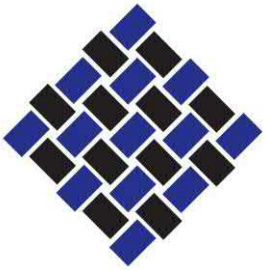


Greater Christchurch Partnership

Te Tira Tū Tahi
One Group, Standing Together

Greater Christchurch Urban Development Capacity Assessment

Housing and Business Interactions

28 March 2018: Version 4

Contents

Executive Summary

Housing and business land use patterns, coupled with their integration with the transport network, help determine the degree to which an urban area is well-functioning and accessible. The land use patterns that characterise the Greater Christchurch area are the result of historic trends and previous planning decisions that have shaped the spatial distribution of housing and business areas across the sub-region.

This report considers the spatial interactions between housing and business areas in Greater Christchurch, and their effects on transport and accessibility. It also identifies some of the potential opportunities and barriers for urban development and change in the sub-region. This report meets the requirements of Policy PB1(c) of the National Policy Statement on Urban Development Capacity.

The key findings from this report include:

- Greater Christchurch's urban form has been shaped by the creation and expansion of the settlements laid-down in the 19th century. During the latter part of the 20th century, the pattern of development was influenced by the change in dominant transport mode from foot, bicycle and tram to the private car.
- The availability of significant areas of flat land that were fairly easy to subdivide and service meant the Greater Christchurch area has grown with lower densities than other New Zealand cities.
- The impact of the earthquakes has seen the relocation of households and businesses from damaged central and eastern areas of the City, and eastern Kaiapoi, to areas to the west. These changes have had a major impact on land use patterns and travel movements across the sub-region.
- Housing preferences relate to the homes and locations that suit people's lifestyles and financial circumstances. They are determined, at least in part, by where people work, their choice of school and their desire to access different services and amenities. People are often required to consider the trade-offs between various housing and locational choices.
- For many people, a detached house on a large section with private space remains representative of housing in Greater Christchurch. However, this type of housing may not suit, or be affordable, for all households. A changing population will also affect future housing preferences in the sub-region.
- Access to the strategic transport network is an important factor for the locational choices of industrial activities, while proximity to a nearby workforce and customer base is important for office and retail activities. Locating near associated business activities also influences the locational preferences of businesses.
- Development capacity enabled through plans seeks to support locational choice within an integrated urban form that provides suitably located greenfield and intensification opportunities. This capacity reinforces the role of the central city and key activity centres as focal points for people to shop, work, meet, relax and often live.
- Access to jobs in Greater Christchurch is highest in the central and western areas of the City. Access to activity centres is fairly high for much of the sub-region, although accessibility is generally lower for people travelling by public transport, bicycle and walking.
- Accessibility influences the socio-economic opportunities of communities in the sub-region. Reduced access to jobs, coupled with a range of other social and economic factors, has placed some areas in the City's eastern suburbs within the top 5% most deprived in New Zealand.
- Current land use patterns mean trips originate from a range of locations and terminate at a range of destinations. Greater Christchurch has high private car usage and low public transport patronage compared to other New Zealand cities. The reasonable ease of travel in the sub-region has allowed people to live further from their workplace and the activity centres.
- Most working residents in Christchurch City are employed in the City, although there are significant commuting flows between different areas of the City. The share of working residents in Selwyn and Waimakariri employed in the districts is much lower, with more than 40% travelling into the City for work. The average trip length in the sub-region has risen between 5 and 10% over the last decade.
- Key transport challenges for Greater Christchurch relate to post-earthquake disruptions. Increased congestion and delays, weaker journey time reliability and the reliance on the private car constrains the ability of the network to move people and goods efficiently, and has led to pinch points and low corridor productivity.

- Greater Christchurch's transport network could experience substantial increases in travel demand and traffic if the projected population growth was to eventuate. This would result in more delays, although any potential effects would vary across the sub-region. The increase in travel times from the western areas of Christchurch City, Selwyn and Waimakariri into the central city would likely be much worse. Travel time delays would also likely vary day-to-day, making it difficult for people to plan their journeys.
- There could be significant cost to the economy from increased travel times, as freight will take longer to transport, including to and from the airport, port, distribution centres and warehouses.
- The location of future land use growth could significantly affect the distribution of trips and the resulting levels of congestion in Greater Christchurch, with marginally better average speeds and travel times in the sub-region projected based on a higher share of growth being accommodated in the City.
- Based on feedback from Greater Christchurch Partnership officials, there are a number of potential opportunities for and barriers to urban development and change in Greater Christchurch. This includes a range of spatial and non-spatial opportunities and barriers that can be investigated in further detail as part of the Future Development Strategy.

Options to manage the effects of population growth and increased travel demand on the transport system in Greater Christchurch will be a key consideration of the Future Development Strategy. Land use and transport planning will need to consider how to maximise positive interactions between housing and business areas, and the transport network, and minimise negative interactions related to reduced travel time reliability, safety and accessibility across the network, as well as incompatible land uses generating reverse sensitivities. An integrated planning approach will support a more economically, socially and environmentally sustainable pattern of development in Greater Christchurch.

Definitions

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

Term	Definition
CAST	Christchurch Assignment and Simulation Traffic Model
CCC	Christchurch City Council
CRPS	Canterbury Regional Policy Statement 2013 (Revised 2017)
CSM2	Christchurch Southern Motorway Stage 2
CTM	Christchurch Transportation Model
GCTS	Greater Christchurch Transport Statement 2012
IMD	New Zealand Index of Multiple Deprivation 2013
LURP	Land Use Recovery Plan 2013
MBIE	Ministry of Business, Innovation and Employment
NPS-UDC	National Policy Statement on Urban Development Capacity 2016
NZTA	New Zealand Transport Agency
RMA	Resource Management Act 1991
UDS	Greater Christchurch Urban Development Strategy 2007

1. Background

This report has been prepared to consider the spatial interactions between housing and business land use activities in Greater Christchurch, in order to meet the requirements of Policy PB1(c) of the National Policy Statement on Urban Development Capacity 2016 (NPS-UDC). This assessment accompanies the housing and business capacity assessments undertaken for Greater Christchurch that respectively meet the requirements of Policy PB1(a) and Policy PB1(b) of the NPS-UDC.

1.1 Purpose and Scope

The NPS-UDC provides direction to decision makers under the Resource Management Act 1991 (RMA) on planning for sustainable development in urban environments.[1] It recognises the national significance of well-functioning urban areas, with a focus on ensuring that local authorities, through planning, both:

- enable urban environments to grow and change in response to the shifting needs of communities and future generations; and
- provide enough space for their population to happily live and work, which can be through both allowing development to go 'up' by intensifying existing urban areas and 'out' by releasing greenfield land.

The NPS-UDC directs local authorities to provide sufficient development capacity in their resource management plans to meet the demand for housing and business growth, recognising that connectivity and mobility between both are important to achieving well-functioning urban environments. In the context of this report, the NPS-UDC requires local authorities to develop an evidence and monitoring base that supports their planning decisions for urban areas. This includes Policy PB1, which requires that local authorities (that have part, or all, of either a medium or high growth urban area in their district or region)[2]:

" …shall, on at least a three-yearly basis, carry out a housing and business development capacity assessment that:

a) Estimates the demand for dwellings, including the demand for different types of dwellings, locations and price points, and the supply of development capacity to meet that demand, in the short, medium and long-terms; and

b) Estimates the demand for the different types and locations of business land and floor area for businesses, and the supply of development capacity to meet that demand, in the short, medium and long-terms; and

c) Assesses interactions between housing and business activities, and their impacts on each other."

This assessment has been prepared to meet the requirements of Policy PB1(c), which focuses on the spatial interactions between housing and business land use activities. This report, coupled with the related housing and business capacity assessments, provide an evidence base that will guide and inform the development of a Future Development Strategy for Greater Christchurch, which is also a requisite of the NPS-UDC.

This assessment aims to meet the requirements of Policy PB1(c) by:

- providing information about the positive and negative spatial interactions between housing and business capacity in Greater Christchurch, as well as their impacts on accessibility and transport; and
- analysing the key opportunities and challenges for development and change in Greater Christchurch.

It should be noted that the guidance for the NPS-UDC also recommends that assessments meeting the requirements of Policy PB1(c) should reconcile the housing and business capacity assessments to ensure capacity is not double counted, or under- or over-estimated. This requirement is not addressed in this report, but considered as a part of the related housing and business capacity assessments for Greater Christchurch.

In this context, the current strategic direction for Greater Christchurch in terms of planning for a well-integrated and functioning urban environment is set out in a number of documents that align to the vision for the sub-region. These strategies and plans have been produced to guide and manage urban development, including providing for housing and business land, social, health and recreational facilities, and transport infrastructure. A summary of the key takeaways from several of these documents is outlined in Appendix A.1.

[1] Sustainable development, as defined and described in the 1987 Brundtland Report, is about *'meeting the needs of the present without compromising the ability of future generations to meet their own needs'*.

[2] Although only Stats NZ's 'Christchurch Urban Area' (i.e. the City and the townships of Prebbleton and Kaiapoi) is classified as a high growth area, for the purposes of the capacity assessments, the whole of the Greater Christchurch area is considered a high growth area and the relevant policy requirements are applied to this wider area.

2. Evolution of Greater Christchurch

This section describes the key trends that have helped shape the urban form of Greater Christchurch, in order to understand the basis for the spatial distribution of housing and business land uses across the sub-region. This section draws extensively on the research undertaken in the Contextual Historical Overview of Christchurch City report produced on behalf of Christchurch City Council (CCC).[3]

2.1 Early Settlement

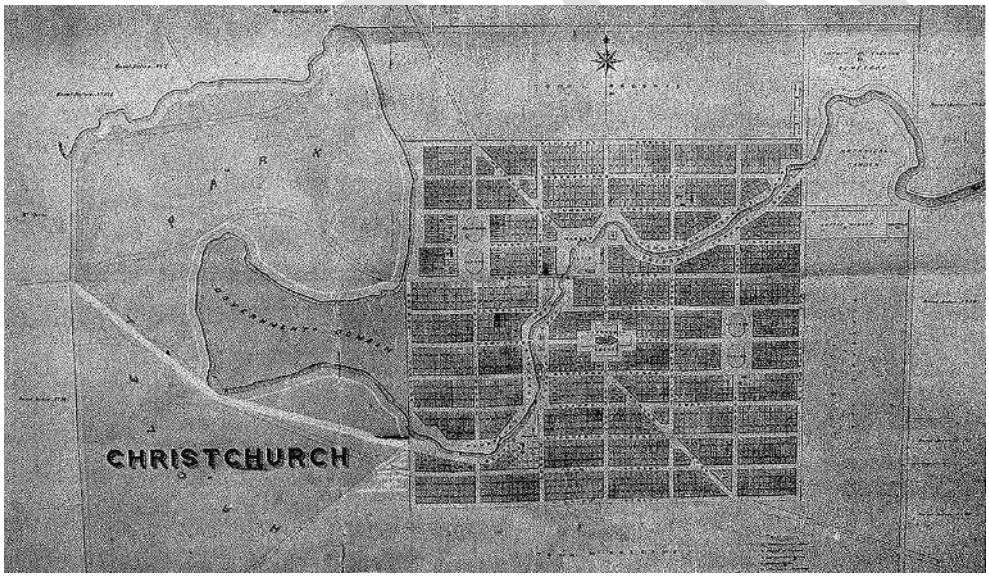
Early archaeological sites provide evidence that Maori frequented the Christchurch area in the earliest years of Maori occupation of New Zealand seven or eight hundred years ago. The area would have been known to subsequent iwi, including Waitaha, Ngati Mamoe and Ngai Tahu, but Christchurch gains a history only with Ngai Tahu. Tracks crossed the country on which the City was built, which lay between Ngai Tahu's pa at Kaiapoi and the population centres on Banks Peninsula and around Te Waihora (Lake Ellesmere).

The swamplands and seashore in the Christchurch area were productive eco-systems for Maori inhabitants, with permanent or semi-permanent settlements established on the margin of the estuary and, like the city of Christchurch itself, along the Avon and Heathcote Rivers.

In 1848, the Canterbury Association sent out Captain Thomas, accompanied by surveyors, to prepare a site for settlement in Canterbury. Thomas originally placed the principal town in Lyttelton Harbour, but when he realised there was insufficient flat land there to meet their requirements, he relocated Christchurch to a point on the Avon River where those coming up the river first encountered higher, drier ground.

The plan for Christchurch was the standard rectangular grid of colonial settlement, with the grid originally laid out between Salisbury, St Asaph, Barbadoes Streets and Rolleston Avenue/Park Terrace. Land was also set aside between the northern, eastern and southern sides of the grid, and the town belts (later renamed the avenues), for later expansion (Figure 2.1).

Figure 2.1 Surveyor's Plan of Christchurch, 1850



Source: Contextual Historical Overview of Christchurch City

Although the ideals of the Association harked back to an earlier England, Christchurch was unmistakably a mid-19th century colonial town with a layout more like that of towns established during the expansion of the United States. Similar plans to that of Christchurch were also prepared for Auckland, Dunedin and parts of Wellington, but it was only on Christchurch's flat, expansive site that a regular grid was feasible.

2.2 Residences

In the 1850s, most of Christchurch's residents lived within the four avenues. Even within the four avenues, residences almost all conformed to the standard of a detached, single family dwelling. By the 1930s, there

[3] https://www.ccc.govt.nz/culture-and-community/heritage/heritage-in-the-city/historical-overview

were a number of apartment or flat developments in the central city. The construction of new apartments from the 1960s and the conversion of former commercial buildings to residential use from the 1980s helped grow the central city population, which had seen a trend of depopulation resulting from the encroachment of commercial premises on residential areas.

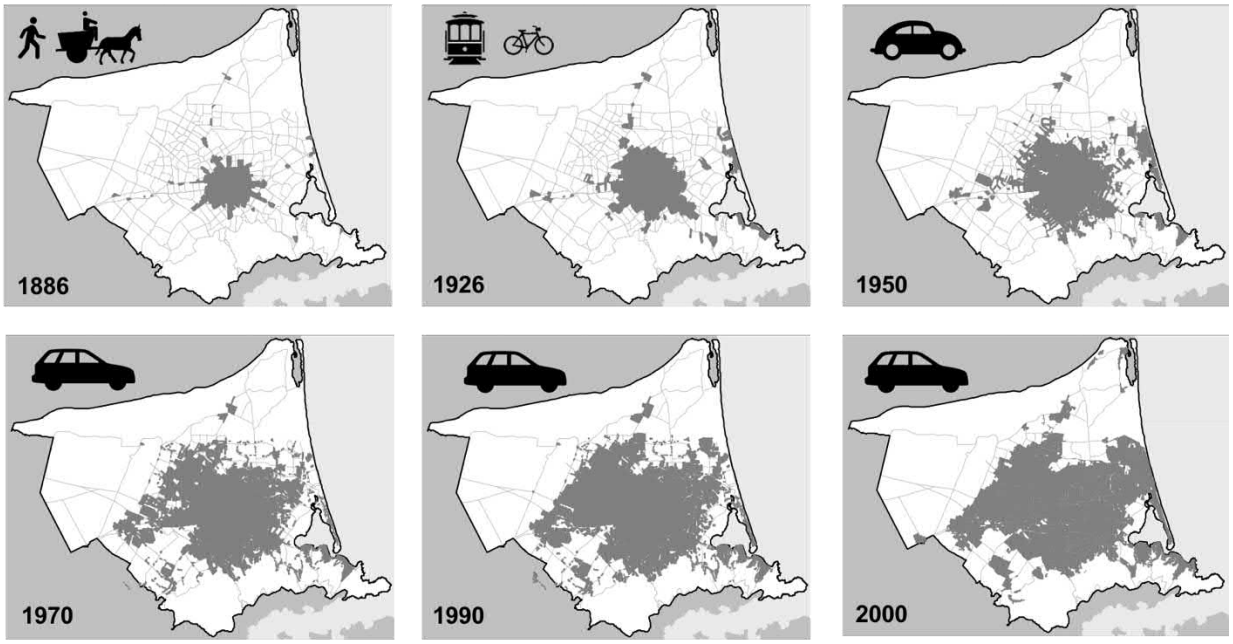
By the late 1870s, the distribution of the City's population had changed markedly. Nearly as many people were living in the early suburbs and on rural sections as within the central city. Important early suburbs were Sydenham, Addington and St Albans, while Richmond, Linwood, Sumner and New Brighton also became early centres of population. Woolston developed as a residential, commercial and industrial area along Ferry Road, which was the main route linking the central city to the wharves on the Heathcote River.

Although the Port Hills have been described as a southern barrier to growth in Christchurch, forcing development north and west, residences had begun to appear on the hills by the end of the 19th century. Hill suburbs continued to develop through the 20th century, spurred by the extension of the tramline. Opawa, St Martins, Beckenham, Thorrington and Lower Cashmere were also built-up in the first half of the 20th century.

After World War I, a large number of bungalows were built in the City. These bungalow suburbs formed a further ring outside the early villa suburbs, with large tracts of bungalows built in outer St Albans, Spreydon, Beckenham, Shirley, Richmond and Linwood. Many of these bungalow suburbs were served by tram lines. After World War II, developments dominated by 'later' bungalows formed a further ring outside the inter-war bungalow suburbs, with these suburbs mostly developed in the northern and western fringes of the City.

The pattern of development in Christchurch during the 20th century was influenced, especially on the flat, by the change in dominant transport mode from foot, bicycle and tram to the private car. Growth in the latter part of the 20th century was mostly focused on the north-western and north-eastern flanks of the City, while by the early 21st century, housing developments had closed the gap between the outer fringe of the City and Belfast to the north and Halswell to the south-west (Figure 2.2).

Figure 2.2 Urban Expansion of Christchurch, 1896 - 2000



Source: Christchurch City Council

Christchurch's history of detached residences on large sections was partly determined by the availability of significant areas of flat land that were relatively easy to subdivide and service. This pattern of development means the City has had lower densities than other New Zealand cities.

In the early 1970s, plans were made to create a new town at Rolleston that was to be connected to Christchurch by a commuter rail link. Although the plan was scrapped, Rolleston did eventually develop as a large new commuter town later in the 20th century, becoming economically and socially an outlier of the City despite being in the district of Selwyn. Other satellite towns in Selwyn that have been important population centres since the 19th century include Lincoln and Prebbleton, while West Melton has had substantial growth during the first part of the 21st century.

Starting in the 1850s as a sawmill town, Rangiora became the administrative and commercial centre for a large area of farms and orchards in the Waimakariri district, as well as the most significant population centre.

The town has attracted residents who commute to Christchurch for work, with the population more than doubling between the 1970s and the 2000s. The other principal town in Waimakariri is Kaiapoi, situated just north of the City and close to the large Ngai Tahu pa built in the 1700s. Kaiapoi was developed in the 1850s, with a busy port supporting the town from the 1860s and a railway line reaching the town from the 1870s.

2.3 Industry and Commerce

2.3.1 Industrial

In the 19th century, most of Christchurch's industry was located either within the four avenues or the early suburb of Sydenham. Industrial activity was focussed in these areas until about the 1960s. Woolston was also an early focus of industry due to its proximity to the Heathcote River.

Woolston was at the eastern end and Islington at the western end of what became a major industrial corridor in Christchurch based initially on access to the Lyttelton and Main South railway lines. For much of its length, the corridor also had road access from Moorhouse Avenue and Blenheim Road, with the latter transformed from a country lane and stock route to a four lane highway in the 1950s. After the Blenheim Road upgrades, a broad wedge between the road and the railway line was developed for industrial and warehouse uses. This meant that industry remained concentrated in this corridor even after road transport made inroads on rail in the second half of the 20th century.

Much of the development of Christchurch's industry in the second half of the 20th century occurred in areas that had been zoned by planners for industrial activity. This reflected deliberate efforts to confine industry to areas remote from the City's commercial centre and residential areas. In this context, industrial activities moved steadily west from Addington, primarily along the southern side of Blenheim Road between the road and the railway line, through Middleton and Sockburn to Hornby. Hornby has now become a key distribution hub for both Greater Christchurch and the wider South Island.

Other subsidiary industrial zones also became more important in the second half of the 20th century as industry moved out of the central city and became less reliant on rail transport. With the economic recession of the 1970s and 1980s, more flexible approaches to zoning for businesses in the City also started to evolve.

The Izone Business Hub at Rolleston developed rapidly in the 21st century, attracting businesses due to its geographic location at the crossroad of State Highway 1, the Main Trunk Line and Midland Line and its offer of reasonably priced land. The 370ha of developed or zoned land at the park incorporates the Port of Tauranga's Metroport and Port of Lyttelton's Midland Ports, which facilitates freight movements between the Lyttelton and Timaru Ports, and the wider economy across the South Island.

Smaller industrial areas have also been established in Rangiora and Kaiapoi, while industrial, warehouse and logistic uses have increasingly located along the western edge of the City adjacent to State Highway 1 near Christchurch Airport. There is also an industrial area in Bromley that has developed adjacent to Dyers Road, which is now State Highway 74.

2.3.2 Offices

Until well beyond the middle of the 20th century, people from all over Christchurch travelled into the central city to access professional services. However, the practice of professional services exclusively operating in large, central premises began to change towards the end of the 20th century as offices were increasingly opened in key activity centres, suburban shopping areas and industrial zones, reflecting the shift of retail activity away from the central city.

The central city remained largely unchanged between 1914 and 1960, reflecting a period of depression, war and post-war recovery. Beginning in the 1960s through until the stock market crash of 1987, several large, modern high rise office blocks were built, usually on sites that had been occupied by older commercial stock. Zoning and plan provisions came to have an influence on the City's development from the 1950s, although the process of replacing the older commercial stock was mostly driven by economic factors.

The significant rebuilding in the central city through this period was driven by demand for higher quality office space. After the stock market collapse of 1987, the City was over-supplied with office space, so as the tourist industry grew, some office buildings were converted for use as hotels.

In the 1970s, a technology park was established in Russley that was enabled under a planning framework, at the time, encouraging higher technology uses. It has subsequently developed as a cluster of primarily offices, attracting a range of office based companies. This was the first sizeable cluster of office development outside the central city.

A number of factors have led to the dispersal of office activities in Christchurch over the last decade, which have been exacerbated by the earthquakes (see Section 2.5).[4] This has resulted in the development of standalone office buildings and dispersed office based employment across the City, including in light industrial zones. In the 2000s, commercial employment grew by more than 120% in industrial zones, which was much higher than the overall growth of 40% in the City during the same period.[5]

The formation of office parks at Show Place, Canterbury Technology Park, Airport Business Park and other locations in Christchurch during the last two decades has also led to a greater concentration of office based employment in suburban locations and associated changes in travel patterns.

Smaller office markets have also developed in some satellite towns in Selwyn and Waimakariri, including in Rangiora, Rolleston, Kaiapoi and Lincoln. Lincoln also accommodates Lincoln University and a number of Crown Research Institutes. Businesses occupying office space in these towns primarily include small, local professional services or businesses supporting the wider agricultural industry.

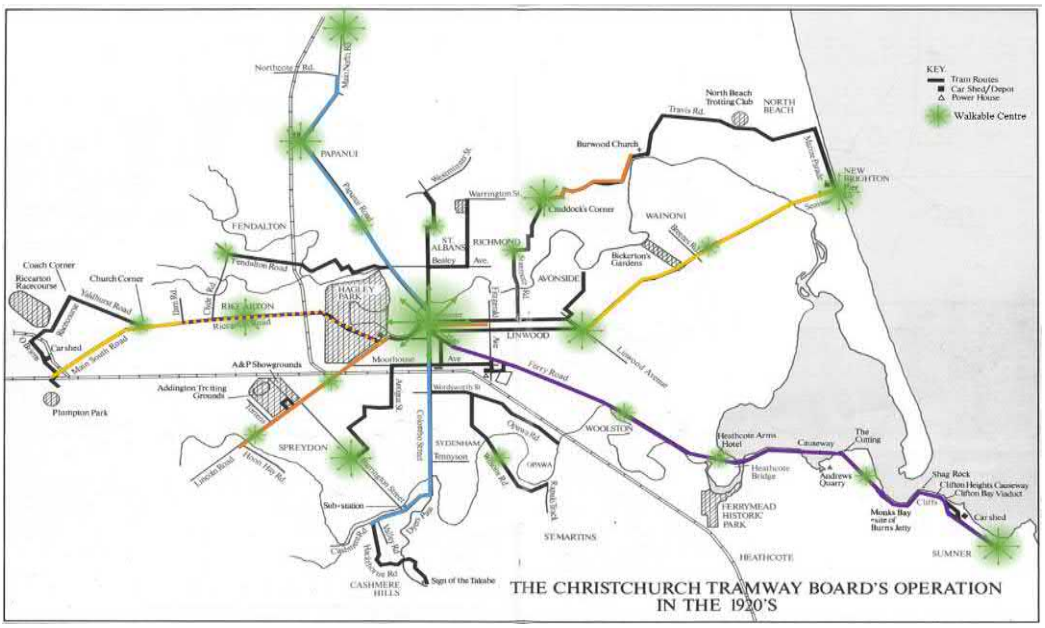
2.3.3 Retail

The earliest shops in Christchurch appeared along High, Cashel and Colombo Streets. This area has remained the heart of central city retailing, enjoying a heyday from about 1900 to 1960, which coincided with a peak reliance on a public transport network that radiated out to the suburbs. Market (later Victoria) Square was the other focus of shopping and trading in early Christchurch.

Starting in the 1960s, retailing shifted substantially into the suburbs with the development of suburban shopping centres. Associated with this was a decline in use of public transport and an increase in use of the private motor car. However, the central city survived as a shopping area with continued custom from people working in the central city, tourists and locals drawn to speciality shops.

As the City expanded at its edges, suburban shopping centres developed, often at important intersections or tram termini (Figure 2.3). Some of the older suburban shopping centres eventually became part of long lines of shops on major roads leading out of the central city, such as along Riccarton and Lincoln Roads.

Figure 2.3 Commercial Centres and Tram Routes in Christchurch, 1920s



Source: Christchurch Transport Strategic Plan / Contextual Historical Overview of Christchurch City

A key event inaugurating the major changes in retailing in Christchurch was the opening of the Hays store at Church Corner in 1960. This, along with the Bishopdale shopping centre, marked the beginning of a change towards significant retail developments that provided off-street car parking, a marked contrast from people

[4] Factors that have attracted office based companies to industrial zones include proximity to residences for owners or workers, accessibility, car parking and price.

[5] Property Economics analysis, 2014

taking a tram or bus to a central city store. Construction of the first suburban mall began in 1965 in Riccarton. The pre-eminence of malls and mega shopping centres is now a feature of retail shopping in the City.

From 1999, the City Plan enabled retail activities in commercial and light industrial areas without significant limitations, resulting in the dispersal of retail businesses across the City, including the development of large format retail centres (e.g. Tower Junction).[6] There was also major expansion of larger suburban centres, including Northlands, Riccarton, The Palms and Eastgate. Associated with these trends was greater use of private motor cars to access shops, particularly large format centres that were less accessible by public transport.

A new planning framework has subsequently been introduced that seeks greater consistency with the overarching growth strategy for the City, and to enable assessment of proposals for large retail development outside the central city and suburban centres, in order to restrict the scale of retail activity in industrial areas.[7] While reducing the extent of dispersed retail activity across the City, the share of retail employment in the central city continued to decline between 2000 and 2011, and was significantly disrupted by the earthquakes in 2010 and 2011 (Figure 2.4).

Figure 2.4 Retail Employment in Christchurch, 2000 - 2012

Year	Identified Retail Centres	Christchurch CBD	Balance of Christchurch
2000	39%	31%	32%
2001	39%	31%	31%
2002	39%	31%	30%
2003	39%	31%	31%
2004	40%	29%	32%
2005	41%	29%	31%
2006	42%	28%	31%
2007	41%	27%	33%
2008	42%	27%	32%
2009	42%	27%	32%
2010	43%	26%	32%
2011	44%	24%	34%
2012	46%	12%	43%

Source: Proposed Christchurch City District Plan: Commercial and Industrial Chapters Economic Analysis

During the period leading up to the earthquakes in 2010 and 2011, planning initiatives were pursued to help restore the vitality of the central city and make it more attractive to workers, residents and visitors. However, the dispersal of retail activity has continued in the City during the post-earthquake period (see Section 2.5).

The satellite towns in Selwyn and Waimakariri are also served by their own cluster of shops and services. As populations in these towns have increased, the retail offer providing for the local shopping needs of residents has also grown, with the more substantial offering in Rangiora, Rolleston, Kaiapoi and Lincoln reflecting the larger relative sizes of these towns.

[6] http://archived.ccc.govt.nz/council/proceedings/2004/july/cnclcover29th/regulatoryconsents/varn86.pdf
[7] http://archived.ccc.govt.nz/council/proceedings/2004/july/cnclcover29th/regulatoryconsents/varn86.pdf

2.4 Transport

2.4.1 Lyttelton Port, Inland Ports and the Airport

The first transport problem that had to be solved if Christchurch was to thrive was access to Lyttelton Harbour from the City. With the arrival of the settlers, a track was developed over the hills behind Lyttelton to Heathcote. However, most settlers chose to send their heavy baggage to Christchurch via sea in boats small enough to cross the Sumner bar and navigate the shallow estuary and rivers.

The practice of bringing goods from Lyttelton to the Heathcote River by boat contributed to the construction of Christchurch's first public steam railway line. This line from Ferrymead to the central city was opened in 1863, but became redundant once the Lyttelton rail tunnel was opened in 1867, eliminating the need to use small vessels to and from Lyttelton. A road tunnel linking Lyttelton to the City was also opened in 1964.

The small area of flat land in Lyttelton has restricted the scale of the port. This has contributed to the development of an inland port in Woolston, enabling expanded container services and reducing congestion at the port, while facilitating the movement of freight by containers via road and railway line. As stated earlier, the establishment of two inland ports at Rolleston, serving the Lyttelton and Timaru Ports, provides for future growth in the movement of freight.

In 1940, the municipal airport at Harewood in the City's north-west was officially opened. By 1950, it was the first international airport in New Zealand. Industrial, warehousing and logistic activities have been developed near Christchurch Airport in recent years. However, the extent of the airport noise contour, which covers a large area of land to the north-west of the City (see Section 2.6), and its associated restrictions has limited urban growth in this part of the City.

2.4.2 Rail and Roads

The building of railway lines to Ferrymead and Lyttelton was followed by lines to the south, west and north of the City. These lines linked Christchurch to its expanding farming hinterland and provided long distance links to other parts of New Zealand. Commuter trains ran to Lyttelton, Burnham and Rangiora until the 1970s.

The line south and the line to Lyttelton formed a continuous route that ran east-west across the southern side of the central city. This corridor influenced the development of the City. As the rail network expanded, a growing population settled close to the central city station on the line to and from Sydenham, while industrial developments occurred in Addington, Woolston and on Moorhouse Avenue, where sidings were provided.

The building of the new railway station at Addington in 1993 and the transfer of rail passenger services away from the central city station reflected the changing status of rail travel in the City. The closure of the central city station and Addington workshops, and the consolidation of marshalling yards at Middleton, combined with the closure of the Addington saleyards, opened the way for zoning changes on large areas of ex-railway land along the rail corridor for new business and residential development.

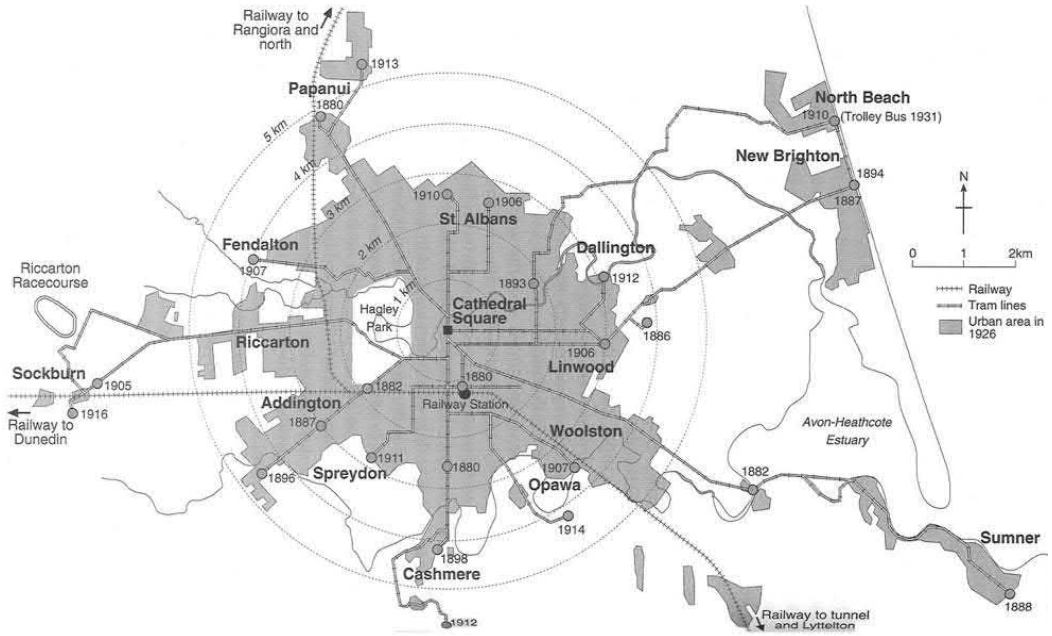
As with the railway lines, main roads leading north, west and south connected Christchurch to its agricultural hinterland. However, until the mid-20th century, these roads were less important than the railway lines. The main roads south and west diverged at Upper Riccarton, while subsidiary routes linking Selwyn and Banks Peninsula to the City went down Springs, Lincoln and Halswell Roads. The main road north led out to Papanui where again two roads diverged. Harewood Road was a key route north but ceased being a main road when the Waimakariri River was bridged between Belfast and Kaiapoi. The bridge ensured the other road that diverged at Papanui would become the 'Main North Road'.

A motorway was built north of Belfast in the late 1960s, while congestion along Riccarton Road prompted the transformation of Blenheim Road from a country lane to a four lane highway in the 1950s. Over subsequent years, plan changes that permitted 'big box' retail along Blenheim Road degraded the strategic function of the corridor, which in turn led to the development of the Southern Motorway Extension. This development is part of the Christchurch Motorways Project initiated by the New Zealand Transport Agency (NZTA) to help alleviate pressure on state highway routes north and south of the City, and provide better links between Christchurch, Selwyn and Waimakariri.

2.4.3 Trams, Buses, Bicycles and Cars

The first transport revolution in Christchurch came with construction of the tramways in the 1880s. In 1880 itself, the first tram line opened between Cathedral Square and the railway station. By the end of the year, the tram line ran between Sydenham and Papanui. By the end of the 19th century, the tramway system extended to other parts of the City, including Addington, Woolston, Sumner and New Brighton (Figure 2.5).

Figure 2.5 Railway and Tram Lines in Christchurch, 1926



Source: Contextual Historical Overview of Christchurch City

After electric trams were introduced in 1905, the City's tramway system grew significantly. This made travel over longer distances more affordable and allowed people to reside further from their workplace, spurring the peripheral residential growth of the City. Shopping centres developed at some tram termini, but because tram lines radiated out from Cathedral Square, they also had a centripetal effect. The period that trams were a pivotal part of the transport system coincided with the period the central city attracted its largest numbers of people from the suburbs to work, shop or seek entertainment.

By 1914, the tramway system had reached its maximum extent. Trams now also ran to Riccarton, St Albans Park, Cranford Street, Spreydon, Fendalton, St Martins, Opawa, Northcote, Dallington and Cashmere Hills. The system was the largest in New Zealand, although because the City was so dispersed, the patronage of the tram system was lower per route kilometre than other New Zealand tram systems.

By the end of World War II, the tram system was badly run down and facing competition from the private car, and was eventually replaced by buses. Buses had started to be used on some routes in the 1920s, with the last tram run in 1954. The buses generally followed the same routes as the trams, although the routes to the north, west and south-west were steadily extended further out as the City expanded at its edges.

All bus routes continued to run through the central city until 1999 when the Orbiter service was inaugurated so that those using public transport no longer had to travel into the central city and out again to move around the circumference of the City. This allowed people to better access activity centres across the City. However, even with this service, the public transport network was overwhelmingly radial, which no longer reflected the patterns of movement and living of most Christchurch residents.

The bicycle also has a special place in Christchurch's transport history. The first velocipedes appeared in the late 1860s and the first safety bicycles in the 1880s. Christchurch gained a reputation, for a time, of having more bicycles per head of population than any other City in the world, except for perhaps Copenhagen. The popularity of cycling stemmed from the fact that the City is predominately flat. However, cycle use also went into steep decline with the increasing uptake of the private motor car.

The motor car first appeared in Christchurch in 1898. Car numbers grew steadily but remained relatively low until after World War II, then expanded dramatically in the 1950s and 1960s. Making provisions for people to journey by car became a key consideration for town planners from the 1950s. The rising use of private cars also unshackled the need for developments to be at least fairly close to a tram line or bus route.

The use of private cars has now become a defining feature of Christchurch, providing people with flexibility when travelling across the City. This preference of transport mode has contributed to the trend of suburban growth in both the City and the surrounding satellite towns in Selwyn and Waimakariri.

2.5 Effects of the Earthquakes

A series of earthquakes struck Greater Christchurch in 2010 and 2011 that caused substantial damage to land, buildings and infrastructure. The impact of the earthquakes was felt in the availability of housing and business space, as well as the functionality of the transport system.

The earthquakes caused some form of damage to most of the housing stock in Greater Christchurch with an estimated 167,500 homes receiving damage, of which about 24,000 had extensive damage.[8] Between 10,000 and 15,000 homes in Christchurch City alone became uninhabitable.[9] The residential red zone in the east of the City, the Port Hills, and the Kaiapoi area in the south of Waimakariri, accounted for most of the uninhabitable residences in the sub-region.

The disruption to residential areas changed the population distribution in Greater Christchurch, with a large migration of people from the damaged central and eastern areas of Christchurch City to the west and south-west of the City, and the surrounding districts. Between 2010 and 2012, the City's population fell by over 21,000, or 6% of its population, as people moved to areas in Selwyn and Waimakariri or beyond the Greater Christchurch area altogether. The migration of people from the City has contributed to higher growth in the districts during the post-earthquake period (Table 2.1).

Table 2.1 Population Change by Territorial Authority, 2010 - 2016

	2010	2012	2016	Population Change (2010 - 2012)		Population Change (2010 - 2016)	
				Total	Percentage	Total	Percentage
Christchurch City	376,300	355,100	375,000	- 21,200	- 6%	- 1,300	- 0 %
Selwyn	41,000	44,400	56,200	+ 3,400	+ 8%	+ 15,200	+ 37%
Waimakariri	47,600	50,500	57,800	+ 2,900	+ 6%	+ 10,200	+ 21%

Source: Stats NZ, Sub-National Population Estimates

The parts of Greater Christchurch that had the most significant population losses after the earthquakes included the area units of Dallington, Burwood, Avondale and Bexley in the City's north-east, which each lost more than 1,700 residents between 2010 and 2016 (Figure 2.6). Kaiapoi East and Courtenay in Waimakariri, and Burwood and Dallington in the City, each lost over half of their population bases during this period.

The parts of Greater Christchurch that had the most significant population gains after the earthquakes included area units in and around the satellite towns in Selwyn and Waimakariri, including in Rolleston, West Melton, Lincoln, Pegasus, Rangiora and Kaiapoi. Wigram and Aidanfield in the City's south-west also had large population growth during this post-earthquake period (Figure 2.6). Much of the residential development occurred on land that had been planned, and in most cases rezoned, for greenfield development.

The earthquakes also damaged business premises and land in Greater Christchurch, especially in the central and eastern parts of Christchurch City. Many businesses were forced to relocate, which affected the movement of people and goods across the sub-region. This was most noticeable in the central city, which was partly cordoned off for a time after the earthquakes for the health and safety of residents and workers.

Many central city businesses moved to the City's suburbs, including to industrial zones in these areas, which heightened concerns relating to conflicting expectations around amenity levels and exacerbated the trend of dispersed office and retail activity over the preceding decade. The relocation of businesses was made easier due to the availability of vacant land and facilitated by changes to legislation after the earthquakes permitting, albeit on a temporary basis, commercial activities in residential premises.

The employment base in the central city fell by about 20,000 between 2010 and 2016 (Figure 2.6). However, businesses have started to return to the central city, reflecting the area's rejuvenation and the availability of new, higher grade commercial premises. The first to move back into the central city have predominately been central and local government agencies, professional services, and businesses in retail and hospitality.

By October 2017, about 202,000sq.m of new office floorspace had been developed in the central city since 2011, of which about 83% had been leased. This significant new development has helped the central city's office stock in 2017 recover to about 70% of its pre-earthquake level. Other developments projected to be completed in 2018 will increase the central city's office stock to about 80% of its pre-earthquake level.[10]

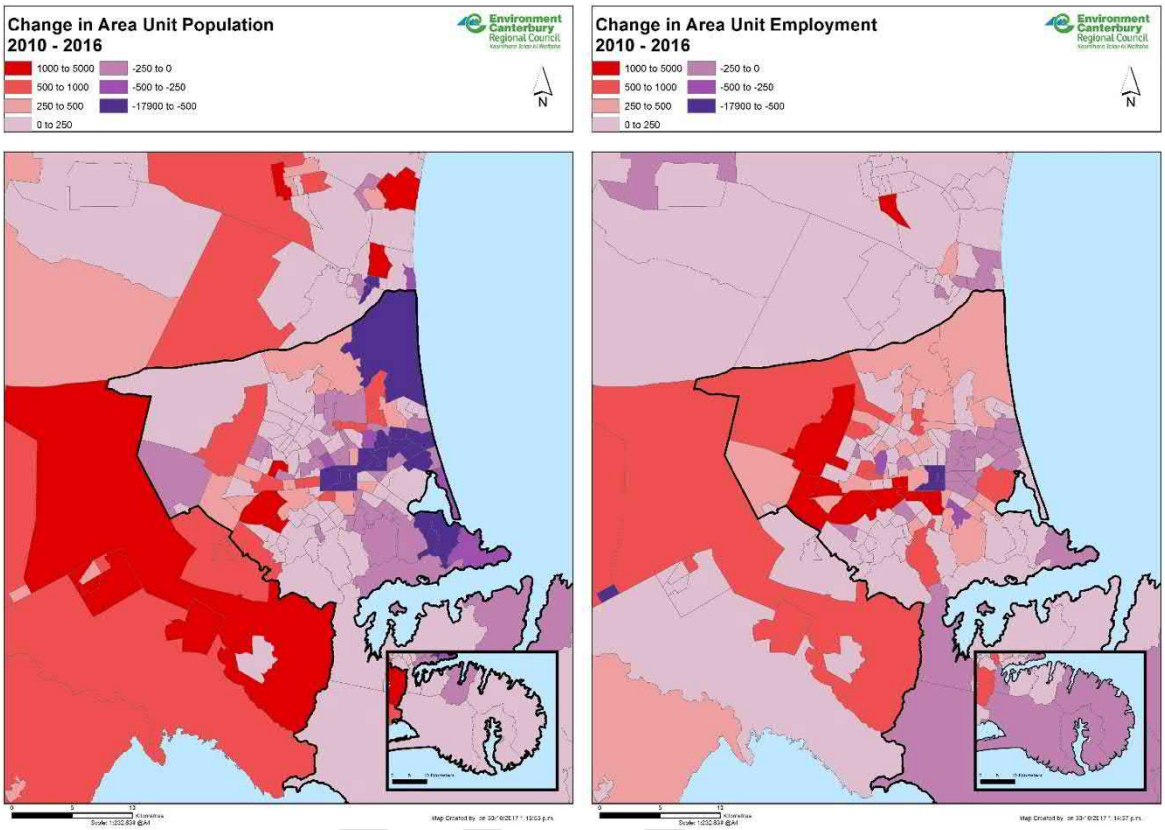
[8] CERA, Canterbury Wellbeing Index, June 2015

[9] Independent Hearings Panel, Decision 1 Strategic Directions and Strategic Outcomes, 2015

[10] Independent Hearings Panel, 2015, Decision 1 Strategic Directions and Strategic Outcomes

The area units that had the largest employment gains between 2010 and 2016 included Middleton, Riccarton and Riccarton South, Wigram, Islington and Addington in the south-west of the City, and Yaldhurst in the west of the City around Christchurch Airport. Each of these area units gained more than 2,000 employees over this period, with Middleton gaining almost 5,000 employees. Some employment growth has also occurred in parts of Selwyn and Waimakariri since the earthquakes, but not to the same degree as in the City (Figure 2.6).

Figure 2.6 Population and Employment Change in Greater Christchurch, 2010 - 2016



Source: Stats NZ, Sub-National Population Estimates and Business Demography Statistics

The changes to the spatial distribution of land use activities across Greater Christchurch, coupled with the damage to roads and other infrastructure from the earthquakes, have had a major impact on transport across the sub-region. This includes altered travel patterns resulting in greater traffic volumes from the surrounding districts to the City, which has contributed to more congestion and delays on the road network, particularly on routes connecting satellite towns to the north, south and west of the City.

The public transport system has also seen a decline in the number of people using buses, with patronage in Greater Christchurch falling by around 35% after the earthquakes. Although bus patronage has risen since the post-earthquake low in 2011/12, the number of people using buses has plateaued over recent years and remains about 20% below pre-earthquake levels. It should be noted that some routes perform substantially better than others in the sub-region, with some routes constrained by a lack of capacity to meet higher demand.

2.6 Constraints on Urban Expansion

At present, there is 17,000ha of rural zoned land (i.e. non-urban land) within the Christchurch district boundary, which excludes Banks Peninsula as most of the peninsula is not within the Greater Christchurch area. While this quantum of land may seem substantive in terms of the potential opportunities for further expansion of Christchurch's urban area, large tracts of this land is constrained by a range of environmental, planning and physical factors. This includes high flood hazard areas, residential development restrictions in the airport noise contour, business and residential restrictions in the aquifer protection zone (Figure 2.7), operational and un-remediated quarry sites, and areas of high landscape value (e.g. the Port Hills).

Figure 2.7 Limits on Urban Development in Greater Christchurch

Source: Greater Christchurch Urban Development Strategy

The availability of flat, rural land that is conducive to residential and business development characterises much of the land that surrounds the satellite towns in the surrounding districts, including Rolleston, Lincoln, West Melton and Prebbleton in Selwyn, and Rangiora, Kaiapoi and Pegasus in Waimakariri. Fewer environmental, planning and physical constraints on this land has supported major growth at these satellite towns in recent periods, and especially after the earthquakes when readily available land for development was required to help meet the demand from residents and businesses displaced from other parts of the Greater Christchurch area.

In this context, some environmental and planning factors do limit urban development around these towns. The main limits to unconstrained development around the satellite towns in Selwyn and Waimakariri include the need to protect versatile soils that support primary production, and to manage intensification of the rural environment that may undermine landscape values and create amenity and reverse sensitivity conflicts with legitimately established activities (e.g. airport noise contour, quarrying, agricultural research farms, strategic infrastructure and government facilities).

There are also pressures on water resources in the districts, including its availability to service expanding urban areas and support intensive farming operations, and the impacts these activities are having on surface and ground water quality. Consideration also needs to be given to recognising, protecting and enhancing the ancestral lands, water resources, wāhi tapu and wāhi taonga of Te Rūnunga o Ngāi Tahu across the Greater Christchurch area.

3. Interactions between Housing and Business Land Uses

This section describes the spatial interactions between housing and business land use activities in Greater Christchurch, coupled with the transport network, to understand the potential for complementary land uses that support a well-integrated and accessible urban environment.

3.1 Drivers of Locational Preferences

The drivers of locational preferences differ for different housing and business land use activities. Developing a better understanding of the preferences for different types of households and businesses can be useful when devising planning responses as it might identify opportunities to provide capacity for different activities.

Households

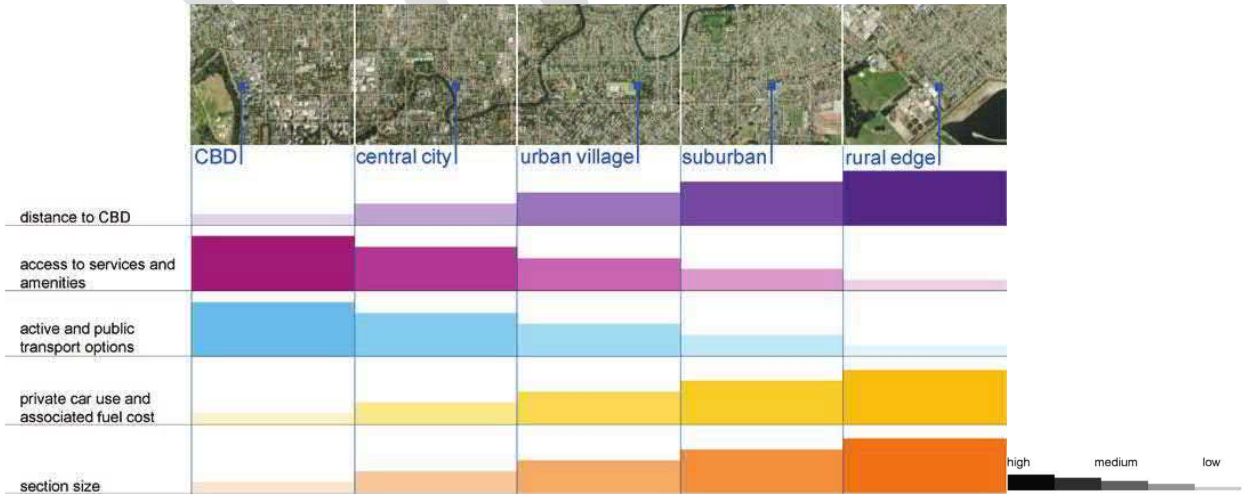
The Exploring New Housing Choices for Changing Lifestyles document was prepared by CCC to look at new housing solutions in response to the changing lifestyles and urban growth challenges of the 21st century.[11] This document recognises that people's housing needs are diverse and varied, and reflect their individual circumstances. Generally, people move into homes that suit their lifestyle, meaning a 'one size fits all' approach to housing is not appropriate for the sub-region.

As described in Section 2, Greater Christchurch has a diverse tradition of housing with varying types of homes built in different historic periods. Early developments featured houses that vary in size between large estate homes and small cottages in 'worker' or 'affluent' suburbs. As well as private homes, both central and local government have also developed housing in the sub-region that ranges from houses to flats.

In more recent years, apartments and townhouses have been increasingly built near the central city, but for many people, a detached house on a large section with private, open space remains representative of housing in Greater Christchurch. This model will continue to be an important part of meeting future housing need, but it is important to note that while these properties are particularly suited to the needs and lifestyles of many people, they may not suit, or be affordable, for everyone.

The varying housing locations in Greater Christchurch from the satellite towns to the rural edge to the central city offer different levels of access to amenities and services. Although living near shops, schools, parks and workplaces is generally something people desire, this often requires a trade-off with other factors, such as the affordability and size of homes. Houses and lifestyle bocks at or beyond the urban fringe of the City, and in the towns in Selwyn and Waimakariri, provide more private space but may not have convenient access to as many services and community facilities (Figure 3.1). The degree to which people are willing to trade-off between these factors will reflect individual preferences and circumstances, including the importance residents place on having good access to different types of services and amenities.

Figure 3.1 Trade-Offs for Different Residential Locations in Greater Christchurch



Source: Exploring New Housing Choices for Changing Lifestyles

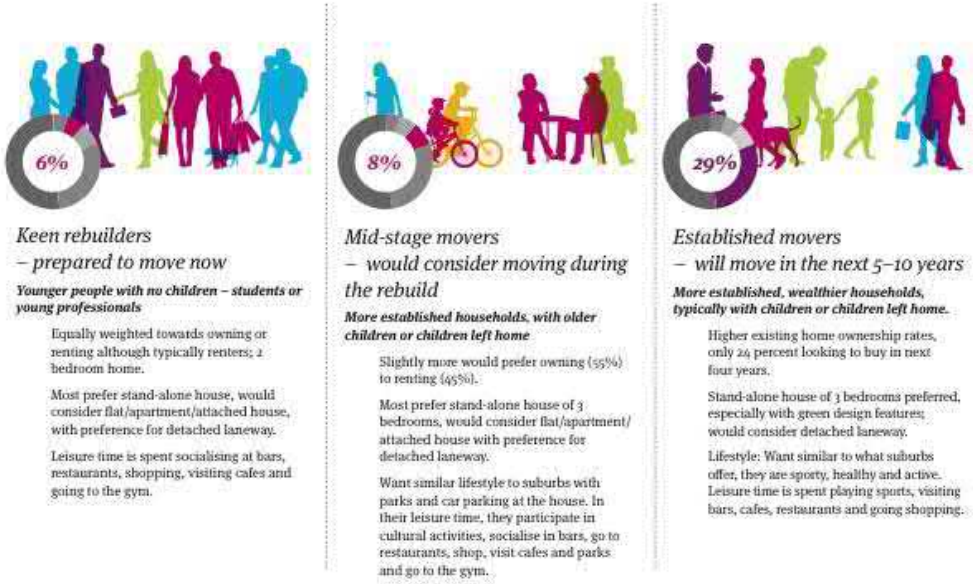
[11] This document is not based on survey findings but provides general commentary on the diverse housing needs of people.

In this context, the national problem of housing affordability has also become more pronounced in the Greater Christchurch area over recent years, which substantially restricts the housing choices people can make regardless of their preferences. It is therefore essential that good quality housing is provided for not only all stages and ages of life, but also for households that fall into different socio-economic groups in the sub-region. For many people in the sub-region, the core driver of where they choose to live relates to the affordability of different residential areas.

Alongside the Exploring New Housing Choices for Changing Lifestyles document, other research has been undertaken to consider housing preferences in Greater Christchurch, with the focus of the research on who might want to live in the central city and their particular housing preferences.[12]

Research conducted by IPSOS and CCC indicated about half of those surveyed would consider moving into the central city at some stage, with the majority of these survey respondents only likely to consider moving into the central city once it has been rebuilt. Younger people with no children and more established households with older children or children that have left home were more likely to consider moving into the central city during the rebuild period (Figure 3.2).

Figure 3.2 People Who are More Likely to Consider Moving into the Central City



Source: Developing the Central City as a Place to Live

Respondents of this survey showed a clear preference for central city living that provided neighbourhoods that had a sense of community now and in the future, that are pet friendly, safe and secure, and close to amenities, as well as providing a wide range of good quality housing options. The survey also highlighted that poorly managed developments, and having to sacrifice security and safety for the vitality and fun of central city living, would deter people from moving into the central city.

For survey respondents who indicated they are unlikely to ever consider living in the central city, the key reasons given for wanting to stay in the suburbs included the desirability of large, open spaces that allowed outdoor living and play areas, the peace and quiet of the suburbs and outskirts of the City, and the fact that suburban locations provided them with access to the amenities that satisfied their lifestyle needs.

Although previous research provides some insights into the drivers of housing preferences in Greater Christchurch, in particular for central city living, further research would support a better understanding of the core drivers across the sub-region. This would help ensure planning responses considered as part of the Future Development Strategy met the needs of all people and households. In addition, it will be important to consider the information from the 2018 Census to identify the key trends for the Greater Christchurch area since the last census in 2013.

It is also important to note that the housing preferences that currently characterise the Greater Christchurch area may not be the preferences that characterise the future population of the sub-region. It is therefore important that changing preferences in the sub-region are suitably considered as part of any future planning responses.

[12] Central city living research includes Testing Successful Central City Living in Christchurch (2013) prepared by Opus International Consultants and Developing the Central City as a Place to Live (2013) prepared by IPSOS and Christchurch City Council.

Businesses

In the absence of an evidence base on the drivers of locational preferences for business activities in Greater Christchurch, the criteria adopted in the business capacity assessment to consider the feasibility of areas for industrial and commercial development can be used to provide some insight into business preferences.

The criteria used for the feasibility assessment was determined through consultation with a focus group that comprised Property Council members, developers and real estate experts for the Greater Christchurch area. The focus group identified the relative importance they placed on each factor influencing the feasibility of industrial and commercial developments in the sub-region (Table 3.1)

Table 3.1 Factors Important to the Feasibility of Business Developments in Greater Christchurch

	Necessary	Very Important	Somewhat Important
Industrial	• Transport accessibility	• Planning constraints • Natural hazard constraints • Land assembly	• Land remediation • Private infrastructure requirements
Commercial (Retail / Office)	• Proximity to residential areas and local population • Planning constraints	• Visibility • Transport accessibility • Natural hazard constraints • Land assembly	• Land remediation • Private infrastructure requirements

Source: Greater Christchurch Partnership, Business Capacity Assessment

In terms of industrial activities, the feedback from the focus group was that access to the transport network was a necessary factor influencing the commercial feasibility of an area for industrial development. This includes access to the strategic road network, rail network, airport and ports. A location with minimal risk of reverse sensitivity issues and natural hazard constraints were also considered very important factors for industrial activities in Greater Christchurch.

In terms of commercial activities, a location that has good proximity to residential areas and a critical mass of people is considered a necessary factor for the feasibility of an area for retail and office developments. This relates to the need for these activities to have a nearby workforce and customer base to sustain business. The visibility and amenity of an area, as well as car parking availability and public transport links, were also considered very important factors for commercial activities. As with industrial activities, the risk from natural hazards was seen as a very important factor influencing the relative feasibility of areas in Greater Christchurch for commercial uses.

The importance of agglomeration and clustering of similar or related business activities is also a core driver of where businesses choose to locate in Greater Christchurch, whether it be for industrial or commercial activities. This is reflected in the primacy of certain industrial zones, office locations and key activity centres in the sub-region.

Further information on the process and results of the assessment of feasibility for industrial and commercial developments in Greater Christchurch is included in the business capacity assessment. Further research into the drivers of business preferences in Greater Christchurch would help ensure planning responses best meet the requirements of businesses across the sub-region as part of the Future Development Strategy.

3.2 Location of Development Capacity

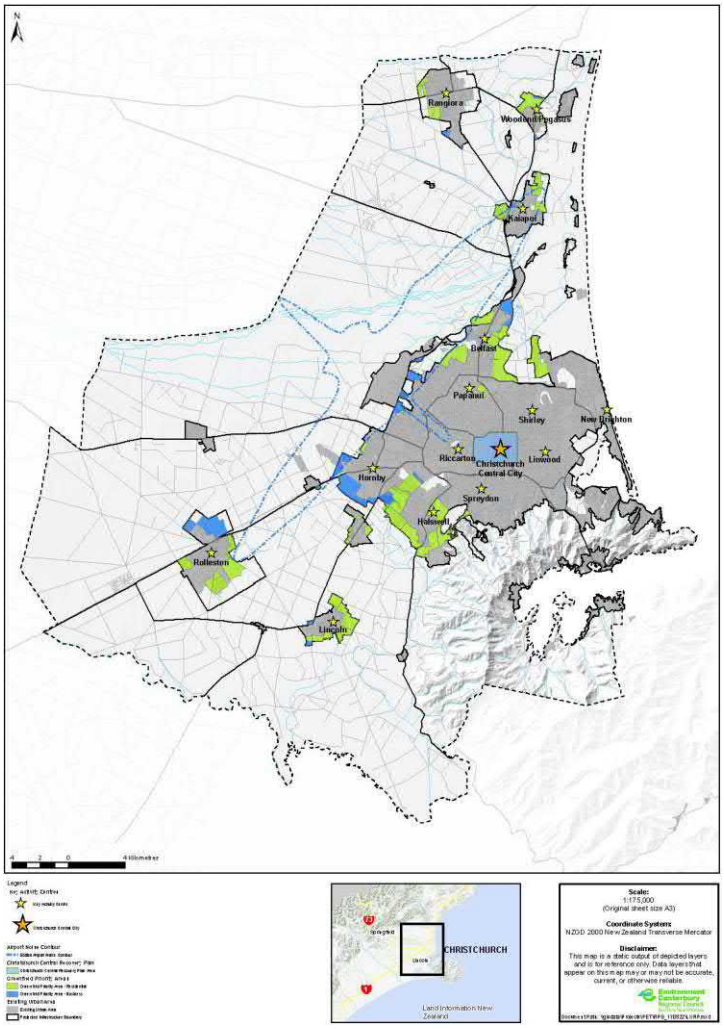
Map A of the Canterbury Regional Policy Statement 2013 (Revised 2017) (CRPS) shows the existing urban areas and priority areas for housing and business development in Greater Christchurch. These areas were identified as required to provide sufficient land zoned for urban purposes to enable recovery and rebuilding through to 2028. The key activity centres in the existing urban area are also indicated on Map A, which provide a focus for commercial activities and residential intensification (Figure 3.3).

The greenfield priority areas are generally clustered to the north, west and south-west of the existing urban areas. These areas are situated close to existing infrastructure corridors that connect to the growth areas in the City's north and Waimakariri district, and to the City's south and on to Selwyn district. The growth areas were included in the CRPS as they have the best potential to support residential and business growth while achieving a consolidated urban form, and an efficient and orderly provision of infrastructure.

In this context, the CRPS indicates that commercial developments should be focused on reinforcing the central city and key activity centres across the sub-region, as well as the network of neighbourhood centres, while the provision of new business land should be focused around existing infrastructure to minimise public

costs and achieve integration with the transport network. Locating business land close to existing and future residential development supports a broader range of travel options and reduces energy usage. Greater self-sufficiency of employment in districts, suburbs and settlements is also crucial for community development and social sustainability.

Figure 3.3 Greenfield Priority Areas in Greater Christchurch



Source: Canterbury Regional Policy Statement

Accommodating the demand for households in Greater Christchurch is achieved in two ways: greenfield expansion into priority areas and intensification in existing urban areas. To support a sustainable urban form, the CRPS indicates that residential intensification should be located around the central city, key activity centres and neighbourhood centres, consistent with their scale and function, and public transport routes. The CRPS also identifies mixed-use areas and brownfield sites as important opportunities for residential intensification in the sub-region.

In order to effectively use the greenfield priority areas to accommodate residential developments, the CRPS indicates that minimum densities should be achieved. This will help create a compact urban form that supports existing activity centres and can be served efficiently by infrastructure, including public transport. The greenfield areas should also contribute to increased housing supply and choice in Greater Christchurch, including providing affordable options, and support recovery and growth in the sub-region.

Overall, the capacity for housing and business development in Greater Christchurch has been identified based on providing sufficient land to support the future growth needs of the sub-region, while contributing to an urban form that achieves consolidation and intensification of existing urban areas, and avoids unplanned expansion into the surrounding rural areas.

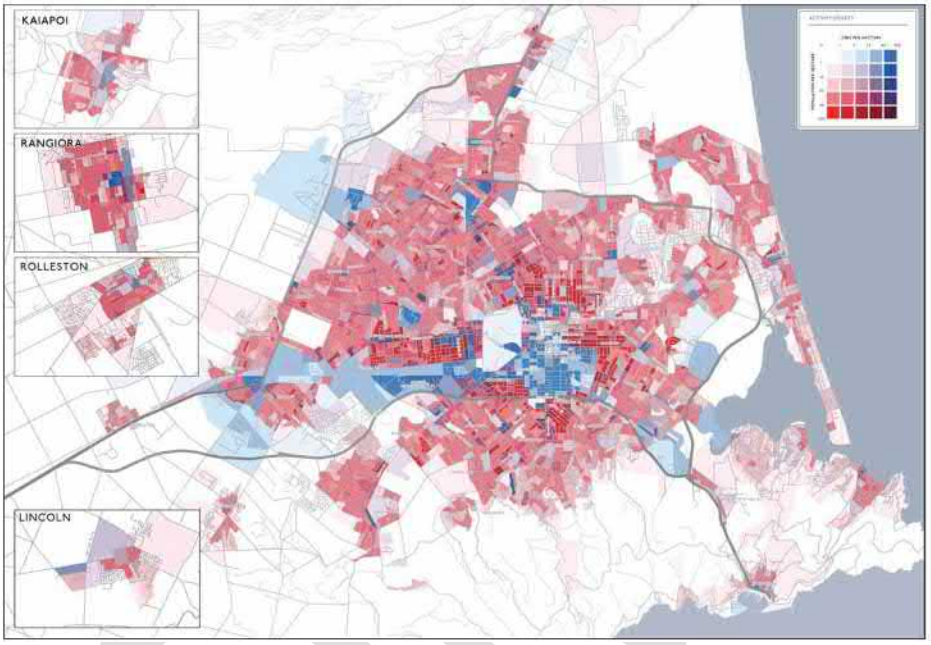
3.3 Positive Spatial Interactions

3.3.1 Urban Form and Accessibility

The evolution of the Greater Christchurch area (see Section 2) has resulted in the spatial distribution of housing and business land use activities that characterise the sub-region today. Greater Christchurch is, for the most part, a medium density urban area, with most residential areas supporting between 20 and 40 people per hectare. However, there are some higher density areas in the sub-region, including in Addington and Riccarton in the west of the City (Figure 3.4).[13]

Employment in the sub-region is mainly concentrated in and around the central city, along Blenheim Road to the west and in satellite business areas located on the strategic road network (Figure 3.4). As described in Section 2.5, the central city experienced substantial disruption as a result of the earthquakes and is only now starting to recover as the rebuild progresses.

Figure 3.4 Population and Employment Densities in Greater Christchurch, 2013



Source: Christchurch Transit Alternatives Report

There are few significant mixed-use areas in Greater Christchurch that have a dense combination of both residential population and employment. Christchurch City is fairly unique as it currently has a low central city population relative to other New Zealand cities due to the earthquakes. These current land use patterns mean that trips originate from a range of locations and terminate at a range of destinations across the sub-region, although the central city remains a key destination. In this context, Greater Christchurch has the highest rate of car ownership and usage compared to other New Zealand cities, with the relatively low public transport usage in part reflecting the settlement pattern in the sub-region.[14]

The CRPS recognises that land use patterns that are integrated with transport infrastructure minimise energy use through network optimisation, and provide for the social and economic wellbeing of the community, and people's health and safety. Land use patterns that are integrated with transport support shorter journey times for all modes and enables greater travel mode choice. This includes integrating housing and business areas with current or planned public and active transport routes to support these travel options in the sub-region.

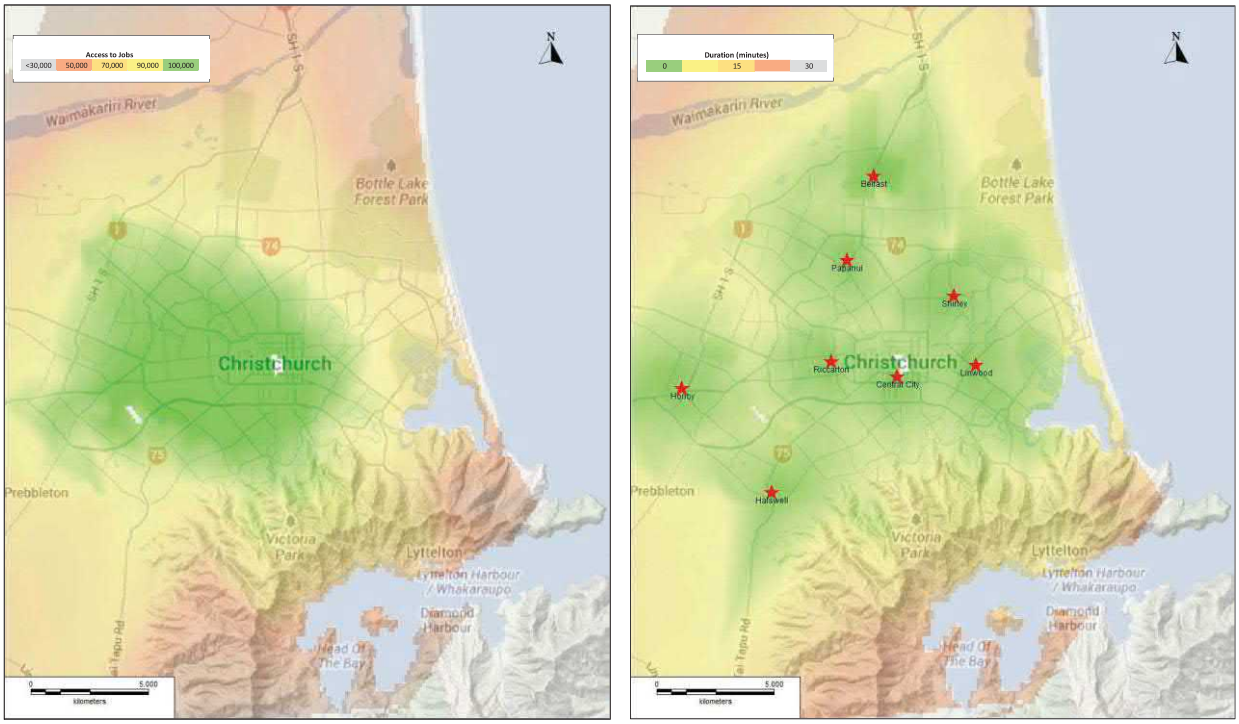
In this context, access to jobs in Greater Christchurch is highest in the central and western areas of Christchurch City, which reflects the concentration of jobs in this part of the sub-region (Figure 3.5). Access to this concentration of jobs has contributed to population growth in the western parts of the sub-region over time. In addition, the level of access to key activity centres in the City is also fairly high for much of the City (Figure 3.5), which suggests that the services and facilities provided in these activity centres are reasonably accessible to a significant share of the City's population.

[13] Draft Strategic Case for the Future of Public Transport in Christchurch, February 2017
[14] Draft Strategic Case for the Future of Public Transport in Christchurch, February 2017

Similar levels of access to activity centres will be evident for the satellite towns in Selwyn and Waimakariri, which are each served by a grouping of shops and services that are consistent with the scale of the resident population. Although access to jobs in the districts will be lower than in the City, an increasing employment base in some of these towns, such as Rolleston and Rangiora, will increasingly provide job opportunities to local working residents.

It should be noted that these accessibility measures are based on people that travel by private car in Greater Christchurch, which is currently the dominant mode of transport in the sub-region. The level of access to jobs and activity centres will be lower for people that travel by public transport, cycling and walking. Improving accessibility for public and active transport should continue to be a key consideration when developing future planning responses in the sub-region, in order to support increased modal choice for all people and communities.

Figure 3.5 Access to Jobs and Key Activity Centres by Private Motor Car in the AM Peak, 2016



Source: Integrated Transport Assessment Guidelines

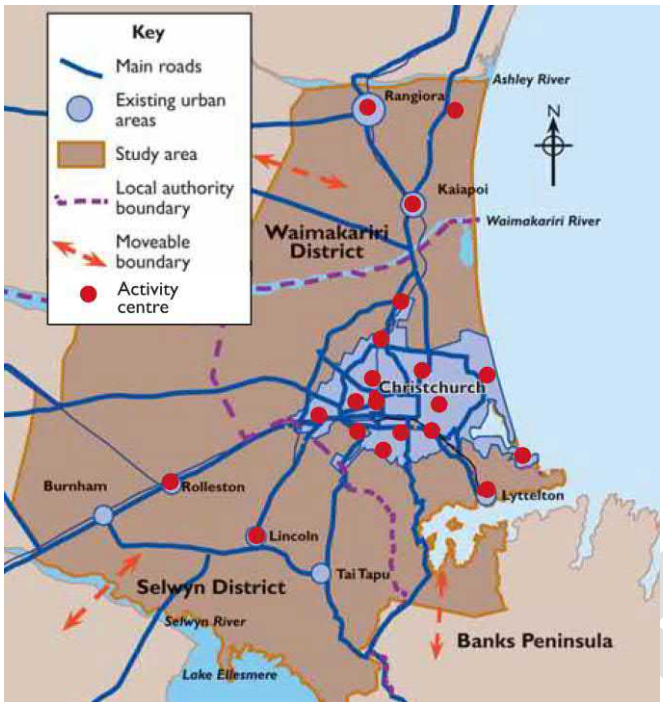
3.3.2 Activity Centres

To achieve a well-integrated and functioning urban environment, the Greater Christchurch Urban Development Strategy (UDS) identifies the importance of activity centres as focal points for services, employment and social interactions, and where people shop, work, meet, relax and often live. The central city is the main activity centre in Greater Christchurch, followed by Riccarton, Papanui-Northlands, Shirley-The Palms and Linwood-Eastgate. The various district activity centres and town centres includes Rangiora, Rolleston, Lincoln and Kaiapoi, as well as Barrington and Hornby in the City's suburbs (Figure 3.6).

The CRPS gives effect to the UDS in recognising the importance of maintaining the existing network of activity centres in Greater Christchurch, including the central city, as focal points for commercial, community and service activity in the sub-region. This reflects the investments that have been made in these places and their preference as a location for future commercial development. By virtue of their density, mix of activities and location along strategic transport networks, activity centres also support provision of public transport and residential intensification. The CRPS indicates that inappropriate development outside of these centres may undermine the investments made in the centres, and weaken the range and viability of the services they provide to communities.

It is important to note that activity centres in the sub-region are not homogeneous, with the extent that business and residential intensification should be directed to occur in these centres dependent on their scale and function. The role of neighbourhood centres is also recognised in terms of the opportunities they provide to local communities, and as a location for appropriate business development.

Figure 3.6 Activity Centres in Greater Christchurch



Source: Greater Christchurch Urban Development Strategy

In this context, several activity centres located strategically along arterial roads in Christchurch City have been selected as consolidation focal points in the UDS, identifying them as areas where intensification could be achieved over the period to 2041.[15] These activity centres are well served by the public transport network and are surrounded by higher density residential areas, making them fitting locations for concentrations of public and private services.

Overall, the role of activity centres in Greater Christchurch is to create positive spatial interactions between housing and business activities, and the transport network, by supporting a mix of land uses in a quality built environment that provides access for all modes of travel (Figure 3.7). This close proximity of housing and business activities support two-way interactions, whereby a higher population density around activity centres support the commercial and community services in the centre, while these commercial and community services support the resident population and make it an appropriate place to live.

Figure 3.7 Prosperous Activity Centres in Greater Christchurch

Source: Greater Christchurch Urban Development Strategy

[15] Consolidation focal points selected in the UDS include the activity centres of Riccarton, Papanui-Northlands and Linwood-Eastgate, and the district activity centres of Halswell, Barrington and Hornby.

The UDS also identifies several growth issues for activity centres in Greater Christchurch, which could be considered as part of preparing the Future Development Strategy, that includes:

- maintaining and promoting self-sufficient activity centres;
- providing certainty for existing activity centres to ensure sustainable investment and growth;
- locating public and private services and facilities in activity centres;
- ensuring activity centres enhance community character and identity;
- providing effective multi-modal transport access to key activity centres;
- designing and developing activity centres in a way that contributes to surrounding environments; and
- supporting higher density housing around key activity centres.

3.4 Negative Spatial Interactions

3.4.1 Disadvantaged Communities

The New Zealand Index of Multiple Deprivation 2013 (IMD) is a set of tools developed by the University of Auckland for identifying concentrations of deprivation in New Zealand. It measures deprivation at a local level using routinely collected data from government departments and the census, and using methods comparable to international deprivation indices.

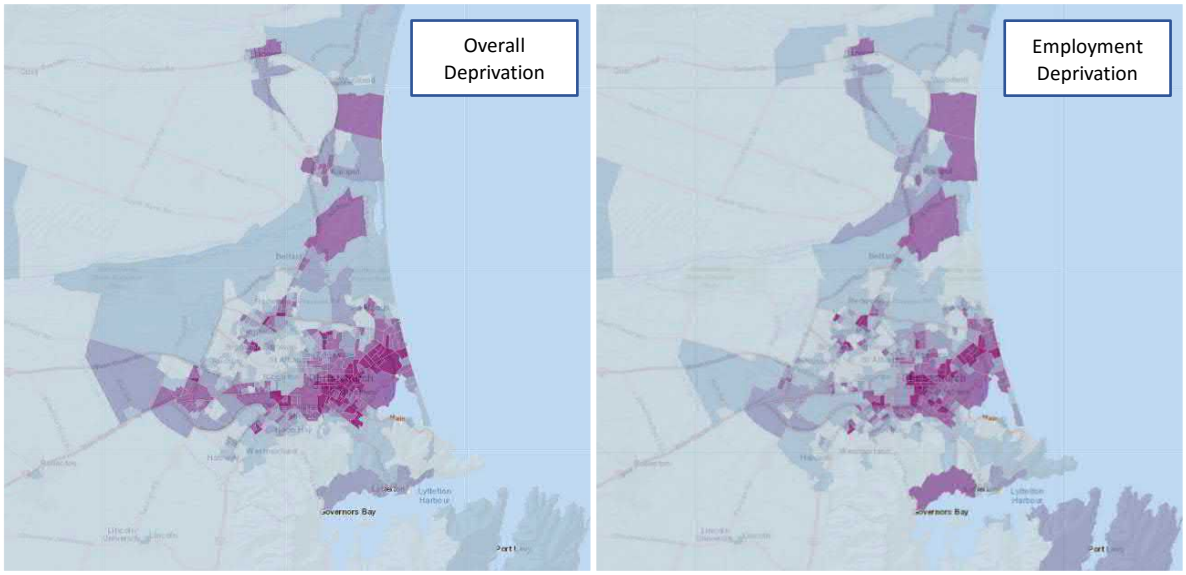
The IMD is comprised of indicators grouped into seven domains of deprivation: employment, income, crime, housing, health, education and access to services. These seven domains can be used, either individually or in combination, to explore the geography of deprivation, and its association with socio-economic outcomes. The domains of deprivation that are of interest for the purposes of this analysis includes employment, education and access to services.

An overview of the indicators used under each of the seven domains of deprivation is set out in Appendix A.2, as well as the weight given to each domain to create an overall IMD score for each local area.

In overall terms (i.e. a synthesis of the seven domains of deprivation), the IMD indicates that parts of Greater Christchurch are ranked in the top 20% most deprived local areas in New Zealand. These deprived areas of the sub-region are mostly in the eastern suburbs of Christchurch City. Some parts of the sub-region are also ranked in the top 5% most deprived in the country, with these highly deprived areas found in Aranui, Avonside and Phillipstown in the east of the City, and Hillmorton in the south-west (Figure 3.8).

The more deprived areas of Greater Christchurch in overall terms also display higher deprivation in terms of employment accessibility and participation. Although the extent of employment deprivation in the sub-region is less significant than the overall levels of deprivation, parts of Christchurch City are still ranked in the top 5% most deprived in New Zealand for employment deprivation, with these deprived areas found in the eastern suburbs of Phillipstown, Aranui and Linwood (Figure 3.8).

Figure 3.8 Overall and Employment Deprivations in Greater Christchurch, 2013



Source: University of Auckland, New Zealand Index of Multiple Deprivation 2013

The higher levels of employment deprivation in the eastern parts of Christchurch City largely mirrors the spatial distribution of jobs in the sub-region, with the greatest concentration of jobs in the central and western areas of the City (Figure 3.5). Barriers to people in the City's eastern suburbs accessing jobs in other parts of the sub-region will have affected the socio-economic opportunities of these communities.

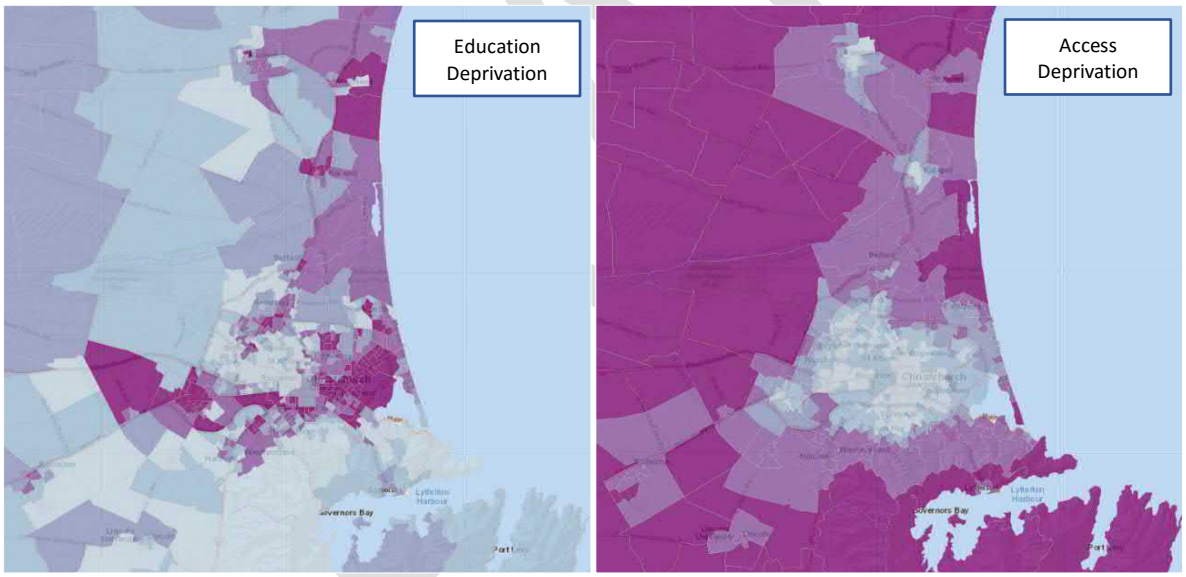
In contrast, the extent of education deprivation in Greater Christchurch is greater than the overall deprivation levels. The highest concentration of education deprivation is found in the eastern and central parts of Christchurch City, while fairly significant education deprivation is also evident in other parts of the sub-region, especially in the City's south-west and in parts of Waimakariri district. In this context, a number of areas in the City are ranked in the top 5% most deprived in the country for education deprivation (Figure 3.9).

The more deprived areas in Greater Christchurch under the access domain are those rural locations where people need to travel longer distances to access health, education and care facilities, and shops and services. In so far as urban areas in the sub-region, there are indications of some access deprivation in the outer suburbs of the City, the fringes of the satellite towns in Waimakariri, and areas within and around the satellite towns of Rolleston and Lincoln in Selwyn.

In this context, it is important to note that several developments have been progressed in the satellite towns in Selwyn and Waimakariri since 2013, in part as a response to their high population growth, which are likely to have improved these areas under the access to services domain. Examples include a new supermarket and health clinic in Rolleston, development of new town centre and neighbourhood shops, and investment in new or expanded primary and secondary schools.

It should also be noted that this measure is based on a period of major disruption in Greater Christchurch after the 2010 and 2011 earthquakes. As described in Section 2.5, there was significant movement of people and businesses across the sub-region post-earthquakes, which will have affected people's ability to access a range of services and amenities. Recent developments will have helped address some of the accessibility issues across the Greater Christchurch area.

Figure 3.9 Education and Access to Services Deprivations in Greater Christchurch, 2013



Source: University of Auckland, New Zealand Index of Multiple Deprivation 2013

Overall, the IMD indicates that some communities in Greater Christchurch are disadvantaged in terms of their ability to access and participate in employment and education, and their proximity to key services and facilities. This particularly relates to communities in the City's eastern suburbs. Although a number of factors will be influencing levels of deprivation in these areas, it will be important to consider as part of the Future Development Strategy the types of planning responses that could enable increased opportunities and better outcomes for these communities.

3.4.2 Reverse Sensitivities

The concept of reverse sensitivity is the situation where an existing land use has deliberately located away from other land uses that may be sensitive to their activities, but is subsequently encroached on, resulting in pressure for that activity to cease or change the way it operates. This could include, for example, residential areas encroaching on activities that produce odours (e.g. airports or certain industries).

Most adverse effects can be avoided if land use activities that discharge to air are not located near established land uses that will be incompatible with these activities, or conversely, if sensitive land uses (e.g. homes, health facilities and schools) are not placed near established areas where incompatible activities are undertaken (e.g. industrial zones).

In this context, Policy 6.1.2 of the CRPS recognises that there are environmental challenges to the recovery, rebuild and redevelopment of the Greater Christchurch area that need to be provided for through a clear planning framework. This includes addressing any *"conflicts between legitimately established activities and sensitive activities which seek to locate in proximity to these (reverse sensitivity)"*.

Policy 14.3.5 also states in relation to the proximity of discharges to air and sensitive land uses that:

1. *To avoid encroachment of new development on existing activities discharging to air where the new development is sensitive to those discharges, unless any reverse sensitivity effects of the new development can be avoided or mitigated.*
2. *Existing activities that require resource consents to discharge contaminants into air, particularly where reverse sensitivity is an issue, are to adopt the best practicable option to prevent or minimise any actual or likely adverse effect on the environment.*
3. *New activities which require resource consents to discharge contaminants into air are to locate away from sensitive land uses and receiving environments unless adverse effects of the discharge can be avoided or mitigated.*

To give effect to Policy 14.3.5, the CRPS indicates that territorial authorities will set out objectives and policies, and may include methods in districts plans, to ensure that:

- activities discharging contaminants to air are appropriately located; and
- provision is made to protect established activities discharging contaminants to air from adverse reverse sensitivity impacts resulting from the encroachment of sensitive land uses, if the established activity has adopted the best practicable option to prevent or minimise any actual or likely adverse impacts.

In this context, the district plans for Christchurch City, Selwyn and Waimakariri have provisions to address reverse sensitivity issues related to incompatible land uses in Greater Christchurch. For example, residential land at Awatea Park in Wigram has been rezoned on the basis that it cannot be developed until the Christchurch Kart Club has moved. A resource consent application has been made to relocate the Kart Club to the McLeans Island area, with a funding allocation in CCC's long term plan assisting with the relocation.

Although there are some isolated complaints about reverse sensitivity issues in Greater Christchurch, which generally relate to the interaction between residential neighbourhoods and legacy industrial zones, these incidents are considered to be more localised issues that don't require a major planning response as part of the Future Development Strategy. As noted above, these issues are largely addressed in the district plans, including addressing issues related to:

- Noise, odour and pollution from industrial areas;
- Noise, dust and traffic from quarrying;
- Noise, odour and sprays from agriculture;
- Noise from airport (noise contours) (see Section 2.6), port, and busy road and rail corridors; and
- Noise from late time commercial activities affecting residential areas.

3.5 Transport and Accessibility

3.5.1 Travel Patterns

The settlement pattern that characterises Greater Christchurch, coupled with its integration with the transport network, currently provides reasonable ease of travel across the sub-region. This relative ease of travel has allowed people to live further from their workplace and the key activity centres, and has supported recent development being focused in the outskirts of the City, and in the satellite towns in Selwyn and Waimakariri.

The 2013 Census provides data on where people usually lived and worked at the time the Census was undertaken, which can be used to build a picture of the commuting patterns in Greater Christchurch after the earthquakes. It should be noted that these commuting patterns will have evolved since the Census given the ongoing recovery of the sub-region, particularly the growing number of workers returning to the central city.

A summary of the data showing where people usually lived and worked in Christchurch City, Selwyn and Waimakariri at the time of the 2013 Census is provided in Appendix A.3.[16]

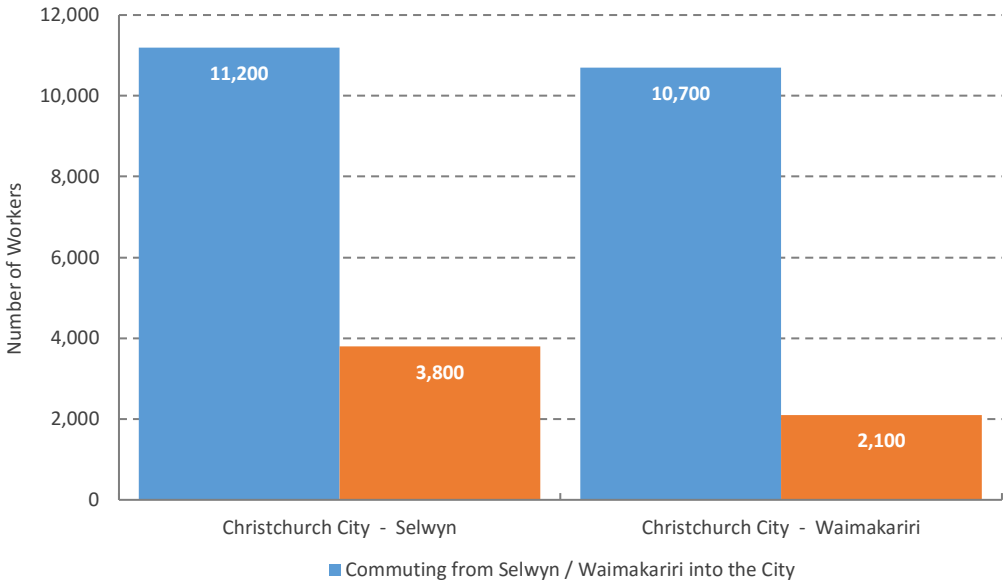
Based on the 2013 Census data, the share of workers living in the same area as their employment differs in the sub-region.[17] The most local workforce was in Waimakariri where about 80% of workers employed in the district also lived in the district, while Selwyn was at a slightly lower share at about 70%. In so far as Christchurch City, the most local workforce was in the City's north-east (51%), while the City's south-west had the least local workforce (33%). A negligible share of central city workers lived in the central city in 2013, reflecting the major rebuild activity underway in this part of the sub-region at the time of the Census.

These commuting patterns indicate that most workers employed in Christchurch City did not live in the same part of the City as their place of work in 2013, meaning people had to travel across the sub-region, to varying degrees, to get to work. The most significant flow of commuters was to the City's south-west, with about 36,000 workers travelling into this area for their employment from elsewhere in the sub-region. This reflects the large number of jobs supported in such areas as Hornby, Wigram, Middleton and Addington in the south-west of the City. About 74% of these workers lived in other parts of the City, while about 14% lived in Selwyn and 8% in Waimakariri. The large commuter flows to the City's south-west has contributed to greater traffic volumes and congestion on this part of the network.

Other significant commuting flows in 2013 were to the City's north-west, south-east and central city, with more than 18,500 workers travelling into each of these areas to access their workplace from elsewhere in the sub-region. The flow of workers to the City's north-east was somewhat less at around 12,000, while less than 5,000 workers travelled into Selwyn and Waimakariri respectively from elsewhere in the sub-region.

In this context, the City is characterised as being a significant net importer of labour in the sub-region, with a net inflow of around 7,400 workers from Selwyn and 8,600 workers from Waimakariri in 2013 (Figure 3.10).

Figure 3.10 Commuting Flows between Christchurch City, and Selwyn and Waimakariri, 2013



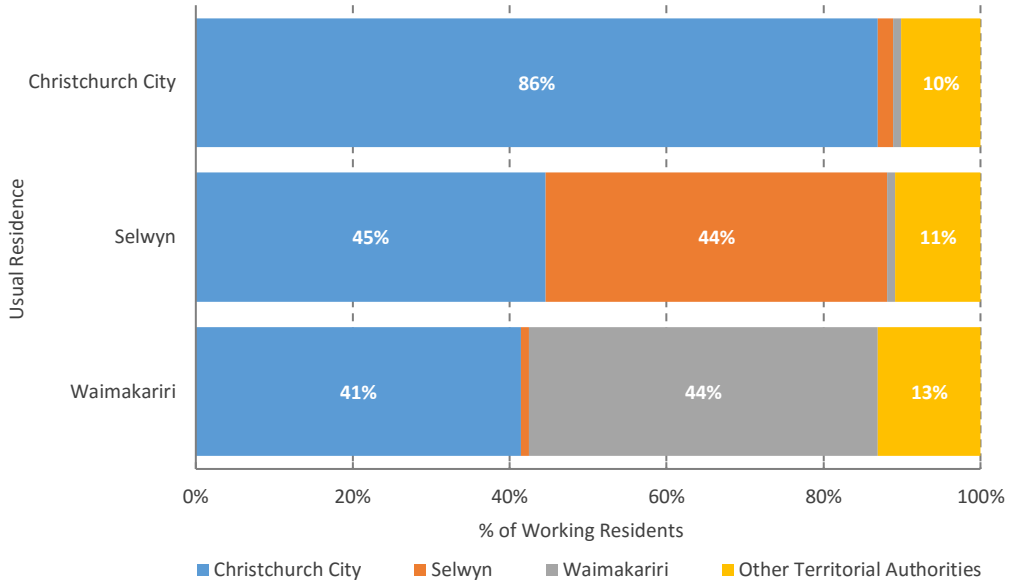
Source: Stats NZ, 2013 Census

While the above analysis considers what share of workers live in the same area as their workplace, it is also possible to consider what share of working residents are employed in the same area as where they live. This shows the self-containment level for an area. In this context, Census data indicates most working residents in Christchurch City were employed in the City in 2013. However, the level of self-containment in Selwyn and Waimakariri were much lower at about 44%, with almost half of all working residents in these districts commuting into the City for work (Figure 3.11).

[16] The commuting flows data for Banks Peninsula is provided in Appendix A.3, but not included as part of the analysis in this section given the smaller scale of these commuting flows.

[17] The areas that comprise Greater Christchurch in this analysis include the north-east, north-west, south-east, south-west and central city of Christchurch City, and the districts of Selwyn and Waimakariri.

Figure 3.11 Workplace Address for Residents in Christchurch City, Selwyn and Waimakariri, 2013

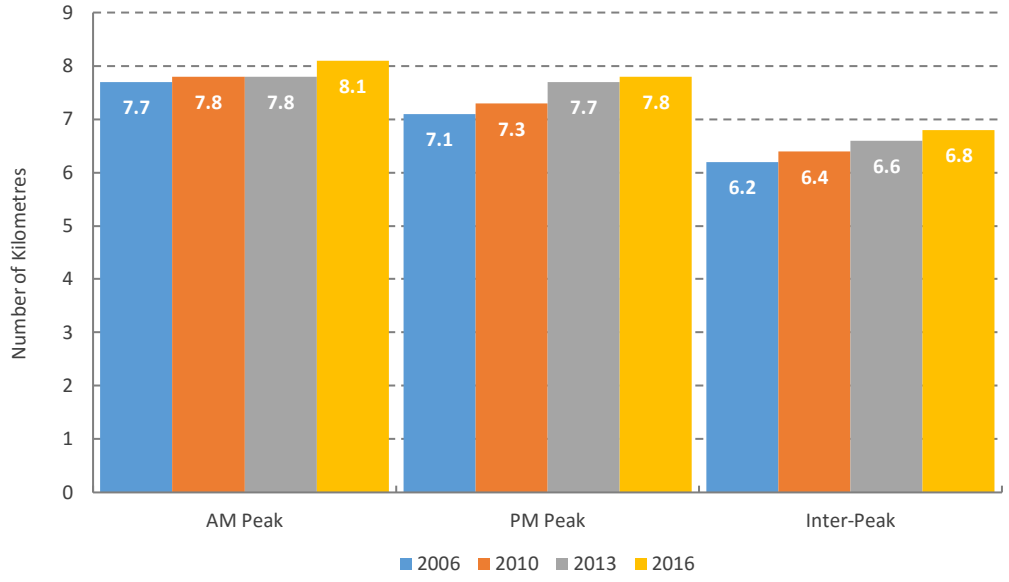


Source: Stats NZ, 2013 Census

This analysis of the Census data provides an insight into the travel patterns for Greater Christchurch by showing where people lived and worked in the sub-region in 2013. Although the analysis indicates a sizeable share of the population do not live and work in the same area of the sub-region, in some cases a movement between one area to another may not actually represent a major trip in terms of distance (e.g. a person living and working on either side of a boundary line). In addition, this analysis has not provided any information on the mode of transport used to commute to work. Although many trips in Greater Christchurch are currently made by private car, some will be taken by public and active transport, and there will be opportunities to increase this share as part of future planning responses.

In this context, the Christchurch Assignment and Simulation Traffic Model (CAST) indicates that the average trip length for light vehicles in Greater Christchurch grew across all time periods from 2006 to 2016. The most significant increase was over the PM peak and inter-peak periods, with average trip lengths growing by about 10%. The increase over the AM peak period was less significant at about 5%, although the longest average trip length was still undertaken during this part of the day (Figure 3.12).

Figure 3.12 Average Trip Length for Light Vehicles in Greater Christchurch, 2006 - 2016



Source: Christchurch Assignment and Simulation Traffic Model 2016

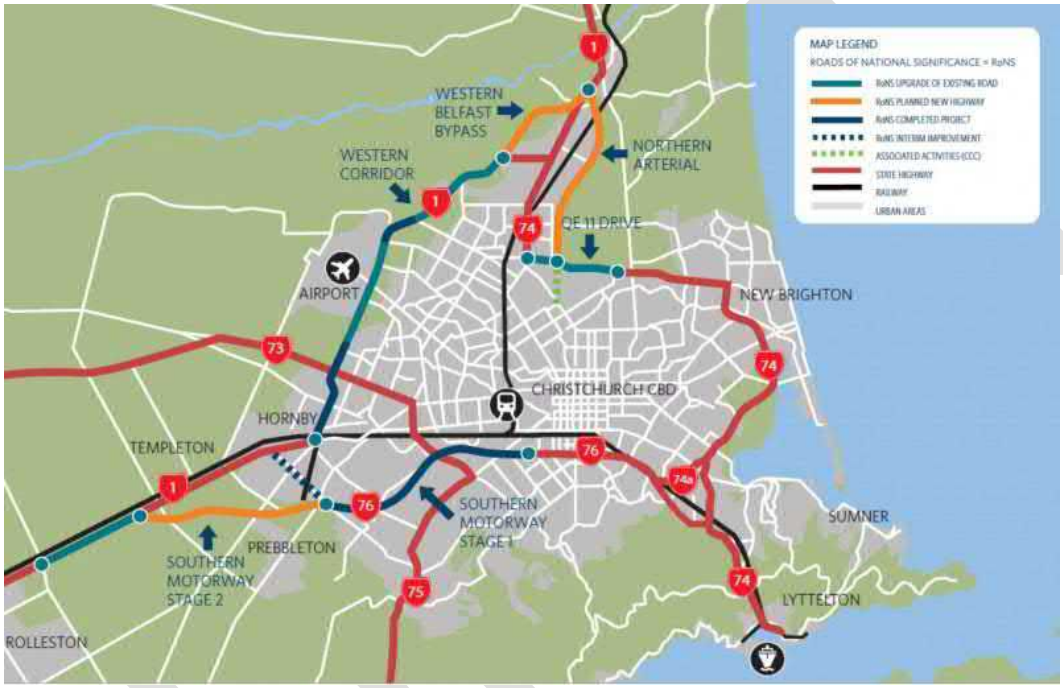
The longer travel distances reflect the changing land use patterns in Greater Christchurch over this period, with large-scale residential development on the urban fringe of Christchurch City, and in the satellite towns in Selwyn and Waimakariri, resulting in an increased share of the population travelling further to access the economic and social opportunities concentrated in the City. In addition, people are travelling to a wider range of destinations across the City. A key consideration of the Future Development Strategy therefore relates to the capacity of the transport network to support these travel movements (see Section 3.5.2).

3.5.2 Transport Network Constraints

Current Constraints

The road network facilitates the movement of people and freight into, out of and within Greater Christchurch (Figure 3.13). An efficient, safe and sustainable road network is therefore vital for connecting Christchurch City with the surrounding Selwyn and Waimakariri districts, and beyond, and ensuring the sub-region is an accessible and well-functioning urban area.

Figure 3.13 Strategic Road Network in Greater Christchurch

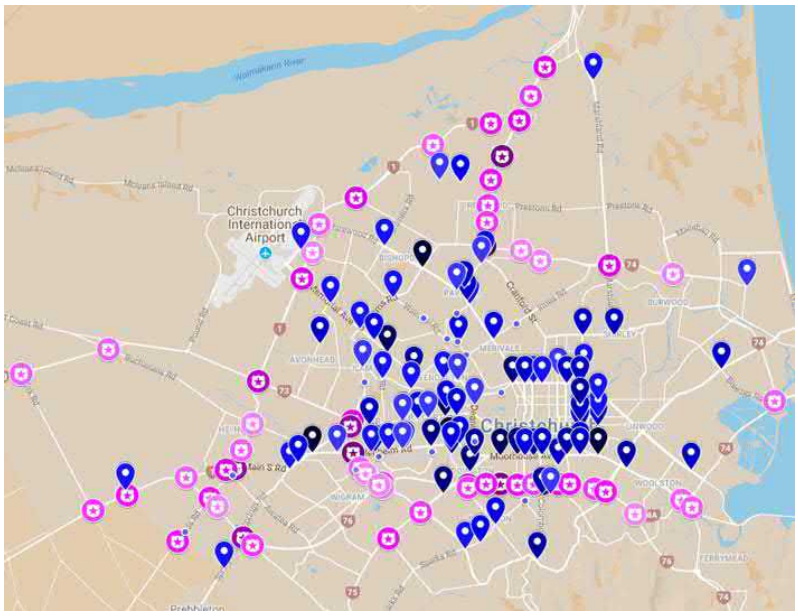


Source: NZTA, https://www.nzta.govt.nz/projects/christchurch-motorways/

The agencies responsible for transport in Greater Christchurch have collectively reviewed the opportunities and challenges for integrated transport solutions in the sub-region. The key transport challenges relate to the disruption to travel patterns after the earthquakes. The impact of land use changes and development on travel patterns has resulted in increased congestion and delays on parts of the network, and weaker journey time reliability. The reliance on private cars in the sub-region has also constrained the ability of the transport system to move people and goods efficiently, and has led to localised pinch points and low corridor productivity. Road safety also remains a key challenge for the network.

In this context, the agencies responsible for transport in Greater Christchurch have reviewed the safety, reliability and accessibility problems for the sub-region to identify the critical issues to be addressed in the short to medium term. The critical (i.e. high or very high) problem locations on the road network in the City were identified through this evidence analysis (Figure 3.14), as well as the key issues for other parts of the road network in the Greater Christchurch area (Figure 3.15).

Figure 3.14 Critical Problem Locations on the Road Network in Christchurch City



Source: Christchurch Transport Investment Story

Note: Pink locations are on the state highway network and blue locations are on the Council's network. The darker shade shows more severe issues.

Figure 3.15 Key Issues for the Road Network in Greater Christchurch

Source: Christchurch Transport Investment Story

In addition to the issues identified in Figures 3.14 and 3.15, a business case has also been prepared for the state highway network between Ashley River and Belfast in the north of the City, and in Waimakariri district. Reliability, safety and access issues were also identified for this part of the strategic road network in Greater Christchurch, while downstream impacts for travel into the City were also identified.

Future Constraints

The Greater Christchurch Partnership jointly owns the Christchurch Transportation Model (CTM). The model uses fixed land use inputs to identify future travel demands and potential impacts on the transport system.

Previous projections indicated a population of around 550,000 in the Greater Christchurch area by 2041. The latest Stats NZ population projections have increased the forecast population in the sub-region to 640,000 by 2048, and by comparison, forecasts that the population will reach 550,000 by about 2028 (i.e. thirteen years earlier than the previous projections).

In order to understand the potential effect of additional demand on the transport network from this projected population growth, the revised population projections for 2028 and 2048 have been modelled in the CTM. This was undertaken by simply scaling previous projections, rather than doing a detailed land use allocation exercise. This means that travel demand was modelled based on the population projections and was not constrained by whether there was zoned land capacity to accommodate the growth (Table 3.2).

An additional sensitivity test for 2048 was also modelled to test the extent to which the location of growth has an impact on the transport network. The same projected population growth for Greater Christchurch was used, but a higher share of the residential and employment growth was allocated to the City, in line with previous UDS and CRPS targets (i.e. 70% of the additional population growth in the sub-region distributed to the City), rather than in Selwyn and Waimakariri, which had experienced significant increases in growth post-earthquakes (Table 3.2). The transport networks used in the model are based on the existing transport system and the currently planned network improvements.

Table 3.2 Scenarios Modelled through the Christchurch Transportation Model

Model Scenario	Year Modelled	Method for distributing the additional population in Greater Christchurch amongst territorial authorities	Share of the additional population in Greater Christchurch distributed to each territorial authority		
			Christchurch City	Selwyn	Waimakariri
GCP3-28	2028	As per the latest Stats NZ projections	51%	31%	18%
GCP3-48	2048	As per the latest Stats NZ projections	51%	31%	18%
ST1-48 (sensitivity test)	2048	As per the target in the UDS	70%	19%	11%

Source: Christchurch Transportation Model 2017

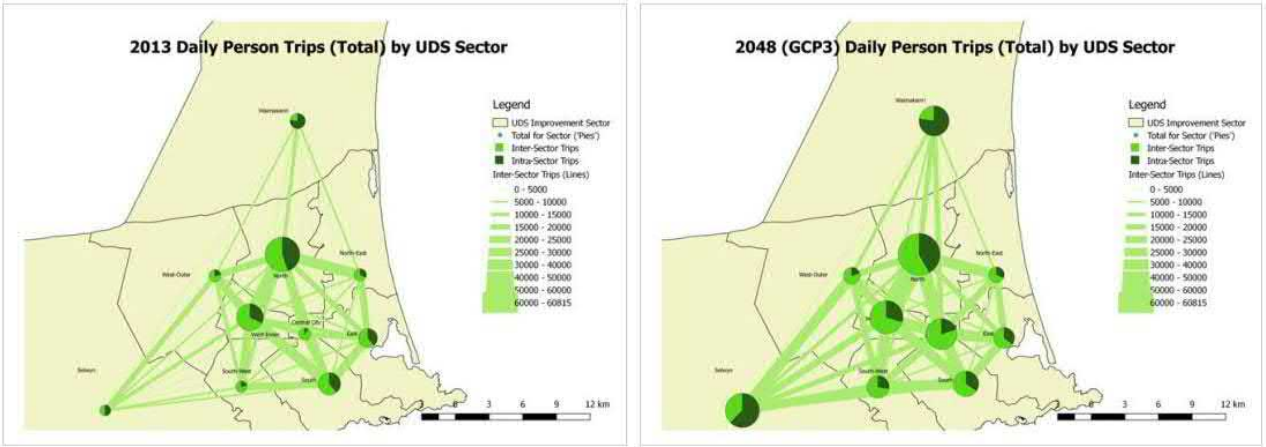
The modelling shows the potential changes in the location (i.e. origins and destinations) and volume (i.e. demand) of daily trips in Greater Christchurch by 2028 and 2048. The results can be compared with 2013 to show the possible changes under each modelled scenario (Table 3.3) (Figure 3.16), while some of the likely key trip demands for each territorial authority can also be identified (Table 3.4).

Table 3.3 Summary of Land Use and Travel Demand Changes by Modelled Scenario, 2013 - 2048

	2013	GCP3-28 (2028)	GCP3-48 (2048)	ST1-48 (2048)
Population	428,025	547,898	639,858	639,858
Employment	217,437	285,864	334,050	334,050
Daily person trips	1,947,650	2,510,616	2,930,958	2,927,781
AM peak trips	242,338	314,798	366,103	365,689

Source: Christchurch Transportation Model 2017

Figure 3.16 Daily Person Trips between Sub-Regional Sectors in Greater Christchurch, 2013 - 2048



Source: Christchurch Transportation Model 2017

Table 3.4 Summary of Land Use and Travel Demand Changes by Territorial Authority, 2013 - 2048

	2013	2048 (GCP3-48)	Percentage Growth	Sensitivity Test (ST1-48)
Selwyn				
Trips originating in Selwyn	116,174	354,442	205% (Note that 62% are internal trips by 2048)	299,497 (Note that 59% are internal trips by 2048)
Selwyn households	11,862	37,830	219%	30,391
Selwyn to Christchurch trips	59,850	132,778	120% (Note that 26,611 trips are during AM peak 2 hours)	120,479
Waimakariri				
Trips originating in Waimakariri	155,745	305,748	96% (Note that 77% are internal trips by 2048)	272,045
Waimakariri households	15,423	32,401	110%	27,599
Waimakariri to Christchurch trips	36,170	64,789	67% (Note that 14,281 trips are during AM peak 2 hours)	60,982
Christchurch City				
Trips originating in Christchurch	1,549,031	2,116,575	37% (Note that for all sub-sectors in the City, more than 50% of trips are to sectors outside the local area)	2,200,158
Christchurch households	138,637	193,223	39%	205,465

Source: Christchurch Transportation Model 2017

The modelled scenarios for Greater Christchurch all show that population growth could result in some significant increases in traffic and travel demand in the sub-region during the next thirty years (Table 3.5).

Table 3.5 Changes in Daily Trips by Transport Mode and Territorial Authority, 2013 - 2048

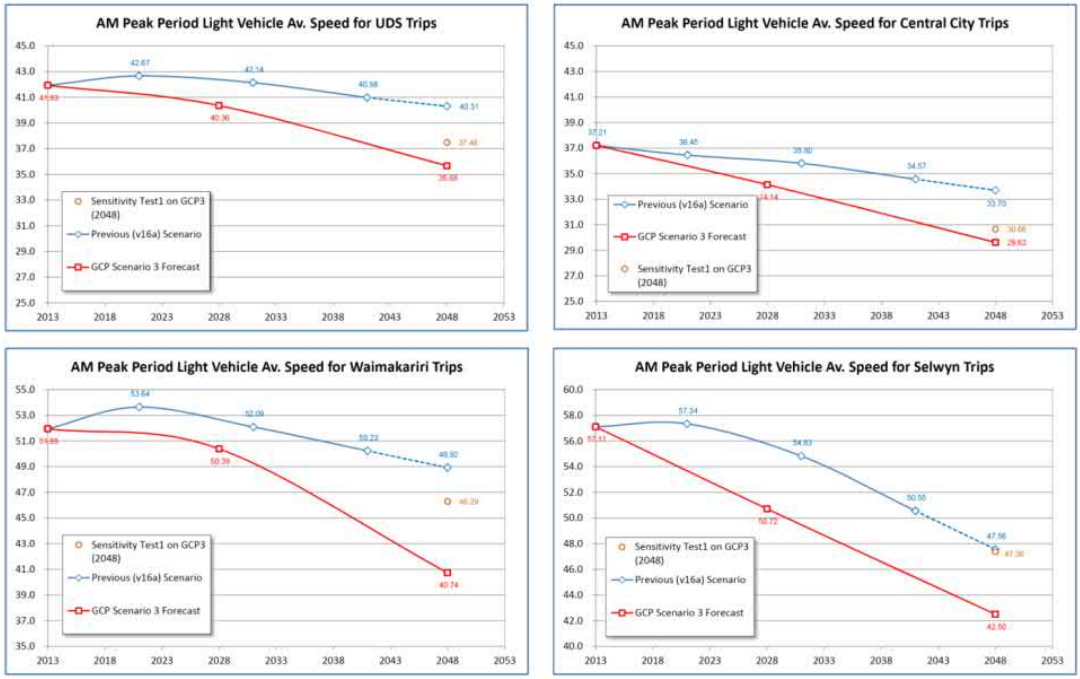
Daily Trips	GCP3-48	ST1-48 (sensitivity test)
Total vehicle trips (light vehicle and heavy vehicle trips)	+ 52%	+ 51.5%
Total public transport passenger trips	+ 54%	+ 64%
Total bike trips	+ 50%	+ 56%
Total trips from Selwyn	+ 208%	+ 160%
Total trips from Waimakariri	+ 97%	+ 76%

Source: Christchurch Transportation Model 2017

Both scenarios show that additional trips could result in more vehicles on the transport network, with associated increased delays and reduced average speeds in the sub-region. The impacts would likely be most significant in areas located closer to population centres. Average travel speeds in the morning peak are forecast to decline by over 6km/h during the next thirty years (i.e. from 42km/h in 2013 to 36km/h in 2048). This means that journeys at peak times could take about 15% longer by 2048 than they do now. This is more substantial than under the previous population projections, which projected a less than 1km/h drop by 2041, or about 2% longer travel times (i.e. shown by the 'previous (v16a) scenario' line in Figure 3.17).

In this context, it should be noted that the assumed future infrastructure in place was developed in line with the previous population projections, so it is not surprising that there is some potential degradation in travel speeds given the increases in the number of person trips and no corresponding capacity increases by any mode. This has also been exacerbated by the changes in land use and travel patterns in the post-earthquake environment.

Figure 3.17 Modelled Light Vehicle Travel Speeds (km/h) in Greater Christchurch in the AM Peak, 2013 - 2048



Source: Christchurch Transportation Model 2017

Such delays would be noticeable for all people and purposes of travel, be that commuters to work or school, or commercial, freight and emergency service trips. However, the delays would also likely vary greatly across the sub-region. The increase in travel times from the western areas of the City, Selwyn and Waimakariri into the central city could be much worse than the average increases, with travel times potentially being 60% longer by 2048 than they are now. The travel time delays are also likely to vary significantly from day-to-day, which could make it difficult for people to know how long their journey will be each day (Table 3.6).

Table 3.6 Average Travel Times (Minutes) to the Central City from the Sub-Regional Sectors in the AM Peak, 2013 - 2048

Model Scenario	From Selwyn	From Waimakariri	From Christchurch City						
			From North	From North East	From East	From South	From South West	From West Inner	From West Outer
2013	26.3	32.8	11.7	15.0	12.1	10.0	12.6	10.8	17.6
2028 (GCP3-28)	32.8 (+ 6.5)	35.6 (+ 2.8)	14.3 (+ 2.6)	16.7 (+ 1.7)	13.2 (+ 1.1)	12.1 (+ 2.1)	17.6 (+ 5.0)	14.9 (+ 4.1)	23 (+ 5.4)
2048 (GCP3-48)	44.4 (+ 18.1)	52.6 (+ 19.8)	16.3 (+ 4.6)	18.4 (+ 3.4)	13.7 (+ 1.6)	13.4 (+ 3.4)	23.1 (+ 10.5)	17 (+ 6.2)	28.2 (+ 10.6)
2048 (sensitivity test)	38.2 (+ 11.9)	43.1 (+ 10.3)	15.9 (+ 4.2)	18.2 (+ 3.2)	14.2 (+ 2.1)	13.7 (+ 3.7)	21.3 (+ 8.7)	16.9 (+ 6.1)	26.4 (+ 8.8)

Source: Christchurch Transportation Model 2017

There could be substantial cost to the regional economy from increased travel times, as freight takes longer to transport around Greater Christchurch, including to and from the airport, port, distribution centres and warehouses. The cost to the economy from this increase in congestion could be approximately $200 million per year. In the absence of targeted interventions, increased travel demands could also result in increased vehicle emissions, increased crash risk and negative social impacts for sectors of society without good access to goods and services.

In this context, the sensitivity test that was modelled for Greater Christchurch through the CTM demonstrates that the location of land use growth can significantly impact the distribution of trips and the resulting levels of congestion. Due to the high level, first cut nature of this exercise, the model has not included changes to transport infrastructure to reflect a system that may better support a denser Christchurch City (e.g. increased public transport, walking and cycling capacity, and less investment in the economically inefficient storage of vehicles in carparks). The cost to the regional economy under this scenario could be about $150 million.

The modelling also indicates that the mode split of the modelled person trips (i.e. by private car, public transport and bicycle) is projected to remain fairly constant over time under all the scenarios tested, although there was a marginal increase in public transport and cycling mode share under the sensitivity test. This will be largely due to the model calibration being based upon the surveyed preferences of people to use private cars to travel around the Greater Christchurch area.

The model does not adjust for changing personal preferences over time, such as greater use of bicycles and other possible social transport changes (e.g. the potential for lower car ownership amongst younger people, or alternative ownership and lease models that may transpire due to the roll-out of smart vehicle technology).

In this context, it is important to note that this modelling provides a high level strategic view and is presented to show how travel demands and movements between sectors of the sub-region change over time. It is not suitable to analyse the outputs of the model in any more detail at this time due to both the strategic nature of the modelling tool and the coarse nature of the land use input update. Finer grained transport models that cover Christchurch City, as well as specific townships outside the City, are available to investigate more specific aspects when this level of detail is required.

Options to manage the effect of population growth and increased travel demand on the transport network will be a key consideration of the Future Development Strategy. Integrated transport and land use planning responses will need to consider how to maximise positive interactions between housing and business areas, and the transport network, and minimise negative interactions related to reduced travel time reliability, safety and accessibility. This will include planning for a transport system that positively influences land use patterns and behaviours that are economically, socially and environmentally sustainable.

4. Future Urban Development and Change

This section considers the opportunities for and barriers to urban development and change in the Greater Christchurch area, taking account examples of areas in the sub-region that have undergone processes of change in the past.

4.1 Examples of Past Urban Change

Urban areas can undergo processes of change in response to the shifting needs of people and communities. In this context, Section 2 provides an overview of some of the key trends that have shaped the Greater Christchurch area over time, which includes a description of areas that have experienced a process of change, such as the rezoning of ex-railway land during the latter parts of the 20th century for new business and residential development. Examples of other areas in the sub-region that have undergone changes in the past include Woolston and Wigram.

Woolston

The suburb of Woolston in the south-east of Christchurch City was one of the first industrial areas established in the City. This is due to its proximity to the Heathcote River and Ferry Road, which were main entry points for people and goods arriving into Canterbury after European settlement. Industries also located along the river because of the availability of water and its convenience as a sewer. When the river lost its importance as a transportation route after the Lyttelton Rail Tunnel opened in the 1860s, Woolston remained a significant industrial area due to the railway line between the City and Lyttelton passing through the area.

The Woolston tanneries were one of the key industries that established in the area during the mid to late 19th century, occupying a landmark site along the banks of the river. By the 1910s, the tanneries were processing a million sheep pelts a year, converting over 1,000 hides per week into leather and employing about 200 people. Many of these workers also lived locally, helping to foster a strong working class identity in Woolston.

Industries began closing or moving away from Woolston in the 1950s, including the tannery site which closed in 1959. Many of the older tannery buildings were subsequently demolished in the 1970s, with small factories erected at the site. During the 1990s, some of the older buildings began to be restored and vacant land at the site was developed. A multi-unit complex that offered new apartment space and small business units was also built at the site during the early 2000s.

The former industrial site now supports a rich mix of old and new buildings that are occupied by a variety of uses, creating an attractive mixed-use environment at the heart of the Woolston suburb. However, the introduction of non-industrial land uses in the area has generated some reverse sensitivity issues related to the discharges to air from factories, which highlights the challenge of an evolving urban area and the divergent expectations of different land uses.

Wigram

Wigram Air Base, originally named Sockburn Airport, was opened in the south-west of Christchurch City in 1916 as home to the Canterbury Aviation Company. This large airfield was used as a private flying school to train pilots for both World War I and entry into Britain's Royal Flying Corps, as well as to pioneer commercial aviation in the region. After the end of World War I, the Government purchased the site and converted it to a military base, renaming it Wigram Aerodrome.

The aerodrome continued to expand after the Government took over the base in 1923. It was initially used to continue training pilots and aircraft mechanics, before two technical schools were also established at the site to provide training for photographers, aviation technicians, cooks, librarians and administrators. New accommodation and recreational facilities were also built at the 275ha site.

The base closed to air force training in 1995, and after more than ninety years in operation, closed to commercial air traffic in 2009. This former air base is now being redeveloped to accommodate a new master planned community that will be home to approximately 4,000 people and provide a range of leisure, recreational, retail and community services for residents in the south-west of the City. The history of the land as a former flight school and air force base has been incorporated into the design of the new community, reflected in the Air Force Museum, historic buildings and naming of the streets.

4.2 Industrial Zone Differentials

Industrial zone differentials are price efficiency indicators developed by the Ministry of Business, Innovation and Employment (MBIE) to compare land values in industrial zones with those in adjacent commercial, residential or rural zones. These differentials are focused on small areas situated on either side of industrial zone boundaries, taking account land parcels within 250m of these boundaries.

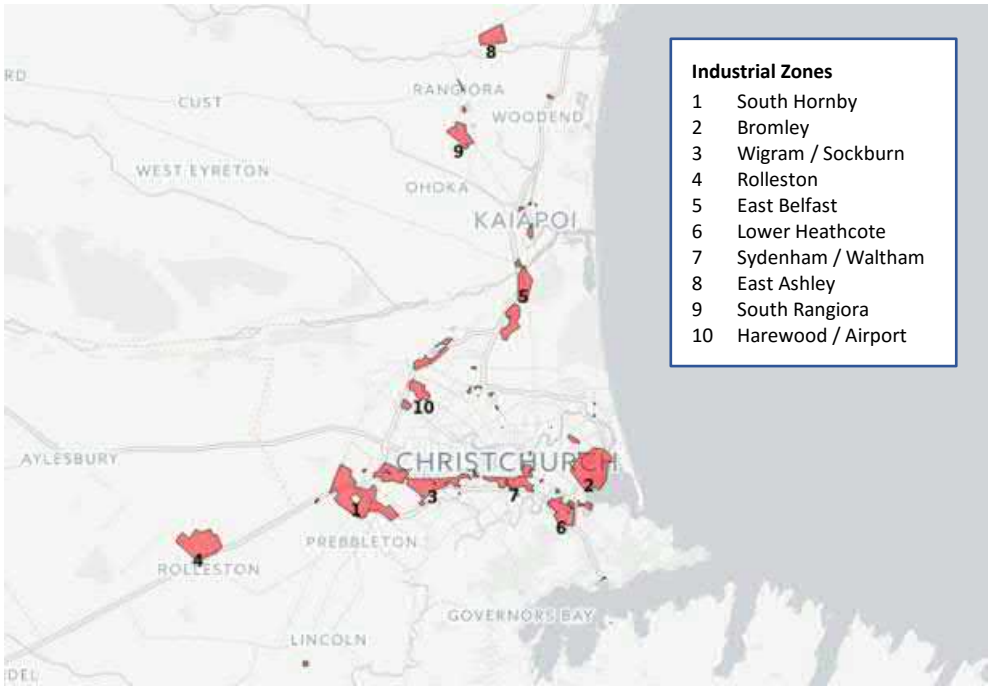
The purpose of the industrial zone differentials is to provide information about how well zoning and other regulations support demand for industrial land uses relative to other land use activities in any given location.

Significant differences in land values across industrial zone boundaries could indicate that there is a mismatch between zoning and the relative demand for different land uses in an area. Such price differentials might reflect insufficient capacity, either in the local or sub-regional context, to meet the demand for one land use relative to another land use.

A mismatch in the zoning and relative demand for different land uses can occur as the natural growth of an urban area generates sectoral and spatial changes that make old zoning patterns less relevant. For example, legacy industrial sites in central cities are often ripe for redevelopment given the higher values associated with other land use activities that are attracted to central city areas, such as commercial and residential uses.

In this context, the Urban Development Capacity Dashboard produced by MBIE provides industrial zone differentials for ten industrial locations across Greater Christchurch (Figure 4.1). These price differentials can be used to understand whether current zoning and regulations are meeting the relative demand for land uses in various parts of the sub-region.

Figure 4.1 Key Industrial Zones in Greater Christchurch



Source: Ministry of Business, Innovation and Employment, Urban Development Capacity Dashboard

A detailed summary of the price differentials for the key industrial zones in Greater Christchurch is provided in Appendix A.4, including the relative value of commercial, residential and rural land uses adjacent to each industrial zone.

Based on the MBIE data, the differences in industrial and commercial land values around industrial zones in Greater Christchurch are limited, except for the statistically significant differences around the industrial zones in Wigram/Sockburn and Sydenham/Waltham. At the boundary of these industrial zones, commercial land values are significantly greater than the industrial land values, with industrial land only achieving around 78% of the value of commercial land in Wigram/Sockburn and around 66% in Sydenham/Waltham.

The highly competitive commercial land values around these industrial zones are likely to reflect their more central location when compared to other industrial zones in the sub-region, which boosts their attraction for commercial uses seeking a location close to the central city.

The data also indicates that values for residential land are higher than similarly located industrial land in many locations across Greater Christchurch, which could point towards a relative shortage in the capacity for new housing in these parts of the sub-region. The largest statistically significant difference in industrial and residential land values is around the industrial zone in East Belfast, where industrial land values are less than half the value of the residential land. Other statistically significant differences in residential and industrial land values are evident in South Hornby, Harewood/Airport, Rolleston and Wigram/Sockburn.

Interestingly, the value of industrial land in the South Rangiora and Sydenham/Waltham industrial zones are higher than the adjoining residential land, which could indicate a shortfall in capacity to meet the demand for industrial space in these locations relative to the capacity for residential uses.

The MBIE data also indicates that there could be scope at a number of industrial zones across Greater Christchurch to rezone rural land to industrial given their higher relative values in these areas. This includes around industrial zones in South Rangiora, Rolleston, Harewood/Airport and South Hornby, where industrial land values are four to nine times higher than the adjacent rural land. No statistically significant difference in rural and industrial land values around the industrial zones in East Belfast, Lower Heathcote and East Ashley indicates there may be sufficient capacity in these areas to meet the relative demand for industrial space.

Overall, industrial zone differentials offer an insight into where opportunities may exist to rezone land in and around the industrial zones in Greater Christchurch to better meet the relative demand for different land use activities. However, it will be necessary to undertake further testing of the industrial price differentials, as well as the other price efficiency indicators supplied by MBIE, to understand the degree to which they align with known market conditions in the sub-region.

For example, the industrial zone differentials indicate that there is a statistically significant difference in the value of industrial and rural land in South Hornby, which means there could be an opportunity to rezone rural land to industrial to better meet the relative demand for these land use activities in the area. However, it is known that there is a sufficient supply of industrial land in South Hornby to meet demand, meaning to rezone more industrial land in the area would not appropriately reflect the underlying market conditions.

Further consideration of what the price efficiency indicators mean for planning responses in the sub-region will be an important part of preparing the Future Development Strategy. It will be necessary to consider the indicators in both the context of the capacity assessment findings and local knowledge of land markets.

4.3 Opportunities and Barriers

In order to identify some of the key opportunities and barriers to urban development and change in the Greater Christchurch area, a workshop was held with Greater Christchurch Partnership officials to consider the key issues for the sub-region. The feedback from this workshop included a range of spatial and non-spatial opportunities and barriers for the sub-region that can be investigated in further detail as a part of the Future Development Strategy.

A summary of the key feedback received from the official's workshop in relation to the opportunities for and barriers to urban development and change in the Greater Christchurch area is provided in Appendix A.5.

Key Opportunities

Based on the workshop feedback, the key potential opportunities for development and change in Greater Christchurch can be grouped under four main themes: integrating land use and infrastructure planning, redeveloping land and buildings, incentivising preferred patterns of development and removing the key barriers to development. These four themes from the workshop are described in more detail below.

- **Integrate land use and infrastructure planning:** Delivering higher density residential developments that support a more compact urban form, with developments focused around activity centres and along transport corridors. Rezoning activity centres and transport corridors for higher density housing supports a transit-oriented development approach that offers greater choice in travel mode. Investment in infrastructure that unlocks the future development potential of areas also provides opportunities for the sub-region. This includes the opportunity to invest in enhanced passenger transport services.
- **Redevelop land and repurpose buildings:** Ensuring planning and regulatory conditions encourage under-utilised land and buildings to be redeveloped for more efficient uses, especially in the central city where sites and buildings have not been put back into full use since the earthquakes. This requires close working with the development sector. There might be other opportunities for redeveloping land to more efficient uses, with ideas from the workshop including opportunities for large open spaces in the sub-region to be partially redeveloped for housing.

- **Incentivise urban development and change:** Encouraging patterns of development that align with the vision for the sub-region in terms of achieving desired outcomes for future growth. Such incentives could include the configuration of developer contributions, investments in public spaces and key technologies, and different funding models to deliver projects. These tools would be particularly useful to incentivise developments in areas of the sub-region that are currently less commercially feasible (e.g. the central city and eastern parts of the City).
- **Remove barriers to urban development and change:** Addressing underlying issues affecting the commercial feasibility of development in the sub-region to help unlock areas for new development. Key feasibility issues relate to high land values and building costs, and low sales prices in parts of the sub-region. Reducing planning constraints could open up prospects for new development in the sub-region. For example, reconfiguring the airport noise contour could make land in the western areas of the sub-region available for residential and business development. However, any changes to the planning constraints in the sub-region would need to be considered in the context of promoting sustainable development.

Key Barriers

In the same way as the feedback on the key opportunities for Greater Christchurch, the official's workshop provided feedback on some of the key barriers to urban development and change in the sub-region. Based on this feedback, the key barriers can be grouped under four themes: environmental and planning limits on development, capacity of infrastructure networks, development costs and feasibility, and perceptions and attitudes of people. These four themes from the workshop are described in more detail below.

- **Environmental and planning limits on development:** Environmental and planning factors limit urban development in the sub-region, with the City generally more constrained by such factors than satellite towns in Selwyn and Waimakariri. Key environmental constraints include areas at risk from natural and geotechnical hazards, such as flooding, inundation and liquefaction. These issues are most significant in the eastern parts of the City. Restrictions associated with the airport noise contour, and to a lesser extent the aquifer protection zone, represent development barriers in the west of the sub-region.
- **Capacity of infrastructure networks:** Existing land use patterns have resulted in more dispersed housing and business land use activities in the sub-region. A potential barrier to future development in the sub-region relates to the capacity of the transport network, as well as other infrastructure networks, to support the future growth of the sub-region. This includes the cost of delivering new infrastructure to support and service new and expanding housing and business areas.
- **Development costs and feasibility:** High land values and construction costs reduce the commercial feasibility of new developments in the sub-region, particularly in terms of delivering new residential developments. Such issues are especially significant for the central city, which has higher land values in part due to land banking, and for the eastern parts of the City, which achieve low sale prices when compared to other parts of the sub-region. The workshop feedback reinforced that development of greenfield sites generally benefit from lower and more certain costs than brownfield sites.
- **Perceptions and attitudes:** Poor understanding and perceptions of certain typologies of housing, especially for higher density living, can act as a barrier to some types of housing being brought to the market in the sub-region. These perceptions have often been affected by developments in the past being of inferior quality. Some areas of the sub-region also suffer from perception issues, which limits the likelihood that private investment is focused in these areas. A limited understanding of people's preferences and circumstances also reduces the ability of councils to plan for the type and location of housing that is most desired by local people.

Further Investigation

As noted above, these key potential opportunities and barriers to urban development and change in Greater Christchurch can be considered, alongside other possible opportunities and barriers for the sub-region, in further detail as part of preparing the Future Development Strategy. This would include further consideration of the key priorities for the sub-region over the short, medium and long term, and what opportunities can be exploited, and barriers addressed, to help deliver the desired outcomes for the sub-region.

It will also be important that the Greater Christchurch Partnership continues to engage with stakeholders involved in the development sector in Greater Christchurch to identify the best way forward for delivering future urban development and change in the sub-region.

Appendices

A.1 Greater Christchurch Strategic Framework

A.1.1 Greater Christchurch Urban Development Strategy 2007

The Urban Development Strategy (UDS) was developed to consider the complexity and inter-relationships between land use, transport and infrastructure planning in Greater Christchurch, taking account a range of social, health, cultural, economic and environmental values.

The UDS is underpinned by principles that shape and guide its planning decisions, with the overarching principle being 'sustainable prosperity'. This recognises that our day-to-day activities simultaneously affect our economy, environment and communities, meaning a sound understanding of the systems that support life in an urban environment is essential.

Several principles are recognised as contributing to 'sustainable prosperity' in Greater Christchurch, including improved integration, with the UDS stating (page 14):

> *"Sustainable prosperity will be achieved through integrating environmental, land-use, infrastructure, social, cultural, economic and governance goals in all decision-making, policies, plans and activities by recognising the connections between systems, giving effect to the regional and local metropolitan context."*

To achieve a well-integrated and functioning urban environment, the UDS identifies the importance of activity centres as focal points for services, employment and social interactions, and where people shop, work, meet, relax and often live.

Several activity centres located strategically along arterial roads in Christchurch City are selected as consolidation focal points in the UDS; identifying them as areas where intensification could be achieved over the period to 2041.[18] These activity centres are well served by the public transport network and are surrounded by higher density residential zones, making them fitting locations for concentrations of public and private services.

The UDS also identifies the importance of linking demand for land with infrastructure planning and funding to achieve successful growth management. This was recognised as a particular challenge for Christchurch City, with a shortage of zoned and serviced land on the edge of the City resulting in a significant amount of development spilling into settlements in Selwyn and Waimakariri. Unless infrastructure is provided in a timely manner, the UDS indicates that there will be ongoing pressure on smaller settlements beyond Christchurch City to accommodate a disproportionate share of growth.

In this context, the UDS anticipates that the delivery of necessary road infrastructure will continue to be vital in terms of supporting the movement of people and goods around Greater Christchurch, albeit with a shift to more integrated transport corridors that cater for all modes of travel.

A central tenet of the UDS is the integration and parallel development of land uses with the transport system, in order to reduce impacts from increased traffic volumes and congestion. This includes the need for improved walking, cycling and public transport networks as attractive and sustainable alternatives to private motor vehicle use, and their integration throughout and between communities in Greater Christchurch. In this way, transport is fundamental to achieving a well-integrated and functioning urban form, and improving the quality of life in Greater Christchurch.

Overall, the UDS sets out an approach to managing growth in Greater Christchurch to 2041 that includes:

- providing 70% of the anticipated residential growth in Christchurch City;
- providing the remaining 30% of the anticipated residential growth in Selwyn and Waimakariri;
- growing the share of housing provided through intensification (i.e. from 23% in 2006 to 60% in 2041);
- giving residents easy access to employment, education, leisure, health and community facilities;
- creating employment opportunities in new growth areas and revitalising Christchurch's central city;
- ensuring that new growth areas are well connected to wider road and rail networks; and
- providing a range of transport choices, including public transport, cycling and walking.

[18] Consolidation focal points selected in the UDS include the activity centres of Riccarton, Papanui-Northlands and Linwood-Eastgate, and the district activity centres of Halswell, Barrington and Hornby.

A.1.2 Greater Christchurch Urban Development Strategy Update 2016

A partial update of the UDS was undertaken in 2016 to develop a roadmap for Greater Christchurch from recovery to regeneration following the 2010/11 earthquakes, recognising that the sub-region has many environmental, social, cultural and economic challenges and opportunities. The UDS Update allowed the extensive recovery work completed through the post-earthquake period to be integrated into the Strategy.

As part of the update, the strategic directions from the 2007 Strategy were updated, with the new strategic goals for Greater Christchurch in the UDS Update grouped under four key themes: healthy communities, enhanced natural environments, prosperous economies, and integrated and managed urban development.

In this context, the UDS Update provides an approach to achieving integrated and managed urban development in Greater Christchurch to 2041 that includes:

- clearly defined and maintained boundaries for urban development, with the urban area consolidated through redevelopment and intensification;
- new development is well-integrated with existing urban areas, with sufficient land available to meet the need for regeneration and future land uses;
- a network of activity and neighbourhood centres complement Christchurch's central city; incorporating mixed-use and transport-oriented development, supporting increased housing density and choice, and providing access to community facilities;
- an efficient, reliable, safe and resilient transport system that reduces dependency on private motor vehicles, promotes active and public transport, and improves accessibility;
- key public transport corridors and routes are identified and protected; and
- infrastructure is comprehensively integrated with land use planning.

A.1.3 Land Use Recovery Plan 2013

The Land Use Recovery Plan (LURP) was developed following the significant disruption of the earthquakes to provide direction for residential and business land use development in Greater Christchurch over a fifteen year period to 2028.

The principal focus of the LURP is the recovery of the built environment, with the goal to *"develop resilient, cost-effective, accessible and integrated infrastructure, buildings, housing and transport networks"* (page 11).

To support recovery in Greater Christchurch, the LURP identifies the need for greater housing choice and the revitalisation of activity and neighbourhood centres. This includes encouraging more intensive housing in existing urban areas to allow people to live closer to established communities and facilities, support recovery of suburban centres and Christchurch's central city, and make best use of existing infrastructure networks.

In addition to intensification of existing residential areas, the LURP recognises the potential to promote the mixed-use redevelopment of brownfield sites (e.g. former business sites) in neighbourhood, suburban or key activity centres, or other appropriate locations. This offers the opportunity to develop integrated communities, although planning controls will be necessary to avoid amenity conflicts with surrounding land uses and to address site-specific issues (e.g. contaminated land).

Some households also want to locate on the urban edge in greenfield developments, meaning intensification alone will not provide for all housing demand in Greater Christchurch over the period to 2028. In this context, the LURP indicates that greenfield housing requires suitable planning, design and investment to deliver and maintain the necessary infrastructure, services and facilities. Certainty about the location and timing of future greenfield developments, and coordination of infrastructure and land uses, is therefore critical to enabling investor confidence, efficient resource use and minimising development costs.

The LURP also aims to revitalise Greater Christchurch as the heart of a prosperous regional economy. This includes delivering commercial floorspace outside Christchurch's central city in a way that complements the new compact city core, with commercial development in key activity and neighbourhood centres aiming to:

- support an efficient transport network;
- meet community needs for revitalised centres;
- protect industrial areas from being undermined by higher value land uses; and
- avoid conflicts over noise, odour or other environmental issues.

Well-functioning infrastructure is also recognised as critical to the recovery of Greater Christchurch, with the LURP indicating that the location and timing of infrastructure works must take account the needs of housing and business development in both existing urban areas and greenfield priority areas.

This includes recognising that changing travel patterns since the earthquakes have placed significant stress on Greater Christchurch's transport infrastructure. A shift from private motor vehicle use to other forms of transport is therefore crucial to reducing the impacts of traffic, and supporting a compact urban form by making it easy for people to cycle, walk and use public transport. In this context, the LURP identifies the importance of public transport for maintaining accessibility to business and residential areas, and supporting the recovery of the central city, and suburban and satellite centres. Key activity centres are integral to the public transport network for Greater Christchurch, with their accessibility to main transport routes also supporting their opportunities for housing intensification.

A.1.4 Greater Christchurch Transport Statement 2012

The Greater Christchurch Transport Statement (GCTS) provides an overarching framework that supports an integrated approach to planning and managing the transport network in Greater Christchurch, with the focus of the Statement on the strategic links between key places in the sub-region.

The GCTS identifies several strategic transport issues for Greater Christchurch that require short term action, including addressing public transport operations and growth, northern and south-western accessibility given future growth and changing land use patterns, and central city linkages to other key locations, amongst others.

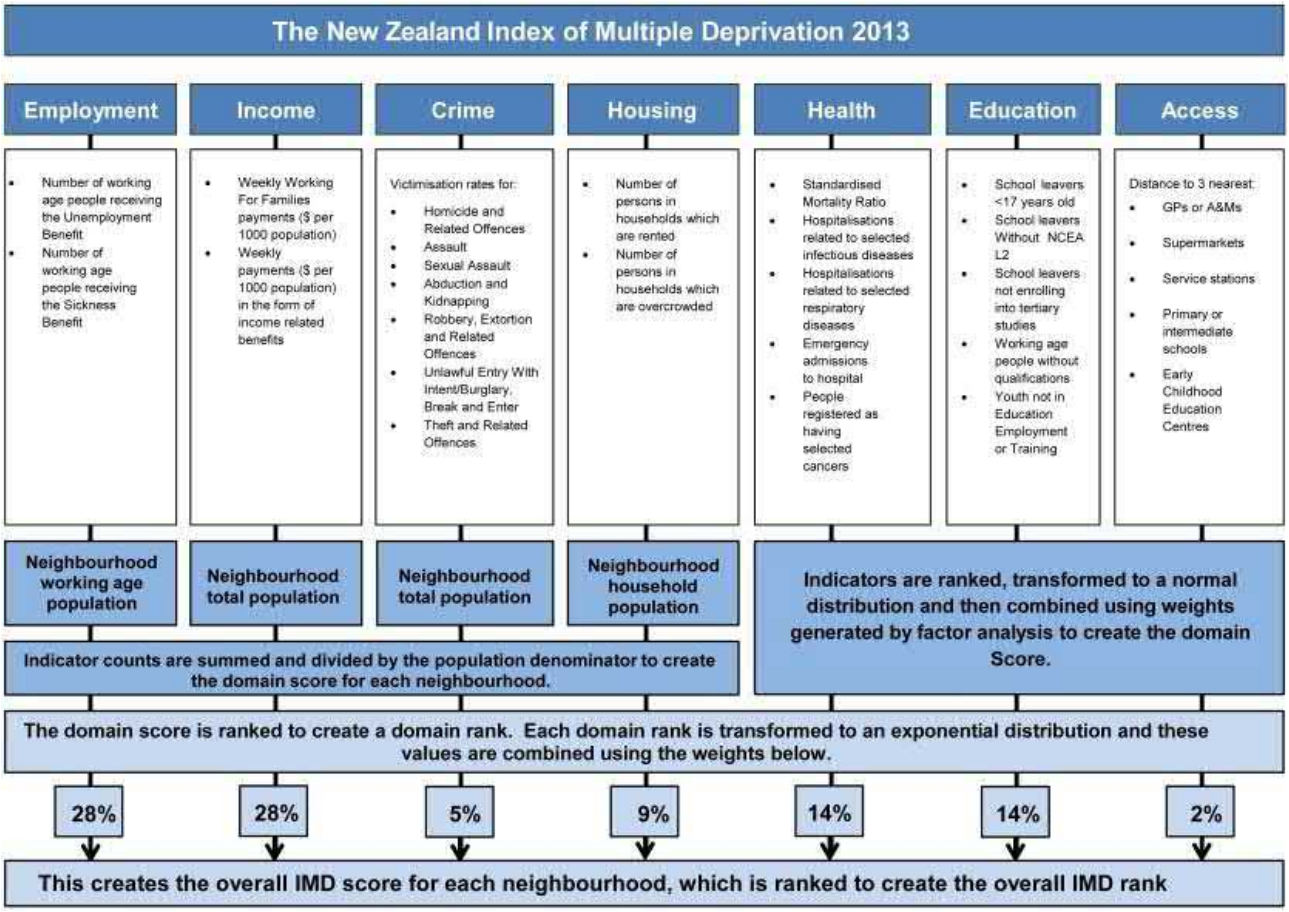
In planning and developing an effective 'one-network' transport system for Greater Christchurch, the GCTS aims to achieve the best possible outcomes and objectives using a strategic approach. In this context, a key transport outcome identified in the Statement is to improve links between people and places, which includes improving connectedness, resilience, reliability, efficiency and travel choice.

The GCTS outlines the following objectives in relation to improving links between people and places:

- integrate land use activities with transport solutions, enabling ease of movement between places;
- optimise the use of existing transport assets through managing travel demand and networks;
- provide safe, efficient and resilient links to connect people and places;
- ensure efficient and predictable travel time between key places; and
- provide more options for people to walk, cycle and use public transport.

A.2 New Zealand Index of Multiple Deprivation 2013

The New Zealand Index of Multiple Deprivation 2013 is comprised of indicators grouped into seven domains of deprivation: employment, income, crime, housing, health, education and access to services. It is the combination of these deprivation domains that can be used, either individually or in combination, to consider the geography of deprivation, and its association with socio-economic outcomes.



Source: University of Auckland, New Zealand Index of Multiple Deprivation 2013

A.3 Travel to Work Flows

The 2013 Census provides data on where people usually lived and worked at the time the Census was undertaken, which can be used to build a picture of the commuting patterns in Greater Christchurch after the earthquakes. It should be noted that these commuting patterns will have evolved since the Census given the ongoing recovery of the sub-region, particularly the growing number of workers returning to the central city.

			WORKPLACE ADDRESS								
			Christchurch City							Waimakariri	Selwyn
			Central City	North-East	North-West	South-East	South-West	Banks Peninsula	Christchurch City Total		
USUAL RESIDENCE	Christchurch City	Central City	860	200	310	350	550	-	2,270	30	50
		North-East	4,510	11,590	6,880	6,640	8,680	40	38,340	940	610
		North-West	3,400	2,890	13,340	3,140	8,960	40	31,780	460	890
		South-East	4,440	2,860	3,780	14,020	8,340	90	33,520	310	690
		South-West	3,710	2,120	5,160	4,800	18,100	50	33,940	300	1,470
		Banks Peninsula	180	60	160	290	370	1,430	2,500	20	90
		Christchurch City Total	17,100	19,730	29,630	29,240	45,010	1,640	142,350	2,070	3,810
	Waimakariri		1,180	2,060	2,280	1,590	2,880	10	10,010	11,440	280
	Selwyn		1,150	590	2,350	1,290	4,960	40	10,390	130	10,810

Source: Statistics New Zealand, 2013 Census

A.4 Industrial Zone Price Differentials

Industrial zone differentials are price efficiency indicators developed by the Ministry of Business, Innovation and Employment to compare land values in industrial zones with those in adjacent commercial, residential or rural zones. These price differentials are focused on small areas on either side of industrial zone boundaries; taking account land parcels within 250m of the zone boundary.

Industrial Zone		Industrial Land Value (per sq.m)	Adjacent Land Use	Adjacent Land Value (per sq.m)	Land Value Ratio	Statistically Significant Difference?
1	South Hornby	$249	Commercial	$259	0.96	No
		$125	Residential	$204	0.61	Yes
		$130	Rural	$35	3.76	Yes
2	Bromley	$150	Residential	$177	0.85	No
3	Wigram / Sockburn	$294	Commercial	$375	0.78	Yes
		$282	Residential	$302	0.93	Yes
4	Rolleston	$125	Residential	$177	0.71	Yes
		$88	Rural	$12	7.13	Yes
5	East Belfast	$107	Residential	$246	0.44	Yes
		$40	Rural	$17	2.40	No
6	Lower Heathcote	$244	Commercial	$259	0.94	No
		$147	Residential	$193	0.76	No
		$141	Rural	$32	4.36	No
7	Sydenham / Waltham	$463	Commercial	$703	0.66	Yes
		$420	Residential	$393	1.07	Yes
8	East Ashley	$6	Rural	$4	1.39	No
9	South Rangiora	$297	Residential	$187	1.59	Yes
		$68	Rural	$8	8.56	Yes
10	Harewood / Airport	$350	Commercial	$364	0.96	No
		$277	Residential	$448	0.62	Yes
		$184	Rural	$37	4.96	Yes

Source: Ministry of Business, Innovation and Employment, Urban Development Capacity Dashboard

A.5 Official's Workshop Feedback

Key opportunities for and barriers to urban development and change in the Greater Christchurch area were discussed at a workshop held with Greater Christchurch Partnership officials. Feedback from this workshop included a wide range of potential spatial and non-spatial opportunities and barriers for the sub-region that require further investigation as part of the Future Development Strategy.

Potential Opportunities

Theme	Key Workshop Feedback
Integrate land use and infrastructure planning	• Enable infrastructure-led development as opposed to reactionary infrastructure delivery • Reinforce the role of activity centres that benefit from good access to the transport network • Rezone activity centres and transport corridors for higher density housing • Transit-oriented development that encourages passenger and active modes of travel • Achieve the objectives of An Accessible City in terms of aspirations for mode share • Develop light rail or bus express lanes running along key transport corridors, with park and ride facilities linking to suburbs and satellite towns • Undertake early structure and master planning for key growth areas to deliver enhanced development outcomes that minimise adverse effects
Redevelop land and repurpose buildings	• Encourage the redevelopment of under-utilised land and buildings • Rezone areas that could support higher density housing and reduce the need for car use • Remodel suburban commercial buildings into apartments (e.g. Addington) • Relocate and redevelop large event areas for housing (e.g. Riccarton Racecourse) • Redevelop fragments of larger parks and reserves for housing (e.g. McFarlane Park, Burnside Park, Avonhead Park) • Redevelop Council owned land and brownfield areas • Consider areas submitted for rezoning as part of the review of the Christchurch District Plan
Incentivise urban development and change	• Incentivise the development of existing capacity, including in the City's eastern suburbs • Support central city housing that is suitable and attractive to different types of households • Assistance from central government for unlocking opportunities for new development (e.g. purchasing areas of land) • Configure developer contributions to encourage preferred patterns of development • Create financial incentives for buying and upgrading homes that are comparable to the incentives for building new homes • Invest in appropriate transport technologies that support sustainable growth • Promote joint funding models that unlock key infrastructure (e.g. stadium) • Invest in public space and streetscape improvements • Explore the potential for affordable cooperative housing options • Explore the potential for land swaps
Remove barriers to urban development and change	• Address key development feasibility issues, including high land values and building costs • Reconfigure the airport noise contour to unlock land in western areas • Invest in technologies that reduce noise issues in noise exclusion zones • Investigate where existing barriers to development could be removed over time • Investigate the barriers to development for zoned land on greenfield areas
Other key considerations	• Encourage neighbourhood planning in the local context • Support increased community interactions and cohesiveness • Incorporate a component of social and affordable housing in developments • Understand the lifestyle needs and demands of future generations • Create appropriate jobs in more deprived areas, including the City's eastern suburbs • Encourage dwellings to be used by local residents as opposed to be used as holiday rentals

Potential Barriers

Theme	Key Workshop Feedback
Environmental and planning limits on development	• Natural hazard risks (e.g. sea level rise, flooding, inundation), especially in eastern areas • Geotechnical hazard risks (e.g. rockslides, liquefaction), especially in eastern areas • Restrictions in the airport noise contour and aquifer protection zone • Need to maintain the floodplain and land drainage capacity • Protection of ground water and surface water quality • Protection of fertile agricultural land in western areas • Location of land use activities with high impact on communities (e.g. reverse sensitivity issues related to quarries, state highways and industrial areas) • Height limits on new buildings, especially in the central city
Integration of land use and infrastructure planning	• Existing land use patterns, with dispersed housing and business activities • Longer distances travelled to access the workplace, and key services and facilities • Capacity of the transport network to provide increased connectivity and travel choice, including constraints on key strategic transport corridors (e.g. Brougham Street) • Ability of the public transport system to be an efficient travel option for some communities • Continued investment in infrastructure that make private transport more convenient • Integrating and sequencing infrastructure delivery to achieve efficiencies • Insufficient existing and planned infrastructure to support growth • Limited transport connections across the Waimakariri River
Market conditions reducing the feasibility of development	• Costs of construction • High land values, especially in the central city • Land values artificially maintained through car park use in the central city • Costs of remediating land with geotechnical or contamination issues • Development feasibility issues in certain areas, including in eastern areas • Ability to privately deliver a range of commercially feasible housing options • Ability to deliver social and affordable housing in the absence of government intervention • Spatial differences in the relative cost of development, with lower costs for greenfield land • Spatial differences in the externalities of development to the wider area not reflected in pricing structures • Inflexible financing support for developments • Cost of delivering new servicing infrastructure • Market uncertainty resulting in conservative approaches by developers
Perceptions and behaviour of residents	• Willingness to commute longer distances to live in higher quality, new build homes • Poor understanding of certain neighbourhoods (e.g. Spreydon, Somerfield) and different housing typologies • Perception issues for certain areas due to the quality of the existing housing stock • Limited incentives for landlords to improve the quality of rental homes • Desirability of living in suburban areas • Poor quality developments affect local perceptions of higher density living • Inability of first home buyers and owner-occupiers to compete with investors

Version Control

Date:	28 February 2018
Version:	Draft V4.0
Contributors:	Sam Bellamy, David Falconer
Purpose:	Greater Christchurch Urban Development Capacity Assessment
Owner:	Greater Christchurch Partnership