned with the number of bedrooms, garage and living space provided, and for families, the location of schools was important.

These national and international trends were reflected in an Auckland-wide housing demand survey in 2015. Auckland Council's Research and Evaluation Unit commissioned a study to investigate what is important to Auckland households when choosing a place to live and to explore the housing that residents would choose to live in, if it was available (Yeoman et al. 2016). This research provided an understanding of the demand of housing, in both, an unconstrained and income constrained context. The key findings indicate that the choice of housing types favoured medium and large sized dwellings, 61% and 26% respectively. While the largest group chose detached housing as their final choice (52%), the research shows that there is also a willingness to live in other housing types such as attached housing and apartments (48%). This is especially the case where it means that residents are able to live in the location of their choice. However, the Choice Modelling data indicates that residents were more likely to choose attached dwellings and apartments over stand-alone dwellings and were also willing to trade-off their preferred location when dwelling sizes were larger (as determined by the number of bedrooms). This means that, in general, people prefer larger dwellings. The report concludes that while there is a demand for more 'higher density' dwelling types in Auckland, there is clearly a mismatch between the current supply of dwelling typologies and the housing demand as per the survey. Data regarding the type and location of the housing stock in GC needs to be collected and

documented, so as to determine whether we might expect future housing demand to mirror what is being experienced in Auckland and Australia.

5.7 Migrant Demand

The expected net migration for Greater Christchurch is included in the Stats NZ projections, however the type of migrants has changed and this could influence future housing demand. Since the 2011 earthquakes, Greater Christchurch has seen a growth in migrants from South Asia, especially the Philippines and India. However, there has been a decrease in the number of migrants from Japan, the UK and Ireland. The growing origins of migrants lead to more diversity and more diversity within the housing market, e.g. some families require larger homes to accommodate their extended families. Additionally, the origin of foreign arrivals can affect the housing price. A 1,000 person increase in monthly European/UK arrivals raises real house prices by 8 percent after 2 years, whereas a 1000-person increase in monthly Asian arrivals raises real house prices by around 6 percent.

Housing plays a critical role in the social structure, as it provides a place for meetings, traditions, rituals, and other cultural expressions¹⁹. Māori and Pacific households often have culturally specific requirements and preferences in relation to dwelling design, which can influence their housing preferences, choices and trade-offs. New Zealand wide studies indicates that Pacific peoples often prefer to live in an extended family living situation, but it is also noted that this could be a strategy to cope with the high costs of accommodation²⁰. This tendency for extended family living arrangements should be taken into consideration as there will be a requirement for dwelling types that house a larger than average number of people.

Census data on ethnicity is shown in the table below. This shows that the majority of the area identifies as European at 74%, with the next two ethnicities identified as Asian (11%) and Maori (9%).

Total 3 TAs	2006	2013	2018
European	70%	77%	74%
Maori	7%	7%	9%
Pacific	2%	2%	3%
Asian	6%	7%	11%
Middle East / Latin	1%	1%	1%
Other	12%	2%	1%
Not Elsewhere Included	3%	4%	0%

¹⁹ Housing Choice and Preference: A review of Literature, Wildish Bianca, Auckland Council, 2015

²⁰ Housing Choice and Preference: A review of Literature, Wildish Bianca, Auckland Council, 2015

	2013			2018			Change 2013 to 2018		
	Owner Occ	Renters	HOR	Owner Occ	Renters	HOR	Owner Occ	Renters	HOR
Waimakariri District									
Māori	1,095	561	66%	1,644	705	70%	549	144	4%
Pasifika	93	36	72%	165	81	67%	72	45	-5%
Asian	237	87	73%	456	204	69%	219	117	-4%
NZ European & Other	12,783	2,781	82%	15,132	3,144	83%	2,349	363	1%
Total	14,208	3,465	80%	17,397	4,134	81%	3,189	669	1%
Christchurch City									
Māori	5,802	7,359	44%	7,731	8,949	46%	1,929	1,590	2%
Pasifika	999	1,617	38%	1,392	2,085	40%	393	468	2%
Asian	5,895	4,446	57%	9,474	8,400	53%	3,579	3,954	-4%
NZ European & Other	66,075	29,016	69%	67,836	28,767	70%	1,761	-249	1%
Total	78,768	42,438	65%	86,433	48,201	64%	7,665	5,763	-1%
Selwyn District									
Māori	831	426	66%	1,488	666	69%	657	240	3%
Pasifika	75	48	61%	162	93	64%	87	45	3%
Asian	285	201	59%	882	444	67%	597	243	8%
NZ European & Other	10,128	2,415	81%	13,476	2,835	83%	3,348	420	2%
Total	11,319	3,090	79%	16,008	4,038	80%	4,689	948	1%

Source: Statistics New Zealand

Table 31: Households by tenure by ethnicity.

The rates of owner occupation by ethnicity is higher in Waimakariri and Selwyn when compared to Christchurch City. Households with people of New Zealander / European descent have higher rates of owner occupation than households of other ethnicities. Other key trends include between 2013 and 2018:

- The number of owner occupiers and renter households by ethnicity increased in all three authority areas with the exception of renter households of New Zealander / European descent living in Christchurch City;
- The number of owner occupier households of New Zealander / European descent living in Selwyn and Waimakariri Districts increased faster than those living in Christchurch City (+2,349 households in Waimakariri and +3,348 households in Selwyn compared to +1,761 households in Christchurch City);
- Rate of owner occupation increased for households of Māori and New Zealander / European descent across all three local authority areas;
- Rates of owner occupation for households with people of Pasifika descent increased in Christchurch City and Selwyn district but declined in Waimakariri District; and
- Rates of owner occupation for households of Asian descent fell in Waimakariri District and Christchurch City but increased in Selwyn District.

5.8 Household Crowding

The size of households is an important driver to consider as residents will buy or rent dwellings based on the number of bedrooms provided. If appropriate housing is not supplied by the market, crowding occurs. The Canadian National Occupancy Standard (CNOS), used by the New Zealand Government as a core housing indicator, was developed by the Canada Mortgage and Housing Corporation to determine the number of bedrooms a dwelling should have to provide freedom from crowding. The CNOS is based on the number, age, sex and interrelationships of household members. The CNOS states that:

- No more than two people shall share a bedroom
- Parents or couples may share a bedroom
- Children under 5 years, either of the same sex or opposite sex may share a bedroom
- Children under 18 years of the same sex may share a bedroom
- A child aged 5 to 17 years should not share a bedroom with a child under 5 of the opposite sex

- Single adults 18 years and over and any unpaired children require a separate bedroom²¹

Christchurch City had the highest relative level of crowding with 9% of renter households crowded. Selwyn has relatively low levels of crowding compared to other urban areas. Although the relative level of crowding is low, crowded households still have significant levels of housing need.

	Owner Occupiers		Renters		Total households	
	Dwellings	% of total	Dwellings	% of total	Dwellings	% of total
Waimakariri District						
1 bedroom needed (crowded)	210	1%	135	4%	345	2%
2 + <u>bdrms</u> needed (severely crowded)	39	0%	18	1%	57	0%
Total - crowded	249	1%	153	5%	402	2%
Total - No extra bedrooms required	1,776	10%	906	30%	2,682	13%
1 bedroom spare	5,115	30%	1,131	37%	6,246	31%
2 or more bedrooms spare	10,038	58%	873	29%	10,911	54%
Total not crowded	16,929	99%	2,910	95%	19,839	98%
Total stated	17,178	100%	3,063	100%	20,241	100%
Christchurch City						
1 bedroom needed (crowded)	1,470	2%	2,421	7%	3,891	3%
2 + <u>bdrms</u> needed (severely crowded)	345	0%	699	2%	1,044	1%
Total - crowded	1,815	2%	3,120	9%	4,935	4%
Total - No extra bedrooms required	11,031	13%	12,663	35%	23,694	19%
1 bedroom spare	30,681	36%	14,136	39%	44,817	37%
2 or more bedrooms spare	42,267	49%	6,228	17%	48,495	40%
Total not crowded	83,979	98%	33,027	91%	117,006	96%
Total stated	85,794	100%	36,147	100%	121,941	100%
Selwyn District						
1 bedroom needed (crowded)	147	1%	144	4%	291	2%
2 + <u>bdrms</u> needed (severely crowded)	42	0%	24	1%	66	0%
Total - crowded	189	1%	168	5%	357	2%
Total - No extra bedrooms required	1,242	9%	717	22%	1,959	12%
1 bedroom spare	3,882	29%	1,254	38%	5,136	30%
2 or more bedrooms spare	8,304	61%	1,152	35%	9,456	56%
Total not crowded	13,428	99%	3,123	95%	16,551	98%
Total stated	13,617	100%	3,291	100%	16,908	100%

Table 32: Crowding and Underutilisation

²¹ Statistics New Zealand, http://archive.stats.govt.nz/tools_and_services/nzdotstat/tables-by-subject/housing-quality-tables/crowding-occupancy-rate.aspx, 2018

5.9 Demand for Visitor Accommodation

The NPS-UDC Guide on evidence and monitoring identifies key sources of information that provide a proxy for analysing whether visitor demand is numerically and proportionally significant. This is done by comparing the 3 TAs to the national average. These are census counts of dwellings and households and the proportion of dwellings unoccupied on census night. The tables below outline the ratio of dwellings for every household and the percentage of households unoccupied on Census night. The tables shows that the three TAs are under the New Zealand average and therefore visitor demand is consistent with national averages and therefore not numerically and proportionally significant to require an increase in the household projection.

Table 33: Ratio of 2018 census count of dwellings and households			
Area	Ratio	Dwellings	Households
New Zealand	1.14	1,886,517	1,653,792
3 TAs	1.11	201,480	181,038
Queenstown-Lakes	1.55	20,403	13,176

Table 34: Percentage of dwellings unoccupied on 2018 census night	
Area	Percentage
New Zealand	11%
3 TAs	8%
Queenstown-Lakes	29%

6. Housing Development Capacity

Housing capacity is assessed broadly using the following approach: First, the *plan-enabled* capacity is estimated and then adjusted to what is infrastructure ready. This capacity is further modified to what is *reasonably expected to be realised* based on observed patterns of development. The final step is to assess what of the plan-enabled capacity is feasible for development based on a number of general assumptions around development costs and opportunities.

Plan-enabled capacity estimates the maximum that could be built within the allowances of the district plan. For this estimate it is assumed that current dwellings and structures are removed and replaced by new dwellings that maximise the potential of the relevant zone. The *infrastructure ready* assessment removes capacity that cannot be serviced by the wider network, e.g. a wastewater system that can service only a limited number of additional houses and is not currently being considered for upgrading. These considerations are generally broader network issues rather than related to connections to main trunk network.

'Reasonably expected to be realised' (herewith referred to as "expected"), modifies the plan-enabled capacity by applying historic land development or take-up rates (i.e. household per hectare averages). As this assessment is based on what development is actually occurring, it provides a higher degree of certainty (relative to plan-enabled) for residential density yield once a site, block and neighbourhood is fully redeveloped or developed.

The feasibility assessment assesses the commercial viability of development capacity by modelling developer costs, opportunities and potential sales prices. This approach can potentially identify those areas where the plan-enabled/expected capacity overstates the development potential. Conversely it may also identify development opportunities that produce higher dwelling yields than estimated by the expected assessment (i.e. there is the potential for higher density than has historically been the case). Lastly, feasibility can be checked against the take-up rates that inform the expected calculation. This can show that development is occurring in areas that are not modelled as commercially feasible for development but may in reality be built. Reasons being, a developer may have costs lower than the modelled costs, a developer has different profit goals, or the sales price of developed land and dwellings is higher than anticipated. This is consistent with NPS-UD 3.26.

Further details on the methodology, caveats and contextual considerations is provided in Appendix 3.

6.1 Plan-Enabled Capacity

This section discusses and tabulates the yield based on the underlying District Plan zoning and associated rules. Capacity is determined from an assessment of both vacant and built land, incorporating redevelopment (intensification) and greenfield development potential. Plan-enabled is outlined in the NPS-UD (in section 3.4) as:

Timeframe	Includes
Short	Land that is zoned (either permitted, controlled, or restricted discretionary) in an Operative District Plan.
Medium	Land that is zoned (either permitted, controlled, or restricted discretionary) in an Operative or Proposed District Plan.
Long	Land that is zoned (either permitted, controlled, or restricted discretionary) in an Operative or Proposed District Plan or land identified as Future Urban in an FDS.

The approaches for each district are slightly different as they have different areas of emphasis. While the approach to the greenfield capacity assessment is consistent across the three districts, the approach to assessing additional capacity within the existing urban areas reflects the emphasis placed upon intensification and the capacity for intensification within each district. Christchurch City and Waimakariri townships having a greater redevelopment potential compared to the 'new towns' within Selwyn.

Capacity from suburban infill in Christchurch City (i.e. subdividing the vacant rear part of an existing allotment) is limited, with most plan-enabled permitted development opportunities having already been taken-up. Infill is still however possible outside of permitted development where a resource consent may be needed. The majority of intensification opportunities in Christchurch are through the comprehensive site or multiple site redevelopment approach. For Selwyn and Waimakariri, capacity is focused more on greenfield uptake and backfill capacity in suburban zones, with less focus on comprehensive site redevelopment. This is due to a combination of a number of factors including market forces, the age of existing housing stock (i.e. more recent development), past patterns of development, and the size and form of the townships.

6.1.1 Christchurch City Council

Analysis of plan-enabled (theoretical) and expected capacity was undertaken at an urban block level, where attributes were assessed for the:

- current level of housing development,
- average density of the block,
- potential minimum and maximum 'plan enabled' density, and the
- anticipated density based on recent patterns of development.

A range of outputs were generated from this analysis to compare the difference between the current density of the block compared to the various measure of potential density of the block, i.e. the anticipated net gain in housing should development occur. Other determinants of capacity were as follows:

- Land zoned *Residential Guest Accommodation* was excluded as it is anticipated that this is used for hotels and not housing.
- Land within the *Accommodation and Community Facilities Overlay* was excluded as currently it is used and encouraged for accommodation (which could provide around 600 additional households).
- Land within the High Flood Hazard area was excluded as the District Plan seeks to avoid development within these areas due to the flood risk.
- *Commercial Zones (outside the Central City)*: The Commercial Core, Commercial Local, Commercial Banks Peninsula, and Commercial Mixed Use Zones all permit residential activity located either above or at the rear of a development site. Since the earthquakes, more residential units located within commercial areas have been removed than have been built. So while there is potential capacity within these areas, the recent evidence suggests it is not occurring and, therefore, is not included within this capacity assessment.
- *Commercial Central City*: While areas such as the 'Frame' and the Central City Mixed Use Zone have been included in the assessment, the potential within the Commercial Central City Business Zone, which permits housing above the ground floor, requires more work to determine its potential capacity. Therefore this land is currently excluded until more work is undertaken on potential capacity.
- *Papakāinga/Kāinga Nohoanga Zone* allows contiguous Māori land (identified through Te Ture Whenua Maori Act 1993) to be treated as one site and has no site density controls. This provides potential for a wide variation in density. More work needs to be done to determine the potential capacity and the extent of recent take-up within this zone and therefore, this land is currently excluded from the capacity assessment.
- *Non-residential activities in residential zones*: Currently 2.7% of residential sites are occupied by non-residential activities, including halls, education and community facilities. This adjusts the theoretical capacity by 2%.
- *Residential Medium Density (RMD) Zone*: The theoretical capacity applied is based on modelling of the zone standards. The modelling shows that a density of 120hh/ha is possible where the development potential of the site is maximised. Recognising that that it is unlikely to always be possible to maximise development outcomes this has been reduced to 100hh/ha. Analysis of recent development activity shows that a more typical density outcome is in the 60 to 90 hh/ha range, where a multi-unit modest sized townhouse development approach used, typically on a single land parcel. The majority of developments in the RMD zone are of this type. Developments achieving higher densities have been completed and these are typically associated with larger development sites.

- *Residential Central City Zone*: This provides for high density housing, with a higher height limit than the RMD zone, resulting in a theoretical potential yield in well in excess of 100hh/ha. Historically, developers have not generally taken full advantage of the enabled height limit but has instead limited development to two and three stories townhouse typologies. There are however examples of multi-storey apartment buildings that achieve densities of over 200hh/ha. Townhouse development with dedicated on site car parking are commonly achieving 60 to 80hh/ha. Townhouse development with no on-site parking (which are becoming more common) are often exceeding densities of 150hh/ha.
- *Commercial Mixed Use Zone*: This zone enables residential activity. There are a number of recent (since 2018) examples of development in the zone. Typically development outcomes are similar to those of the Residential Central City zone, achieving in excess of 100hh/ha in a number of development examples.
- *Residential Suburban Density Transition Zone*: This zone has been operative since the 2016 District Plan review enabling development of multi-unit housing in addition to single detached dwellings. At the time of the 2018 Capacity Assessment there were few examples of multi-unit developments that had taken advantage of the new plan provisions. However, this is now a common development outcome in the zone, with development typologies similar to those for the RMD zone, namely two storey terrace and duplex townhouses. Density outcomes are usually fall in the 60 to 80hh/ha range.
- *Minor Residential Units, Retirement Villages within all Residential Zones*: Within the Christchurch District Plan minor residential units are permitted activities within the Residential Suburban Zone. This allows for small, independent units to be built on sites greater than 450m². As such for all Residential Suburban zoned sites greater than 450m² there is capacity for an additional unit. The provision for Minor Residential Units is new in the District Plan, the previously provisions were limited to family flats and therefore not directly comparable. Consequently it is not possible to accurately make an assessment of the likely update of Minor Residential Units in the Christchurch City reasonably expected to be realised capacity.
- *Retirement villages* are permitted activities throughout the Residential Suburban Zone and could also increase the total theoretical capacity, however more detailed analysis work is required to understand and identify future potential retirement village locations and significance on capacity. Therefore, retirement villages are currently excluded from the capacity assessment density calculation.
- *Enhanced Development Mechanism (EDM)*: The EDM allows for comprehensive development if it meets certain criteria. This again could provide for greater housing densities and overall capacity; however likely development or uptake is limited and similar density outcomes can be achieved within the rules of the zones where the EDM applies. This additional potential yield has therefore been excluded from the capacity calculation.

6.1.2 Selwyn and Waimakariri District Council

Within Selwyn and Waimakariri districts, zoned land is identified by township and the various Living or Residential zones contained within them. This also includes the Rural-Residential zoned land enabled through Councils' adopted Rural Residential Strategies and Policy 6.3.9 of the CRPS - Selwyn's Living 3 (Rural Residential) or Waimakariri's Residential 4a and 4b zones. This evaluation excludes rural zones and Existing Development Areas/Small Settlements under both district plans that are historic lifestyle living/residential zones which are in most cases located within the rural environment in isolation of townships. The two Special Housing Accord Areas in Selwyn are included as plan enabled capacity, which include the South Faringdon and Acland Park development areas²².

Housing supply for Selwyn and Waimakariri has been reported from the Selwyn Capacity for Growth Model (SCGM) and Waimakariri Capacity for Growth Model (WCGM), both models having been prepared by Market Economics Limited. These two models assess capacity at a site specific level. This estimates housing supply at a site-specific level by combining geospatial data with District Plan subdivision density standards, permitted activity bulk and location rules and accounting for 'vacant' (where there are no consented buildings on the site) and 'vacant potential' (where potential exists to subdivide based on the subdivision standards) land to determine the theoretical capacity of each property²³.

²² Uptake monitoring data on the Rolleston Special Housing Areas is available on Selwyn District Council's Website - <http://www.selwyn.govt.nz/services/planning/special-housing-areas/selwyn-district-council-monitoring-report>

²³ Refer to the SCGM and WCGM Technical Reports respectively and note that the Theoretical capacity is defined as 'Theoretical Plan Enabled Capacity' in the Growth Models

For both the SCGM and WCGM the following assumptions have been applied:

- 'Undevelopable' lots have been removed, including roads and railways, hydrological features, vested roads and reserves and designated sites;
- Dwelling typology is assumed to be what the District Plans enable;
- Estimates are rounded down to the nearest whole number;
- Amalgamation of parcels is not accounted for;
- Intensification is only assumed where the zone density rules enable five or more dwellings to be accommodated on the parcel;
- That 25% of land area is set aside for infrastructure;
- That no commercial buildings will be constructed in residential zones²⁴.

This parcel specific information has been aggregated up to the TA level for reporting capacity. New urban housing development (FUDA) areas have been included in the medium term for Rolleston (additional capacity of 5,756 at 12.5hh/ha and 7,050 at 15hh/ha), Rangiora and Kaiapoi (combined at 12hh/ha is 5,400 and at 15hh/ha is 6,850).

Table 36: Plan enabled urban capacity			
Urban Capacity	Short 2021 - 2024	Medium 2021 - 2031	Long 2021 - 2051
Waimakariri	2,273	2,273	12,192
Christchurch	205,178	205,178	205,178
Selwyn	11,234	13,108	18,864
Total 3 TAs	218,685	220,559	236,234

Table 37: Plan enabled rural capacity			
Rural Capacity	Short 2021 - 2024	Medium 2021 - 2031	Long 2021 - 2051
Waimakariri	23,346	23,346	24,325
Christchurch	8,249	8,249	8,249
Selwyn	10,927	11,028	11,028
Total 3 TAs	42,522	42,623	43,602

²⁴ Home office/small business can cohabitate within residential dwellings

6.2 Plan-Enabled and Infrastructure Ready

This section summarises the actual and likely availability of development infrastructure and other infrastructure in the short, medium and long term, as required under Policy 3.4 of the NPS-UD. This is whether there is water supply, wastewater, stormwater and land transport infrastructure available to support the development of residential land. Infrastructure ready (as outlined in 3.4) means the following:

Timeframe	Includes
Short	Adequate existing development infrastructure is available.
Medium	Adequate existing development infrastructure is available or funded through the LTP.
Long	Adequate existing development infrastructure is available or funded through the LTP or the Infrastructure Strategy.

The infrastructure assessment considers whether any area currently zoned for residential activity over any timeframe faces a specified constraint on development. The explicit capacity of development infrastructure is difficult to do as infrastructure models are designed to meet household projections. The approach to identifying the availability of infrastructure was to determine any areas where a lack of development infrastructure or other infrastructure would impede or prohibit the potential development of a site or sites for housing. Areas that require additional development costs, such as on-site stormwater storage capacity, were identified but not excluded from the capacity as these do not impede development directly (but do add costs). These additional costs of development will be quantified, and the impacts considered, within the housing feasibility assessment.

Generally, no zoned land is significantly impeded in such a way that would make development or intensification impossible. This is principally because land identified within the CRPS required infrastructure and therefore was programmed for servicing. Also, there are no identified infrastructure constraints for the balance of the Living/Residential Zones that would preclude intensification to the densities prescribed in either the Selwyn or Waimakariri District Plan.

6.2.1 Christchurch

The assessment of infrastructure capacity for wastewater and stormwater networks, is different for intensification areas than greenfield. For greenfield areas, new infrastructure is appropriately sized and designed to service the planned scale of the new neighbourhoods. In the case of intensification (redevelopment) areas, the explicit capacity of development infrastructure is more complex to assess. Infrastructure models to date, have been based upon the application of household projections to catchments, rather than the modelling of theoretical or 'reasonably expected to be realised' household capacity. More detailed modelling will need to be undertaken to identify whether there are capacity issues to service all plan-enabled and expected capacity. In the interim, the infrastructure assessment has focused on identifying those locational areas where there is a lack of development infrastructure or feasible infrastructure solution, resulting in restrictions on connections to the Council's network, and/or obtaining of a building consent.

Wastewater - Except for a few locations, generally no zoned land is impeded in such a way that would make development impossible in the short to medium term. There are some 'spot' locations and/or sites that require alternative solutions for connections, however this is an impact on development costs (and so feasibility), not strictly land development capability. Alternative solutions (local pressure sewer system to attenuate waste water in wet weather) enable development without exacerbating overflow issues and further compromising Council's ability to meet is consented overflow conditions.

Greenfield areas known as Highfield (1000 potential homes) and East Papanui (approximately 400 potential homes) require either the planned upgrades to be completed by Council or alternatively developer led. For the purpose of this assessment, these areas have been deemed infrastructure ready in the medium term.

Parts of Shirley and Aranui are within a vacuum sewer catchment, where there is no additional capacity for new sewer connections until a solution is developed. It is not known at this stage what the number of potential new houses are restricted until further modelling is undertaken. However for the purpose of recording a number 600 have been estimated as constrained in the long term as neither a programme of work, nor any planned investment has been committed under the Long Term Plan, nor Infrastructure Strategy. This reduces the plan-enabled capacity by a total of 1000 households.

Water Supply - There are no water supply constraints to development within the Christchurch area, as all required major upgrades have either been undertaken in recent years or are planned to be undertaken within the next ten years in the 2021-2031 LTP. Over the next ten years a key focus for the water supply asset will involve over \$200 million investment in the improvement and maintenance of the reticulation network, to reduce leakages and improve the long term sustainability of the water supply.

Stormwater - Stormwater treatment facilities and waterway enhancement programmes will involve retrofitting existing and creating new facilities within the Avon, Styx and Heathcote catchments. Throughout Christchurch, stormwater capacity is not identified as a significant restraint to residential development, as most sites have the ability to mitigate effects on site. Land development is therefore not precluded, rather for certain sites there will be an increased development cost associated with providing on-site mitigation infrastructure. Areas that require additional development costs, such as on-site stormwater storage capacity, were identified but not excluded from the capacity as these do not impede development directly (but do add costs).

Facilities and open space - Council's facilities include libraries, sports and recreation centres, pools, stadia, camping grounds, art gallery and museum, community centres, bus exchange and corporate accommodation. There has been extensive rebuilding and repairs of facilities post-earthquakes, resulting overall in a modern network of well-designed buildings able to cater for optimal usage and meet citizens expectations. Council's investment over the next ten years will be to complete the Te Pou Toetoe (Linwood) indoor swimming pool and community spaces; the metro Sports Facility; Hornby library, customer services and rec and sport centre; and the Canterbury Multi-Use Area. These together with the existing network will adequately support a growing population well into the future. In respect to parks and open space, there exists an extensive network of parks asset sites and facilities across the city. Network plans are being developed to guide Council's further investment and importantly the prioritisation of new developments and upgrades to meet community needs equitably and within available resources.

Transport - Throughout Christchurch, all existing and planned urban areas have access to core transport links, corridors and public transport. Identified areas of future growth (RNN) have led to upgrades to transport links to be programmed. These upgrades include Cashmere Rd, Lincoln Rd and Whiteleigh Ave, public transport and cycleway improvements. Areas of intensification around the city are supported through various transport programmes, notably improvements to the public transport and cycling network, which become more viable through intensification. However, growth is also likely to lead to reductions in the level of service and capacity on the transport network, which will result in increasing delays and congestion. Over the next 10 years Council is investing \$551.8 million in upgrading roads, footpaths and road infrastructure, and a further \$746 million on operational costs.

6.2.2 Selwyn

Wastewater - The East Selwyn Sewer Scheme has capacity, with additional upgrades planned and undertaken when population thresholds are met or where developers need to extend sewer mains and install lateral connections at the time of subdivision. Further, master planning and supporting Development Contribution policies are in place in the 2015-25 LTP.

Water Supply - Generally, bulk water infrastructure is planned and will be constructed as required, with developers needing to extend water mains and install lateral connections to the primary network at the time of subdivision. Further, master planning and supporting Development Contribution policies in place in the 2015-25 LTP. Some development areas in Lincoln, Rolleston, and Prebbleton require water supply and utility upgrades, which are programmed for upgrades by 2028. Developers have an option to progress these upgrades privately within a shorter timeframe in response to the timing and sequencing of development.

Stormwater - Generally, stormwater capacity is available or possible for all sites that have been zoned for development with an Integrated Stormwater Management System established in Lincoln.

Transport - Urban areas have access to transport links, including the Main Trunk and Midland Lines and State Highway 1, 73 and 75. The Southern Motorway extension and Four-Laning of State Highway 1 to Rolleston has recently been completed. Future growth is enabled through progressive upgrades to transport links, which have been either undertaken or are programmed to ensure there is sufficient capacity within the strategic transport network to accommodate growth needs over time.

6.2.3 Waimakariri

Wastewater - Generally, there is wastewater capacity across the urban areas. Several rural-residential areas require upgrade and ongoing work to increase capacity is either underway or programmed for works.

Water Supply - Generally, there is water supply capacity. Several rural-residential areas require upgrade and ongoing work to increase capacity is either underway or programmed for works.

Stormwater - Generally, there are no stormwater constraints. Areas, such as East Rangiora and Ravenswood will require Stormwater Management Plans for development.

Transport - Generally, throughout Waimakariri, urban areas have access to transport links, including the Main Trunk (State Highway 1 and 71). The Northern and Western Corridor improvements were recently completed. Identified areas of future growth are aligned to upgrades to transport links, which have been either undertaken or programmed to integrate development in the strategic transport network.

6.3 Other infrastructure

Policy 10 of the NPS-UD states that councils should also engage providers of development infrastructure and additional infrastructure to achieve integrated land use and infrastructure planning. Additional infrastructure covers other providers that met a broader need, it is defined as:

- public open space;
- community infrastructure (as defined in section 197 of the Local Government Act 2002);
- land transport (as defined in the Land Transport Management Act 2003) that is not controlled by local authorities;
- social infrastructure, such as schools and healthcare facilities;
- a network operated for the purpose of telecommunications (as defined in section 5 of the Telecommunications Act 2001); and
- a network operated for the purpose of transmitting or distributing electricity or gas.

Government departments who provide development and additional infrastructure include:

- Kāinga Ora Homes and Communities as providers of public housing and partners with the development community, Māori, local and central government on urban development projects.
- Department of Conservation as providers of large public open space;
- Ministry of Social Development as providers of social infrastructure;
- Waka Kotahi as providers of land transport;
- Ministry of Education as providers of schools;
- Ministry of Health as providers of healthcare.

As part of the next steps (Phase 2) to the HCA the other infrastructure providers will be engaged to identify whether there are any constraints to the long term development capacity. Government departments will be involved with the development of the Greater Christchurch Spatial Plan (next Future Development Strategy) and it is through this process that any capacity issues and opportunities regarding housing, social, health and transport infrastructure will be identified, further assessments undertaken, and required responses agreed.

6.4 Reasonably Expected to be Realised

This section outlines what is reasonably expected to be realised or 'expected capacity'. This follows the process outlined in 3.26 (2) (c) where the information regarding past developments trends modifies the plan-enabled capacity by changing the densities and scale of potential development. This capacity is then tested as to whether it is feasible. The total theoretical capacity within Greater Christchurch is 213,427 dwellings and reasonably expected to be realised capacity is 84,539 dwellings, being a difference of some 128,888 households. This is largely due to the difference in theoretical and modified density counts for Christchurch and the spatial analysis for Selwyn and Waimakariri.

In Christchurch, the largest difference between plan-enabled and expected capacity, results within the Residential Medium Density (RMD), Residential Central City (RCC), Residential Suburban Density Transition (RSDT) and Residential Suburban (RS) zones. What is plan-enabled is significantly more than the densities that have historically and, until relatively recently, are being achieved (built). However, the trend is towards an increasing density through redevelopment, particularly within the RMD and RSDT zones. For the RMD zone a study of the Riccarton area has shown a progressive increase in density over time. For the RSDT zone there is an increasing utilisation of the multi-unit provisions introduced through the District Plan Review (refer Decision 10, July 2016), leading to site and block densities much closer to the RMD zone.

Table 40: Christchurch residential density assumptions			
Zone / Overlay	Theoretical (hh/ha)	Modified (hh/ha)	Reason
Zones			
Residential Suburban	25	15.9	Theoretical - 400m ² minimum lot size – DPR 14.4.1.3 RD1
Residential Suburban Density Transition	70	50	Theoretical - Potential from RSDT and RMD modelling. Theoretical increased to 70hh/ha recognising the potential for multi-unit development enabled in the zone. Modified – observation of recent (last two years) of multi-unit development activity in the zone.
Residential Medium Density	100	60	Theoretical - Potential from RSDT and RMD modelling Modified - Potential from Riccarton evidence (discussed above) and revised upwards based on observations of recent development activity more widely across the zone.
Residential New Neighbourhood	15	15	Theoretical and Modified - Residential Policy – 14.2.1.1 a. iv.
Residential Central City	150	100	Theoretical - 200m ² minimum lot size – DPR 14.6.2.11, however comprehensive development possible. Modified – observations of recent development activity, noting that there is a wide range in density outcomes driven by typology and whether on-site parking is provided. All observed development typologies are achieving high density outcomes.
Residential Hills	17	9.6	Theoretical - 585m ² minimum lot size – DPR 14.7.1.3 RD1
Residential Large Lot	7	2.8	Theoretical - 1350m ² minimum lot size – DPR 14.9.1.3 RD2
Residential Banks Peninsula	25	11.9	Theoretical - 400m ² minimum lot size – DPR 14.8.2.1 a. i.
Residential Small Settlement	10	6.6	Theoretical - 1000m ² minimum lot size – DPR 14.10.2.1 a. i.

Overlays			
Community Housing Redevelopment Mechanism	65	40	Overlay allows up to 65 hh/ha in RS zone. Modified is based on density achieved by Kāinga Ora redevelopment projects (conservative estimate – higher densities have been achieved in some instances).
East Frame	900 households	900 households	Based on consent data for housing units and the master plan
RS - Existing Rural Hamlet Overlay	5	5.7	2000m ² minimum lot size – DPR 14.4.3.2.1 b. ii.
RS - Peat Ground Condition Constraint	5	5.1	2000m ² minimum lot size – DPR 14.4.3.2.1 b. ii.
RS - Stormwater Capacity Constraint Overlay	52 households	52 households	Existing allotments at June 1995 – DPR 14.4.3.2.1 b. ii.
RMD - Medium Density (Higher Height Limit and Individual Site Density) Overlay	100	60	Theoretical - Potential from RSDT and RMD modelling Modified – As per RMD, adjusted for height limit
RMD - Residential Medium Density Lower Height Limit Overlay	100	60	Theoretical - Potential from RSDT and RMD modelling Modified – As per RMD, adjusted for height limit
RH - Residential Hills Density Overlay	13	3.7	Theoretical - 765m ² minimum lot size – DPR 14.7.1.3 RD1
RH - Residential Mixed Density Overlay – 86 Bridle Path Rd	9 households	9 households	Stated households – DPR 14.7.2.1 a. iv.
RH - Residential Mixed Density Overlay – Redmund Spur	400 households	400 households	Stated households – DPR 14.7.2.1 a. iii.
RLL - Residential Large Lot Density Overlay	3	1.9	Theoretical - 2700m ² minimum lot size – DPR 14.9.1.3 RD2
RLL - Residential Large Lot Density Overlay Allandale	24 households	24 households	Lots identified on ODP – 8.10.13
RLL - Residential Large Lot Density Overlay Samarang Bay	8 households	8 households	Lots identified on ODP – 8.10.12
RBP - Diamond Harbour Density Overlay	16	7.4	Theoretical - 600m ² minimum lot size – DPR 14.8.2.1 a. ii.
RSS - Kāinga Overlay 1 and 2	22	8.2	Theoretical - 450m ² minimum lot size – DPR 14.10.2.1 a. v.

Selwyn - The Selwyn growth model utilises parcel based information to determine the modified or reasonably expected to be realised capacity. This adjusts the plan-enabled capacity in recognition that the market rarely provides for housing to the densities and typologies enabled by District Plan subdivision standards and land use rules. It also accounts for the reality that there will be a range of lot sizes as a consequence of natural features, demand profiles and infrastructure needs.

The reasonably expected to be realised capacity is an estimate of the contemporary level of development that is being produced by the market within sample areas using spatial data to determine the extent to which the realised subdivision density is consistent with the underlying zones. The reasonably expected to be realised capacity outputs have been aggregated up to the TA level for the purposes of reporting. Key assumptions within the growth model are briefly summarised as follows:

Table 41: Selwyn residential density assumptions	
Assumption	Broadly
Infrastructure	25%
Living Z Sites Sizes	Minimum = 500m ² Modified = 630m ² Rolleston, 680m ² Lincoln, 713m ² Prebbleton,
Living 1 Site Sizes	Minimum = 650m ² Modified = 765m ² Rolleston, 780m ² Lincoln, 960m ² Prebbleton, 1,000m ² West Melton and other townships
Living 2 and 3 Site Sizes	Minimum = 5,000m ² Modified = 5,000m ²

Waimakariri - Similarly to Selwyn, the Waimakariri growth model utilises parcel based information to determine the modified or reasonably expected to be realised capacity. This adjusts the plan-enabled capacity in recognition that the market rarely provides for housing to the densities and typologies enabled by District Plan subdivision standards and land use rules. The reasonably expected to be realised capacity is an estimate of the contemporary level of development that is being produced by the market within sample areas using spatial data to determine the extent to which the realised subdivision density is consistent with the underlying zones. The reasonably expected to be realised capacity outputs have been aggregated up to the TA level for the purposes of reporting.

Table 42: Waimakariri residential density assumptions				
Township	Zone	Min lot size (m ²)	Modified Lot Size (m ²)	Infrastructure %
Rangiora	Residential 2	600	800	25%
Kaiapoi	Residential 2	600	800	25%
	Residential 7a	150	300	25%
	Residential 7b	300	400	25%
	Residential 7c	500	600	25%
Woodend / Ravenswood / Pegasus	Residential 2	600	800	25%
	Residential 6	400	700	25%
	Residential 6a	138	400	25%
Oxford	Residential 2	600	800	25%
Mandeville	Residential 4a	5000	10000	25%
	Residential 4b	10000	15000	25%
Ohoka	Residential 4a	5000	10000	25%
	Residential 4b	10000	15000	25%
Small Settlements	Residential 3	600	1500	25%

Table 43: Reasonably expected to be realised urban capacity

Urban Capacity	Short 2021 - 2024	Medium 2021 - 2031	Long 2021 - 2051
Waimakariri	2,273	2,273	12,192
Christchurch	82,452	82,452	82,452
Selwyn	14,154	16,129	21,885
Total 3 TAs	98,879	100,854	116,529

Table 44: Reasonably expected to be realised rural capacity

Rural Capacity	Short 2021 - 2024	Medium 2021 - 2031	Long 2021 - 2051
Waimakariri	23,346	23,346	24,325
Christchurch	2,087	2,087	2,087
Selwyn	9,576	9,677	9,677
Total 3 TAs	35,009	35,110	36,089

6.5 Feasible Capacity

The feasible calculation is based on the previously developed MBIE/MfE Feasibility Tool. Feasibility is in two stages, land development and build development. Feasible is defined in the NPS-UD as the following:

Table 45: NPS-UD Feasibility Implications within Timeframes

Timeframe	Includes
Short	Commercially viable to a developer based on the current relationship between costs and revenue.
Medium	Commercially viable to a developer based on the current relationship between costs and revenue.
Long	Commercially viable to a developer based on the current relationship between costs and revenue, or any reasonable adjustment to that relationship.

The approach to modelling commercial feasibility is based on a number of assumptions that can be altered to produce different results.

The Land Development Model uses the MBIE/MfE Feasibility Tool as its base. This outlines a range of costs to be considered in calculating the commercial viability of a development of land to a subdivided section. This calculation determines whether the section sales price is sufficient to cover the cost of development. Costs were undertaken by Harrison Grierson on behalf of the partnership and these are outlined in the supporting documents. Land values and sales prices were sourced from QV and developers. Land Development was applied to greenfields within the district that are undeveloped, with the assumption that greenfield currently underway are feasible. The value of each land holding within a typical greenfield can vary dependent on the size of the lot and the proximity to existing urbanised areas. A standardised land value (at square metre) for each greenfield is generally not consistent across the various land parcels in each greenfield. For example, a

land parcel with an existing house is generally worth more per square metre than a land parcel without a dwelling. Smaller land parcels also trend towards a higher square metre value than larger land parcels. The Build Development Model uses the MBIE/MfE Feasibility Tool as its base. This outlines a range of costs involved in building to be considered in calculating the commercial viability of building a dwelling on a section. The calculation determines whether the dwelling price is sufficient to cover the costs of development. Costs were provided by WTP on behalf of the partnership and these are outlined in the supporting documents. Capital values, last sales and zoning provisions from the councils and sale price information from QV. Redevelopment sites are the existing cadastral boundaries of sites within the residential zoned areas. The Build Development Model did not include an assessment of land development costs. All development sites were considered to be acceptable to develop for housing without the need for land development work (e.g. sites are serviced for infrastructure and do not require earthworks for stormwater attenuation), although site preparation work is assumed to be required (e.g. removal of existing dwellings and other structures, site clean-up).

Financial Data from Stats NZ²⁵ helps show income and expenditure and profit from land development and subdivision and house construction. In 2019, the average profit in land development was 23%, whereas for house construction it was 6.6%. These percentages have been used in the feasibility assessments.

6.5.1 Christchurch Feasibility Assessment

The MfE Feasibility Tool was used as the basis for assessing both redevelopment and new greenfield capacity. Land value (or purchase cost) remains a key determinate of the feasibility for greenfield development. Two approaches were taken; the first of these was to assume the rated Capital Value was a proxy for the land value. The second approach was to apply a land value calculated from examining the pattern of historic subdivision in one example greenfield area (this being the South Halswell Outline Development Plan Area – refer to Christchurch District Plan, Chapter 8 Appendix 8.10.20). The land value was then adjusted to account for the proportion of the parcel occupied by an existing dwelling and/or ancillary buildings.

The improvement value component was subtracted from the capital value of the land parcel as a whole and assigned to a smaller section encompassing the improvement. The capital value of the remainder of the land parcel then better reflected the actual land cost to developers (essentially the improvement value component of the purchase could be sold again, albeit on a smaller section thereby cancelling out some the cost). In almost all Christchurch greenfield developments, the rural dwelling and surrounds are subdivided off prior to or part of the land development. The result being that on average the land value input equated to only 75 percent of the overall recorded capital value for any one land parcel in a greenfield area.

The MfE Building Development Model is the basis for establishing the feature, attribute and value inputs into a GIS-based redevelopment model that has been used to assess feasible capacity for the existing urban area. Essentially, the GIS-based model replicates the process of the Building Development Model for each potential development site within Christchurch, taking into account the rules of the District Plan, the underlying value of the land and improvements, existing development and development costs, and then applying a series of test development typologies appropriate for the zone and based on recent development outcomes (including the sale price developers are typically setting). The outcomes of typology testing are then compared to determine which the most feasible development is and this determines what the housing yield is for a site. The parameters for development are:

- Where there is more than one feasible development typology per site, the typology with the highest profit is selected to determine the housing yield.
- Development typologies assessed are based on averages of key attributes of observed development outcomes in the each assessed zone from the last two years of development activity.
- Recession plane deductions for upper level floor space has been estimated.
- Minimum subdivision size for each zone applies (where appropriate).
 - Demolition costs are based on existing building(s) footprint in each parcel and includes accessory buildings. These are estimated from building footprint data which is based on aerial photography

²⁵ <https://statisticsnz.shinyapps.io/bpbench/>

approximations. A standard square meter cost has been applied, therefore the approach does not take into account site or building specific attributes that may increase the cost of demolition.

- Each redevelopment site is assumed to be cleared (i.e. this is not an assessment of infill development and no existing structures are retained).
- The Technical Category of the land determines the foundation cost to apply.

For redevelopment in Christchurch within the RMD, RSDT and RCC zones, the patterns of development since the 2018 Capacity Assessment suggest the market has become more aligned with what can be delivered in the post-2016 District Plan Review zones (these being more enabling of intensification). A townhouse typology of two storey, two/three bedroom, multi-unit homes is currently the typical development outcome for the RMD and RSDT zone, and also (in a more dense and often higher form) a typical development in the RCC zone. This typology delivers consistently medium density development, well in excess of the zone minimum density for the RMD and RCC zones. The RSDT zone does not require a minimum density yield but density outcomes are above historical yields. It has been observed (through consents) that density outcomes do tend to increase where larger and/or amalgamated sites are developed, however the development typology outcomes are broadly the same.

Sales price tends to be generally consistent between developments in the same area and has seen significant growth in recent months. For the Central City, developers are increasingly building projects with fewer car parks than the number of homes or in some cases no car parks. This has increased the overall densities being achieved, even where townhouse typologies are being used in the Central City. Developers are investing more widely across the Central City, including within the Central City Mixed Use zones (the capacity of which was not assessed in 2018) achieving similar development outcomes as for the RCC zone.

Recent patterns of development have formed the basis for the Christchurch modelled typologies assessed (see Table 46), which do differ from those tested in the previous 2018 Capacity Assessment.

Zone	'Typical' typology	Others tested
RSDT	One/Two storey townhouse, 70 to 80 square meters, single carpark	Subdivision for zone minimum, detached single storey dwelling.
RMD	Two/Three storey townhouse, 70 to 105 square meters, single carpark	Low-rise, walk-up apartment (three storey)
RCC	Two/Three storey townhouse, 70 to 105 square meters one/no parking	Low-rise and mid-rise apartment (up to five storey)
CCMU	As RCC	As RCC
Other Zones	For infill and subdivision detached dwellings in new separate sites.	

The modelled feasible capacity for Christchurch has maximised feasibility within the development potential enabled by the plan. This does not in itself lead to built outcomes. Other scenarios where model inputs are reflective of real world development outcomes, will produce a lower level of overall feasibility. It is possible that upon full redevelopment and development of urban areas, the actual realised density will fall between the reported feasible and expected calculations. Noting however, as stated for Christchurch there have been exclusions from the assessment which if included are likely to increase capacity.

6.5.2 Selwyn and Waimakariri Feasibility Assessment

Selwyn has added a feasibility module to the SCGM. This is in two parts, Land Development Model and Build Development Model. The LDM takes into account costs and lot sales price within a developer framework. This assumes subdivision in stages, which minimises the timing of costs incurred and revenue from sales. It models the key financial costs associated with the development of land to understand the interest incurred on upfront costs. The holding costs is calculated with a Weighted Average Cost of Capital and then contingency

and profit margin are considered. Costs are based on the HG report in the supporting documents. Sales prices are calculated from CoreLogic data and a 'per m²' price is derived to provide flexibility. For the Long Term a future cost and revenue relationship is modelled. This projects a range of relationship scenarios based on historic trends. Generally, the sales price is rising faster than costs meaning in the longer term things become more feasible.

The BDM looks at different dwelling typologies, sizes and build qualities for feasibility. Similarly to the LDM model, the model looks at costs and revenues within a developer framework. The model considers a 'group home' builder where some economies of scale can reduce overall costs. This also reduces risk and time for the build and therefore the capital and cash flow required. Costs are based on the WTP work in the supporting documents. Sales prices are calculated from lot sales and location data, with a 'per m²' price derived for flexibility. For the Long Term a future cost and revenue relationship is modelled. This projects a range of relationship scenarios based on historic trends. Generally, the sales price is rising faster than costs meaning in the longer term things become more feasible.

6.5.3 Summary of Feasible Capacity

Table 47: Feasible Urban Capacity			
Urban Capacity	Short 2021 - 2024	Medium 2021 - 2031	Long 2021 - 2051
Waimakariri	2,273	2,273	12,192
Christchurch	101,994	101,994	101,994
Selwyn	4,578	6,452	12,208
Total 3 TAs	108,845	110,719	126,394

Table 48: Feasible Rural Capacity			
Rural Capacity	Short 2021 - 2024	Medium 2021 - 2031	Long 2021 - 2051
Waimakariri	23,346	23,346	24,325
Christchurch	2,087	2,087	2,087
Selwyn	9,576	9,677	9,677
Total 3 TAs	35,009	35,110	36,089

6.6 Take-Up

This section summaries the rates of take-up over the past 10 years as the basis to then estimate future rates of take-up. This shows net new dwellings by TA. This informs the 'reasonably expected to realised' section in two ways, providing understanding of current development, as well as understanding development that is occurring but not modelling as feasible. The 2011 earthquakes significantly affected take-up rates for Christchurch City, particularly in terms of redevelopment of the existing urban area (i.e. new dwellings achieved through intensification). Consequently, using a 10 year average take-up rates will produce abnormal results and therefore a longer range of take-up rates have been used to smooth out inconsistencies.

*Table 44: Take Up *only urban take-up*

	07	08	09	10	11	12	13	14	15	16	17	18	19	20
Waimakariri	312	213	171	282	367	839	1069	869	539	562	460	600	550	481
Christchurch	960	1,066	1,102	1,243	711	1,139	1,575	2,392	2,217	2,276	2,189	1,982	2,245	2,607
Selwyn	725	455	375	386	422	746	1,249	1,166	1,203	1,279	1,219	1,005	1,092	1,593
Total 3 TAs	1,997	1,734	1,648	1,911	1,500	2,724	3,893	4,427	3,959	4,117	3,868	3,587	3,887	4,681

Observations – Christchurch redevelopment

Building consent data continues to show a strong uptake of redevelopment capacity in the Christchurch zones that enable intensification. This is particularly evident in the inner-suburbs, close to the Central City. The Central City has also seen development activity increase in the last two years. Consequently the majority of new homes supply in Christchurch is now from redevelopment rather than greenfield.

Analysis of Take Up compared to Feasibility

The current take-up within the TAs shows all areas experience positive growth, it also shows why what is reasonably expected to be realised is also feasible. Additional analysis of take-up is found in section 6.1.

7. Summary of how NPS-UD Requirements are met

The following table outlines how the NPS-UD requirements are met.

NPS-UD Requirement	Where it is Met:
3.2 Sufficient development capacity for housing	Section 1 outlines Housing Sufficiency
3.4 Meaning of plan-enabled and Infrastructure ready	Section 5 outlines demand with competitiveness margin
3.5 Availability of additional infrastructure	Section 6 outlines capacity in its various stages
3.9 Monitoring requirements	Section 6 outlines capacity
3.10 Assessing demand and development capacity	Section 3 outlines involvement with development sector
3.19 Obligation to prepare HBA	Section 5 provides some monitoring analysis though more work is required and is outlined in Section 8
3.20 Purpose of HBA	Section 1 outlines Housing Sufficiency
3.21 Involving development sector and others	This Capacity Assessment has been prepared in the required timeframe and applies to the urban environment and beyond. It has been prepared in a joint manner with the local authorities for Christchurch listed in the NPS-UD appendix
3.22 Competitiveness Margin	Section 1 outlines Housing Sufficiency
3.23 Analysis of housing market and impact on planning	This work will primarily inform the development of the Greater Christchurch Spatial Plan and other council planning documents.
3.24 Housing demand assessment	Section 3 outlines involvement with development sector
3.25 Housing development capacity assessment	Section 4 includes the competitiveness margin
3.26 Estimating what is feasible and reasonably expected to be realised	Section 4 describes impact on affordability and demand for housing by Māori and relevant up-to-date indicators currently available
3.27 Assessment of sufficient development capacity for housing	Section 4 describes demand by different locations and dwelling type.

Table 51: How NPS-UD requirements are met

8. Future Work

The following is a list of key work to be undertaken after July 31:

1. Re-visiting methodology, in terms of consistency and detail;
2. Develop a comprehensive monitoring approach and potential dashboard for information;
3. Undertake an assessment to understand demand for Papakāinga housing;
4. Investigate viability of a single growth model;
5. Test Feasibility of Plan Enabled Capacity and understand what typologies and subareas are feasible but not reasonably expected to be realised;
6. Incorporate development sector feedback;
7. Future work integrating potential capacity with infrastructure strategy;
8. Break down capacity by standalone and multi-unit;
9. Adjust capacity figures when Waimakariri District Council release their proposed district plan;
10. Consider Reasonably Expected to be Realised in terms of Housing Capacity modelling when sections become available;
11. Potentially more information around high-demand either sub-areas or typologies. E.g. Intensification in SDC;
12. Check projections against any new Stats NZ information; and
13. Re-run Housing Demand based on variations (e.g. take-up) to projections.

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Appendix 1: NPS-UD Housing Capacity Objectives and Policy Requirements

Objective 1 - New Zealand has well-functioning urban environments that enable all people and communities to provide for their social, economic, and cultural wellbeing, and for their health and safety, now and in the future

Objective 2 - Planning decisions improve housing affordability by supporting competitive land and development markets.

Objective 6 - Local authority decisions on urban development that affect urban environments are:

- integrated with infrastructure planning and funding decisions; and
- strategic over the medium term and long term; and
- responsive, particularly in relation to proposals that would supply significant development capacity.

Objective 7 - Local authorities have robust and frequently updated information about their urban environments and use it to inform planning decisions.

Policy 2 – Tier 1, 2, and 3 local authorities, at all times, provide at least sufficient development capacity to meet expected demand for housing and for business land over the short term, medium term, and long term.

Policy 10 – Tier 1, 2, and 3 location authorities:

- that share jurisdiction over urban environments work together when implementing this National Policy Statement; and
- engage with providers of development infrastructure and additional infrastructure to achieve integrated land use and infrastructure planning; and
- engage with the development sector to identify significant opportunities for urban development.

Subpart 1 – Providing development capacity

3.2 Sufficient development capacity for housing

- Every tier 1, 2, and 3 local authority must provide at least sufficient development capacity in its region or district to meet expected demand for housing:
 - in existing and new urban areas; and
 - for both standalone dwellings and attached dwellings; and
 - in the short term, medium term, and long term.
- In order to be sufficient to meet expected demand for housing, the development capacity must be:
 - plan-enabled (see clause 3.4(1)); and
 - infrastructure-ready (see clause 3.4(3)); and
 - feasible and reasonably expected to be realised (see clause 3.26); and
 - for tier 1 and 2 local authorities only, meet the expected demand plus the appropriate competitiveness margin (see clause 3.22).

3.4 Meaning of plan-enabled and infrastructure-ready

- Development capacity is plan-enabled for housing or for business land if:
 - in relation to the short term, it is on land that is zoned for housing or for business use (as applicable) in an operative district plan
 - in relation to the medium term, either paragraph (a) applies, or it is on land that is zoned for housing or for business use (as applicable) in a proposed district plan
 - in relation to the long term, either paragraph (b) applies, or it is on land identified by the local authority for future urban use or urban intensification in an FDS or, if the local authority is not required to have an FDS, any other relevant plan or strategy.
- For the purpose of subclause (1), land is zoned for housing or for business use (as applicable) only if the housing or business use is a permitted, controlled, or restricted discretionary activity on that land.
- Development capacity is infrastructure-ready if:

- a. in relation to the short term, there is adequate existing development infrastructure to support the development of the land
- b. in relation to the medium term, either paragraph (a) applies, or funding for adequate infrastructure to support development of the land is identified in a long-term plan
- c. in relation to the long term, either paragraph (b) applies, or the development infrastructure to support the development capacity is identified in the local authority's infrastructure strategy (as required as part of its long-term plan).

3.5 Availability of additional infrastructure

1. Local authorities must be satisfied that the additional infrastructure to service the development capacity is likely to be available.

Subpart 3 – Evidence-based decision-making

3.9 Monitoring requirements

1. Every tier 1, 2, and 3 local authority must monitor, quarterly, the following in relation to each urban environment in their region or district:
 - a. the demand for dwellings
 - b. the supply of dwellings
 - c. prices of, and rents for, dwellings
 - d. housing affordability
 - e. the proportion of housing development capacity that has been realised:
 - i. in previously urbanised areas (such as through infill housing or redevelopment); and
 - ii. in previously undeveloped (ie, greenfield) areas
 - f. available data on business land.
2. In relation to tier 1 urban environments, tier 1 local authorities must monitor the proportion of development capacity that has been realised in each zone identified in clause 3.37(1) (ie, each zone with development outcomes that are monitored).
3. Every tier 1, 2, and 3 local authority must publish the results of its monitoring at least annually.
4. The monitoring required by this clause must relate to the relevant urban environments, but may apply more widely (such as, for example, where the relevant data is available only on a region or district-wide basis).
5. If more than one tier 1 or tier 2 local authority has jurisdiction over a tier 1 or tier 2 urban environment, those local authorities are jointly responsible for doing the monitoring required by this subpart.

3.10 Assessing demand and development capacity

1. Every local authority must assess the demand for housing and for business land in urban environments, and the development capacity that is sufficient (as described in clauses 3.2 and 3.3) to meet that demand in its region or district in the short term, medium term, and long term.
2. Tier 1 and tier 2 local authorities comply with subclause (1) in relation to tier 1 and tier 2 urban environments by preparing and publishing an HBA as required by subpart 5.

Subpart 5 – Housing and Business Development Capacity Assessment (HBA)

3.19 Obligation to prepare HBA

1. Every tier 1 and tier 2 local authority must prepare, and must make publicly available as required under the Local Government Act 2002, an HBA for its tier 1 or tier 2 urban environments every 3 years, in time to inform the relevant authority's next long-term plan.
2. The HBA must apply, at a minimum, to the relevant tier 1 or tier 2 urban environments of the local authority (ie, must assess demand and capacity within the boundaries of those urban environments), but may apply to any wider area.
3. If more than one tier 1 or tier 2 local authority has jurisdiction over a tier 1 or tier 2 urban environment, those local authorities are jointly responsible for preparing an HBA as required by this subpart.

3.20 Purpose of HBA

1. The purpose of an HBA is to:

- a. provide information on the demand and supply of housing and of business land in the relevant tier 1 or tier 2 urban environment, and the impact of planning and infrastructure decisions of the relevant local authorities on that demand and supply; and
- b. inform RMA planning documents, FDSs, and long-term plans; and
- c. quantify the development capacity that is sufficient to meet expected demand for housing and for business land in the short term, medium term, and long term.

3.21 Involving development sector and others

1. In preparing an HBA, every tier 1 and tier 2 local authority must seek information and comment from:
 - a. expert or experienced people in the development sector; and
 - b. providers of development infrastructure and additional infrastructure; and
 - c. anyone else who has information that may materially affect the calculation of the development capacity.

3.22 Competitiveness margin

1. A competitiveness margin is a margin of development capacity, over and above the expected demand that tier 1 and tier 2 local authorities are required to provide, that is required in order to support choice and competitiveness in housing and business land markets.
2. The competitiveness margins for both housing and business land are:
 - a. for the short term, 20%
 - b. for the medium term, 20%
 - c. for the long term, 15%.

Housing

3.23 Analysis of housing market and impact of planning

1. Every HBA must include analysis of how the relevant local authority's planning decisions and provision of infrastructure affects the affordability and competitiveness of the local housing market.
2. The analysis must include an assessment of how well the current and likely future demands for housing by Māori and different groups in the community (such as older people, renters, homeowners, low-income households, visitors, and seasonal workers) are met, including the demand for different types and forms of housing (such as for lower-cost housing, papakāinga, and seasonal worker or student accommodation).
3. The analysis must be informed by:
 - a. market indicators, including:
 - i. indicators of housing affordability, housing demand, and housing supply; and
 - ii. information about household incomes, housing prices, and rents; and
 - b. price efficiency indicators.

3.24 Housing demand assessment

1. Every HBA must estimate, for the short term, medium term, and long term, the demand for additional housing in the region and each constituent district of the tier 1 or tier 2 urban environment:
 - a. in different locations; and
 - b. in terms of dwelling types.
2. Local authorities may identify locations in any way they choose.
3. Local authorities may identify the types of dwellings in any way they chose but must, at a minimum, distinguish between standalone dwellings and attached dwellings.
4. The demand for housing must be expressed in terms of numbers of dwellings.
5. Every HBA must:
 - a. set out a range of projections of demand for housing in the short term, medium term, and long term; and
 - b. identify which of the projections are the most likely in each of the short term, medium term, and long term; and
 - c. set out the assumptions underpinning the different projections and the reason for selecting the most likely; and
 - d. if those assumptions involve a high level of uncertainty, the nature and potential effects of that uncertainty.

3.25 Housing development capacity assessment

1. Every HBA must quantify, for the short term, medium term, and long term, the housing development capacity for housing in the region and each constituent district of the tier 1 or tier 2 urban environment that is:
 - a. plan-enabled; and
 - b. plan-enabled and infrastructure-ready; and
 - c. plan-enabled, infrastructure-ready, and feasible and reasonably expected to be realised.
2. The development capacity must be quantified as numbers of dwellings:
 - a. in different locations, including in existing and new urban areas; and
 - b. of different types, including standalone dwellings and attached dwellings.

3.26 Estimating what is feasible and reasonably expected to be realised

1. For the purpose of estimating the amount of development capacity that is reasonably expected to be realised, or that is both feasible and reasonably expected to be realised, local authorities:
 - a. may use any appropriate method; but
 - b. must outline and justify the methods, inputs, and assumptions used to arrive at the estimates.
2. The following are examples of the kind of methods that a tier 1 local authority could use to assess the amount of development capacity that is feasible and reasonably expected to be realised:
 - a. separately estimate the number of feasible dwellings (using a feasibility model) and the number of dwellings that can reasonably be expected to be realised (using building consents data on the number of sites and extent of allowed capacity that has been previously developed), for the short, medium and long term; compare the numbers of dwellings estimated by each method; then pick the lower of the numbers in each time period, to represent the amount of development capacity that is feasible and reasonably expected to be realised
 - b. estimate the number of feasible dwellings or sites, and then assess the proportion of these that can reasonably be expected to be developed in the short, medium and long term, using information about landowner and developer intentions
 - c. integrate information about past development trends and future landowner and developer intentions into the feasibility model, which could mean modifying assumptions about densities, heights, and timing of development.
3. The following is an example of the kind of methods that a tier 2 local authority could use to assess the amount of development capacity that is feasible and reasonably expected to be realised:
 - a. assess the number of dwellings that can reasonably be expected to be developed (using building consents data on the number of sites and extent of allowed capacity that has been developed previously), for the short, medium and long term; and
 - b. then seek advice from the development sector about what factors affect the feasibility of development.
4. Different methods may be appropriate when assessing the development capacity that is reasonably expected to be realised in different circumstances, such as:
 - a. in existing, as opposed to new, urban areas; and
 - b. for stand-alone, as opposed to attached, dwellings.

3.27 Assessment of sufficient development capacity for housing

1. Every HBA must clearly identify, for the short term, medium term, and long term, where there is sufficient development capacity to meet demand for housing in the region and each constituent district of the tier 1 or tier 2 urban environment.
2. The requirements of subclause (1) must be based on a comparison of:
 - a. the demand for housing referred to in clause 3.24 plus the appropriate competitiveness margin; and
 - b. the development capacity identified under clause 3.25.

If there is any insufficiency, the HBA must identify where and when this will occur and analyse the extent to which RMA planning documents, a lack of development infrastructure, or both, cause or contribute to the insufficiency.

Appendix 2: Changes between the NPS-UDC and NPS-UD

There are several changes to this HCA following the previous capacity work and the change in National Policy Statement.

Change	Response
Implementation 3.21 seeks engagement with development sector, providers of infrastructure, and others with important information.	The partnership has commissioned a development sector survey to invite responses on capacity and future development
Implementation 3.23 seeks analysis of how planning and infrastructure decisions impact the competitiveness and affordability of the local housing market for different groups of the community.	This capacity assessment contains sections relating to monitoring, affordability, housing need, preferences and trade-offs, influencing factors, and specific community demand such as Māori housing demand and other migrant demand. This information will help inform planning decisions.
Implementation 3.24 (1), 3.25 (2), and 3.27 (2) requires to assess demand, development capacity, and sufficiency of capacity by type and location.	This capacity assessment provides analysis of demand by territorial authority and typology and includes the competitiveness margin.
Implementation 3.24 (5) requires a range of demand projections must be produced, with the most likely projection identified for each of the short, medium, and long terms. Assumptions, reasons for projections and the most likely projection to be set out.	This capacity assessment outlines a range of projections with analysis as to what projection is most likely.
Implementation 3.25 (1) (c) and 3.26 seeks feasibility estimates of housing development capacity based on the current relationship between costs and prices, with flexibility to alter this relationship for long-term feasibility.	Feasibility assessment first uses the current relationship between costs and prices for the medium term. Long-term feasibility models potential changes in sales and costs.
Implementation 3.26 highlights options and examples to calculate housing development capacity that is feasible and reasonably expected to be realised, and ensuring transparency of methods, inputs, and assumptions.	Reasonably expected to be realised is based on current development trends to help inform what is likely to be built. Feasibility tests whether this is commercially viable.

Table 1: Changes between NPS-UDC and NPS-UD

Changes from the 2017 Capacity Assessment

Change	Response
CEAG Memo 24th March 2020 – Appendix C	
Assessment of the most appropriate projection	There is ongoing need to check whether the chosen projection is appropriate. This capacity assessment outlines why the projection is chosen and this needs to be tested against take-up and future Stats NZ information.
Transfer of demand for smaller, multi-unit dwellings across Greater Christchurch. Does reapportioning demand change the demographic profile?	This capacity assessment does not reapportion demand rather it outlines the scale of response the FDS addresses. There needs to be care in reapportioning growth around the 3 TAs and what that means for the demographic profile. Increasing growth in one TA also needs to address the change in demographic profile this will cause.
Projected rural demand influencing urban analysis	This issue is less critical with the change from Stats NZ Area Units to Statistical Area 2. This capacity assessment looks at demand for all the 3 TAs but identifies urban demand. Rural demand provides a complete profile of the area that will help inform spatial planning. Any specific rural-residential demand that occurs in smaller areas than captured in the SA2 will require specific future investigation.
MfE Feedback on 2017 HCA	
Use of alternative projection from Stats NZ Medium Projection	The NPS-UD changed the requirement for using Stats NZ Medium Projection. This capacity assessment outlines what projection is chosen and the justification for that. Ongoing monitoring is needed and projections or alternate scenarios can be calculated.
Feasibility assessment and sensitivity analysis	The feasibility methodology is well-documented including the assumptions on costs and prices and development. These assumptions have been sensitivity checked for potential influence on feasibility.
Take-up information linked	Take-up informs the 'reasonably expected to be realised' and offers alternate information to feasibility. Take-up continues to be monitored by each Council.
Use of Market Indicators	This capacity assessment outlines some key market indicators and discusses the trends, however, the development of a monitoring approach and its integration into the assessment needs future work.

Table 2: Changes between 2017 and 2020

Appendix 3: Methods, Inputs, and Assumptions

The caveats and contextual considerations are as follows:

1. The modelled results provide a range of possible scenario outcomes. They are not however the exhaustive output of all scenario possible outcomes. Other scenarios, using different model inputs may be considered and therefore the context of each scenario (the parameters of the model run) should be understood and carefully considered.
2. For the purposes of establishing a base assessment approach, the MBIE guidance recommends an approach where a commercial viable development is one that achieves a 20% profit margin using the residual valuation approach to feasibility assessment. However, as set out in this report, in reaching a conclusion on feasibility and housing sufficiency, variations to the 20% profit margin approach have been developed to better recognise local and actual market parameters. Where a 20% profit margin is reached, it is more likely that the tested development will be realised. However, this approach does not necessarily mean that development scenarios where a lesser profit margin is achieved will and are not already being realised (built).
3. Estimating a price for finished dwellings across a large range of size and typology is fraught with opportunity for error resulting in over or understating dwelling prices. Sales data provides a useful starting point but does not contain the resolution of detail, particularly around quality of build. Dwelling size is recorded in sales data but again this is only an indicative measure that does not account for shared space or how a dwelling may be set-out (e.g. to determine the number of bedrooms).
4. Build costs have been estimated and applied to all developments. In reality, the square metre build costs will vary within typologies as well as between typologies. For example, all other factors begin equal, the relationship between wall area and roof area is such that an apartment block on a regular shaped square site will be cheaper to construct than a similarly sized apartment block on an irregular shaped or thinner, rectangular shaped site. As modelled, the feasibility assessment cannot take site shape into account, only site size. To do so would require a more complex spatial model and further work to estimate a wider range of estimated costs to match a much wider variety development typologies to match different sites.
5. Building costs used in the feasibility model are based on those from Quarter 4 2020 (being the most up-to-date costs at the time the redevelopment capacity assessment work was commenced in early 2021). It is acknowledged that in the first half of 2021 the costs of some construction materials has increased significantly and therefore the feasibility of some developments may have changed. Land development costs used in the greenfield models were assessed more recently and do partially reflect the costs inflation of 2021 (while noting the cost inflation continues to be an issue for the construction industry)
6. The skills, attributes and capacity of the developer are also a significant factor in development. The model does not differentiate across different scales of development companies or account for different types of construction techniques or processes that a developer may be able to bring to a project. Some developers may be able to reduce or minimise certain costs where economies of scale may be realised or some functions are undertaken in-house, in so doing helping to reduce fees or professional costs. Other developers may be in the position to minimise borrowing costs or minimise the additional cost of capital that must be applied to various components of development through, for example, the minimisation of contingencies through project management and cost controls. Ultimately, these factors may translate into a reduced profit margin expectation at project outset, i.e. a particular project may be feasible for one developer, but not for another.
7. The demand methodology relies upon Stats NZ unconstrained population projections where externalities such as planning interventions, capital works improvements, Government policy, unforeseen global and social change and future technologies are unable to be factored into the 30 year projections.

In respect to Christchurch only:

8. The model is largely a financial tool that uses some spatial attributes of sites to determine the value of some model inputs. It is a two dimensional assessment that does not account fully for the effects of three dimensional development constraints. These include, for example, the effects of slope across a development site or between development sites. The impact of slope

is particularly significant for development sites in the Residential Hills and Residential Banks Peninsula zones. Consequently, the feasible capacity results for the Port Hills and Lyttelton Harbour study area divisions should be considered to have a significant margin of error. The effect of recession planes has been estimated using a simplified spatial modelling approach.

9. The analysis has not been able to consider likely improvements to commercial feasibility achieved through site amalgamation and the use of the Community Housing Redevelopment Mechanism (which provides for medium density developments across the city where it meets certain criteria). Comprehensive developments (which have and continue to be developed) on larger sites typically yield a higher density of houses while allowing for some efficiencies in land development and build costs. This assessment has also not assessed the commercial viability of minor residential units and older persons housing units, which are enabled in most Christchurch residential zones.