Greater Christchurch Partnership

Te Tira Tū Tahi

One Group, Standing Together

Greater Christchurch Housing Development Capacity Assessment

March 2023

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Definitions and Abbreviations

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

Term	Definition
BDM	Build Development Model
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: 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: 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	Land development Model
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-HPL	National Policy Statement on Highly Productive Land 2022
NPS-UD	National Policy Statement on Urban Development 2020
QV	Quotable Value
RMA-EHS	Resource Management Act (Enabling Housing Supply and Other Matters) Amendment Act 2021
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

2. Executive Summary

The National Policy Statement on Urban Development 2020 (NPS-UD) requires tier 1 local authorities, every three years[1], 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: NPS-UD . 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) in 2018.

The 2021 HCA included an assessment of expected urban 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 1: NPS-UD Objectives and Policies). This 2023 HCA update provides new capacity figures based on the TA's responses to the Resource Management (Enabling Housing Supply and Other Matters) Amendment Act 2021 (EHS Act) and adds more detail with typology while continually improving monitoring and integration.

The assessment findings are based on the best available information and models at that point in time. For expected demand, this is based principally on Statistics New Zealand's population estimates and projections and the associated assumptions. Expected demand is sensitive to changes in international migration assumptions, particularly for calculating the long-term sufficiency. An increase or decrease in this assumption will impact the sufficiency numbers for Greater Christchurch in the long term. In this respect it's important to note this uncertainty over a longer time frame with regard to being absolute on what long term sufficiency might be. The numbers provided in this report are based on an agreed scenario and they are framed by the assumptions outlined in the report.

In terms of supply, the assessment utilises Council's respective growth and land development models, and feasibility models (developed from the MBIE/MfE Feasibility Tool). Any 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. Further, it is too early to understand the potential change created by the EHS Act. While plan-enabled capacity has ballooned, the meaningful impact on feasible capacity will be felt over time as the type of development delivered becomes more intense.

Key demand trends for Greater Christchurch include:

- a growing population from 536,500 in 2022 to 708,840 in 2052, an increase of 172,340 people;
- the number of households increasing by 79,088; and
- a changing typology profile reflecting the demographics changing, an aging population resulting in strong growth in the number of 'couple only' and one person households.

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

3. Sufficiency

The sufficiency shown here is for the urban environment of Greater Christchurch. This includes Christchurch City and the surrounding towns of Rangiora, Kaiapoi, Woodend, Rolleston, Lincoln, Prebbleton, and West Melton.
Key assumptions are:

- Capacity proposed through EHS Act variations and plan changes proceeds;
- For the towns, densities within greenfield areas are similar to what is occurring now, whereas intensification areas are higher.
- Intensification is most likely to occur where there is older housing stock, in and around town centres and close to Public Transport routes.
- Intensification will not occur in the short to medium term in areas with newer housing stock.

3.1. Short & Medium-Term Urban Capacity Sufficiency

At a Greater Christchurch level, there is likely to be sufficient capacity based on the current assumptions across all the TAs to meet medium-term demand (see Table 1).

Table 1: Urban Housing Sufficiency within TAs in the Short & Medium Term (2022 – 2032)

Area	Feasible Capacity	Demand with Margin	Surplus / Shortfall
Waimakariri	5,950	5,600	+350
Christchurch	94,000	14,150	+79,850
Selwyn	11,550	10,000	+1,550
Total	111,500	29,750	+81,750

***Rounded to the nearest 50**

3.2. Short, Medium, & Long-Term Urban Capacity Sufficiency

Over the long-term (next 30 years) there is likely to be sufficient capacity based on the current assumptions across the TAs to meet demand. At a District level however, there is a shortfall within Selwyn over the long term of around 3250.

Table 2: Urban Housing Sufficiency within GCP in the Short, Medium, & Long Term (2022 – 2052)

Area	Feasible Capacity	Demand with Margin	Surplus / Shortfall
Waimakariri	14,450	13,250	+1,200
Christchurch	94,000	37,500	+56,500
Selwyn	24,100	27,350	-3,250
Total	132,550	78,100	+54,450

***Rounded to the nearest 50**

3.2.1. Response to Shortfall

In response to the identified shortfall in Selwyn, the Future Development Strategy will need to indicate broad locations to where this long-term demand will be met. The response to this shortfall will be through exploring improving the feasibility of intensification, especially around centres and PT routes and increasing minimum densities (for example, an increase from 15hh/ha to 16hh/ha would meet that shortfall). These areas will be part of any Priority Development Areas identified through the Greater Christchurch Spatial Plan.

4. Housing Bottom Lines

Following the capacity assessment, local authorities must insert housing bottom lines into their relevant plans. The bottom lines should clearly state 'the expected housing demand plus the appropriate competitiveness margin in the region and each constituent district'[2]. The regional council inserts the housing bottom line for the urban environment into its regional policy statement, while the territorial authorities insert the attributed proportion into their district plans.

The urban environment, as agreed by the Greater Christchurch partnership, is the Greater Christchurch Boundary. However, this assessment has considered all main urban areas within the TAs not just the ones within the Greater Christchurch boundary. This is to inform the spatial plan work, recognising the growing size and influence of towns around the boundary of Greater Christchurch.

The townships included in this information are for Waimakariri – Rangiora, Kaiapoi, and Woodend; and for Selwyn – Rolleston, Lincoln, Prebbleton, and West Melton.

Therefore, the Housing Bottom Lines to be inserted into the relevant plans are outlined below.

Table 3: Housing Bottom Lines

Area	Short-Medium Term	Long Term	Total
Waimakariri	5,600	7,650	13,250
Christchurch	14,150	23,350	37,500
Selwyn	10,000	17,350	27,350
Greater Christchurch	29,750	48,350	78,100

[2] NPS-UD 3.6 (1)

5. Demand Analysis

This section identifies two key demand issues from Section 7, especially Section 7.3, and establishes what opportunities there are under the NPS-UD to improve affordability and deliver well-functioning urban environments across Greater Christchurch.

5.1. Key Assumptions

The following are the key assumptions located throughout the report when assessing demand:

- Stats NZ international migration assumptions. The Stats NZ projections assumes change in migration, both into the country (international) and throughout the country (internal). These are outlined in Section 7.4.1. It is important to consider that migration rates vary and are influenced by international factors. Changes to migration policies or impacts of global events (e.g., pandemics) either constrain or enable more international migration.
- Stats NZ also project internal migration. This tracks movement between areas within New Zealand. This is harder to predict as people move for various reasons that change over time. People may be moving because of house prices or the availability of sections or a lifestyle decision. More work is needed to understand the full implication of this within Greater Christchurch.
- Stats NZ natural increase assumptions. The Stats NZ projections also assume a natural increase based on fertility and life expectancy. These are also outlined in Section 7.4.1. These can change though less volatile than migration.
- Household formation. The Stats NZ projections also assume types of household formation (e.g., family, single person, couple). A change in approach or living arrangements will also change the number of people per household and the demand for dwellings.

5.2. Responding to Long Term Housing Demand

A key challenge over the next 30 years is where and how 168,720 people and 77,100 households are to be accommodated within Greater Christchurch, while delivering a well-functioning urban environment that better meets the needs of current and future generations[3]. This will require the development sector and property market to shift from the greenfield model that is primarily occurring on the outskirts of Christchurch City and in the townships of Selwyn and Waimakariri districts to substantially more intensification around centres and strategic transport corridors.

The advice received from the development sector engagement (in Section 7.2) and the locational preferences and trade-offs (in Section 7.3.4) establish that the key demand drivers are location, land availability, cost and condition, land use zoning and consenting certainty. These development sector drivers are manifesting in the ongoing demand for standalone housing typologies on greenfield land across Greater Christchurch, but particularly Selwyn and Waimakariri districts (refer to Section 7.3 and Figure 16). In addition to the demand drivers, development sector market feasibility analysis and financial risk management practices have a direct influence on the quality and amount of higher density housing that is being brought to the market. This is because supply needs to meet demand to make land development economically viable. Consequently, most developers need to achieve an investment on return within a tight timeframe, so there is an inherent need to respond to short-term demand by providing housing that aligns with market demand. The development of alternative housing typologies to meet medium- or long-term needs represent an investment risk.

Planning decisions can enable increases in housing density, infill and intensification (as an alternative to the greenfield model) by: (a) investing in 'placemaking' to uplift land value and improve local amenity and services; (b) improving regulatory and consenting processes to provide certainty and reduce compliance costs; (c) funding models to improve infrastructure and transport networks top enable mode shift and improve accessibility; and (d) initiating exemplar developments to demonstrate that real and

[3] As defined in NPS-UD Policy 1 well-functioning urban environments have or enable a variety of homes (to meet needs and enable Māori to express their cultural traditions and norms) and businesses, have good accessibility, support, and limit adverse impacts on the competitiveness of land and development markets, support reductions in greenhouse gas emissions and are resilient to the effects of climate change.

perceived risks can be reduced, while delivering a high quality product that is viable to develop. These initiatives can support a wider range of housing typologies across varying locations, while improving wellbeing and affordability across temporal scales.

The Greater Christchurch Spatial Plan will be a critical tool to correcting the current imbalance between what the development sector is delivering to meet short term market demand and what is required to better meet the medium- and long-term outcomes for a well-functioning urban environment as it is expressed in the NPS-UD. This is because it will provide direction on the long-term settlement pattern and decisions on critical changes to the transport network to enable a significant shift in travel modes. It will also include responses to natural hazard risk management and climate change and its implementation will be assisted through partnership arrangements with Mana Whenua, government agencies, the development sector and the community.

5.3. Responding to Decreasing Housing Affordability

Affordability issues are manifesting in Greater Christchurch (as illustrated in Section 7.3.1 and Table 20) as the gap between household incomes and the cost-of-living increases. The demand analysis (in Section 7.3.1) establishes that this is heavily influenced by Government fiscal policies, and to a lesser extent the release of land and increased consenting certainty that is influenced by Local Government. It also establishes that an aging population, falling home ownership rates, less secure employment, restricted access to welfare and the increasing cost of living are contributing to a significant increase in demand for affordable housing, including through social housing providers. This issue is highlighted by a 379% to 500% increase in the number of familiesbeing placed on the Public Housing Register across Greater Christchurch (refer to Section 7.3.2).

There is an opportunity for Kāinga Ora and other housing, infrastructure, and services providers to develop and regenerate locations that aren't as attractive to the land development sector due to lower land values, accessibility, neighbourhood character, public perceptions, or schooling options. This response will require partnerships and Government investment to increase the availability of social housing across Greater Christchurch. The Greater Christchurch Partnership also has a role to play by supporting social housing providers through the provision of new and improved infrastructure, transport networks, investing in 'placemaking', streamlining consenting pathways developing and implementing the Greater Christchurch Spatial Plan.

6. Capacity Analysis

This section identifies two key capacity and supply issues from Sections 7.5 and establishes what opportunities there are under the NPS-UD to improve affordability and deliver well-functioning urban environments across Greater Christchurch.

6.1. Key Assumptions

The following are the key assumptions located throughout the report when assessing demand:

- House values and prices. To assess long-term feasibility, assumptions around house values and sales prices are required. This assumes no changes to policy direction relating to borrowing or taxation.
- Land Use zonings. The potential yield is based on the enabled capacity within the related district plans. As these change, capacity will change.
- Densities. The level of growth expected is largely based on recent development. Large drastic changes (e.g., no standalone dwellings built) to what is built is not modelled. This is impacted by the cost of development and could be impacted by changes in the taxation or council or insurance costs.
- Reforms. The full impact of regulatory changes is yet to be realised. The assumption is that capacity matches the capacity proposed through each council's response to RMA-EHS. This will change through the process.

6.2. Regulatory Changes and Reforms

Significant changes in the regulatory framework through the enactment of the NPS-UD, NPS-HPL and RMA-EHS are influencing decisions on housing capacity. These national directions will assist to achieve longer term capacity outcomes by enabling urban consolidation through well-functioning urban environments, protecting highly productive land and responding to the effects of climate change. The NPS-UD provides a strong directive for planning decisions to be responsive to demand and to actively enable supply to promote competitive housing markets, support well-functioning urban environments and improve affordability. The NPS-HPL balances the enabling directions of the NPS-UD by prioritising the need to avoid the rezoning and development of highly productive land for urban activities. This includes requiring cost benefit analysis to be undertaken and for the viability of alternative methods to increase housing land supply to be evaluated.

There is uncertainty regarding whether the policy initiatives to give effect to the RMA-EHS will assist in delivering medium- and long-term housing needs i.e., 1- and 2-bedroom multi-level units rather than 2 to 3 storey town houses and 3-to-4-bedroom single level standalone homes (refer to Sections 7.4). The development sector engagement establishes that physical constraints, development costs (building up costs more) and land value (removing existing homes and conglomerating land is more economically viable where the value of the land is high) limit the viability of recently subdivided greenfield sections being intensified. The mandatory district plan changes required to give effect to the RMA-EHS will provide a pathway to enable existing residential and business properties within established centres and neighbourhoods to be infilled, intensified, and redeveloped. It is less clear what level of intensification may occur where, or to quantify the impact this may have on infrastructure, transport networks and the character of neighbourhoods across the sub-region.

As currently drafted, the Strategic Planning Bill places a stronger statutory weight on Regional Spatial Plans to achieve longer term outcomes and capacity needs within well-functioning urban environments. The Government has also signalled that the National Planning Framework will include environmental bottom lines, which may include baseline carbon emissions and minimum targeted reductions. This would provide an important basis for quantifying the impacts of different housing and business typologies to meet people's needs, the funding and provision of infrastructure (including investment in the transport network and public transport facilities), effects on the environment based on locational context and the influence property market trade-offs and preferences are having on intergenerational wellbeing. The recent weather cycle that contributed to significant rainfall events, and the devastating damage and loss of life caused by Cyclone Gabriel, across the North Island in the 2023, emphasised

the need for planning decisions to take appropriate account of natural hazard risk and the ongoing impacts climate change will have on the environments contained within the Greater Christchurch area.

The Greater Christchurch Spatial Plan, and the implementation actions associated with it, will play a critical role in providing plan enabled housing capacity across the sub-region and balancing this against other critical outcomes and bottom lines as the resource management system transitions from the RMA to the new regime.

6.3. Housing Supply and Responsiveness to Price and Interest Rates

Elements of the property sector respond to prices and other monetary changes differently. It is important to understand how the centralised management of the Aotearoa economy influences capacity and affordability in Greater Christchurch's housing market. The Reserve Bank released analytical notes[4] on how housing supply reacts to prices and monetary policy that listed the following key findings:

- Longer term financing costs, largely driven by long-term projected interest rates, are the key factor in house prices. These factors are influenced by global factors rather than domestic factors such as monetary policy. The impact of the longer-term financing costs are amplified when housing supply is less responsive to prices.
- Investment in housing has been driven by high returns that have been realised over the past 20 years, which has been underpinned by the ability to leverage capital and favourable taxation provisions. The Reserve Bank are expecting a correction in house prices in the future.
- House prices respond differently to changes in interest rates depending on the area. The Reserve Bank have identified variation in how territorial authorities have responded to housing supply. In general, they identify that areas where house prices have grown proportionately faster than housing supply are less responsive, and these areas are more susceptible to changes in interest rates. The Reserve Bank analysis indicates that the Selwyn and Waimakariri housing market has been less responsive than Christchurch City. However, this could suggest the impact of other factors not considered within the Reserve Bank analysis, such as the influence of the Canterbury Earthquakes, buyer preference, land availability and local property sector market feasibility and financial risk management practices.

An example of where the Reserve Bank has applied an economic lever was the recent increase in its benchmark interest rate to address increasing inflation. This response had a direct influence on bank loan interest rates, property values and loan deposit requirements that are contributing to a less buoyant housing market, which is evidenced by reduced building consent numbers and increases in the cost of living. Planning decisions have a lesser influence on how the 'boom' and 'bust' nature of the property sector plays out over time in comparison to government interventions, global externalities, and market changes. The Greater Christchurch Partnership can assist in reducing undersupply to alleviate pressure on the housing sector by ensuring that there are clear consenting pathways to assist plan enabled, and infrastructure ready land, that has been identified to meet demand to be developed within a timely manner to reduce residual costs. These actions are particularly important where there is increased cost of living and affordability pressures affecting society.

[4] https://www.rbnz.govt.nz/research/our-research-and-analysis/analytical-notes

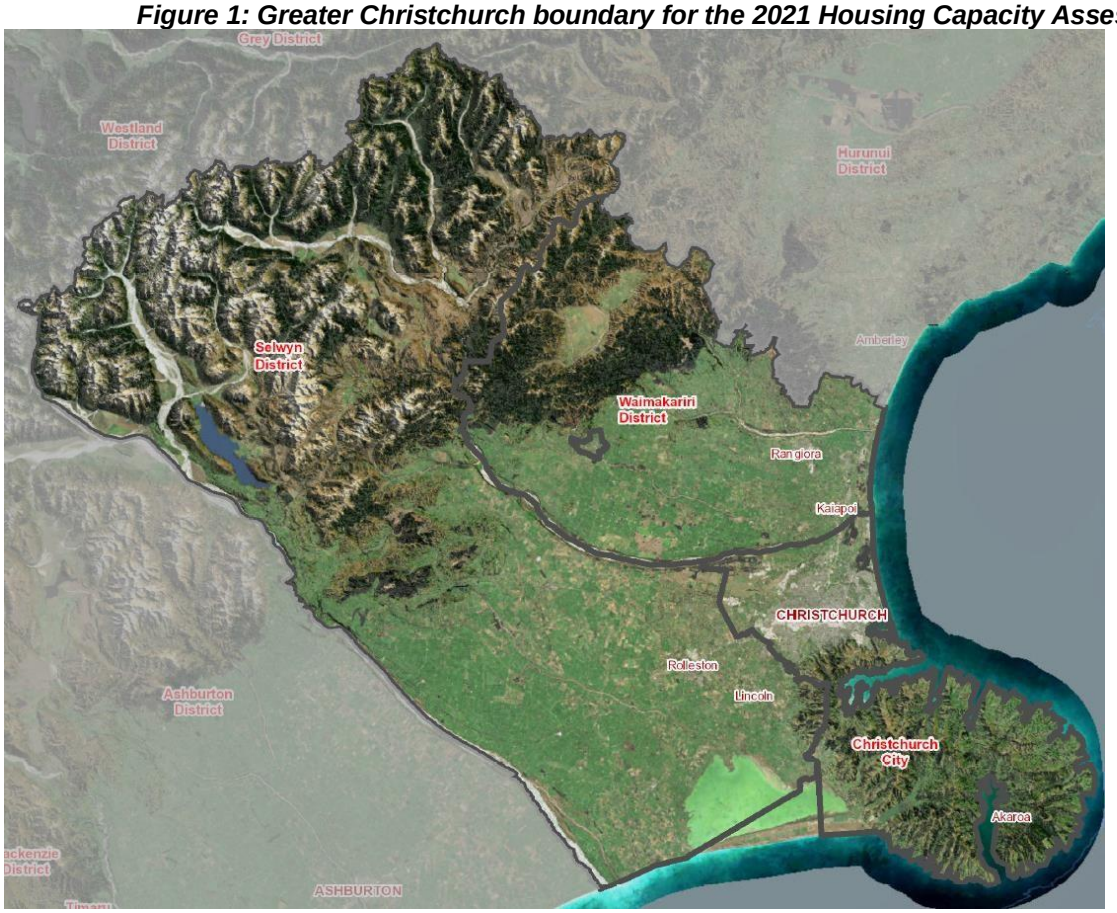
7. Background Work

7.1. 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 this HCA on the grounds that:

a. 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;
b. the indicative national legislation change is leading towards regional spatial plans and an expansion is a step towards a regional plan[5]; whilst still being achievable in the timeframe;
c. expanding the scope recognises the inter-relationship of the housing market[6]; and
d. 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 areas[7] and Urban Accessibility Classification showing what areas have access to larger urban areas[8]).

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=7bad0be7cfe949388f71cbc90b8916 ca

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

7.2. Engagement

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 (e.g., 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, Edgeware, 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)).

Also, Selwyn District Council met with developers throughout the district in early 2023. Their feedback was:

- There is a strong demand for stand-alone typologies, with a general trend to smaller sections and smaller dwelling footprints.
- General support for spatial plans to indicate the direction of further greenfield expansion.
- The scale of greenfield allows for greater outcomes and flexibility than brownfield.
- Disagreement on whether brownfield development in Selwyn will be an attractive option for developers or at least disagreement when in the future it could be.
- A larger number of developers are needed so that there is sufficient competition which can drive affordability.
- General agreement that the rezoning and consenting process is too slow, cumbersome, and drawn-out.
- There is a growing demand for retirement or lifestyle villages, which represents housing choice and a general trend observed of wanting to live closer to family since 2019.

The Waimakariri District Council also met with local developers in Early 2023. The feedback received was similar to as described above for Selwyn District Council. Additional points included the following:

- Neighbourhood centres are also important for local convenience and well-functioning urban environments (e.g. Arlington and Lilybrook local centres). Greenfield developments should include neighbourhood centres.
- Discovering that as they develop small sections and smaller street widths, on street parking is becoming problematic with larger vehicles, rubbish trucks, emergency vehicle etc having difficulty getting through. To date, public transport routes are not keeping pace with development and therefore making new neighbourhoods car dependant.
- More intensive development around PT/MRT routes could be attractive, but require certainty that this will happen.

7.3. Housing Market Factors

Section 3.23 of the NPS-UD 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.

7.3.1. Monitoring

The following information is available on the MHUD Urban Development dashboard[9]. 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 two years 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 2: Dwelling Sales Price from MHUD Dashboard

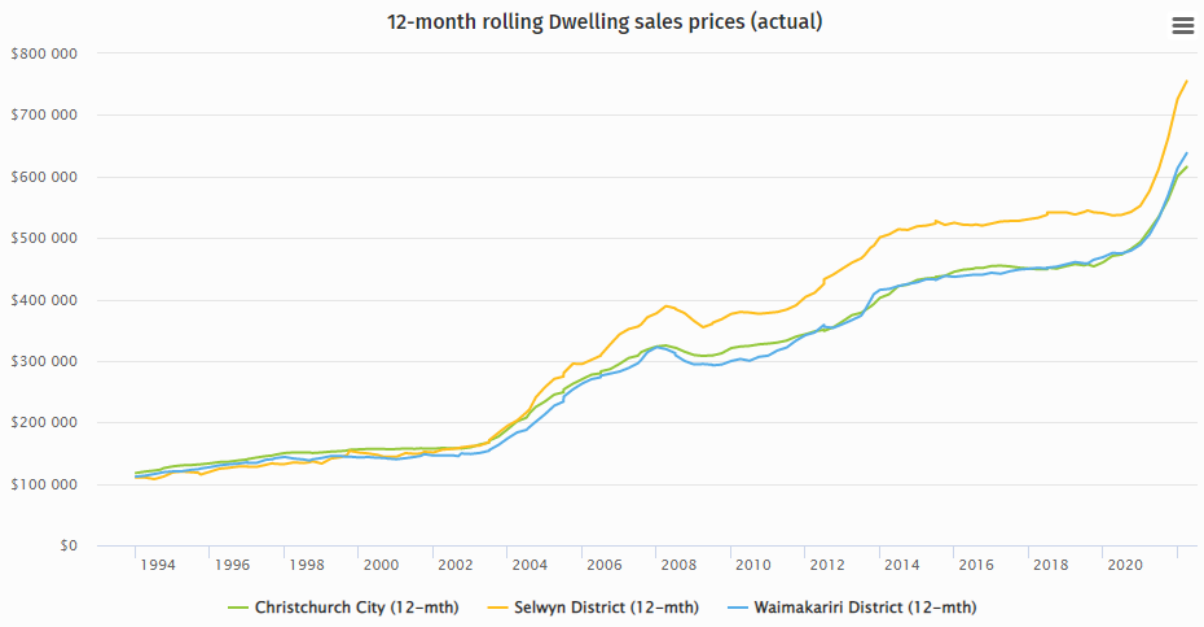


Table 4: Dwelling Sales Price Comparison

TA	31st Dec 2015	31st Dec 2020	31st Dec 2022	Change from 2015 to 2020	Change from 2020 to 2022
Waimakariri	437,500	490,500	723,250	53,000 (11%)	232,750 (32%)
Christchurch	441,250	494,650	672,000	53,400 (11%)	177,350 (27%)
Selwyn	523,500	552,250	818,250	28,750 (5%)	266,000 (33%)
Auckland	725,900	914,000	1,107,000	188,100 (21%)	193,000 (17%)

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 5% and 10%) compared to 21% in Auckland. The increase last two years for the 3 TAs was significant (between 27% and 33%) when compared to the combined growth of the previous years and is slightly higher than Auckland's % increase. This could suggest the relative value of the 3 TAs is attracting more demand.

[9] https://huddashboards.shinyapps.io/urban-development/

Rents

This figure shows the 12-month rolling rent for the three TAs. Between 2015 and 2020 rents dropped in Christchurch and Selwyn but rose in Waimakariri. This is probably because of higher rents through to 2015 following the Earthquakes with homes being repaired and residents needing short-term accommodation and then stabilised. In that same timeframe, Auckland's rent rose. Between 2020 and 2022, rents are rising fairly consistently across the country.

Figure 3: Dwelling Weekly Rents from MHUD Dashboard

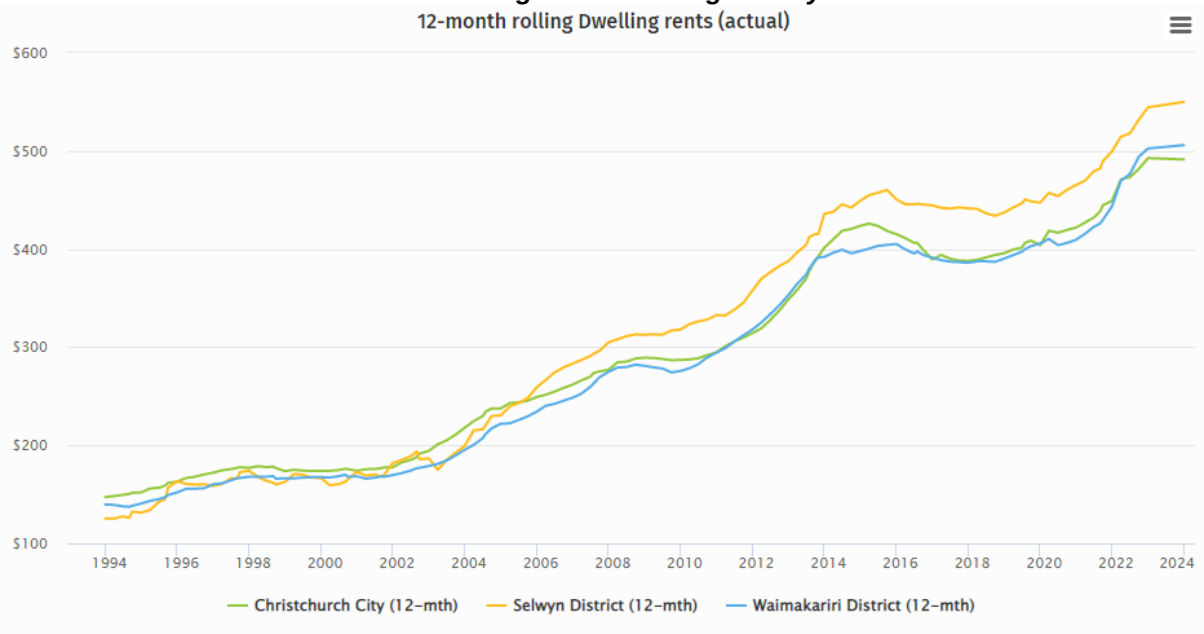


Table 5: Dwelling Weekly Rents Comparison

TA	31st Dec 2015	31st Dec 2020	31st Dec 2022	Change from 2015 to 2020	Change from 2020 to 2022
Waimakariri	405	410	503	5 (1%)	93 (18%)
Christchurch	415	422	493	7 (2%)	71 (14%)
Selwyn	451	465	545	14 (3%)	80 (15%)
Auckland	485	575	602	90 (16%)	27 (4%)

The table above shows a similar story as house prices. Rents between 2015 and 2020 ranged from increasing by 1% to 3% 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 2022 is similar across the 3 Tas with Auckland being lower.

Dwellings Sold

This figure shows the 12-month rolling total of dwellings sold in the 3 TAs. 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 4: Total Dwellings Sold from MHUD Dashboard

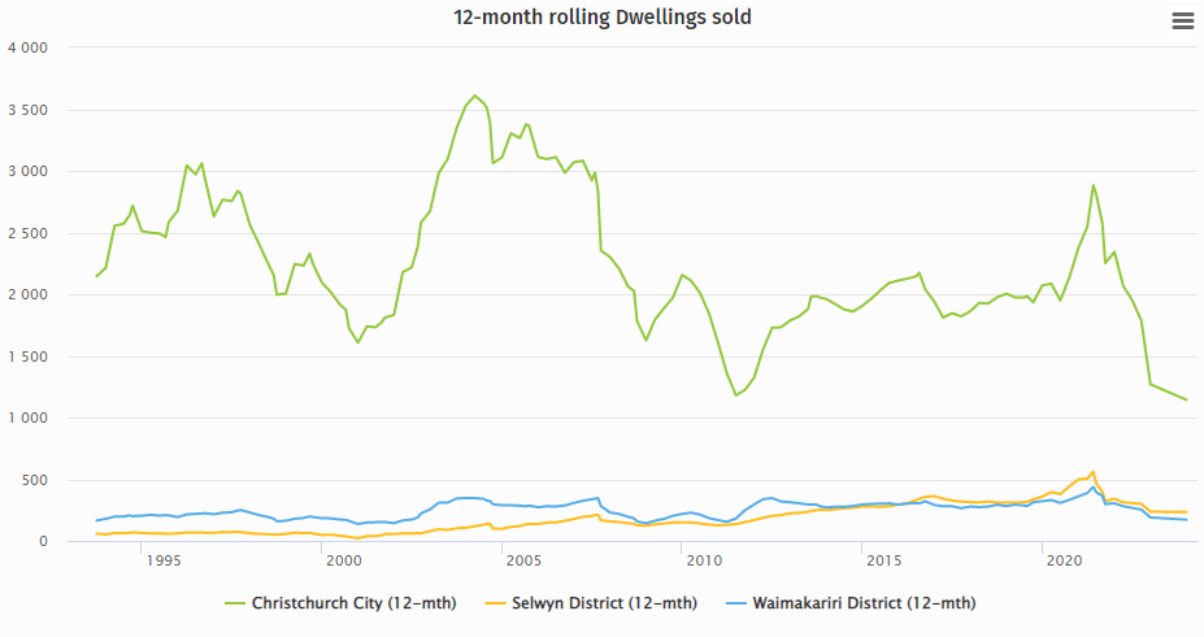


Table 6: Total Dwelling Sold Comparison

TA	31st Dec 2015	31st Dec 2020	31st Dec 2022	Change from 2015 to 2020	Change from 2020 to 2022
Waimakariri	294	361	190	67 (19%)	-171 (-90%)
Christchurch	2,111	2,373	1,270	262 (11%)	-1,103 (-87%)
Selwyn	294	499	237	205 (41%)	-262 (-111%)
Auckland	8,882	8,283	3,283	-599 (-7%)	-5,000 (-152%)

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

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 5: New Dwelling Consents and Household Growth from MHUD Dashboard

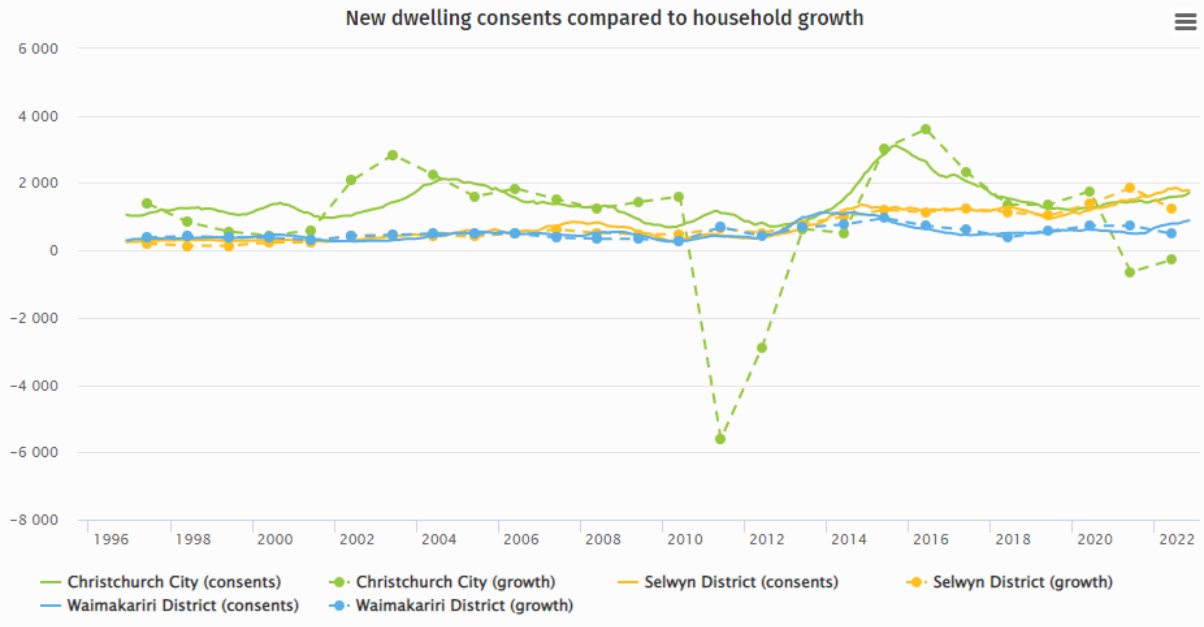


Table 7: New Dwelling Consents and Household Growth Comparison

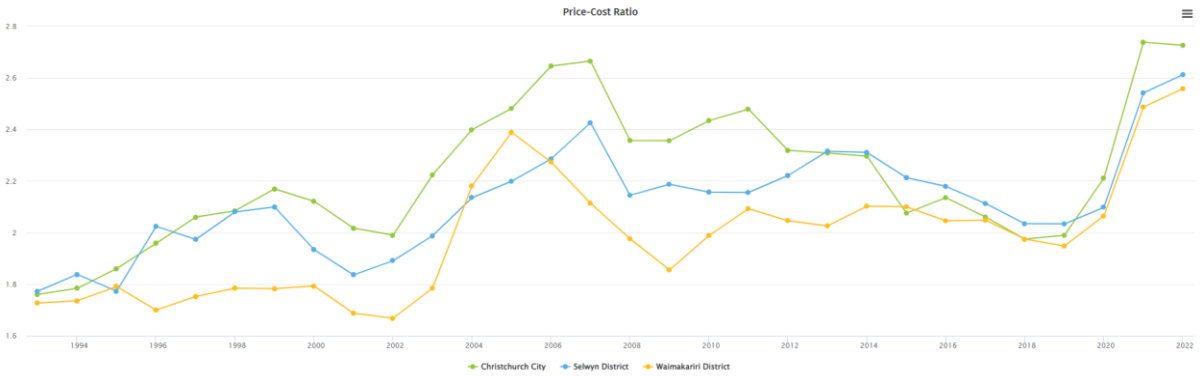
TA	30th June 2015		30th June 2020		30th June 2022		Change from 2015 to 2020		Change from 2020 to 2022	
	Consents	Growth	Consents	Growth	Consents	Growth	Consents	Growth	Consents	Growth
Waimakariri	924	962	616	731	551	615	-308	-231	-65	-116
Christchurch	2,858	3,040	1,259	1,760	1,586	-280	-1,599	-1,280	327	-2,040
Selwyn	1,243	1,207	1,196	1,379	1,726	1,345	-47	172	530	-34
Auckland	4,561	10,800	6,710	10,967	6,829	-2,967	2,149	167	119	-13,934

The table shows that consents and growth has slowed substantially from 2015 to 2020 for Waimakariri and Christchurch with Selwyn holding fairly steady. However, during that period Auckland has seen a large increase in consents though it doesn't correspond to household growth. The change from 2020 to 2022 shows a drop in household growth but a continued positive consent growth in all areas except Waimakariri. This could suggest a level of consenting to cover previous years of under supply or an over-supply as a response to higher dwelling prices.

Housing Price to Cost Ratio

The figure shows the difference between the price paid for a dwelling (house and land) compared to the construction costs (and associated fees). For example, if the land is 1/3 of the house price, the ratio is 1.5. The data shows that the recent increase in prices is largely an increase in land prices, as the ratio has increased.

Figure 6: Housing Price to Cost Ratio



Price Efficiency

This was previously provided by Ministry for the Environment through their dashboard and is now run by Ministry of Housing and Urban Development. This data has been removed.

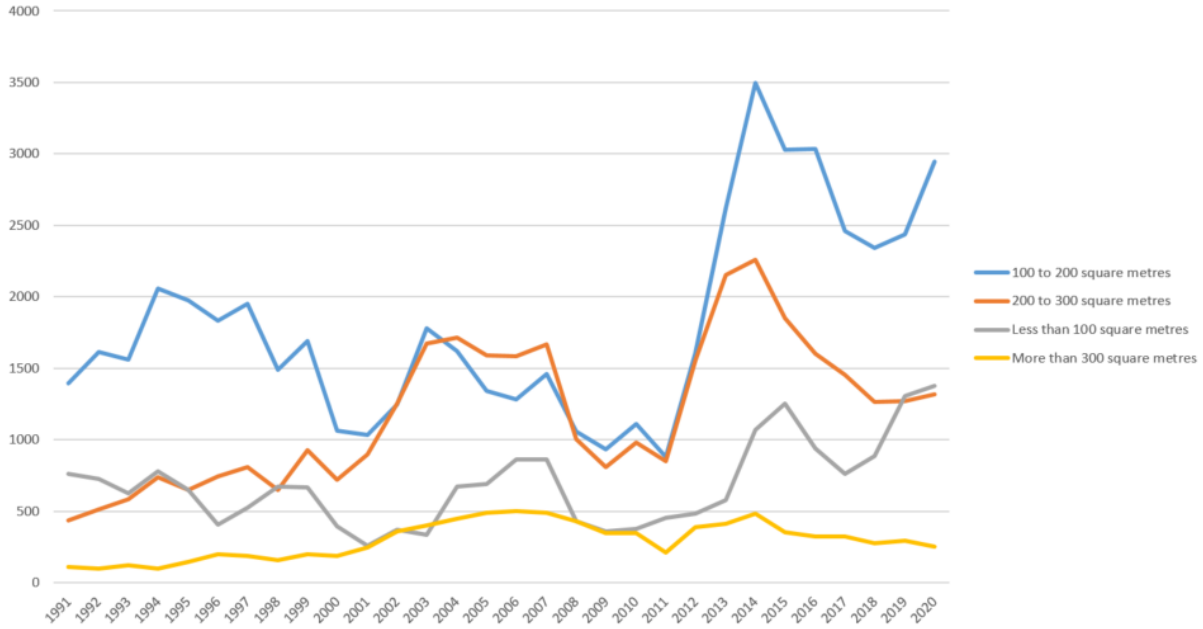
Price Discontinuity

This was previously provided by Ministry for the Environment through their dashboard and is now run by Ministry of Housing and Urban Development. This data has been removed.

House Size

The following figure shows the size of all dwellings consented over time. This is from Stats NZ and is for the Canterbury region only[10]. This shows some recent trends of a lot more 100m^2 – 200m^2 dwellings generally being built. It also shows that in the last few years more dwellings smaller than 100m2 has exceeded dwellings 200m^2 – 300m^2, which last occurred more than 20 years ago.

Figure 7: Number of Dwellings by Size over Time

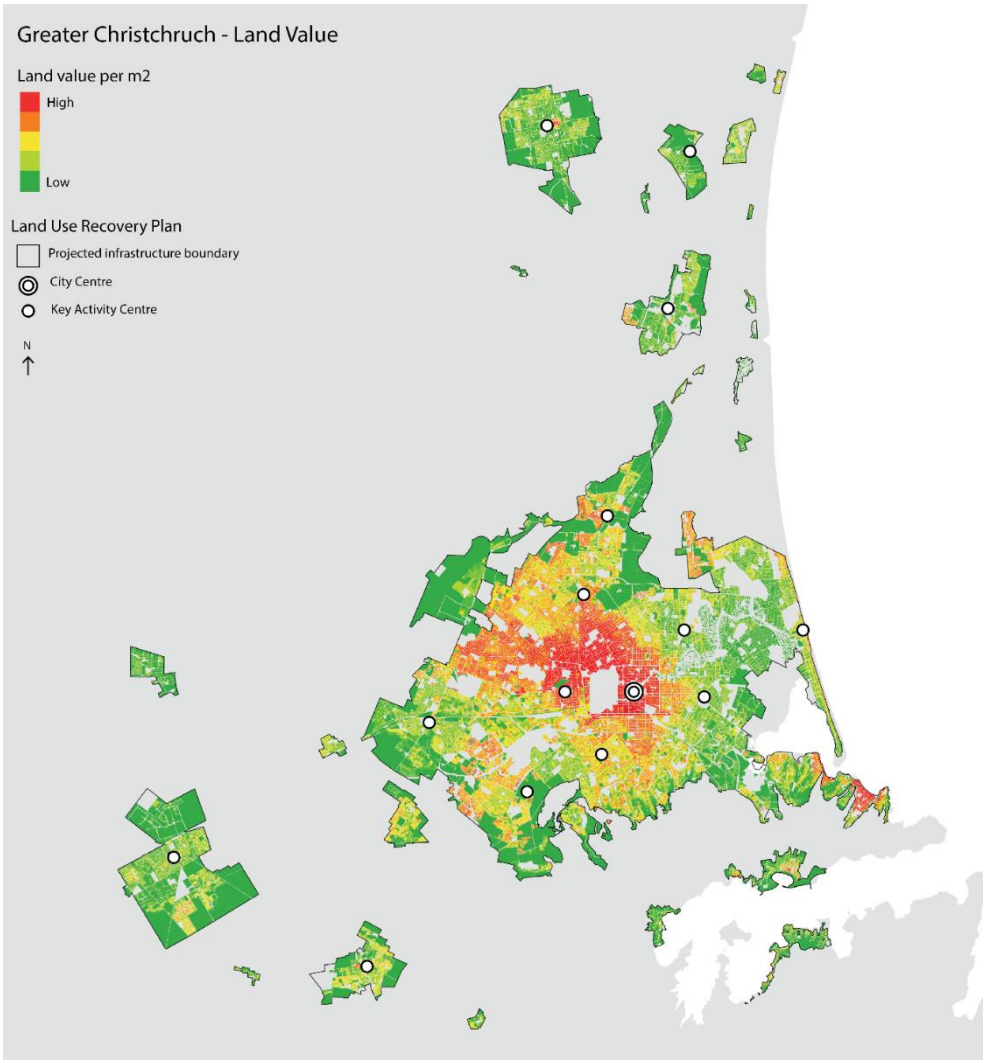


Land Values

Land Values can be a measure of desirability, in which you see higher densities closer to city centres. Land Values are often updated three-yearly and so analysis can focus on areas within Greater Christchurch that have higher land values suggesting a higher level of desirability and potentially better feasibility for increasing density. The following figure shows the expected picture of higher land values around the centre that dissipates out.

Figure 8: Land Values

[10] https://www.stats.govt.nz/news/consents-for-medium-sized-houses-increase-rapidly-in-the-last-decade



Accessibility

The diagrams below show the proportion of population living within travel threshold of 30 mins by walking, cycling, driving or 45 mins by public transport to employment opportunities in the morning peak. With the blue and green areas showing residents of these locations are able to access 60% or more jobs available at time of record within 30 mins of walking, cycling, driving or 45 mins using public transport, and the red and orange areas are able to access 20% or less.

This set of diagrams was last modified in November 2019, utilising Open Street Map road for walking, cycling and public transport, datasets from GTFS feeds of public transport, meshblock employment (States NZ) and drive time from TomTom.

Figure 9: Access to job using PT

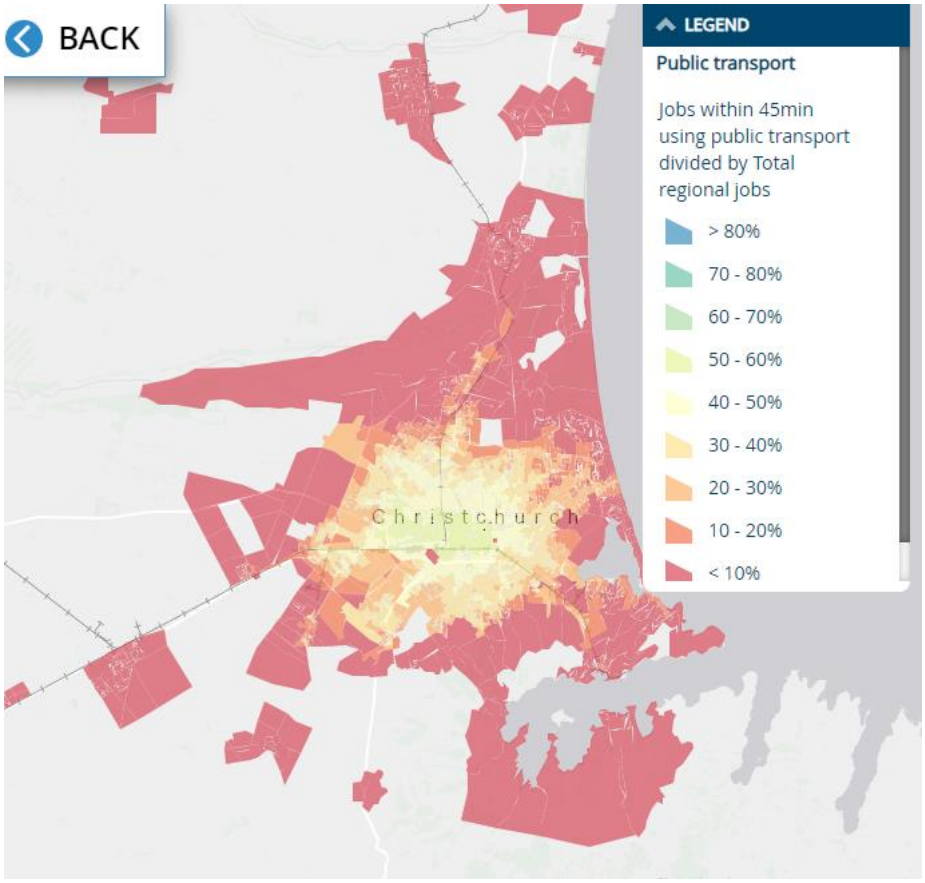


Figure 10: Access to job using vehicle

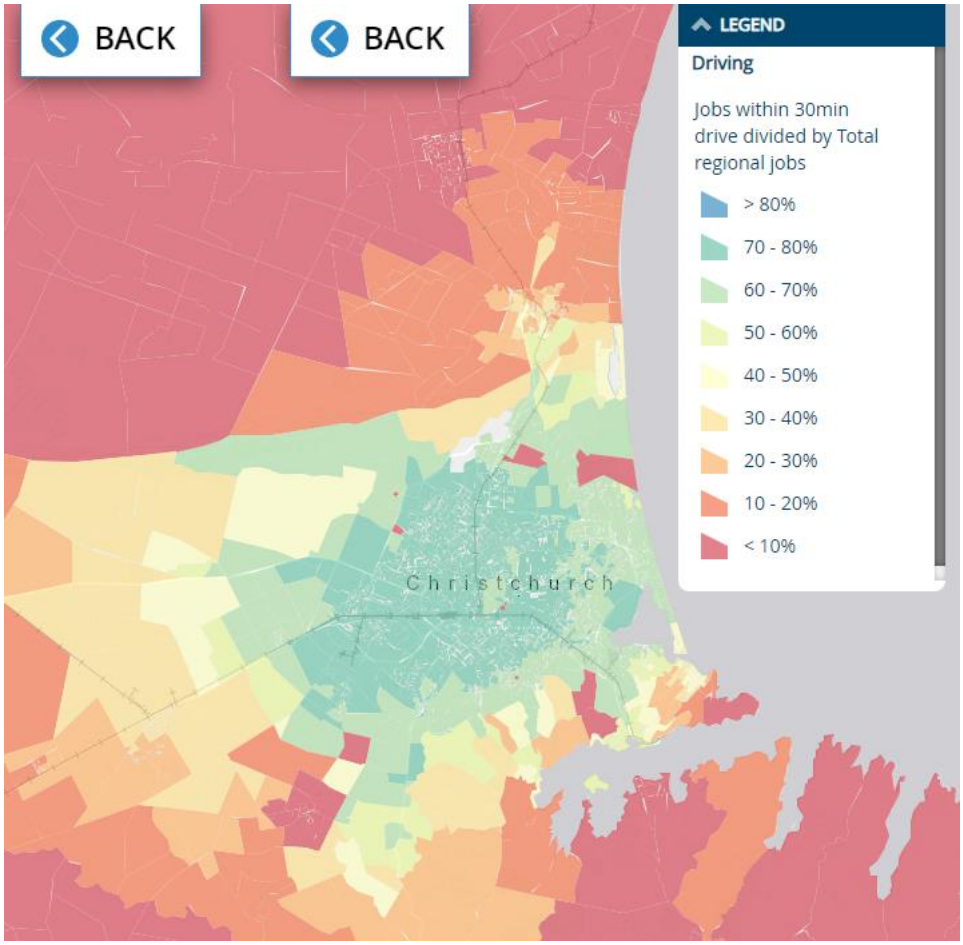


Figure 11: Access to job walking

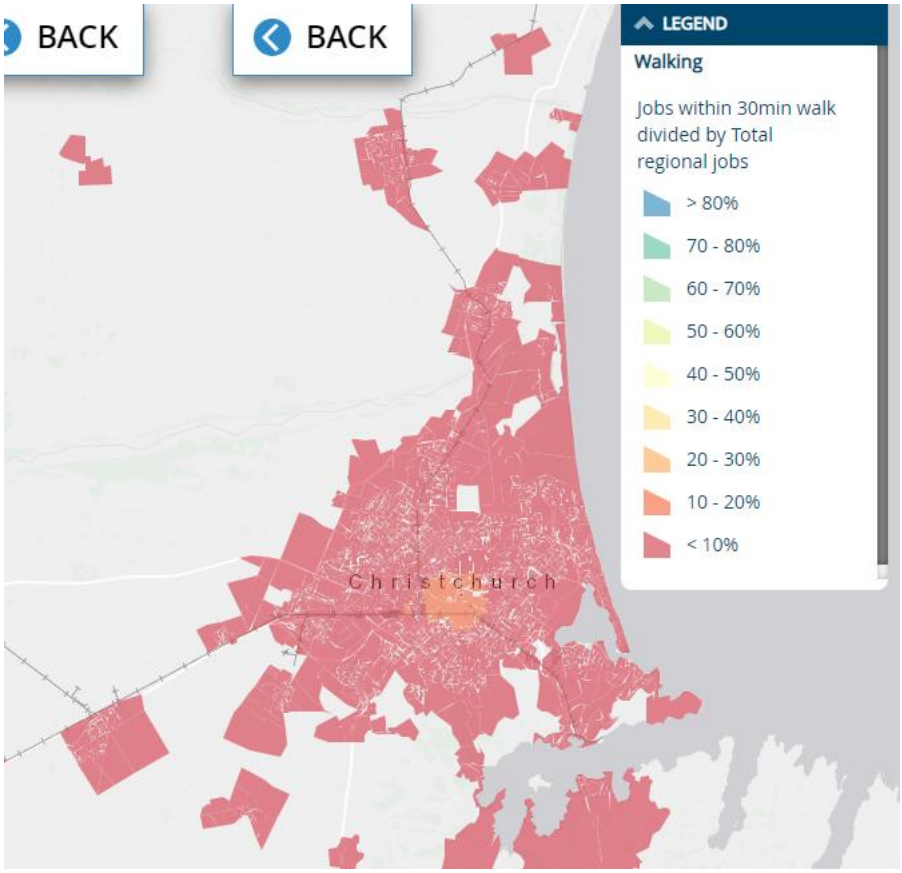
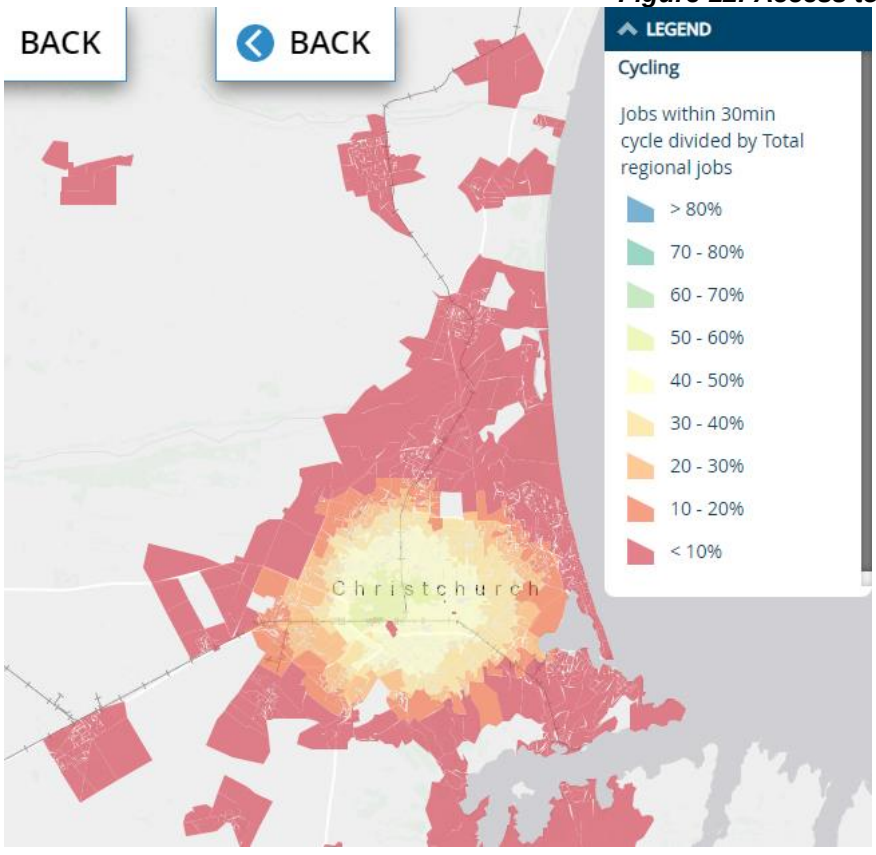


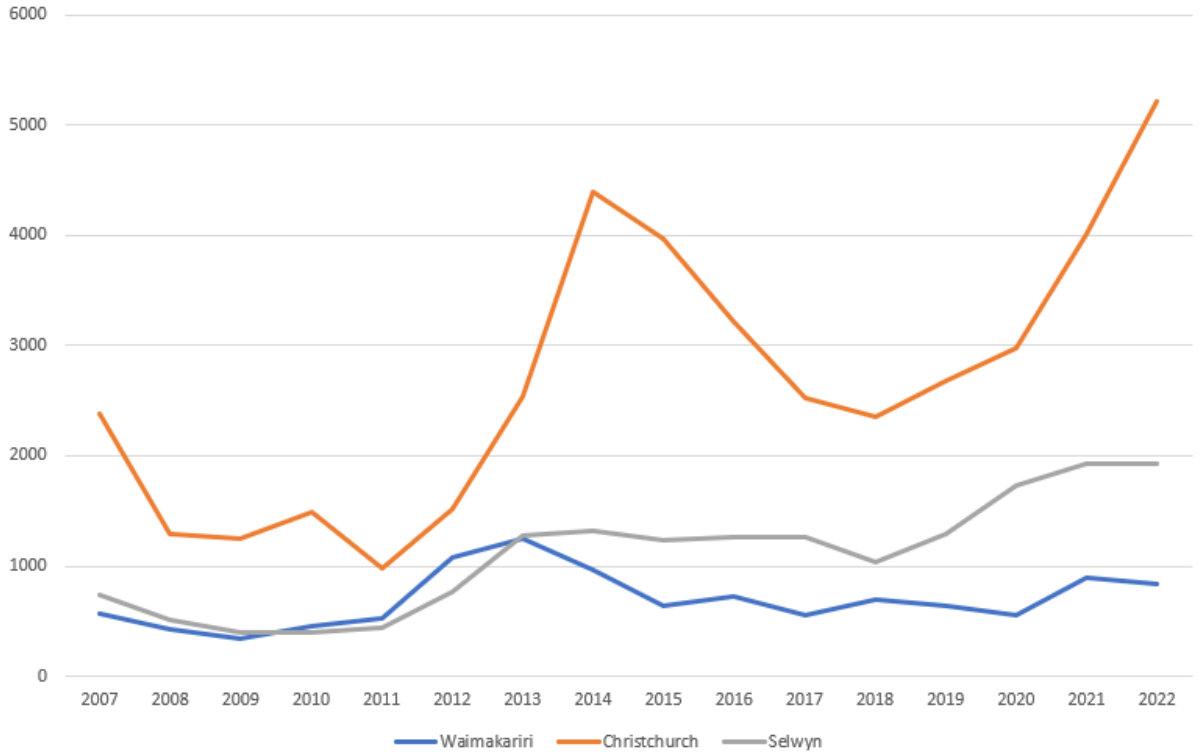
Figure 12: Access to jobs cycling



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 take-up rates can be found in Section 7.5.6. 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 13: Net New Dwelling Consents by TA

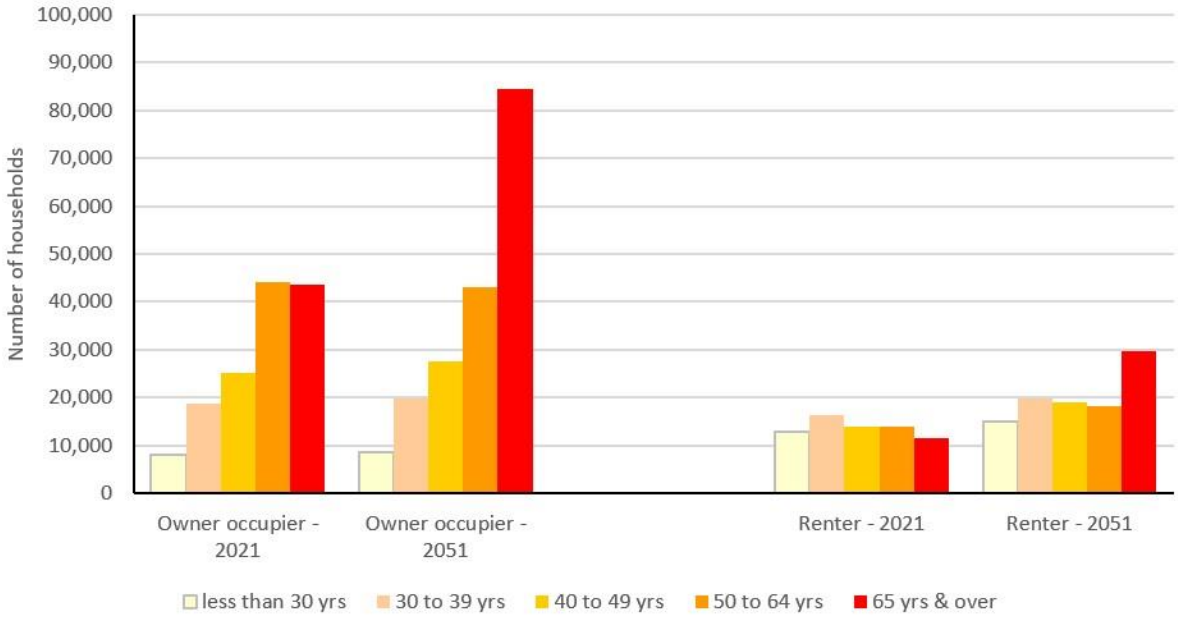


Home Ownership

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.

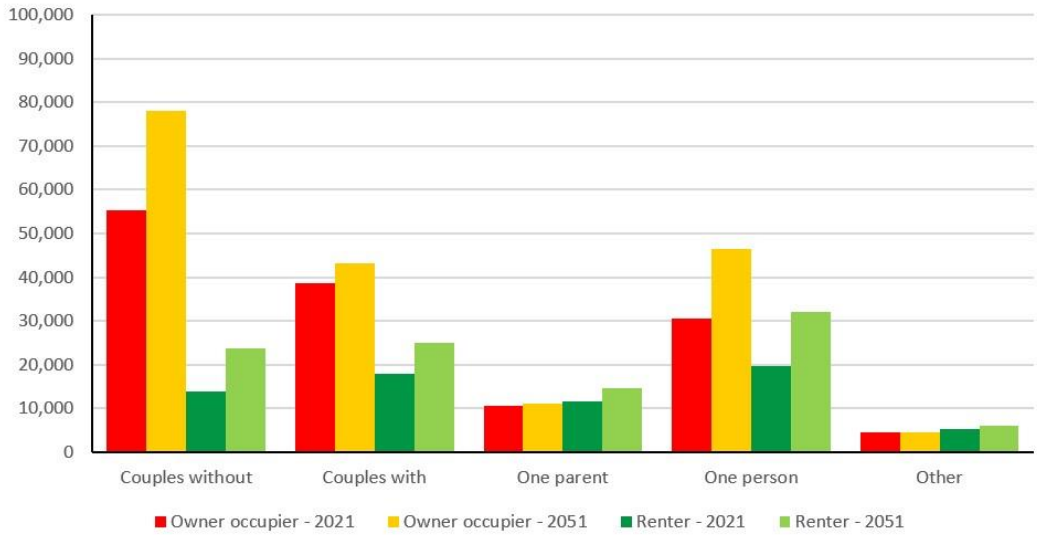
Figure 14: Change in Households by Tenure and Age Group



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.

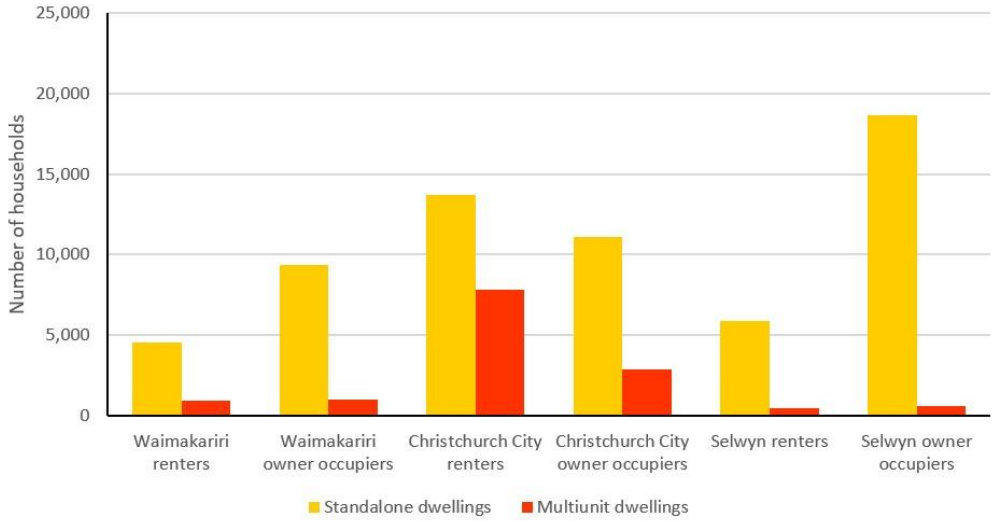
Results from national and international studies indicate that residents give priority to the number of bedrooms when choosing a dwelling. The number of bedrooms required depends on the size of the household. There is currently a gap in information regarding the relationship and trade-offs between the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

Figure 15: 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 16: 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.

Table 8: Rents, House Prices and Income over Time[11]

[11] From Livingston Report

	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

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.

Affordability is the relationship between house prices and income. Factors that influence house prices and income are more national fiscal policies rather than local government. Lowering of interest rates and Loan to Value Ratio's lead to the ability for more people to borrow and subsequently drive house prices up. The release of new land for development will assist the market overall and if associated costs, such as infrastructure, can be minimised then this can reduce pressures on rising house prices, however, fiscal policies will influence prices more. Planning decisions should seek the efficient use of infrastructure to limit costs.

Recent work by Greater Christchurch[12] builds on this analysis. This tested different urban forms as to what achieves better affordability. The result shows that urban form is less of a factor and household income and cost of development continue to drive affordability issues.

7.3.2. 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

[12] Greater Christchurch Spatial Plan Dwelling Affordability Assessment 2022

August 2017 analysing the future need for social housing in New Zealand[13]. 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 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.

Table 9: Current Social and Affordable Housing Supply in Greater Christchurch[14]

	Public Housing	Transitional Housing	Assisted Rental	Progressive Home Ownership	Total
Waimakariri	174	0	117	0	291
Christchurch	7,168	335	1,896	51	9,450
Selwyn	13	0	14	0	27
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.

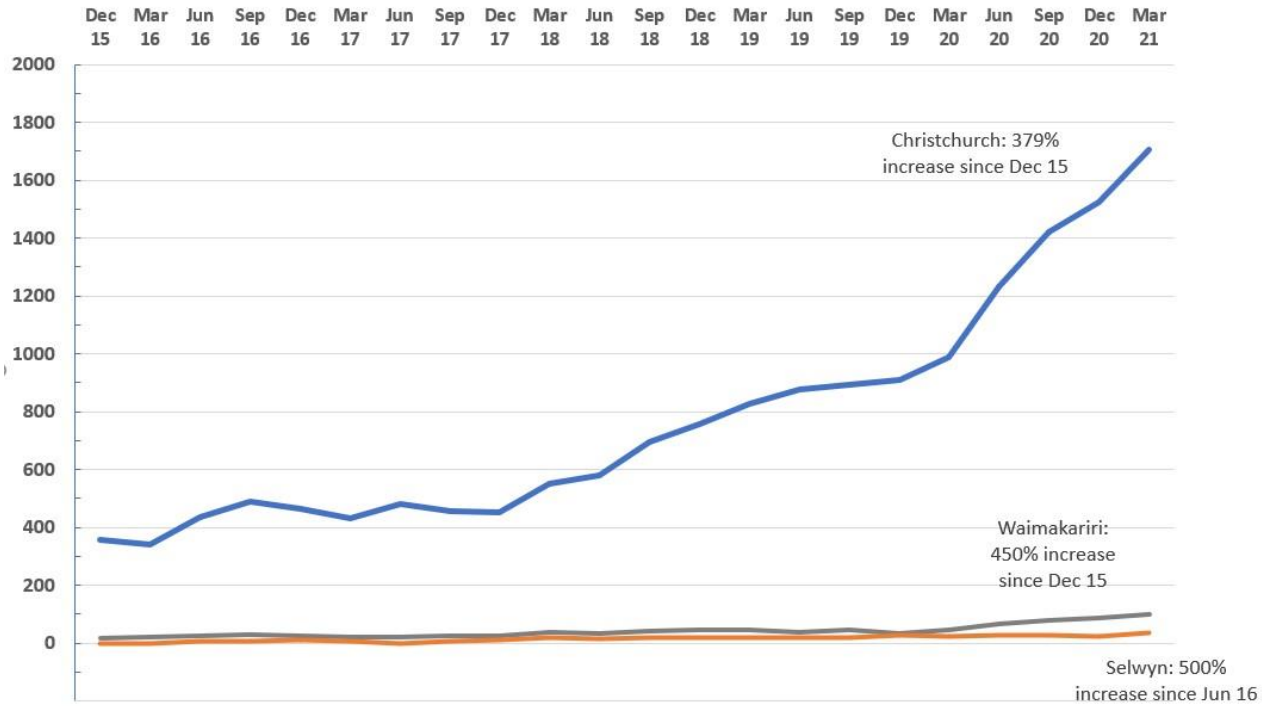
The Livingston and Associates report also analyses the changes in affordability across Greater Christchurch. The data shows that the rate of increase in house prices and rents has outpaced increases in household incomes. The result is a declining rate of home ownership and an increasing rate of housing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

Figure 17: Ministry of Social Development, Public Housing Register 2015 – 2021

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

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



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.

Table 10: Housing Register, by TA and Priority[15]

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

Table 11: Housing Register, by TA and bedrooms required – March 2021

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

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 Grants was rising prior to COVID-19 and has increased rapidly

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

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 in concentrated in households with lower incomes.

Table 12: Number of Stressed Renters

	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.

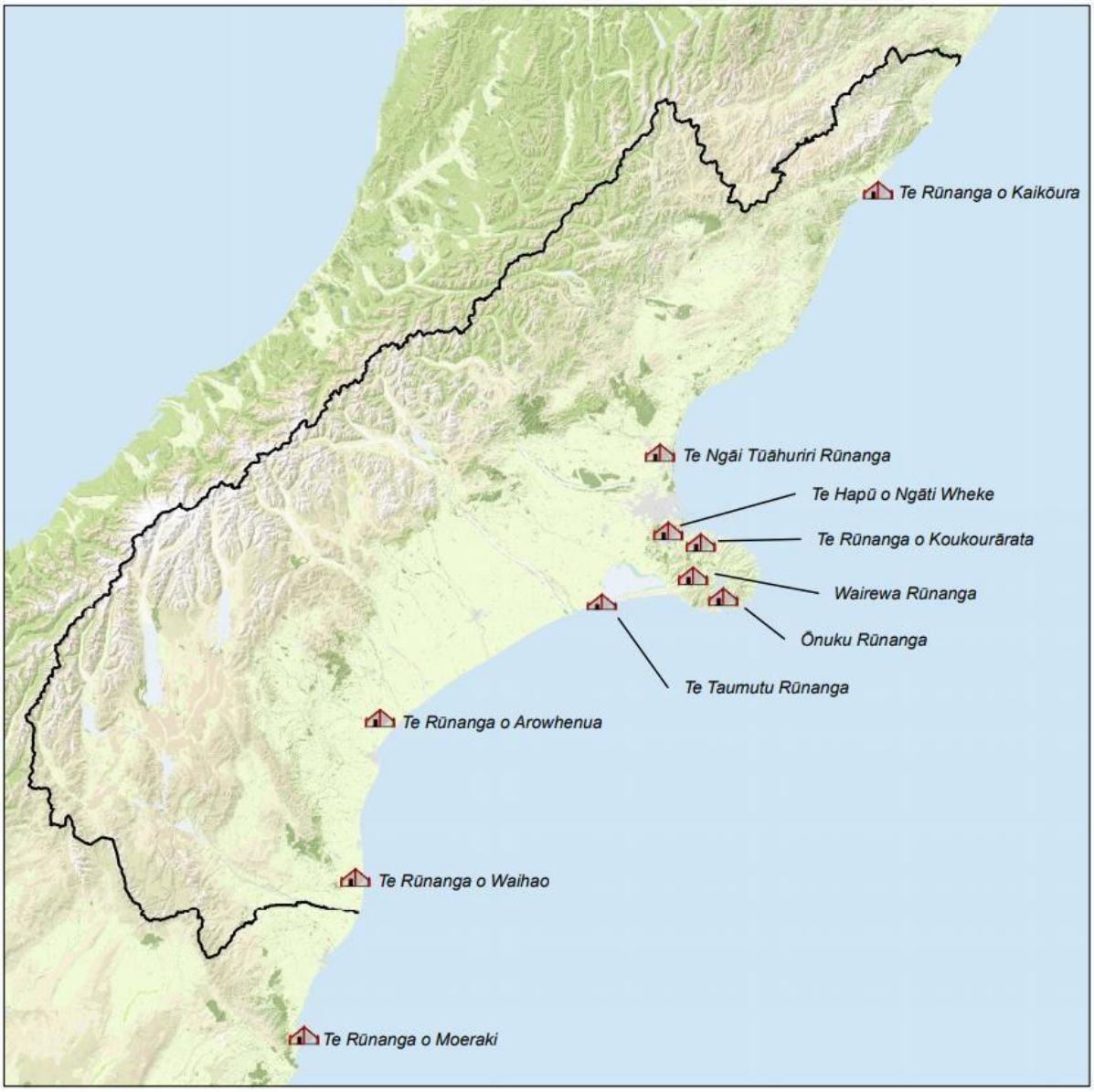
7.3.3. Māori Housing Demand

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 interviews (Page 14)**.**

Figure 18: Map of Pāpatipu marae names and locations within the Canterbury Region[17]

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

[17] From Christchurch District Plan Chapter 1.2.18.



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.

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[18].

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

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.

7.3.4. 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 on 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 and absence of physical barriers contributed to the ease with which the land was able to be subdivided and serviced. Thes factors, as well as low land values and landowners preferences, resulted in residential developments having lower urban densities in comparison to 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. The development sector engagement analysis in Section 7.3 identifies that locational preference are driven by many reasons, including the availability of sections and houses, lifestyle, employment, education, family, financial circumstances, and at least in part, to where people want to go, and how often these trips need to be taken (people's willingness to travel). Locational attributes were identified as one of the most desirable features when looking for a house, as per the Grattan Institute Study (2011)[19]. 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 in response to age, financial changes in circumstance, or other conditions change such as transport costs or major improvements to an area are completed (e.g., rebuild of the central city, revitalisation of older commercial centres, the Ōtākaro 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 is 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 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.

plans/selwyn-district-plan/selwyn-district-plan-review/supportinghttps://www.selwyn.govt.nz/property-And-building/planning/strategies-and-plans/selwyn-district-plan/selwyn-district-plan-review/supporting-information/baseline-reportsinformation/baseline-reports

[19] The Housing We'd Choose, Grattan Institute, 2011

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. Analysis of the interrelationship between housing preference and whether access to the employment opportunities and services provided within business centres and industrial parks is required to establish the extent to which this is influencing housing choices relative to other factors.

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. The strong uptake of housing in the central city maybe an indication that access to employment is overtaking the perceived benefits (such as space, privacy, and capital gains) of standalone dwellings in the suburbs and townships in Selwyn and Waimakariri districts. The success of the I-Zone and I-Port industrial hubs in Rolleston, and the enhancement of the town centres in Kaiapoi, Rangiora and Rolleston, are other examples of where access to the employment opportunities offered within business centres may be influencing housing preferences and demand.

Greater Christchurch will be affected by climate change, and this will have an effect on future housing demand, as well as the resilience of the current housing stock to natural hazard risks. 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.

7.3.5. 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.

7.3.6. Migrant Demand

Migrant demand comes in two forms; from other countries, and from other regions within the country.

International Migration

Stats NZ track international migration as part of the Population Estimates. The following table shows recent international migration and the impact of closed borders during the pandemic. Population growth largely consists of international migration with almost 7,000 people arriving to the area in 2020. This dropped to 250 during 2021.

Table 13: International Migration by TA

TA	2019	2020	2021	2022
Waimakariri	170	350	80	-90
Christchurch	3,400	5,500	-560	-910
Selwyn	500	580	-120	-120
Total	4,070	6,430	-600	-1,120

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 1,000-person increase in monthly Asian arrivals raises real house prices by around 6 percent.

Internal Migration

Stats NZ track international migration as part of the Population Estimates. The following table shows consistent trends in people within New Zealand moving to the area. Christchurch generally loses people due to 'Age and Stage' or lifestyle decisions, whereas the districts growth is largely from internal migration. 2020 saw almost as many people leave Christchurch as arrived in Selwyn, whereas 2021 saw an increase in the total people moving to the area with less leaving Christchurch.

Table 14: Internal Migration by TA

TA	2019	2020	2021	2022
Waimakariri	1,100	1,400	1,600	1,300
Christchurch	-1,500	-2,600	-2,700	-1,200
Selwyn	1,900	2,800	4,700	3,000
Total	1,500	1,600	3,600	3,100

7.3.7. Ethnicity and Housing

Housing plays a critical role in the social structure, as it provides a place for meetings, traditions, rituals, and other cultural expressions [20]. Māori and Pacific households often have culturally specific requirements and preferences in relation to dwelling design, which can influence their housing preferences, choices and tradeoffs. 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 accommodation[21]. 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%).

Table 15: Census Data on Ethnicity

Total	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%

Table 16: Households by tenure by ethnicity

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

[21] 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

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 Zealand / 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.

7.3.8. Household Crowding

The size of households is an important factor to monitor. If appropriate housing is not supplied by the market, crowding or underutilisation occurs. Analysis uses the Canadian National Occupancy Standard (CNOS), which is also used by the New Zealand Government as a core housing indicator. It determines 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 bedroom[22]

When looking at Christchurch, Selwyn, and Waimakariri, Christchurch City had the highest relative level of crowding with 9% of renter households crowded, whereas 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. On the other hand, 52% of total dwellings have 2 or more bedrooms available, potentially suggesting underutilisation.

Table 17: Crowding and Underutilisation

	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 + bdrms 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 + bdrms 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 + bdrms 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%

7.3.9. 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.

[22] Statistics New Zealand, http://archive.stats.govt.nz/tools_and_services/nzdotstat/tables-by-subject/housing-quality-tables/crowding-occupancyrate.aspx, 2018

Table 18: Ratio of 2018 Census Count of Dwellings and Households

Area	Ratio	Dwellings	Households
New Zealand	1.14	1,866,517	1,653,792
3 TAs	1.11	201,480	181,038
Queenstown-Lakes	1.55	20,403	13,176

Table 19: Percentage of Dwellings Unoccupied on 2018 Census Night

Area	Percentage
New Zealand	11%
3 TAs	8%
Queenstown-Lakes	29%

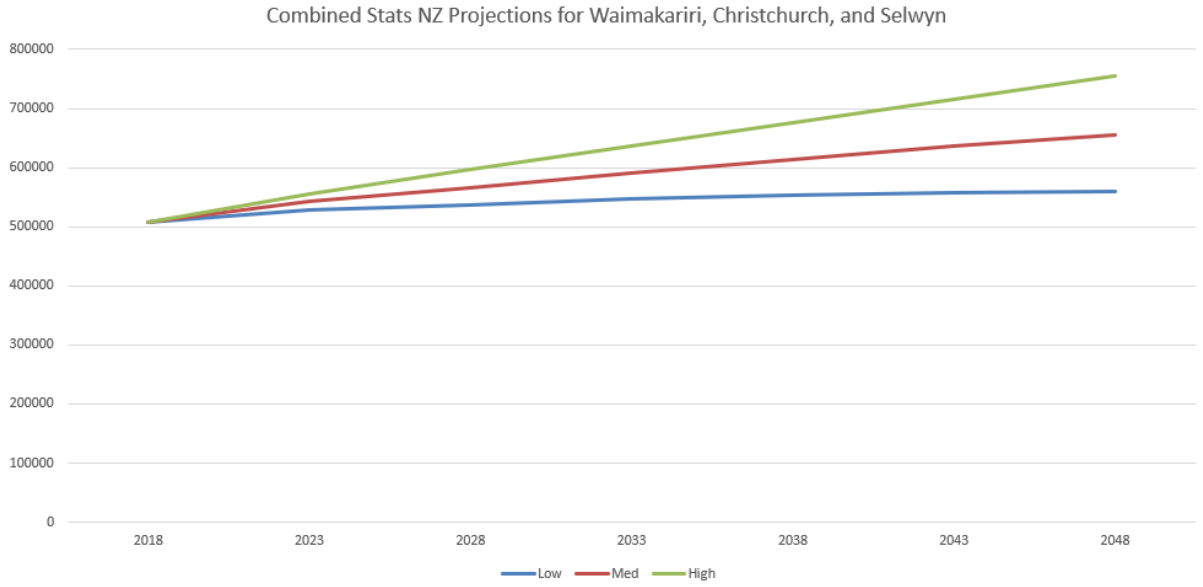
7.4. Demand

7.4.1. Projection Ranges

Identifying Base Projection Data

The initial starting point is the Stats NZ 2018 subnational population projections (low, medium and high projections)[23], as it is the best information available and achieves consistency in terms of methods and consistency with national-level projections[24]. These provide an indication of future population change based on assumptions about future demographic behaviour (birth rates, death rates, net migration)[25]. The Stats NZ 2018 Estimate[26] 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 558,400 to 755,100.

Figure 19: 2018 Combined Projections for Waimakariri, Christchurch, and Selwyn Councils



[23] https://www.stats.govt.nz/news/new-zealands-population-could-reach-6-million-by-2050/

[24] https://www.stats.govt.nz/methods/population-statistics-user-guide

[25] For more information on different Stats NZ terms and measures on population, visit https://www.stats.govt.nz/methods/population-statistics-user-guide.

[26] https://www.stats.govt.nz/news/migration-drives-high-population-growth/

Identify Range of Projections

The initial range of projections are based on Stat NZ's 2018 subnational population projections. Other projection possibilities considered were relying solely on take-up data, and adjusting immigration based on Treasury's report[27]. Take-up is not a one-to-one correlation to growth, as shown in 7.3.1 so is not a good sole measure of growth. Treasury's report (developed before COVID restrictions) considers immigration as an economic decision and therefore New Zealand's relative economic conditions among other things. The result is slightly more population and more of a working age. The results are at a national level and do not provide projections by TA.

The following table outlines the additional population projected for Waimakariri, Christchurch, and Selwyn combined, and shown over the NPS-UD timeframes.

Table 20: Range of Projections for Total TAs

Area	Short Term 2022 – 2025	Medium Term 2025 – 2032	Long Term 2032 – 2052	Total 2022 – 2052
High	25,500 (8,500 p.a.)	56,520 (8,074 p.a.)	156,680 (7,834 p.a.)	238,700 (7,957 p.a.)
Medium	16,560 (5,520 p.a.)	34,540 (4,934 p.a.)	83,560 (4,934 p.a.)	134,660 (4,489 p.a.)
Low	7,680 (2,560 p.a.)	12,980 (1,854 p.a.)	13,880 (694 p.a.)	34,540 (1,151 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 21: Range of Assumptions for Waimakariri District

Waimakariri	Range	Fertility	Life Expectancy Male	Life Expectancy Female	Net Migration
High	2023	2.01	81.3	84.6	8,500
	2048	2.00	85.2	88.1	5,500
Medium	2023	1.90	80.8	84.1	7,000
	2048	1.79	83.9	87	4,000
Low	2023	1.79	80.3	83.6	5,500
	2048	1.58	82.3	85.6	2,500

Table 22: Range of Assumptions for Christchurch City

Christchurch	Range	Fertility	Life Expectancy Male	Life Expectancy Female	Net Migration
High	2023	1.70	80.7	84.0	6,000
	2048	1.71	84.6	87.6	15,000
Medium	2023	1.52	83.3	86.4	-1,500
	2048	1.95	84.7	88.0	7,500
Low	2023	1.51	79.7	83.0	-9,000
	2048	1.33	81.7	85.0	0

[27] https://www.treasury.govt.nz/sites/default/files/2018-04/sense-partners-report.pdf

Table 23: Range of Assumptions for Selwyn District

Selwyn	Range	Fertility	Life Expectancy Male	Life Expectancy Female	Net Migration
High	2023	2.06	85.2	88.3	18,500
	2048	2.05	89.0	91.7	7,000
Medium	2023	1.95	84.7	88.0	16,000
	2048	1.84	87.6	90.7	4,500
Low	2023	1.84	84.2	87.3	13,500
	2048	1.63	86.1	89.1	2,000

7.4.2. Most Likely Projection

The most likely projection sits within the projection range identified above. To identify the most likely projection, the growth (based on estimates) of each TA was compared to the projections within each TA. The following tables show the revised 2018 Medium and High Population Projections shown as annual averages compared with the Stats NZ Population Estimates Average of the last 5 years. The medium-term annual average is 2018 to 2028 and the long-term annual average is 2018 to 2048.

Waimakariri

Waimakariri has seen higher annual population growth than projected over the past 5 years. The following table shows population trends within Waimakariri. The 5-year estimate shows average growth of 1,650. This sits just above the average yearly High Projection. Therefore, the most appropriate projection for Waimakariri is High.

Table 24: WDC Projection and Estimate Comparison

	Medium Term (Annual Average)	Long Term (Annual Average)
Medium Projection	1,210	837
High Projection	1,580	1,254
Last 5 Year Average Growth	1,650	

Christchurch

The following table shows population trends within Christchurch. The 5-year estimate shows average growth of 1,375. This sits just below the Medium Projection. Therefore, the most appropriate projection for Christchurch is Medium.

Table 25: CCC Projection and Estimate Comparison

	Medium Term (Annual Average)	Long Term (Annual Average)
Medium Projection	1,700	2,134
High Projection	3,670	4,337
Last 5 Year Average Growth	1,375	

Selwyn

The following table shows population trends within Selwyn. The 5-year estimate shows average growth of 4,000. This sits above the High Projection. Therefore, the most appropriate projection for Selwyn is High.

Table 26: SDC Projection and Estimate Comparison

	Medium Term (Annual Average)	Long Term (Annual Average)
Medium Projection	2,920	1,940
High Projection	3,520	2,634
Last 5 Year Average Growth	4,000	

Identifying a Starting Population Projection

The 2022 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 27: Stats NZ Population Estimates for TA

Area	2022 Population Estimate
Waimakariri	67,900
Christchurch	389,300
Selwyn	79,300
Total	536,500

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.

The potential result of these uncertainties is that a low projection becomes more appropriate. This would mean less expected growth and therefore less capacity required. While this may be a reality, the long-term projections are always uncertain, and the review of these projections should occur every three years. It is also a conservative approach for planning to project higher so that there is capacity with the timing and availability of land becoming the critical factor.

The following are the TA projections used.

Table 28: TA Population Projections

	2022	2025	2032	2052	Total Change
Total Projection	536,500	558,640	600,560	708,840	+172,340

7.4.3. 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. This is discussed in the Housing in Aotearoa 2020 report by Stats NZ[28] and the trends identified are reflected in the Stats NZ projection assumptions. The higher Selwyn figure reflects the current younger demographic as compared to Christchurch and Waimakariri, but the trend is in the same direction.

Table 29: Stats NZ Average Household Size

[28] https://www.stats.govt.nz/assets/Uploads/Reports/Housing-in-Aotearoa-2020/Download-data/housing-in-aotearoa-2020.pdf

Area	2021 Average Household Size	2024 Average Household Size	2031 Average Household Size	2051 Average Household Size
Waimakariri	2.52	2.47	2.4	2.34
Christchurch	2.54	2.52	2.49	2.45
Selwyn	2.90	2.87	2.80	2.65

7.4.4. Total Household to GCP Urban and Rest of TA Areas

Table 30: TA Urban GCP Projections

Urban GCP Household Demand	Short Term 2022 – 2025	Medium Term 2022 – 2032	Long Term 2022 – 2052
Waimakariri	1,829	4,682	11,308
Christchurch	3,208	11,782	32,103
Selwyn	3,000	8,324	23,414
Total	8,037	24,788	66,825

Table 31: Rest of TA Projections

Rest of TA Household Demand	Short Term 2022 – 2025	Medium Term 2022 – 2032	Long Term 2022 – 2052
Waimakariri	936	2,432	5,688
Christchurch	48	219	376
Selwyn	1,300	2,652	6,199
Total	2,284	5,303	12,263

7.4.5. GCP Area 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 32: TA GCP Urban Projection by Typology %

Urban Household Demand by Typology	Short Term 2022 – 2025		Medium Term 2022 - 2032		Long Term 2022 - 2052	
	Standalone	Multi-Unit	Standalone	Multi-Unit	Standalone	Multi-Unit
Waimakariri	92%	8%	91%	9%	89%	11%
Christchurch	78%	22%	76%	24%	72%	28%
Selwyn	97%	3%	96%	4%	96%	4%

Table 33: TA GCP Urban Projection by Typology Totals

Urban Household Demand by Typology	Short Term 2022 – 2025		Medium Term 2022 - 2032		Long Term 2022 - 2052	
	Standalone	Multi-Unit	Standalone	Multi-Unit	Standalone	Multi-Unit
Waimakariri	1,595	234	3,995	687	9,491	1,817
Christchurch	0	3,208	2,103	9,679	10,163	21,939

Selwyn	2,908	92	8,001	323	22,509	906
Total	4,503	3,534	14,099	10,689	42,163	24,662

7.4.6. GCP Household Demand by Typology with 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 34: TA Urban Projection by Typology with Competitiveness Margin

Urban Household Demand by Typology + Competitiveness	Short Term 2022 – 2025		Medium Term 2022 - 2032		Long Term 2022 - 2052	
	Standalone	Multi-Unit	Standalone	Multi-Unit	Standalone	Multi-Unit
Waimakariri	1,914	281	4,794	824	11,114	2,124
Christchurch	0	3,850	2,524	11,615	11,793	25,714
Selwyn	3,490	110	9,601	388	26,285	1,058
Total	5,404	4,241	16,919	12,827	49,192	28,896

7.5. 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.

'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) and changes in typologies. 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 *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.

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 that 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 being 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 2: Methods, Inputs, and Assumptions.

7.5.1. 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:

Table 35: NPS-UD Capacity, Timeframes, and Implications

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.

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 Māori 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 have 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 450m^2. As such for all Residential Suburban zoned sites greater than 450m^2 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.

Selwyn and Waimakariri District Council

The Selwyn and Waimakariri District plans were both under review at the time of this assessment. This assessment is based on the proposed plan zonings, as well as the variations to the proposed plans to comply with the Enabling Housing Act.

This evaluation excludes rural zones and existing development areas / small settlements in both district plans. In Selwyn, the following areas have also been included as plan enabled capacity:

- South Faringdon (Special Housing Accord Area)
- Acland Park (Special Housing Accord Area)
- South-East and South-West Faringdon (COVID fast-track approved area)
- Faringdon Oval (PC70) (COVID fast-track approved area)
- Approved plan changes; PC68, PC69, PC71 and PC72[29].

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 Formative 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 property[23].

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;
- That 25% of land area is set aside for infrastructure;
- That no commercial buildings will be constructed in residential zones[30].

This parcel specific information has been aggregated up to the TA level for reporting capacity.

Table 36: Plan Enabled Urban Capacity

GCP Urban Capacity	Short 2021 – 2024	Medium 2021 – 2031	Long 2021 – 2051
Waimakariri	79,345	79,345	79,345
Christchurch	544,000	544,000	544,000
Selwyn	108,024	108,024	118,554
Total	731,369	731,369	741,899

7.5.2. 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.

Christchurch

[29] PC69, PC71, and PC72 are under appeal and could change capacity once resolved.

[30] Home office/small business can cohabitate within residential dwellings.

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 37: Christchurch Residential Density Assumptions

Zone / Overlay	Theoretical (hh/ha)	Modified (hh/ha	Reason
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.
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 amount of additional capacity in the towns in the district. This breaks it down to Plan-Enabled, Infrastructure Ready, Reasonably Realised, and Feasible. Different levels of capacity recognises 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 38: Selwyn Residential Density Assumptions

Assumption	Reasonably Expected to be Realised
Infrastructure	25%
Medium Density Residential Zone Greenfield Sites	Rolleston – 500m^2 Lincoln – 650m^2 Prebbleton – 700m^2
Medium Density Residential Zone Infill Sites	Rolleston – 300m^2 Lincoln – 300m^2 Prebbleton – 300m^2
General Residential Sites	West Melton – 700m^2
Large Lot Sites	Rolleston – 6,000m^2 Lincoln – 6,000m^2 Prebbleton – 6,000m^2 West Melton – 6,000m^2

For more information on how growth model process, see Appendix 3: Formative Model Process.

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 39: Waimakariri Residential Density Assumptions

Assumption	Reasonably Expected to be Realised
Infrastructure	25%
Medium Density Residential Zone Greenfield Sites	Rangiora – 500m² Kaiapoi – 500m² Woodend – 500m² Pegasus – 500m²

Medium Density Residential Zone Infill Sites	Rangiora – 300m² Kaiapoi – 500m² Woodend – 300m² Pegasus – 300m²
General Residential Sites	Oxford – 600m²
Large Lot Sites	Rangiora – 6,000m² Kaiapoi – 6,000m² Woodend – 6,000m² Mandeville – 6,000m² Ohoka – 6,000m²
Settlement Zone	Small Settlements – 1,000m²

For more information on how growth model process, see Appendix 3: Formative Model Process.

Reasonable Expected to be Realised Capacity

Table 40: Reasonably Expected to be Realised Urban Capacity

GCP Urban Capacity	Short 2021 – 2024	Medium 2021 – 2031	Long 2021 – 2051
Waimakariri	15,234	15,234	15,234
Christchurch	94,000	94,000	94,000
Selwyn	22,067	22,067	23,022
Total	131,301	131,301	132,256

7.5.3. Reasonably Expected to be Realised and Infrastructure Ready

This section summarises the actual and likely availability of development infrastructure and additional 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:

Table 41: NPS-UD Infrastructure Timeframes and Implications

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 additional 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.

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 wastewater 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.

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 201525 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.

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.

Additional 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 additional 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.

Reasonable Expected to be Realised and Infrastructure Ready Capacity

Table 42: Reasonably Expected to be Realised Urban Capacity

Urban Capacity	Short 2021 – 2024	Medium 2021 – 2031	Long 2021 – 2051
Waimakariri	14,914	14,914	14,914
Christchurch	94,000	94,000	94,000
Selwyn	22,067	22,067	23,022
Total	131,301	131,301	132,256

7.5.4. 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 43: NPS-UD Feasibility Timeframes and Implications

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 NZ[31] 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.

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:

[31] https://statisticsnz.shinyapps.io/bpbench/

- 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 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 (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 then 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.

Table 44: Christchurch Typology Sensitivity Tests

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.

Selwyn and Waimakariri Feasibility Assessment

The Selwyn and Waimakariri growth models also assess feasibility. The model considers building costs, land values, sales revenues, and industry average profit margins. This considers feasibility of infill, redevelopment, and greenfield. Generally, this is a financial tool that tests whether development could return a profit. The feasibility assessment covers land development, greenfield buildings, and brownfield buildings.

For more information on how growth model process, see Appendix 3: Formative Model Process.

7.5.5. Summary of Feasible Capacity

Table 45: Feasible Urban Capacity

Urban Capacity	Short 2021 – 2024	Medium 2021 – 2024	Long 2021 – 2051
Waimakariri	5,950	5,950	14,450
Christchurch	94,000	94,000	94,000
Selwyn	11,550	11,550	24,100
Total	111,500	111,500	132,550

7.5.6. 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. The information below is collated and released by Stats NZ[32]. Multi-Unit contains what Stats NZ classifies as: apartments; retirement village units; townhouses; flats; and other.

Table 46: Take-Up across TAs

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Waimakariri Total	562	429	341	457	527	1,071	1,248	961	633	730	551	694	638	551	895	832
Waimakariri Standalone	526	401	312	423	478	1,045	1,127	819	577	465	524	579	587	515	839	753
Waimakariri Multi-Unit	36	28	29	34	49	26	121	142	56	265	27	115	51	36	56	79
Christchurch Total	2,381	1,286	1,250	1,492	980	1,511	2,539	4,389	3,969	3,211	2,522	2,356	2,686	2,982	4,005	5,212
Christchurch Standalone	1,305	798	840	1,071	710	967	1,868	3,115	2,303	1,914	1,475	1,248	1,305	1,480	1,612	1,755
Christchurch Multi-Unit	1,076	488	410	421	270	544	671	1,274	1,666	1,297	1,047	1,108	1,381	1,502	2,393	3,457
Selwyn Total	740	506	394	394	443	772	1,274	1,318	1,231	1,261	1,257	1,034	1,288	1,726	1,928	1,926
Selwyn Standalone	724	497	387	393	439	766	1,270	1,284	1,210	1,179	1,227	1,016	1,258	1,605	1,763	1,746
Selwyn Multi-Unit	16	9	7	1	4	6	4	34	21	82	30	18	30	121	165	180
3 TAs Total	3,683	2,221	1,985	2,343	1,950	3,354	5,061	6,668	5,833	5,202	4,330	4,084	4,612	5,259	6,828	7,970
3 TAs Standalone	2,555	1,696	1,539	1,887	1,627	2,778	4,265	5,218	4,090	3,558	3,226	2,843	3,150	3,600	4,214	4,254
3 TAs Multi-Unit	1,128	525	446	456	323	576	796	1,450	1,743	1,644	1,104	1,241	1,462	1,659	2,614	3,716

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, most new homes supply in Christchurch is now from redevelopment rather than greenfield.

[32] https://www.stats.govt.nz/information-releases/building-consents-issued-december-2022/

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.

8. NPS-UD Requirements and Response

There are several changes to this HCA following the previous capacity work that aligns with feedback received and the change in National Policy Statement.

NPS-UD changes from NPS-UDC

This table highlights the key changes between the national policy statements and how Greater Christchurch has responded to it.

Table 47: Changes between NPS-UDC and NPS-UD

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 assessing 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.

Changes from Previous Capacity Assessments

The following table shows feedback received and how Greater Christchurch has responded to it.

Table 48: Changes

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.
MfE Feedback on 2021 HCA	
More information on the 'factors of attraction' and quality of life or business	Additional work has been added to Section 7.3.4
More information on assumptions underlying projections, such as migration and household size.	Additional work has been added to 7.4.1
More information on the impact of planning decisions on affordability	Additional work has been added to Section 5 and 6
More information on the impact of infrastructure on affordability	Additional work has been added to Section 5 and 6
Investigate price efficiency and implications for a competitive land market	Additional work has been added to Section 7.3.1
Further discussion on the likely impact on Māori	Additional work has been added to Section 7.3.3
Discussion on the impact of inter-regional migration on	Additional work has been added to Section 7.3.6 and 7.4.1

demand, especially post-quake, and how much house prices are a pull factor	
Analysis of location choice (demand and capacity) at a more granular geographic level	Work to show more granular level is to be completed.
More analysis of what the data and developer feedback suggest.	Additional work has been added to Section 5 and 6
Input data costs shown, including land values and sales price, and example modelling process for transparency	Examples have been added through Section 7.5

The following table outlines how the NPS-UD requirements are met. The relevant parts of the NPS-UD can be found in Appendix 1: NPS-UD Objectives and Policies.

Table 49: How NPS-UD requirements are met

NPS-UD Requirement	**Where it is Met:**
3.2 Sufficient development capacity for housing	Section 3
3.4 Meaning of plan-enabled and Infrastructure ready	Section 7.5.3
3.5 Availability of additional infrastructure	Section 0
3.9 Monitoring requirements	Section 7.3.1
3.10 Assessing demand and development capacity	Section 5
3.19 Obligation to prepare HBA	This report meets timeframes and demonstrates collaboration
3.20 Purpose of HBA	Section 2
3.21 Involving development sector and others	Section 7.2
3.22 Competitiveness Margin	Section 7.4.6
3.23 Analysis of housing market and impact on planning	Section 7.3
3.24 Housing demand assessment	Section 7.4
3.25 Housing development capacity assessment	Section 7.5
3.26 Estimating what is feasible and reasonably expected to be realised	Section 7.5.2 and Section 7.5.4
3.27 Assessment of sufficient development capacity for housing	Section 3

9. Further Work

The following is a list of key work to be undertaken.

Table 50: Further Work

Further Work
Show capacity and demand by sub-area
Re-visiting methodology, in terms of consistency and detail
Investigate viability of a single growth model
Additional work understanding capacity availability, especially in the short-term
Update projections against any new Stats NZ information and any alternate options
Improve monitoring and the potential of a dashboard

Appendix 1: NPS-UD Objectives and Policies

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:

a. integrated with infrastructure planning and funding decisions; and
b. strategic over the medium term and long term; and
c. 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:

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

Subpart 1 – Providing development capacity

3.2 Sufficient development capacity for housing

1. 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:
    a. in existing and new urban areas; and
    b. for both standalone dwellings and attached dwellings; and
    c. in the short term, medium term, and long term.
2. In order to be sufficient to meet expected demand for housing, the development capacity must be:
    a. plan-enabled (see clause 3.4(1)); and
    b. infrastructure-ready (see clause 3.4(3)); and
    c. feasible and reasonably expected to be realised (see clause 3.26); and
    d. 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

1. Development capacity is plan-enabled for housing or for business land if:
    a. 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.
    b. 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.
    c. 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.
2. 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.
3. 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.
3. 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: 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's 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 commercially 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 have 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:

1. 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.

2. 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.

Appendix 3: Formative Model Process

Capacity Assessment – Plan Enabled, Infrastructure Ready, Reasonably Realised, Feasible

The capacity assessments used in this profile are produced from our proprietary Geospatial Property Model ("GPM"). The GPM provides estimates of the amount of additional dwelling and business floorspace that can be developed on each property within the urban areas of the district. The PSM applies a two-stage process, involving a first stage of GIS processing of properties to establish the nature of each property and a second stage that estimates the different types of capacity (as required in the National Policy Statement on Urban Development).

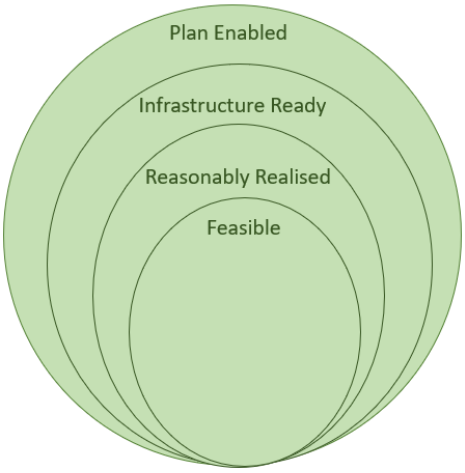
For stage 1, a geospatial analysis was conducted to draw together data for all the properties within the urban areas that could be used for residential and business activities. The geospatial analysis had the following steps:

- **Urban Land**: extract land that is currently zoned urban or expected to be zoned urban. A spatial join between LINZ primary parcels (which is a complete and unique record of all land) and the District Plan zones and any proposed new urban areas. The output from this step is a set of parcels that can be used for urban activities.
- **Developable Urban Land**: remove land that cannot be used for residential and business activities, which includes roads, waterways, openspace, reserves, walkways, rail lines, cemeteries, places of worship, special purpose activities (universities, schools, military, ports, airports, hospitals, etc). The output from this step is a set of parcels that are developable for residential and business activities.
- **Developable Urban Properties**: establish the nature of the activity that is currently located on each developable urban property. Spatially join data to each property, which includes building footprints, rateable property, building consents, and land use surveys. This step also included both desktop and field trip validation of the data sets, with a focus on new activity in known development areas – both business and residential. The output from this step is a set of properties that are developable for residential and business activities, along with existing activities.

The Developable Urban Properties are a critical element of the assessment as it forms the baseline from which the Capacity Assessment is conducted. Much of the processing conducted in the Capacity Assessment is focused on ensuring that information recorded for each of the Developable Urban Properties is accurate and contemporary.

For stage 2, the assessment calculates the different types of capacity as required under the NPSUD which includes Plan Enabled, Infrastructure Ready, Reasonably Realised, and Feasible. The following steps were used to estimate each of the capacity types:

- **Plan Enabled**: applies the District Plan rules to establish the maximum theoretical capacity that can be developed on each urban site, which includes height limits, setbacks, minimum lot size, etc.
- **Infrastructure Ready**: draws from Council's infrastructure information and planning to establish eh capacity that will be serviced.
- **Reasonably Realised**: draws from recent developments, both consents and 224c subdivisions to establish the development patterns that are being realised by the market.



- **Feasible**: is calculated using building cost, land values, and sales revenue information, along with industry average profit margins. The modelling was conducted for intensification, infill, and greenfield developments.

The output of the Capacity Assessment is a property-level estimate of the potential development that could be accommodated in the urban parts of the District. This includes capacity estimates for the short-medium term and long term, as required in the NPSUD.

A key benefit of the Inform Capacity Profile is that users can readily input changes and generate new up-to-date outputs. While the Capacity Assessment has been developed using the best available information, it is important to understand that aspects can and will change in the future. The Inform Capacity Profile allows for flexibility, either in terms of the ability to modify the planning rules in the "Assumption" tab or directly modify specific properties (e.g. change zone).

Capacity for Growth Model

The Capacity for Growth Model ("CFGM") compares the expected demand for dwellings and business floorspace with the supply within the urban parts of the district, to establish whether there is sufficient capacity to accommodate the expected growth. The demand is drawn from the Formative's Population and Economic profile, while the supply is drawn directly from the Capacity Assessment. The CFGM applies a two-stage process, involving a first stage that converts demand to types and locations within the urban areas and a second stage that assesses whether there is sufficient supply to accommodate the demand (as required in the NPSUD).

The first stage is to assess and convert the demand into key typologies and locations within the urban areas. In summary, this stage takes the demand from Formative's Population and Economic profile and converts it into typologies and locations, which can then be compared to the Capacity Assessment. The following steps were applied in the conversion:

- **Dwelling demand**: the total dwellings are converted into types of dwellings, standalone and attached using a set of assumptions – which have been set as baseline preferences observed in the census and can be varied to allow the user to test different scenarios. These dwellings are then allocated spatially to urban areas in the District based on the observed patterns in building consents, which can be varied to allow the user to test different scenarios.
- **Business demand**: the demand for business land is converted into types of land commercial, retail and industrial, using the observed preferences for each industry for different types of land. The demand is then allocated spatially to urban areas in the District according to either dwelling growth (retail and commercial) or according to available capacity (industrial).

The output of this step is detailed demand by typology and location, for both dwellings and business land.

The second stage is to assess the sufficiency of the supply to meet demands, which compares the demand from the first stage with the supply from the Capacity Assessment. The CFGM applies the Competitiveness Margin, as defined in the NPSUD, which provides a measure of the minimum amount of dwellings and business land that is required to be 'Sufficient' – i.e. expected demand plus the Competitiveness Margin.

Next, the CFGM assessment compares the capacity that is feasible for each typology to the number of dwellings or business land to expected demand plus the Competitiveness Margin. In any case where the demand plus the Competitiveness Margin is greater than the supply of feasible capacity the model notes that there is insufficient capacity. The key output of this assessment is to show when and where there may be a need for more supply of developable land within the urban areas.

Glossary

Competitiveness Margin	A margin, over and above the expected demand is required in the NPSUD to support choice and competitiveness in housing and business land markets. The short-medium term is defined as 20% above expected demand, while the long term is defined as 15% above expected demand.
Feasible	This means development that is commercially viable to a developer based on the relationship between costs and revenue. The short-medium term is defined as the current relationship (i.e. no inflation), while the long term is identified by applying an adjustment for expected changes in costs and revenue.

Geospatial data	combines location information (coordinates) and attribute information (the characteristics) for features, in this case, land and buildings.
GIS	A geographic information system (GIS) is a system that creates, manages, analyses, and maps all types of geospatial data. GIS can be used to establish patterns, relationships, and geographic context.
Infrastructure ready	The development activity that can be accommodated by infrastructure. The short-medium term is defined as existing or funded infrastructure, while the long term is identified in the Infrastructure strategy.
Long Term	Covers two decades after the Short-Medium-term.
Plan Enabled	The development activity that can in theory occur on a property. This means all activities that are permitted, controlled or restricted within the District Plan. The short-medium term is defined in the Operative or Proposed District Plan, while the long term is identified in the Future Development Strategy.
Property	A parcel of land, that can contain one or more premises or buildings. There is a one-to-one link between land and properties.
Reasonably Realised	The development activity that is generally achieved by the market, which is based on information from past development trends which show modifying densities and heights, as compared to the rules in the District Plan. The intensity of development achieved by the market tends to be lower than what can in theory be developed.
Short-Medium Term	Covers the coming decade, where the Short term is the coming three years and the Medium-term is the following seven years.
Sufficient	Occurs when there is at least enough capacity to meet the demand (plus the competitiveness margin) and for the short-medium and long terms. For housing, sufficiency includes of existing and new urban areas and standalone and attached dwellings. For business land sufficiency includes by business sector – commercial, retail and industrial.

Please contact us if you have any questions advanced@formative.co.nz or visit www.formative.co.nz

Plan Enabled and Reasonably Realised Capacity

The capacity model draws from the District Plan rules to establish the maximum theoretical capacity that can be developed on each urban lot, which includes height limits, setbacks, minimum lot size, etc. This assessment is conducted using a GIS spatial analysis, which models infill, redevelopment and greenfield potential and is referred to as 'Plan Enabled' capacity.

For infill development the model assesses whether an additional building platform can be fit within the lot and whether there is potential to provide a driveway. The assessment uses building outlines as compared to the land to establish if there is sufficient room for a new building platform and if a driveway can be provided for the potential building platform. This assessment does not account for land uses that may preclude accessway or building platform, for example, pools, gazebos, sheds, gardens, trees, etc which may mean that infill is not possible. There is no data available for these other constraints, and therefore they can not be considered in the model.

For redevelopment the model assesses the maximum amount of development that can be achieved assuming that existing buildings are removed. This assessment applies the minimum lot size and rounds down to the nearest whole number. The resulting redevelopment capacity is then reduced to account for the existing dwelling(s) to provide a measure of net additional capacity. The model assesses each lot in isolation and does not assess the potential development opportunity from the amalgamation of multiple lots.

For greenfield development, the model also measures the maximum amount of development that can be achieved on the land. The assessment removes a proportion of the land for non-developable uses, such as roads, parks, and other infrastructure which is assumed to be a quarter of the land.

Importantly, for the plan-enabled capacity assessment, the requirements set out in the Housing Enabling Act have resulted in a substantial increase in capacity within the residential parts of the urban areas. However, much of this capacity will not be developable in the coming decades as there is insufficient demand and the market is unlikely to develop to the level enabled in the residential zones. Generally, developers do not achieve the maximum lot densities enabled within zone, which means that the theoretical plan enabled capacity in each zone represents an upper limit on potential development that could be achieved.

The model applies 'Reasonable Realisable' development densities which are based on recent development activity within the zones. For example, a hypothetical town with greenfield areas may have seen recent developments with a density that is lower than plan enabled. The model then applies this realised density to establish the amount of density that could be achieved. The same method is applied to existing urban areas, where the density of recent brownfield developments are used to set the realised density. The setting of the Reasonable Realisable assumptions have been reviewed by council and can be modified as densities change. It is likely that the development densities which are

achieved in each zone will continue to increase in the future and that the 'Reasonable Realisable' development densities will need to be reviewed and increased accordingly.

Commercially Feasible Capacity

The commercial feasibility of capacity is calculated using building cost[33], land values[34], and sales revenue information[35], along with industry average profit margins[36]. The modelling was conducted for infill, redevelopment, and greenfield developments.

Broadly, the model is similar to most feasibility tools – i.e. it tests whether a commercial developer could purchase the land, invest money to undertake development and then on-sell at a price that will return sufficient profit. The nature of this process is the same as for most feasibility models – i.e. simply a financial or accounting assessment of costs and revenues to establish whether a return is sufficient to warrant investment.

Importantly, it is not possible to model every type of developer or development type. The model is defined to test a subset of potential developments, which means that it will not provide a full picture of all the types of development that could occur in an urban area.

For example, the modelling does not assess the feasibility of Retirement Care, Government (Kāinga Ora), Community providers, and Private builds. Also the modelling assesses the outcome for the average commercial developer, which does not account for developers that are different from the average.

Also, while the test covers a reasonable range of dwelling types (63 combinations), it does not cover all potential outcomes that will be achieved in the market. The modelling tests the following development types:

- Land Development, which is subdivision of greenfield land to sell as build ready lots.
- Greenfield Building, which tests three typologies (detached, attached and townhouses), three dwelling sizes (large, medium and small) and three build qualities (premium, average and budget).
- Brownfield Building, which tests four typologies (detached, attached, townhouses and apartments), three dwelling sizes (large, medium and small) and three build qualities (premium, average and budget).

It is likely that there will be types of dwellings that are not modelled but which are feasible. Notwithstanding the coverage of the modelling, this method is likely to provide an understanding of the feasibility for most of the development in the urban area.

[33] Harrison Grierson (2021) NPSUD Input Review – Update: Land Feasibility calculator Inputs. WTP (2021) NPSUD Input Review – Update: Build Feasibility calculator Inputs.
[34] Selwyn District Council (2021) Rateable Values 2019.
[35] Quotable Value (2021) Residential Sales Records.
[36] Statistics New Zealand (2021) Business Performance Benchmarker.

As a hypothetical example, before a developer decides to buy and develop a lot of land they will undertake an assessment of whether any development option would yield a profit. They will need to consider the cost of the land (including the potential forgone capital value of any existing dwellings), the expected costs associated with building the new dwellings, the sale price that could be achieved for the dwellings, and finally the risk/profit margin that they need to cover to make the development viable.

For example, it may be that the developer would need to pay $600,000 for the land (including existing buildings), they then need to expend $900,000 to build three new dwellings, and those dwellings are expected to sell for $510,000. This will mean that the cost of the project will be $1.5 million and the revenue would be $1.53 million, which would mean that there is a small profit ($30,000). This small profit would not be sufficient to cover the developers risk, therefore the development would not go ahead. However, developers will assess multiple options, and only one needs to be commercially feasible.

The example above is a simplification of the model, as the assessment in the model includes 28 types of building costs across 63 combinations of developments, along with price points for each town in the District. Also, the assessment is conducted for the coming three decades.

This means that the number of tests, and financial data within each test, in combination represents a large amount of information. However, this complexity is a function of the market, which is inherently multifaceted. Finally, the model assumes that the most profitable option is developable, and does not include other potentially viable options.