

To: Elias Matthee – Queenstown Lakes District Council  
From: Jack Earl & Cam Wallace – Barker & Associates Limited  
Date: 16 May 2023  
Re: Method Statement – Accessibility & Demand Analysis – NPSUD Policy 5

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## 1.0 Introduction

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Barker & Associates (“**B&A**”) have been commissioned by Queenstown Lakes District Council (“**QLDC**”) to undertake an Accessibility & Demand Analysis to assist QLDC in meeting its requirements as a Tier 2 local authority under Policy 5 of the National Policy Statement on Urban Development (“**NPSUD**”).

This document outlines the methodology used to undertake this analysis and provides a high-level summary of findings and recommendations for further work to assist QLDC in meeting the broader requirements of the NPSUD.

## 2.0 Memo Structure

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The methodology utilised for the analysis is primarily based on the guidance as set out in the Ministry for the Environment guidance document “*Understanding and Implementing the Intensification Provisions for the National Policy Statement on Urban Development*”, published September 2020. Where B&A has access to additional information or more refined tools of analysis, these measures have been incorporated into the methodology.

The methodology is set out in four parts, being:

- (1) Policy Context;
- (2) Accessibility analysis;
- (3) Demand analysis;
- (4) Findings and next steps

The results of the analyses have been displayed in a map format using GIS software (ArcGIS) to enable visual interpretation of the data, comparison of areas, identification of areas for refinement and ground-truthing.

## 3.0 Policy Context

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### 3.1 National Policy Statement on Urban Development

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The NPSUD replaced the National Policy Statement on Urban Development Capacity 2016 (“**NPSUDC**”) and came into force on 20 August 2020. The NPSUD provides national direction under the Resource Management Act (“**RMA**”) and intends to improve the responsiveness and competitiveness of land and development markets. It requires local authorities to open-up more development capacity, so more homes can be built in response to demand.

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Relevant objectives of the NPSUD which are useful in informing a methodology for undertaking an accessibility and demand analysis include:

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

**Objective 3:** *Regional policy statements and district plans enable more people to live in, and more businesses and community services to be located in, areas of an urban environment in which one or more of the following apply:*

(a) the area is in or near a centre zone or other area with many employment opportunities.

**Objective 4:** *New Zealand's urban environments, including their amenity values, develop and change over time in response to the diverse and changing needs of people, communities, and future generations.*

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

(a) integrated with infrastructure planning and funding decisions (insofar as this relates to transport)

**Objective 8:** *New Zealand's urban environments; support reductions in greenhouse gas emissions; and are resilient to the current and future effects of climate change.*

Relevant policies of the NPSUD which are useful in informing a methodology for undertaking an accessibility and demand analysis include:

**Policy 1:** *Planning decisions contribute to well-functioning urban environments, which are urban environments that, as a minimum:*

(a) have or enable a variety of homes that:

(i) meet the needs, in terms of type, price, and location, of different households

(c) have good accessibility for all people between housing, jobs, community services, natural spaces, and open spaces, including by way of public or active transport

**Policy 5:** *Regional policy statements and district plans applying to tier 2 and 3 urban environments enable heights and density of urban form commensurate with the greater of:*

(a) the level of accessibility by existing or planned active or public transport to a range of commercial activities and community services; or

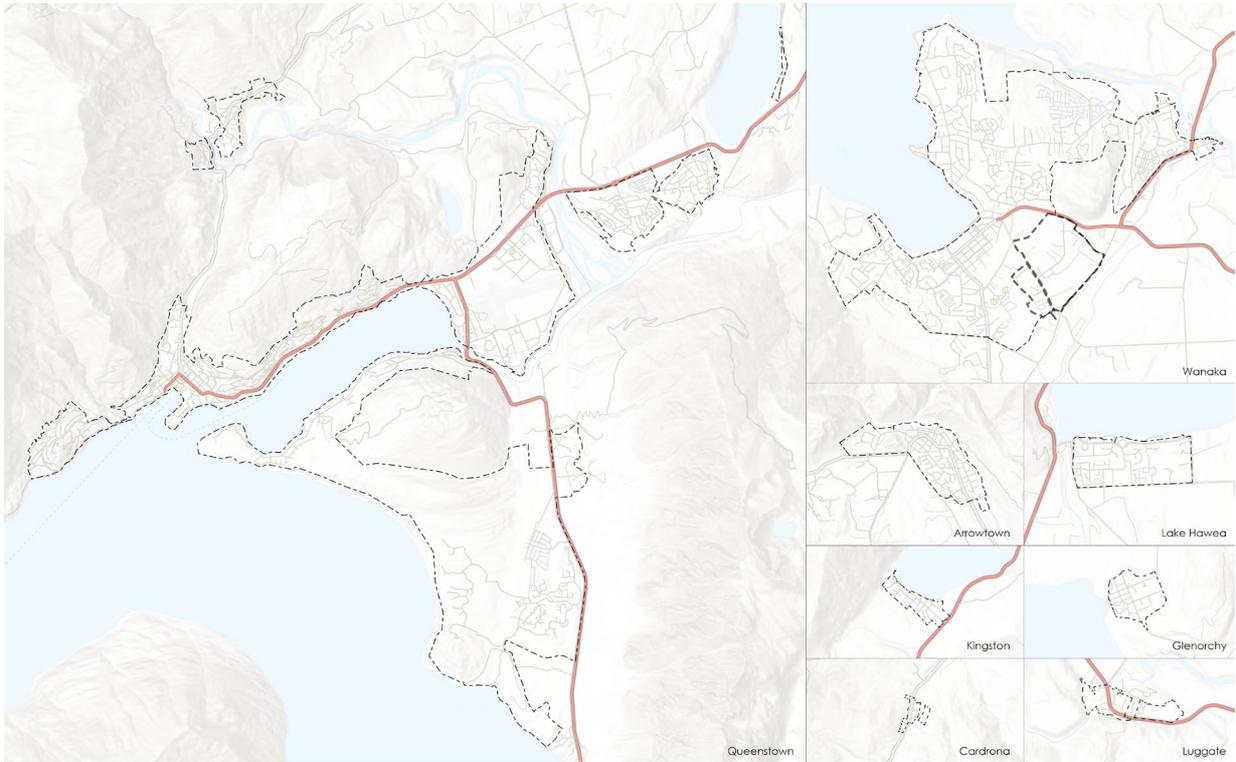
(b) relative demand for housing and business use in that location.

Policy 5 must apply to the entire urban area.

## 4.0 Study Area

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The study area for this work is based on the boundaries of the QLDC's urban environment area as shown in Figure 1 overleaf and includes land within the Urban Growth Boundaries (UGB) as well as zone outside the UGB that are or is intended to be urban in character. This area also includes aggregations of a number of smaller statistical areas (SA1, SA2 and meshblocks). These statistical boundaries are generally well aligned with the zoned urban areas of the QLDC area (e.g. residential, industrial) and allows for easy interpretation of census data relevant to any assessment of accessibility or demand.



**Figure 1 - QLDC Urban Environment Area**

The study area includes some areas that are zoned for development but are currently undeveloped or in the process of redevelopment (e.g. Jack's Point or Three Parks). In these instances, there is often a limited or even no established street network which can be used to understand the potential access to different amenities and employment opportunities. Where this occurs, the level of accessibility will be inferred based on how other areas immediately adjacent to these perform along with other relevant contextual information (e.g. a new cycle or street connection identified within a structure plan).

## 5.0 Accessibility Analysis

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In order to demonstrate compliance with Policy 5(a) of the NPSUD, it is necessary to determine the 'level of accessibility' for any given area across the entire QLDC urban environment area. A high-level desktop review of approaches was undertaken to help inform this analysis.

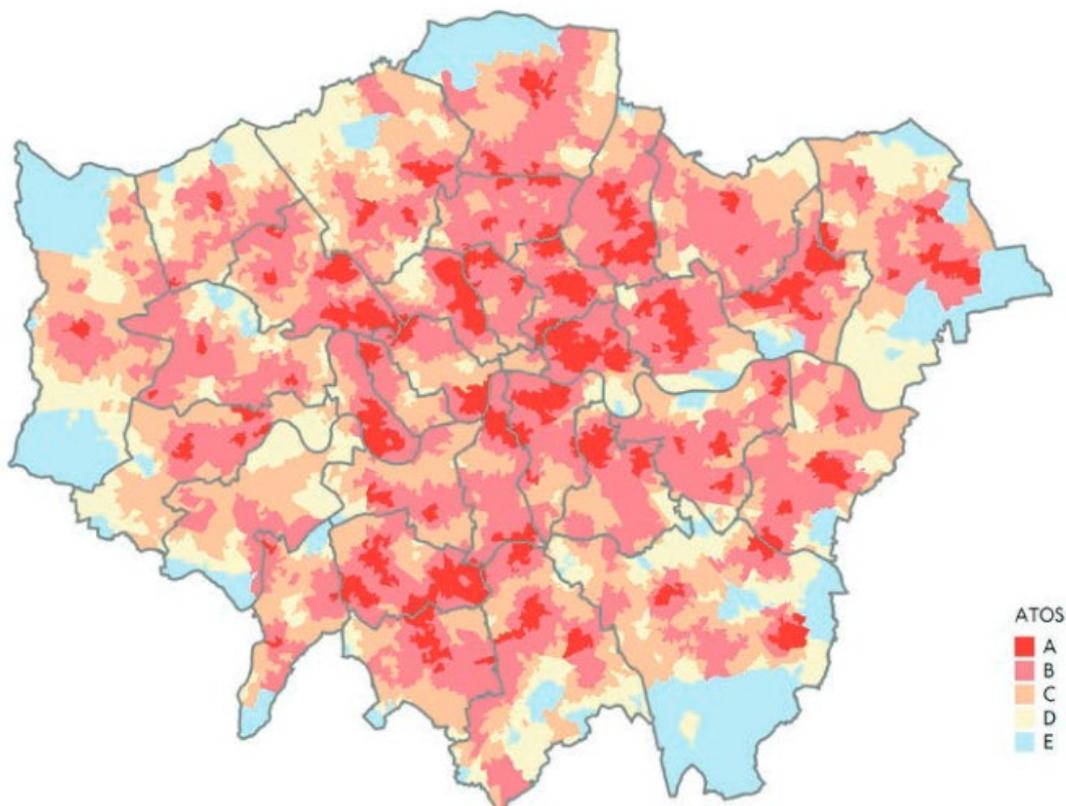
Although reference to some form of accessibility analysis to help inform the plan development process under the RMA is new, accessibility analysis (or accessibility planning) is a well-established concept in both New Zealand and overseas for a range of similar purposes. Waka Kotahi defines 'accessibility planning' as:<sup>1</sup>

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<sup>1</sup> Chapman & Weir (2008) *NZ Transport Agency Research Report 363 'Accessibility Planning Methods'*

*“a structured process for the assessment of, and planning for, accessibility. It uses quantitative and qualitative data and employs tools such as geographical information systems to systematically assess a range of accessibility related information, including origins, the location and delivery of key activities and the transport links to and from them, and assist in the development of a set of accessibility indicators.”*

Well-established overseas examples of accessibility analysis include Transport for London’s (“TfL”), Public Transport Access Level (“PTAL”) and Access to Opportunities and Services (“ATOS”) measures. PTAL rates a selected place based on how close it is to public transport and how frequent services are in the area, while ATOS attempts to indicate how easy it is to access essential key services and employment locations, using public transport or by foot. Both measures provide a simple ranking system based on overlapping walking and public transport catchment analysis to enable an understanding of relative levels of accessibility across the Greater London area. Example outputs of this type of analysis are provided below.



**Figure 2 – ATOS scores for secondary school access in London, U.K.**

Based on an assessment of approaches to accessibility analysis, accessibility can most easily be defined as your ability to go places so that you can do things. The assessment of this is strongly driven by data (e.g. census, GIS) and is based on two key components:

- (1) the transport network serving any urban area (the how we travel); and
- (2) the spatial distribution and location of activities or destinations (the why we travel).

Based on this, determination of an area's 'level of accessibility' needs to be informed by how many destinations can be accessed within a given time frame.

## 5.1 Transport Network

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The first step in measuring accessibility involves defining the transport network that contributes to accessibility. The general focus of the policy framework of the NPSUD is on travel via active or public transport which for QLDC's area includes the bus network, cycle network and walking network.

It is important to note that this policy framework does not explicitly exclude accessibility via private motor vehicles. However, NPSUD objectives and policies also seek to support a reduction in greenhouse gas emissions, and as such a detailed consideration of accessibility via private vehicle is not considered necessary or appropriate.

In terms of the other elements of the active and public transport network, it is considered that the walking network should form the primary driver for an accessibility analysis for the QLDC urban areas. Cycling and public transport (and access to these networks) therefore forms a sub-set of a wider accessibility analysis. This is considered appropriate as:

- Public transport services are currently only available in Queenstown and Arrowtown. More frequent services (at least every 15 minutes) are limited to routes between Frankton and central Queenstown. Queenstown also features an hourly ferry service between Queenstown Bay and Frankton.
- The compact nature of the main urban areas of Queenstown, Arrowtown and Wānaka means good and services are all easily accessible within relatively short timeframes via either cycle or public transport. This means an overemphasis on cycling or public transport within the analysis would not provide a meaningful difference to understand accessibility from one area to the next.
- For cyclists, assuming an average travel time of 15km/hr (which is at the slower end of typical cyclist speeds) the entirety of the Queenstown, Arrowtown and Wānaka areas could be traversed within a 45-minute journey time. In reality, journey times are likely to be shorter for the majority of cycling trips with the various centers and most major local destinations within a 30-minute cycle from anywhere in the study area.<sup>2</sup>
- Where the cycling network is assessed, its consideration within any analysis should be limited to any existing or planned separated cycleways and shared paths that form part of an integrated network that connect key centres and destinations. For this accessibility assessment, this has been limited to a consideration of the Frankton Track from Queenstown Town Centre through to Glenda Drive and the Kawerau Bridge. This route provides access to two of the major employment nodes in the district (Queenstown town centre and Frankton) and is understood to be an important commuter link that currently attracts almost 500 weekday users. However, a relatively low weighting should be applied to this route which is largely unlit and therefore not suitable for many trip types during winter months.
- On-road facilities (e.g. a painted lane on a busy road) or more broadly the road network provides a limited degree of access for the general population by cycling due to perceived and real safety issues. It is noted, particularly in Queenstown, many potential cycling journeys would be required on the State Highway network which in many instances is categorised by high vehicle speeds as well as

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<sup>2</sup> It is also assumed that the increased uptake of electric cycles is likely to further reduce potential journey times for this mode.

intersections/bridges with no dedicated provision for cycling movement. Such environments have been identified as major barriers to greater uptake of cycling by a wide range of users.<sup>3</sup> As such, whilst destinations may be in theory cyclable within relatively short journey times, this option is likely only to be taken up by a very small percentage of the population and would be considered inconsistent with Policy 11 of the NPSUD which requires consideration of accessibility for all people by way of active or public transport.

- For public transport, the Otago Regional bus network comprises 5 different routes between the Queenstown Town Centre and outlying neighborhoods including Arrowtown, Kelvin Heights, Remarkables Shops, Jacks Point and Lake Hayes Estate. These routes run with varying frequencies of either 15-minute, 30-minute or 60-minute intervals. Access via public transport is considered to be relatively constant across the Queenstown urban area with the only difference being shorter journey times for those that live/ work closer to Queenstown town centre.
- Where use of public transport is considered as part of understanding an areas accessibility, there needs to be an acknowledgment that its use requires multiple trip legs – i.e. you must walk to a bus stop, then travel on a bus, then walk from your bus stop to your destination. In addition, depending on route frequency you also need to account for some waiting as users typically factor in arriving early so as to avoid missing a service. This all contributes to increased journey times. As such, a more limited catchment to access public transport services than adopted for other destinations is considered appropriate.

### 5.1.1 Walking Catchments

Walking catchments (also referred to as pedestrian catchments) represent the distance that people can walk over a given time period. Although walking catchments are only specifically referred to under Policy 3 which applies to Tier 1 urban areas, the use of walking catchments as a key metric in understanding the level of accessibility for any given area has been utilised for this work. Whilst accessibility via public transport (buses) and cycling is also relevant, the relatively constrained extent of the QLDC urban areas means that reliance on these modes and the distance one can travel in a short period of time means they are unlikely to provide a detailed understanding of levels of accessibility for specific areas or neighborhoods relative to one another.

Accordingly, there is a need to establish the walking catchments that should apply for an accessibility analysis of the QLDC urban areas. NPSUD Guidance<sup>4</sup> notes that not all places are equal and different locations with different characteristics may often have different-sized walkable catchments. A general approach adopting 5 or 10-minute walking time catchments (approximately equivalent to a 400m / 800m walking distance at an average walking speed of 5kmph<sup>5</sup>) as a starting point is consistent with standard national and international practice. However, consideration also needs to be given how far people walk and what types of destinations they are walking to for higher values amenities (e.g. a Town Centre). As Policy 11 of the NPSUD also requires consideration of accessibility for all people by way of active or public transport. In our opinion, this means that an accessibility analysis under the NPSUD needs to take into consideration those that may be less able (e.g. young children or the elderly). For this reason, walking catchments used should be reflective of an average person and shouldn't be based solely off the abilities of a fully fit and healthy young adult.

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<sup>3</sup> Auckland Transport. (2016). *Evaluating Quality of Service for Auckland Cycle Facilities*, page 5.

<sup>4</sup> MfE. (2020). *Understanding and implementing intensification provisions of the NPSUD*.

<sup>5</sup> Based on the 85<sup>th</sup> percentile walking speed of 1.3m/s. Waka Kotahi. (2009). *Pedestrian planning and design guide*, Section 3.4.

The New Zealand Household Travel Survey 2015-2018 identifies 12min (equivalent to around 1km) is the average trip leg for pedestrians. A trip leg is a single leg of a journey between two stops, with no stops or changes in travel mode. While the New Zealand Household Travel Survey does not currently record distances for walking trips (only times), based on a walking speed of 12 minutes per kilometre (5kmph), it demonstrates that 70% of our walking trips are for distances of under 1km, while 30% are likely to involve longer distances. However, this research also indicates that journeys undertaken solely on foot tend to be longer in duration, with 34% lasting for more than 12 minutes compared to only 15% of walking trips undertaken as part of ‘multi-mode’ journeys. Further walk-only trips are more likely to occur for education, social/leisure or shopping purposes, and less likely to occur for work purposes.<sup>6</sup> There is some supporting evidence of these observations. For example, New Zealand research has shown that the likelihood for walking to school drops off significantly over 1.3km.<sup>7</sup>

Based on the above, the approach to undertaking an accessibility analysis for the QLDC urban areas will be based on a bespoke catchment analysis of key destinations and activities. An Auckland specific example of this approach based on research undertaken by Auckland Transport is shown in Figure 3 below. A summary of the destinations identified for QLDC’s area and applicable catchments considered in set out Section 5.2 overleaf.



**Figure 3 – Acceptable Walking Times to Destinations (Auckland Transport)**

## 5.2 Destinations

The NPSD policy framework and guidance provides an outline of the destinations which need to be considered when seeking to establish a ‘level of accessibility’. This includes jobs, commercial services, community services, natural spaces, and open spaces.

<sup>6</sup> <https://www.nzta.govt.nz/resources/nz-pedestrian-profile/5/>

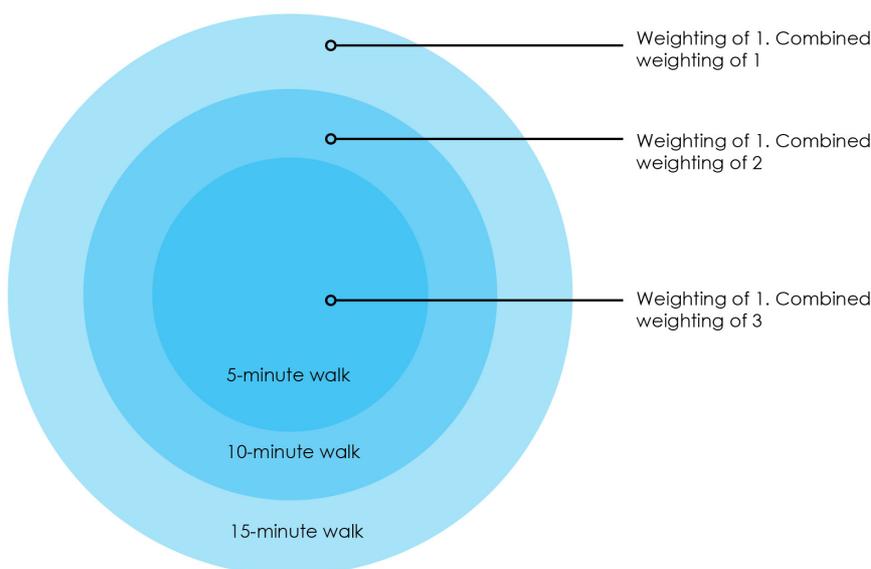
<sup>7</sup> Ikeda et al., (2018) *Built environment associates of active school travel in New Zealand children and youth: A systematic meta-analysis using individual participant data*

NPSUD guidance states that commercial activities include those that serve the needs of the community (e.g. shops) and provide people with employment. Community services include health care, education (including universities and tertiary training institutes), cultural activities (e.g. churches) and land or venues for sport and recreation. A 'range' of services, as required by NPSUD Policy 5(a) should be thought of as a variety of commercial and community services that serve the needs of the catchment when implementing this policy. For example, a doctor and/or pharmacy, school and/or kindergarten and a café and shops would be considered as providing a range of services.

An initial long-list of destinations that should be included in an accessibility analysis was identified and discussed with QLDC staff. Data for these destinations was obtained from a variety of sources and is set out within Attachment 1 of this memo. Following this, a review of destinations was undertaken by both B&A and QLDC staff to determine the appropriateness and validity of this information.

Based on this review of destinations and workshop with staff, the destinations, along with their prioritisation/ weighting and catchment extents were derived to form the basis of the accessibility analysis. Key destinations such as large supermarkets, town centres, schools and frequent public transport stops were assigned higher weightings in acknowledgment of their importance in for day-to-day living for a wide section of the community.

For identified destinations, up to four separate catchments are identified at 5-minute intervals. Higher weightings have been applied to certain catchments to reflect that all those who live closest to the destination have higher accessibility benefits due to their superior proximity to the destination. Where multiple catchments for the same destination are applied, areas closest to the destinations will invariably fall within all catchments that apply and receive a higher weighted score as demonstrated in Figure 4 (i.e. an area 4-minutes' walk from a primary school falls within the 5-minute, 10-minute and 15-minute catchments which would apply). The weightings are then used to derive an overall accessibility score by combining the total value of all catchments covering any given area. A summary of destinations, their associated catchments and weighting in the analysis is set out in Table 1 overleaf.



**Table 1 – Destination Catchment and Weighting**

Destination	5-minute Catchment weighting	10-minute Catchment weighting	15-minute Catchment weighting	20-minute Catchment weighting
Queenstown Town Centre	2	2	1	1
Wānaka Town Centre	2	1	1	-
Arrowtown Town Centre	2	1	-	-
Local Shopping Centres	1	-	-	-
Bayview Ferry Stop	2	-	-	-
15-minute Bus Stop	5	-	-	-
30-minute Bus Stop	3	-	-	-
60-minute Bus stop / Marina and Hilton Ferry stops	1	-	-	-
Primary School	3	1	1	-
Secondary School <sup>^</sup>	-	2	2	-
Large Supermarket	2	2	-	-
Major Open Space*	2	1	1	-
Medical Centre	1	1	-	-
Public Hospital <sup>^</sup>	-	2	1	-
Tertiary Education <sup>^</sup>	-	2	1	-
Shopping Malls <sup>^</sup>	-	2	-	-
Small Supermarkets	1	1	-	-
Community Facilities	1	1	-	-
Early Childhood Education	1	1	-	-
Pharmacy	1	1	-	-
Religious Facilities	1	-	-	-
Open Space / Reserve	2	-	-	-

\* Major sport parks to include and give greater weighting to Queenstown Recreational Reserve, Queenstown Gardens, Queenstown Events Centre (and fields) Millbrook Park, Pembroke Park, Wānaka Recreation Centre, Three Parks Sports fields.

<sup>^</sup> These facilities serve a broader regional/ sub-regional function, are limited in number and are generally of more importance to discreet sections of the community. As a result, their minimum walking catchments have been expanded from 5-minutes to 10-minutes to reflect their wider benefits to an understanding of accessibility.

## 5.3 Barriers to Walkability

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In establishing walking catchments, it is necessary to consider contextual factors that may impact on the distance one can walk. Factors which can impact on how far people are willing to walk include: the quality of the street environment and surrounding built environment; appropriate provision of infrastructure (e.g. street lighting, footpath widths, safe crossing points); traffic volumes, general perceptions of safety and topography.

### 5.3.1 Slope Analysis

A slope analysis was undertaken to understand whether local topographic conditions could form a notable barrier to how easily (or how far) people can walk within a given period of time. Using contour data sourced from QLDC's online GIS platform (Geyser View), a slope analysis was generated. This analysis divides the slope of land up into five categories based on the average gradient in percentage terms:

- 0% - 10%;
- 10% - 20%;
- 20% - 30%;
- 30% - 40%; and,
- 40% <.

The five categories were derived from a literature review on the effect of slope gradient on walking speeds. One important finding from a study carried out in New Zealand, illustrated that the speed of walking increased when walking uphill to a gradient of 6-degrees (or 10%), before decreasing in speed significantly<sup>8</sup>. It was also found that once a gradient exceeds 10%, that walking speeds will reduce by 15%<sup>9</sup>.

For the GIS-based accessibility analysis, the five categories listed above were assigned scaled cost barriers to represent the possible walking speed given a change in gradient. For the 0% - 10% category, only areas that were 10% in gradient were used, and no areas above 40% within the road reserve were found with the exception of steep battered slopes. The represented barriers were informed by Tobler's hiking function which is used by ESRI ArcGIS network service tools. The following barriers were given:

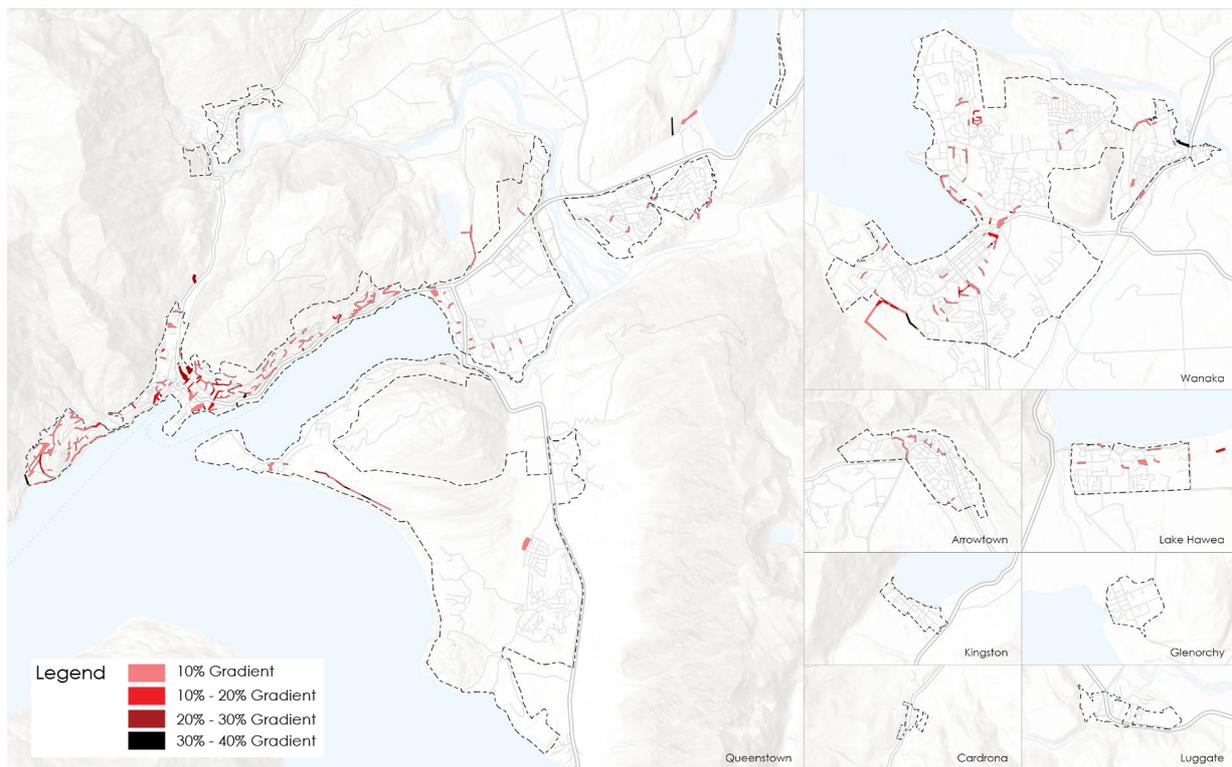
- 10% gradient = 10% decrease in walking speed;
- 10% - 20% gradient = 30% decrease in walking speed;
- 20% - 30% gradient = 46% decrease in walking speed; and,
- 30 - 40% = 60% decrease in walking speed.

Figure 6 shows the output of analysis. Polygon barriers were derived from the slope analysis carried out for the QLDC urban areas. Our analysis illustrated that while a majority of steeper slopes are identified around the Queenstown area, these slopes were typically short in duration because of the town's compact urban form and the urban areas proximity to state highway 6A. The effect of the slopes steeper gradients in decreasing the potential distance a user might walk was ultimately, in our opinion low.

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<sup>8</sup> Finnis, K. K. & Walton, D. (2008). *Field observations of factors influencing walking speeds*.

<sup>9</sup> Munroe, I. (2009). *The problem of catchment in Centres-Based Residential Growth Planning*.



**Figure 4 – Scaled Cost Barriers – Slope Analysis**

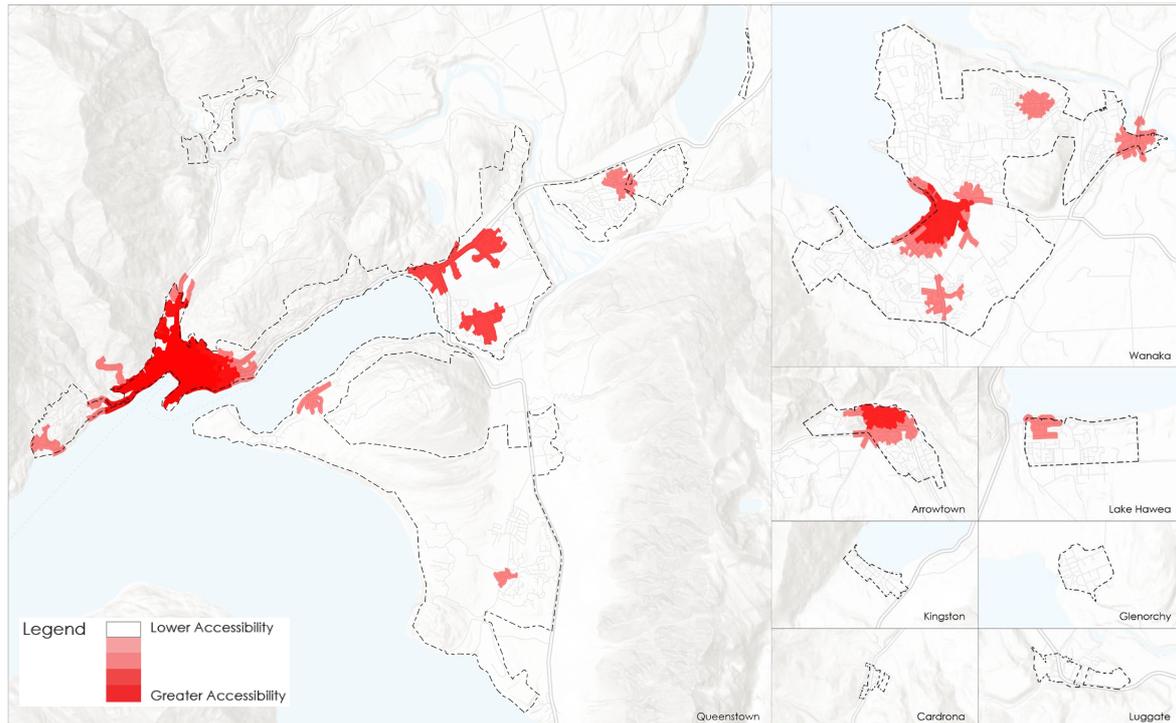
## 5.4 Catchment Analysis

Section 5.4 provides a brief analysis and discussion of the various destination types identified in Table 1.

### 5.4.1 Commercial Centres

During a desktop review of each of the main centres (Queenstown Town Centre, Wānaka Town Centre, Arrowtown Town Centre and Local Shopping Centres) it was considered that the Queenstown Town Centre served a greater role and function than the other centres, followed by Wānaka, then Arrowtown. As such, four sets of catchments covering the Queenstown Town Centre, Wānaka Town Centre, Arrowtown Town Centre and Local Shopping Centres were developed from the edge of the proposed centre zones' extents. Catchments for these proposed centres are shown in Figure 5 below.

Although development is yet to commence, the Plan Change 50 area (the extension of the Queenstown Town Centre), was included in the general extents of the Town Centre analysis. It has been assumed that this area will likely include some additional commercial and retail spaces as well as employment opportunities based around the future residential and visitor accommodation population. Major civic activities and commercial office space have been assumed to remain concentrated within the existing town centre core. In addition, several zoned, but as yet undeveloped, Local Shopping Centres (e.g. Kelvin Heights) have been included in the assessment. It has been assumed that these areas may support some smaller scale commercial and retail opportunities over the life of the District Plan which will contribute to an areas overall level of accessibility. The likelihood of these being available will, in part, be driven by the uptake of intensification opportunities increasing the potential residential catchment of these areas.



**Figure 5 – Centres Catchment Assessment**

Catchments derived from a 5-minute, 10-minute, 15-minute and 20-minute walking time from the Queenstown Town Centre zone were identified. A larger catchment was considered appropriate from the Queenstown Town Centre due to the concentration, scale and range of commercial and community activities available. This is reflective of its function as a service centre for a wider rural hinterland, and as an internationally renowned destination. Catchments of a 5-minute, 10-minute and a 15-minute walking time were applied to the Wānaka Town Centre, while a 5-minute and 10-minute walking time catchment was applied to the Arrowtown Town Centre to reflect the reduced scale and diversity of commercial and community activities available within these centres. Frankton, Five-mile and Remarkables Park had 5-minute walking time catchments identified and have been distinguished from other centres with a greater weighting from other smaller centres in recognition of their emerging importance within the wider centre's hierarchy across Queenstown. It is noted that the catchments for these centres are restricted by the presence of the Airport, industrial blocks and the Queenstown Events Centre which all limit connectivity to an extent. Other local shopping centres / neighbourhood centres were also identified (equivalent to a 5-minute walk). This was given a low weighting but acknowledges that these areas can perform an important role for local communities in providing smaller scale convenience retail (e.g. dairy) within a closer proximity from other larger centres within the urban area. When combined with other services and facilities these can have some contribution towards an area's overall level of accessibility.

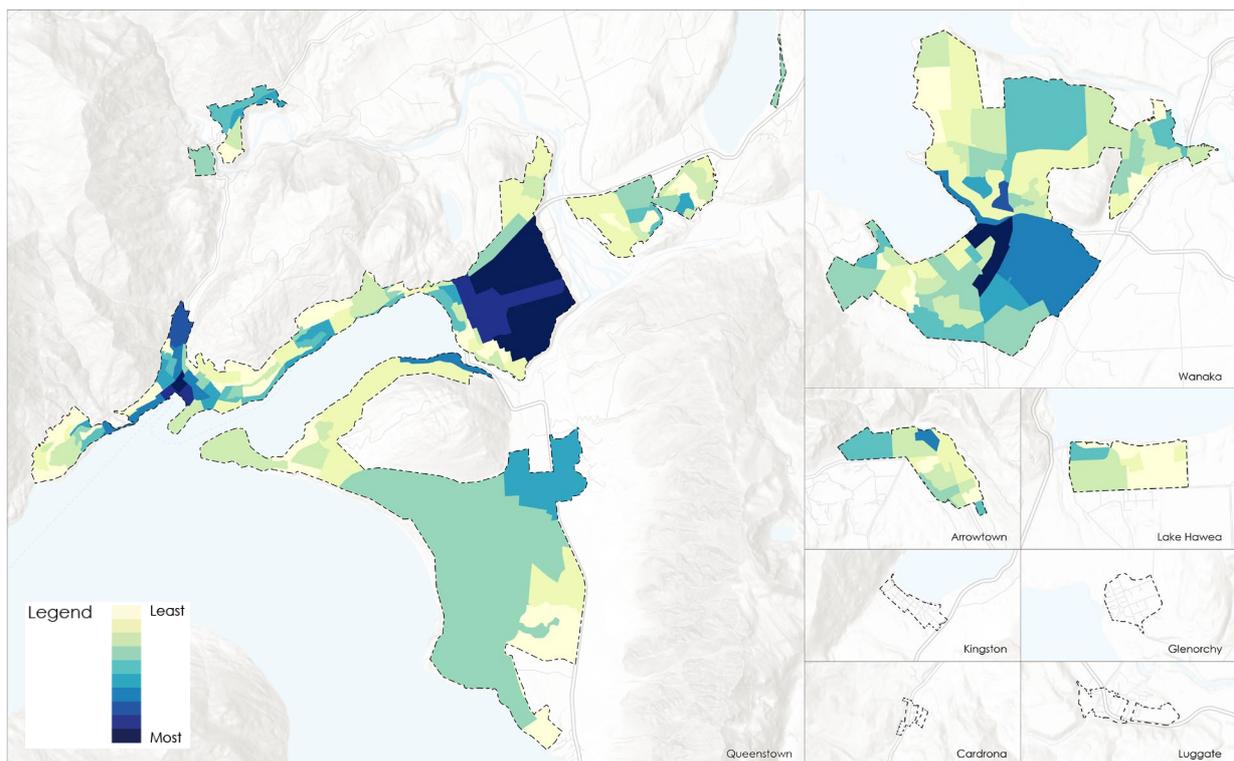
#### 5.4.2 Employment Nodes

Major employment nodes within the urban area were identified based on data from the 2018 Census. Figure 6 identifies total employment counts per meshblock whilst Figure 9 identifies the highest possible proportion of jobs available within a 30-minute walk broken down into percentiles.

The catchments for this matter differ from all others in that they are derived based on the distance from the centroid of individual meshblocks to the next. This is because the data available for employment locations have been derived from the 2013 Census with meshblocks forming the smallest statistical area for which this data is collected. A 30-minute catchment is used in recognition of the limitations of this dataset where employment destinations and trip origins can be distributed across any given meshblock. Due to the nature of this data a lower weighting was applied so as to not distort the overall outputs. It is also acknowledged that catchments for the main town centres will also be representative of many employment opportunities.

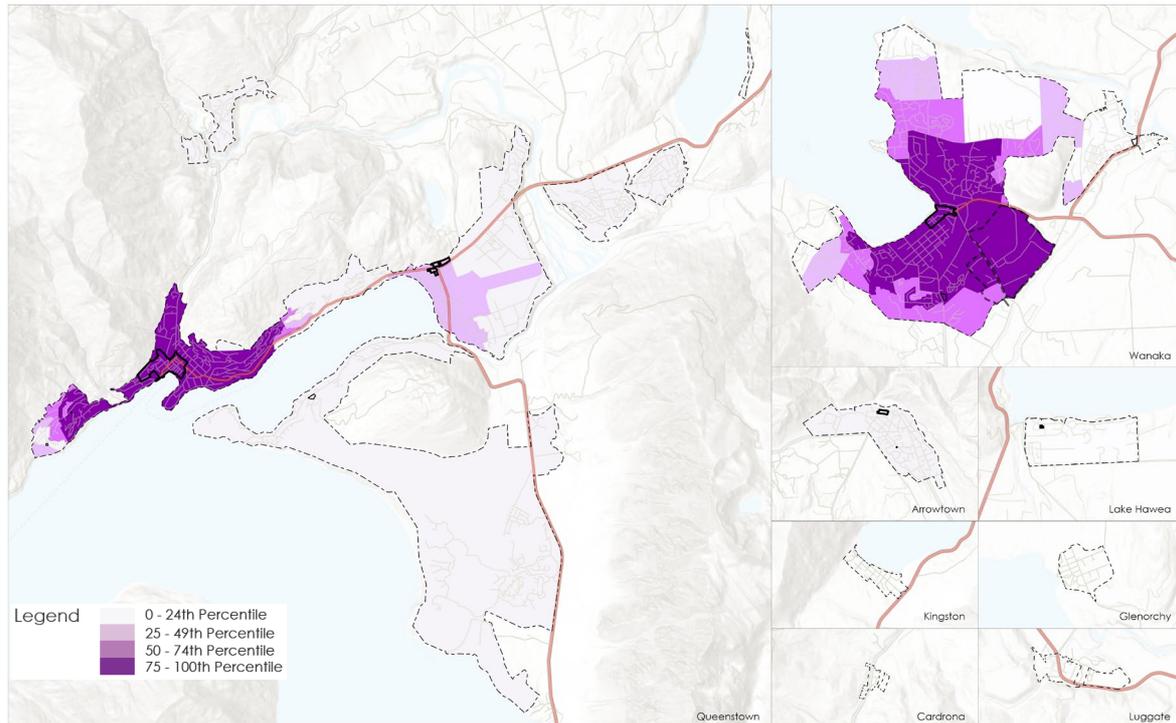
Unsurprisingly, Queenstown Town Centre, Wānaka Town Centre and Frankton<sup>10</sup> feature as major employment nodes. A concentration of employment opportunities is also observable around the fringes of the urban area in places like Jack’s Point and Northlake. This is likely to be reflective of employment opportunities available within the construction industry and related to the ongoing urbanisation of these areas.

Because the difference in functions between the Queenstown/ Frankton/ Arrowtown area, the data was separated out into the aforementioned groups to reflect a more geographically constrained labour market in terms of potential walkability. Census data for the remaining areas including Wānaka, Lake Hāwea and Cardrona was also grouped. This it to give a greater understanding of access to employment opportunities within the Wānaka ward given its distance from Queenstown.



**Figure 6 – Employment Opportunities by Meshblock**

<sup>10</sup> Frankton is characterised by much larger meshblocks in terms of area so appears more significant at the scale shown in Figure 8.

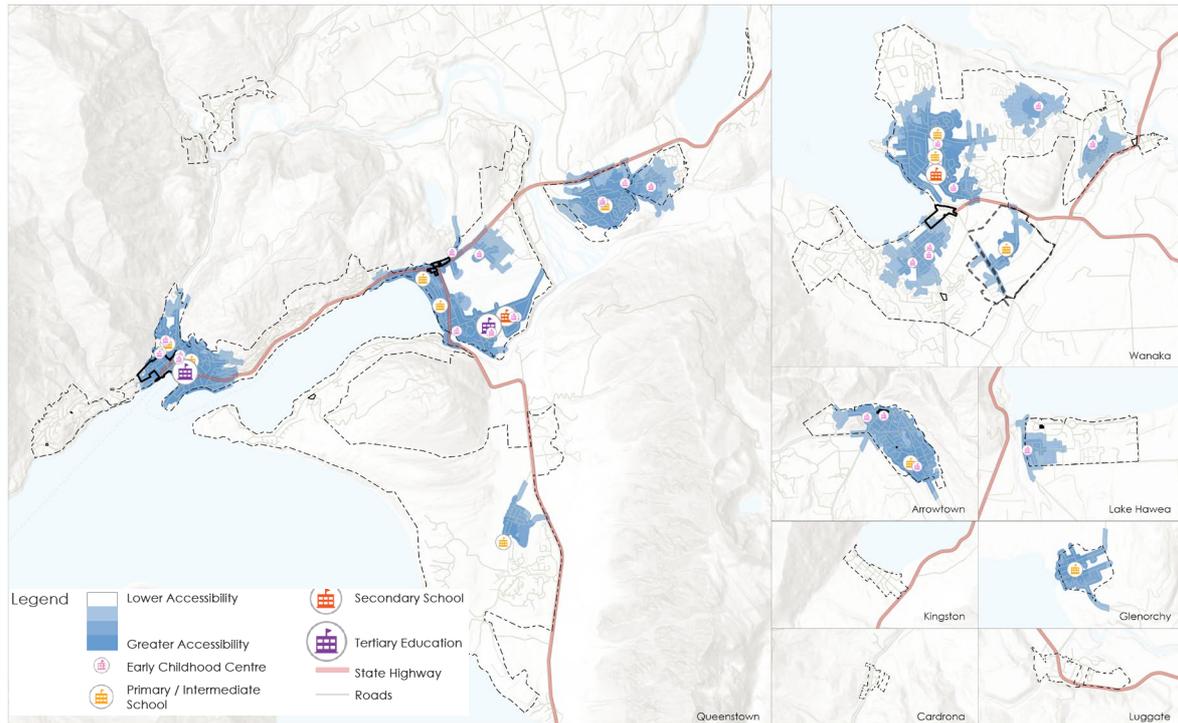


**Figure 7 – Access to 75% of Employment Opportunities via a 30-minute Walk**

### 5.4.3 Education Opportunities

Catchments for primary, secondary, tertiary and early childhood education facilities were generated. Proximity to both primary and secondary schools was given a greater weighting in the overall assessment. Figure 10 shows the outputs of the catchment assessment for educational facilities. Catchments of 5-minute, 10-minute and 15-minute walking times were generated for primary schools with the greatest weighting applying to the 5-minute catchment. Both secondary schools and tertiary education facilities had catchments for 10-minute and 15-minute walking times generated with higher weighting applying at these increased distances in recognition that these facilities typically serve young adults who are, on average, more mobile and typically spend a greater portion of their overall travel time walking. In addition, early childhood education facilities were captured using a catchment for both a 5-minute and 10-minute walking time. A lower overall weighting was applied to these facilities in recognition that they are smaller in scale and their location is more flexible and easier to change over time.

It is notable that the 14 locations of educational facilities, and in particular primary and secondary schools, are typically located close to existing centres and spread throughout QLDCs urban area.



**Figure 8 – Education Catchment Assessment**

#### 5.4.4 Open Space Opportunities

A range of open spaces were identified as being relevant for understanding accessibility. These were broken down into three different categories for ease of assessment – Sportsfields, playgrounds and general open space/ reserves (e.g. esplanade reserve). A minimum size of 300m<sup>2</sup> was also placed on any general open space included within the assessment as a proxy for usability. Although classified as open spaces, golf courses, and the International Stadium were all excluded from consideration due to their private/ semi-private function and/ or activities which are usually associated with fee paying visitors.

All open spaces selected for inclusion in the analysis were then peer reviewed by QLDC staff. This resulted in a number of exclusions and inclusions which took into account the nature and function of these open spaces (e.g. open spaces which functioned as drainage reserves and had no recreational/ leisure functions for residents were excluded). A 400m offset from the edge of the QLDC urban environment area was carried out to understand what natural reserves and other open spaces might have been missed. The open spaces and their entrance points were included. Each remaining open space was then reviewed and assessed by using Google Street View and a further assessment criterion including on-site amenities, useable space and form, access, quality of the space and topography.

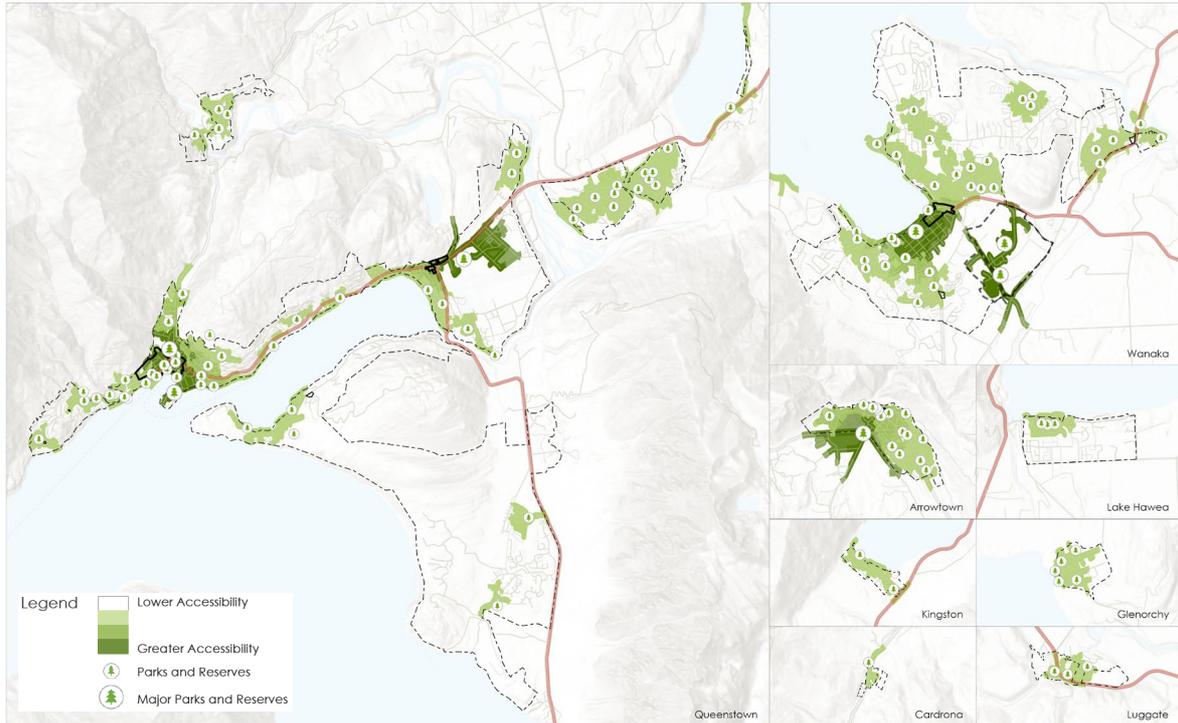
Major open spaces were identified as being regionally significant spaces. These spaces included the Queenstown Recreational Reserve, Queenstown Gardens, Queenstown Events Centre (and fields) Millbrook Park, Pembroke Park, Wānaka Recreation Centre, Three Parks Sports Fields.

A 5-minute walking time to all open spaces identified was applied and a 5-minute, 10-minute and 15-minute walking time was captured to the major open spaces. This is reflective of the nature of these facilities which can, by their size, accommodate a greater number of different uses including organised sport and recreation and thereby creating a high level of value/ amenity for potential users. In terms of outputs, all areas are generally well served by open spaces and playgrounds.

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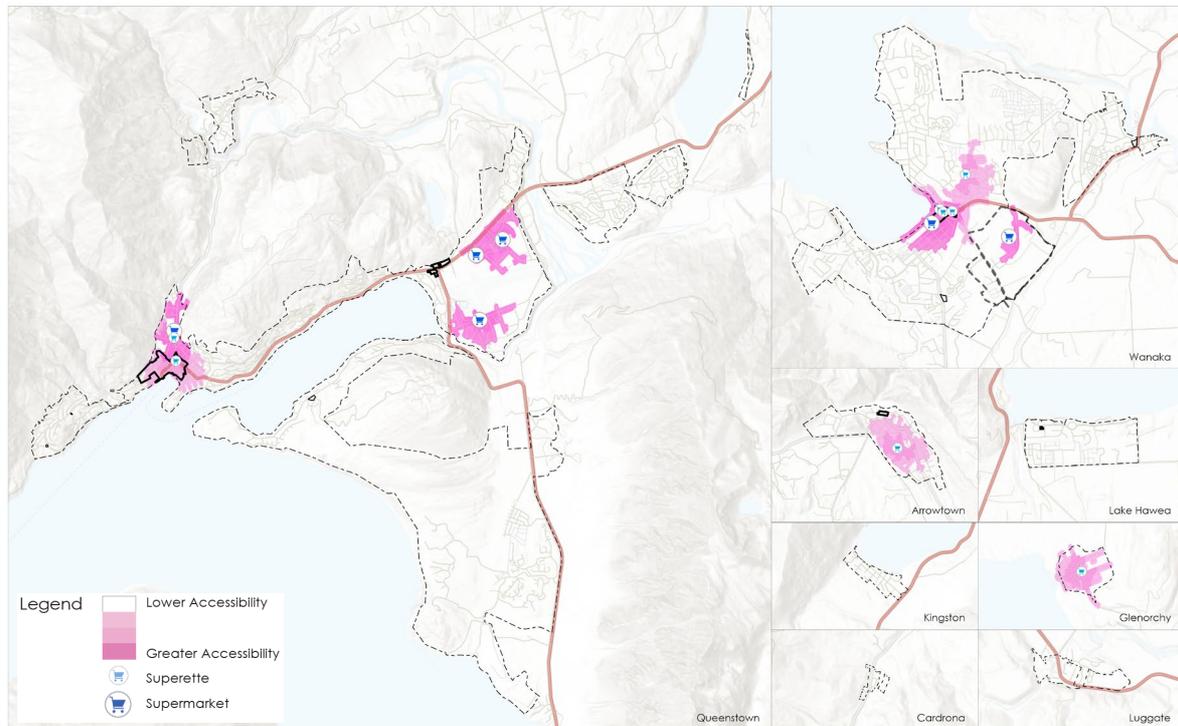
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**Figure 9 – Public Open Space Catchment Assessment**

### 5.4.5 Food Retail

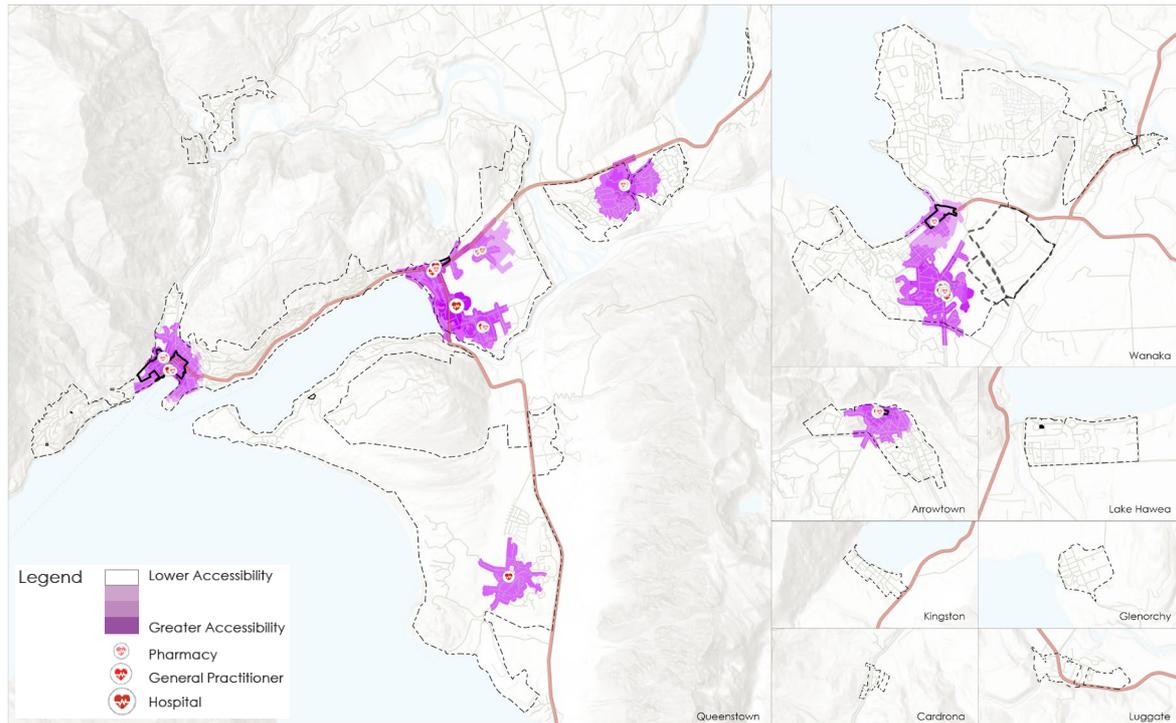
Two categories of food retail were identified as being relevant for this accessibility analysis – supermarkets and superettes. The supermarket category focusses on the larger, full-service supermarket facilities such as New World and Countdowns. Superettes are related to more compact supermarket offerings such as a Four Square. A 5-minute walking time catchment have been mapped for superettes while a 5-minute and 10-minute walking time catchment have been identified for supermarkets.



**Figure 10 – Food Retail Catchment Assessment**

### 5.4.6 Healthcare

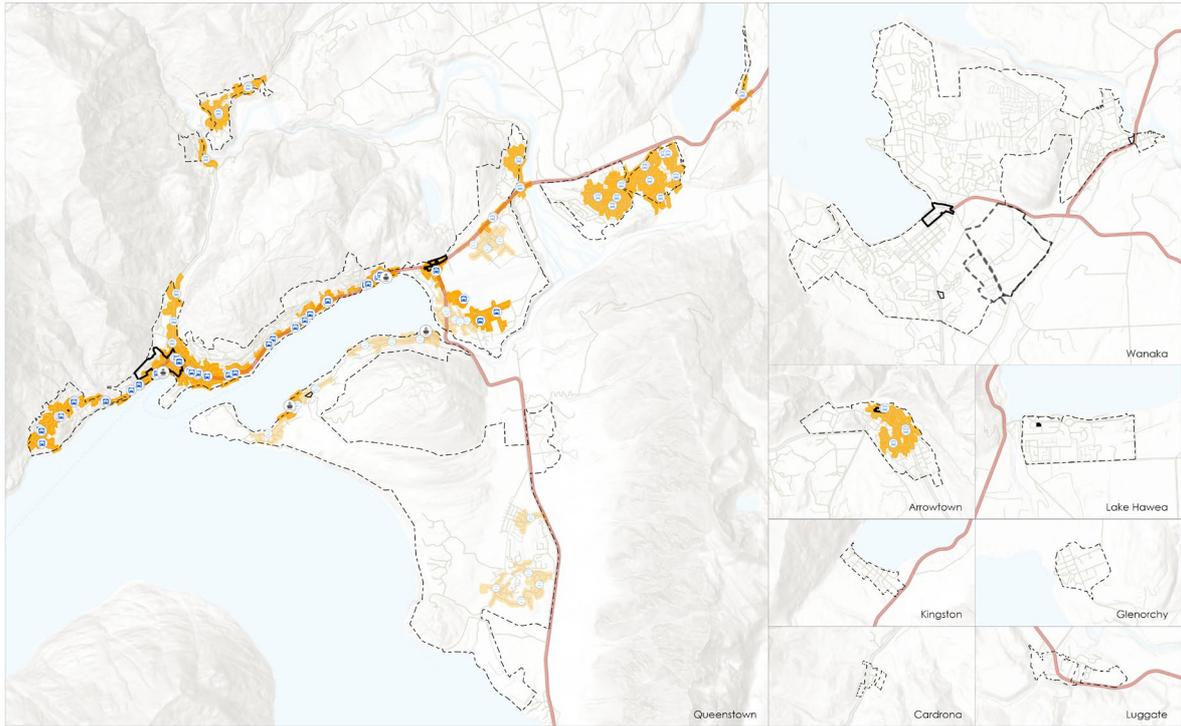
Medical centres were identified as being of particular importance as they typically incorporate a range of different healthcare providers (e.g. GP, pharmacy, physiotherapist, radiology) in a centralised location. This makes them particularly convenient for a wide cross-section of the community (although they are considered especially important for New Zealand’s aging population). 5-minute and 10-minute walking time catchments from these facilities have been identified. It is noted that medical centres can be found in each of Queenstown, Wānaka and Frankton although there is a clear concentration outside of the Wānaka Town Centre. Hospitals and pharmacies (where not part of a medical centre) were also identified and assessed as part of this work. A 15-minute walking time catchment was included for a public hospital in acknowledgment of the wider range of medical services provided.



**Figure 11 – Medical Centre Catchment Assessment**

### 5.4.7 Transport Opportunities

As set out in Section 5.1 of this memo, public transport has been incorporated as part of a broader assessment focused on walking catchments to and from particular destinations. In terms of public transport, existing bus routes and bus stops were identified along with the limited ferry service between Queenstown Bay and Frankton. It is notable that Wanaka has no public transport service. A 5-minute walking time catchment from bus stops and ferry piers was identified. These more restrained catchment extents are reflective of the fact that use of buses requires a multi-modal journey with additional onward travel and waiting times once a bus stop or pier has been reached. A greater weighting has been applied to those bus stops which have access to more frequent services to reflect their increased utility for passengers. Public transport with 60-minute frequencies is considered to be of limited benefit to the broader population base due to reduced flexibility and risks associated with missed or cancelled services (i.e. you have to wait a further hour for the next one). A slightly greater weighting was applied to the Kelvin Heights ferry service in recognition that this presents a competitive journey time with private vehicles (albeit at low frequency). The more frequent bus routes are concentrated between Queenstown town centre and Frankton with some capital works planned along this corridor to improve journey times and reliability. This is reflected in greater public transport accessibility identified along this corridor, although it is noted that topographical constraints combined with the existing block structure along either side of Frankton Road severely limits walkable catchment extents in places.



**Figure 12 - Transport Opportunities Catchment Assessment**

## 6.0 Demand Analysis

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Policy 5(b) of the NPS-UD requires a consideration of the relative demand of a location to help inform appropriate building heights and density. Guidance prepared by MfE's to support the implementation of the NPS-UD recommends using land values (relative to other areas across an urban environment) and a land value-to-capital value ratio as indicators of demand.<sup>11</sup> In addition, a number of other factors identified by the MfE Guidance includes:

- locations close to open space and recreation opportunities
- areas within, or close to, centres
- areas with good transport opportunities
- areas close to key services including, schools, hospitals and supermarkets
- areas close to a range of business activities
- locations with good views, outlook and amenity, including areas with water views or green space outlooks.

The first five matters identified above are captured by the methodology for undertaking the accessibility analysis in Section 5.0 above. The final matter is subjective (as different people place different values on the particular outlooks and views). Further, due to the unique locational context of the urban environments across the Queenstown-Lakes District with an abundance of landscapes being identified as containing significant or outstanding values it is not possible to provide a measure for a specific urban area which is relative to another urban area within the district.

### 6.1 Quantitative Measures

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#### 6.1.1 Land Prices

Based on the discussion above, land prices are considered to be a strong indicator of where, without budget constraints, people would prefer to be. That does not mean that no one wants to live in areas with lower land values people often have links to neighbourhoods that may lack the location or amenity that make some areas more expensive (i.e. this is not to say there isn't 'demand' to live in areas without high land prices). Overall, the best indication of what area people value most on average and in aggregate is land prices there.<sup>12</sup>

Two things make land valuable. One is its **proximity** to amenities that people value (location). The second is *what you can do with the land*. Land prices were calculated for all rateable land parcels<sup>13</sup> on a square metre

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<sup>11</sup> Understanding and implementing intensification provisions for the National Policy Statement on Urban Development, September 2020, pg. 38.

<sup>12</sup> Auckland Economic Quarterly, May 2021, accessed 14 June 2022, from <https://www.aucklandcouncil.govt.nz/about-auckland-council/business-in-auckland/Pages/economic-advice.aspx>

<sup>13</sup> Rateable parcels with a '0' or 'NULL' land value, those used for activities such as reserves, or parcels with a duplicate "Assessment Number" where removed from the data. Parcels which formed part of a wider unit title subdivision where land values were apportioned equally amongst various titles were merged to derive a total land

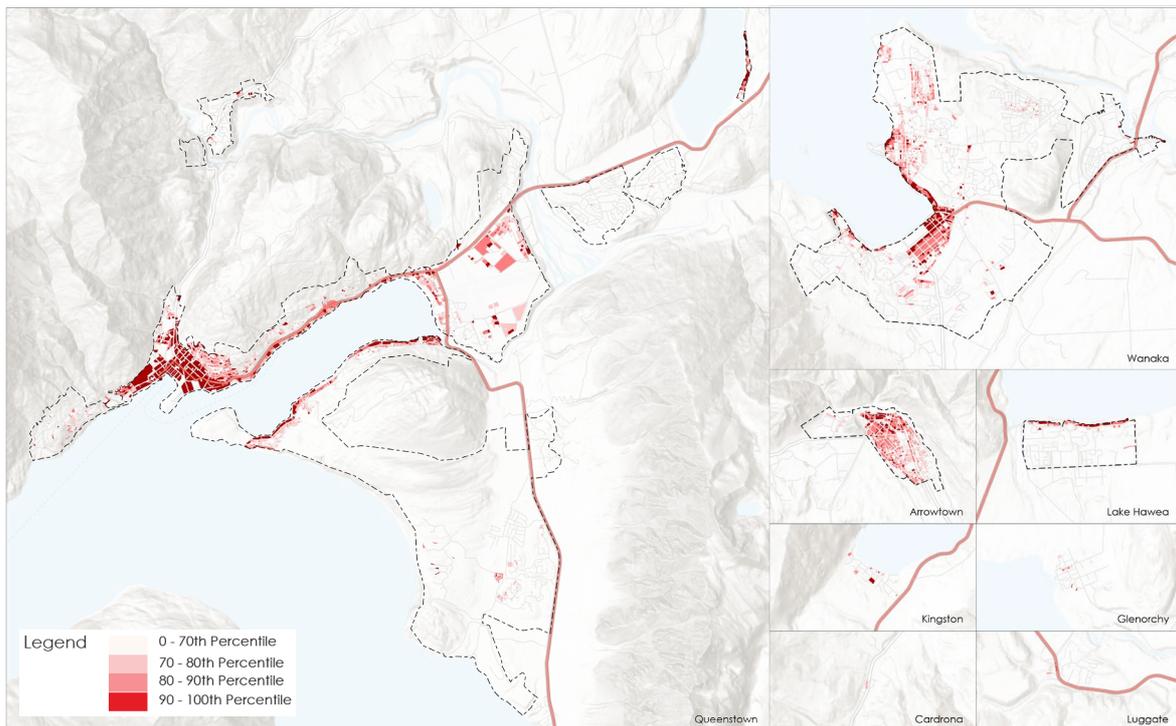
basis, and based on the most recent property valuation data made available by RLC, as per the equation below:

$$\text{Land Value} \div \text{Parcel area (m}^2\text{)} = \text{Land Price per m}^2$$

Once land prices for all qualifying parcels were calculated, they were ranked from highest to lowest. However, understanding land prices for individual parcels alone is not particularly useful when trying to understand relative demand for the purposes of an exercise which is likely to inform a zoning exercise (i.e. it would not be appropriate or practical to apply specific heights and densities to individual parcels based on their own land price). In order to understand the “relative demand” of a particular area in comparison to other areas at a spatial level, it was necessary to aggregate individual parcels into percentile groups to spatially identify areas where increased heights and/ or density may be appropriate. To understand this, the top 70<sup>th</sup>, 80<sup>th</sup> and 90<sup>th</sup> percentiles of parcels based on their land values on a square metre basis were identified. This was undertaken to try and identify any patterns at a broader block/ neighbourhood scale in line with future zoning outputs consistent with good urban design practice under the Resource Management Act 1991.

The cut-off values for the percentiles considered were:

- 70-80<sup>th</sup> Percentile – Land values between \$1,344 and \$1,641 per square metre;
- 80-90<sup>th</sup> Percentile – Land values between \$1,641 and \$2,260 per square metre; and
- 90-100<sup>th</sup> Percentile – Land above \$2,260 per square metre.



**Figure 13 - Average Land Value (\$ per m2) by Meshblock**

value for the site. Similarly, sites which incorporated multiple titles/ ratings valuations (e.g. central city sites where a single building spans multiple parcels) were also merged to enable calculation of land values on a square metre basis.

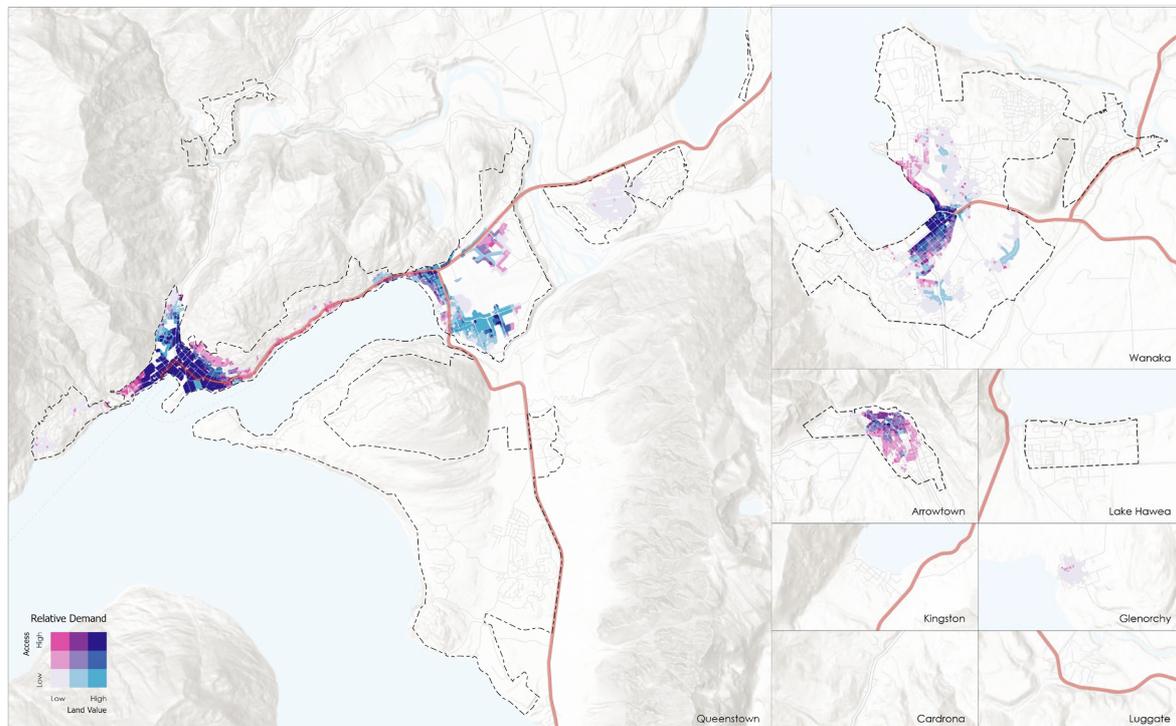
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### 6.1.2 Relative Demand

To help determine ‘relative demand’, high land prices and proximity to amenities were considered together using a bivariate analysis. This enabled an understanding of the spatial relationship between the proximity and price components for any given piece of land across the urban environment. This helps to establish where both proximity attributes and land values are closely aligned and is shown in Figure 14.



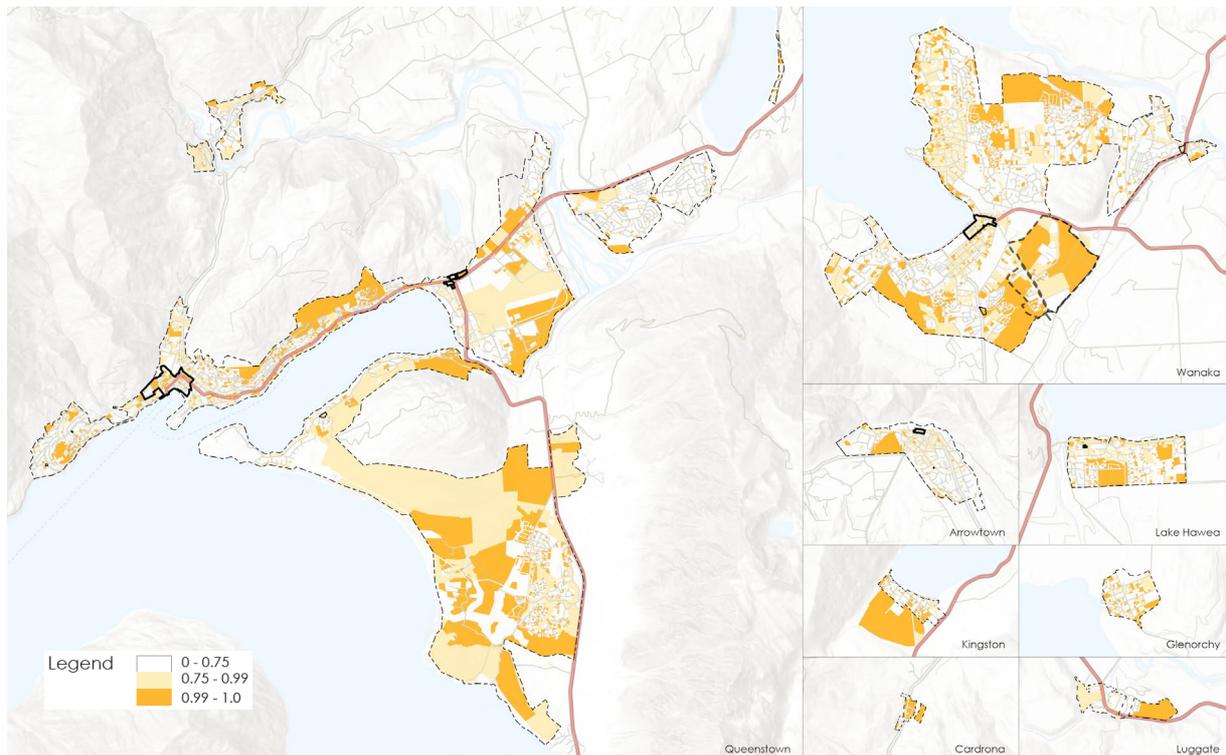
**Figure 14 - Relative Demand Bivariate Analysis**

### 6.1.3 Land Value-to-Capital Value

Land value-to-capital value ratios have also been assessed as these can indicate that land is in a location of high demand and the existing land-use is under capitalised. This is likely to mean it could be more feasible to redevelop for greater levels of intensification. The ratio was calculated for all rateable land parcels based on the most recent property valuation data made available by RLC, as per the equation below:

$$\text{Land Value} \div \text{Capital Value} = \text{Land value-to-capital value ratio}$$

Generally speaking, the closer this ratio is to 1.0, the more feasible redevelopment will be. Existing vacant and greenfield sites can generally be expected to have a ratio of 1.0 (or very close to it) as they typically do not contain any capital improvements. This does not necessarily indicate a high-level of demand, just that barriers to development (at any density) are not impacted by the value of any capital improvements that currently exist on site.



**Figure 15 - Average LV2CV Ratio**

#### 6.1.4 Caveats

It is important to note that the assessment of land prices/ values has been undertaken at a fixed point in time. In reality, these are dynamic figures which fluctuate depending on local market conditions including how enabling the District Plan framework is for development. In this regard, any measures that remove barriers to development (e.g. increased building heights) will likely increase land prices/ values and improve feasibility for redevelopment.

#### 6.1.5 Resource and Building Consent Data

MfE's guidance on implementing Policy 5 of the NPS-UD identifies that resource consent and building consent data could highlight areas where there may be high demand.<sup>14</sup> Resource and building consent data over the past 10-years was provided and reviewed. A review of the data indicated that consent applications were generally in-line with district plan requirements with minor infringements to development standards and were fairly evenly distributed across the urban area. Further, the types of development where consent was sought was generally in-line with the intended outcomes of the underlying zone (e.g. infill subdivision for one or two additional dwellings). As such, it is considered that this data is not directly applicable to inform rezoning (within the Queenstown Lakes context).

#### 6.1.6 Observations

Generally, land prices in the main urban areas across QLDC exhibit a common pattern here land prices are the highest in the centre, gradually reducing as one moves further away. The highest value land (above the 90<sup>th</sup> Percentile) is clearly identifiable in and immediately around Queenstown and Wānaka town centres,

<sup>14</sup> Understanding and implementing intensification provisions for the National Policy Statement on Urban Development, September 2020, pg. 38.

within Arrowtown Town Centre as well as along Frankton Road. This is not surprising as the location, combined with the existing controls allow for much higher levels of development relative to other areas across the district. Frankton and the Shotover Park Industrial Area also display a concentration of parcels with higher relative land values. Some higher land values, relative to other urban areas are also observed around Remarkables Park although there is no clear pattern of consolidation of parcels relative to other areas.

Where there are limitations on what you can do with the land (e.g. density and height controls), but high land prices are still evident, this provides a strong indication that there is a high demand for that land relative to other areas. This pattern was most evident around the lakefront properties in Kelvin Heights, Lake Hayes, Lake Hāwea and some parts of Wānaka (around Lakeside and Beacon Point Road) where there is notable concentration of parcels above the 80<sup>th</sup> percentile in land prices relative to other urban areas across the district.

In terms of the Bivariate Analysis, Queenstown town centre and its immediate surrounds and Wānaka town centre clearly perform the strongest. Frankton is also notable in its presence and generally performs well relative to other areas. This aligns with QLDC's aspirations for this area to function as a 'Metropolitan Centre' within their Spatial Plan.

Land value-to-capital value ratios were also assessed. There is not a specific point at which the Land value-to-capital value holds a particular meaning. However, the upper quartile (i.e. above a ratio of 0.75:1) does provide a useful proxy for areas where intensification may be more feasible to deliver. However, it is also important to note that any changes to development standards applicable to these areas (e.g. relaxation of density controls) would likely improve the land value-to-capital value ratio and increase the feasibility of redevelopment / intensification. The analysis generally shows a concentration of parcels with ratios above 0.75:1 in areas with high land prices indicating the potential for increased intensification opportunities to be taken up by the market.

### 6.1.7 Relationship with the Housing Development Capacity Assessment 2021

The Queenstown Lakes District Housing Development Capacity Assessment 2021 (HBA) was prepared in accordance with the NPS-UD. Section 2.5 and 2.66 of the HBA sets out broad housing demand by the total number of new dwellings required and also broken down by household type, tenure and broad location across the District based on a detailed socio-economic information and Stats NZ projections. The locations identified break the urban environment down into 15 separate areas within the Wakatipu and Wānaka ward.

For the Wakatipu Ward this includes:

- Arrowtown;
- Arthurs Point;
- Eastern Corridor;
- Frankton;
- Kelvin Heights;
- Outer Wakatipu;
- Quail Rise;
- Queenstown Town Centre;

- Southern Township – Wakatipu; and
- Southern Corridor.

For the Wānaka Ward this includes:

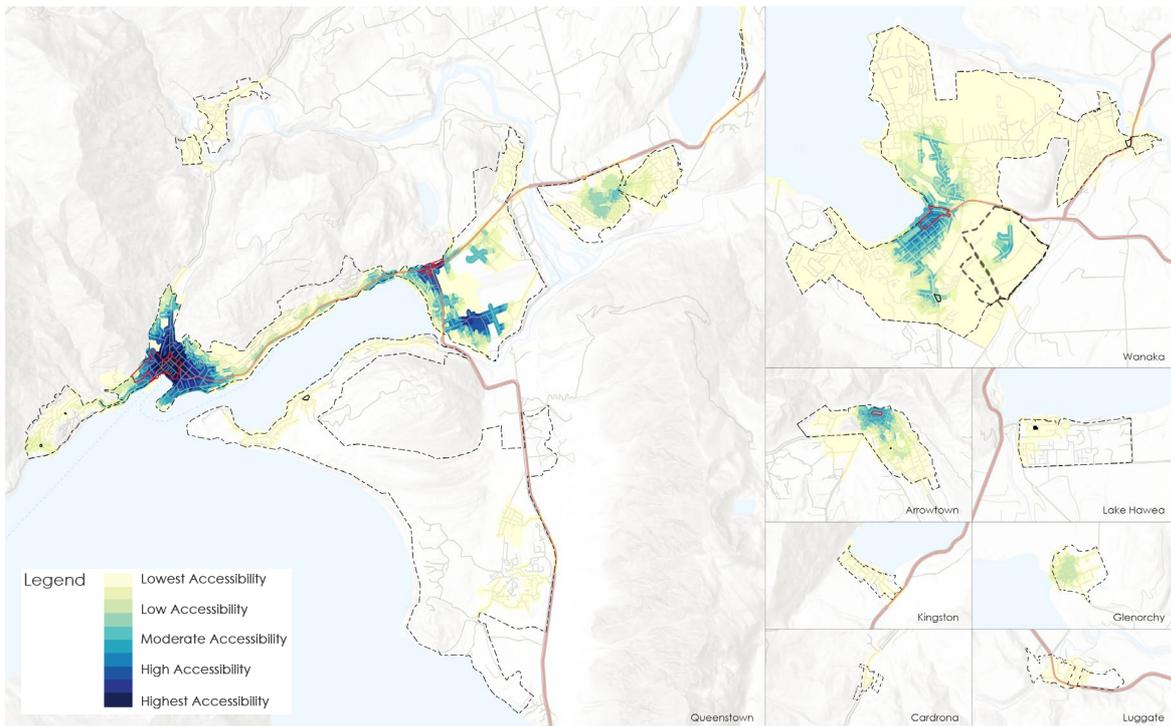
- Cardrona;
- Lake Hawea;
- Luggate;
- Outer Wānaka; and
- Wānaka Town Centre.

The areas identified above cover broad locations, sometimes entire townships, encompassing a number of different existing zones. The requirements of Policy 5 require a comparison to be made between both accessibility and demand. As such, the data presented within the HBA does is not sufficiently granular to enable this comparison to be made. Further, it highlights total dwellings numbers required within these areas, rather than where these dwellings could be located.

## 7.0 Summary & Findings

### 7.1 Accessibility

Figure 16 presents the summary findings of the accessibility analysis set out in Section 5 of this memo. The findings show the results of catchment overlaid with one another and weightings applied according to the priority of the destination and the proximity of the catchment. Under this analysis, the main drivers of accessibility include the proximity to: the Town Centres; the majority of employment opportunities; primary and secondary schools; large supermarkets; medical centres and major open spaces. A summary of key drivers of accessibility within areas across QLDC is provided overleaf.



**Figure 16 - Total Accessibility (Weighted)**

### 7.1.1 Accessibility

**Queenstown** – As expected, Queenstown Town Centre performed as the highest level of accessibility across the QLDC area. The extent of this high level of accessibility aligns to the Proposed District Plan (PDP) High Density and Town Centre zoning, with the exception of land to the south and west of the centre along Brisbane Street, Hobart Street, Adel Street and around the Dublin Street intersection with Hallenstein Street. The Plan Change 50 proposed roads were not included in the analysis, it is anticipated that this area will be Town Centre zone and will support access to a variety of goods and services. Given this, the area at the western ends of Thompson Street and Lomond Crescent should also be considered an area of higher accessibility. Development potential across much of the Town Centre and its immediate surrounds is restricted to around four-storeys maximum. Based on the results of the accessibility (and demand) analysis, increased heights and density of development should be enabled with a primary focus around the Stanley Street and Shotover Road corridors.

**Frankton** – Frankton performed as the second most accessible area with three distinctive nodes including around the Frankton Local Shopping Centre, Remarkables Park Town Centre and Queenstown Central Shopping Centre. It should be noted that given the date and limitations of the access to employment data and the recent urban development in the area, the area may now provide for a greater level of employment opportunities than the analysis currently presents. This should be considered when determining the extent of up-zoning in this area. An initial thought is that it might lift the level of accessibility by one point along Douglas Street and Kawarau Road.

**Arrowtown** – Arrowtown performed as a moderately accessible area primarily in relation to its access to commercial and community services. The extent of the moderately accessible area matches the Arrowtown Town Centre PDP zoning. In comparison with the most accessible areas identified (e.g. Queenstown town centre), Arrowtown does not have good access to a large range of employment opportunities within a 45-minute journey time via walking, cycling or public transport. As such, no additional up-zoning over and above the existing medium density provisions for Arrowtown is considered warranted based on the results of this analysis.

**Wānaka** – Wānaka Town Centre performed as an area of high accessibility. The extent of this area extends along Brownston Street adjacent to the centre and westward, and north along Lakeside Drive. The high accessibility is derived from access to multiple food retailers, quality open space and access to employment.

**Three Parks** – Three parks is a node of moderate-to-high levels of accessibility within Wānaka. This area is currently in the early stages of development which will contribute much higher levels of employment, open space, education facilities, food retailers and goods and services within this Centre. For the purposes of this analysis, only the facilities and road networks that are current were integrated into the assessment. As such, it is considered likely that the level of accessibility of this area will only increase with time with the currently vacant Low Density Residential Zone situated between Three Parks and Wānaka Town Centre being ideally located to leverage off commercial, community and employment opportunities available within both of these locations. As this area is currently undeveloped, it is ideally suited to realise the full benefits of a comprehensively planned medium density development.

**Gorge Road** – The majority of the Gorge Road corridor performs well with a high to moderate level of accessibility identified. This is largely influenced by its proximity to Queenstown Town Centre and the direct nature of Gorge Road itself.

**Frankton Road** – Frankton Road benefits from its position along the main transport corridor linking Queenstown Town Centre and Frankton. However, accessibility along this corridor generally rates from

moderate to low. In large part, this is due to topographical constraints which limit connections to Frankton Road from surrounding residential land and the concentration of commercial and community activities within Queenstown town centre and Frankton. Some continued intensification along this corridor remains appropriate noting it will be served by the most frequent bus route(s) within the District.

**Lake Hayes Estate/ Shotover Country** – This area performs between moderate to low in terms of its accessibility. The moderate rating is concentrated around the small centre based around Eleventh, Twelfth and Thirteenth avenues. Open spaces and Shotover Primary also contribute to the area's accessibility. However, overall access to a wider range of commercial and community services is limited and there is no useful or efficient access (via active modes) to major employment areas. Accessibility is likely to improve significantly if delivery of the Te Putahi – Ladies Mile Masterplan eventuates. This Masterplan includes more frequent public transport, additional schools, a new town centre and further open space opportunities. As there remains a level of uncertainty of when this will occur, the density of development around the Lake Hayes Estate and Shotover Country would be more appropriately considered as part of future plan changes applying to the area north of Ladies Mile.

**Arthurs Point** – Accessibility at Arthurs Point is at the very low end of the accessibility spectrum. There are limited amenities available in this location or easily accessible via active modes and public transport. It is noted that the District Plan already provides for some higher density development in this location.

**Quail Rise** – Quail Rise has been identified as generally have low accessibility with its results largely influenced by the proximity to some open spaces as well as a low-frequency bus service and some employment opportunities in Frankton. However, State Highway 6 clearly acts as a major barrier limiting its overall accessibility.

**Jack's Point/ Hanley's Farm** – Accessibility across Jack's Point and Hanley's Farm has been identified as low. This is expected due to the fact that development in this area is still occurring although it is likely to remain isolated from a higher density of these opportunities over the longer term. There are a limited number of commercial and community amenities currently available that provides a local level of convenience for residents. The circuitous roading layout of Jack's Point is likely to limit accessibility in this area long term.

**Fernhill/ Sunshine Bay** – Accessibility in this area generally rates from moderate to low. In large part, this is due to topographical constraints which limit connections to the Glenorchy-Queenstown Road from surrounding residential land. Commercial and community activities, along with employment opportunities are concentrated within Queenstown town centre and Frankton some 2-4km north-east of this area.

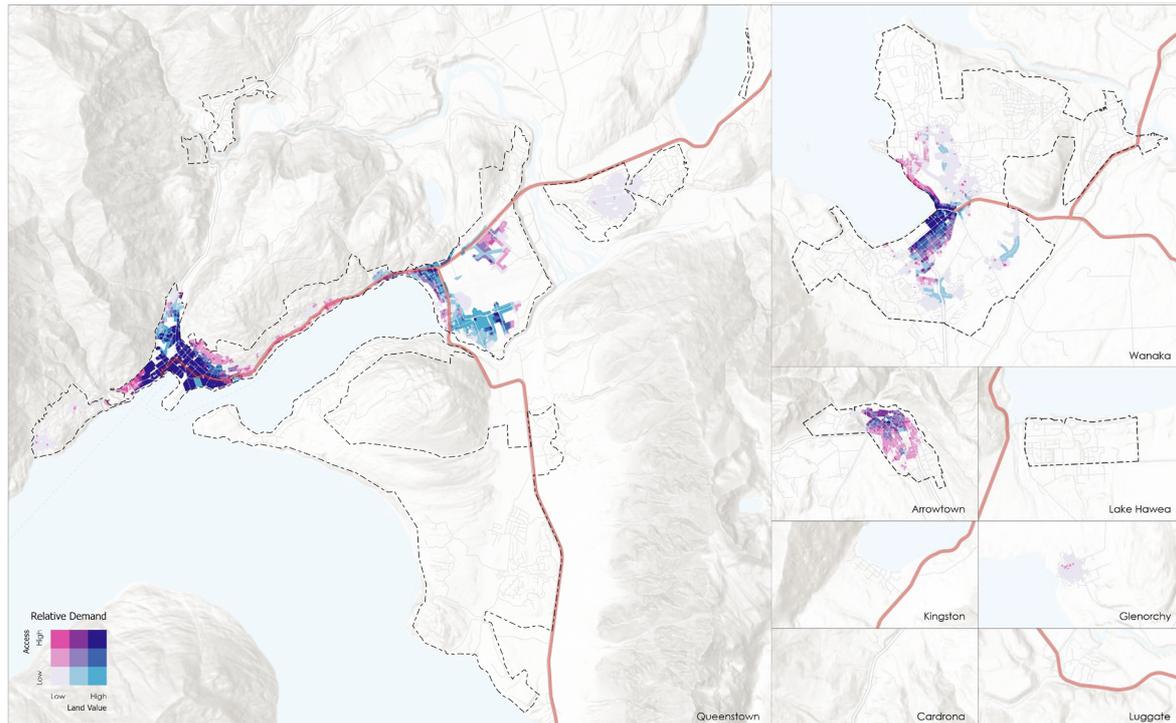
**Kelvin Heights** – Kelvin Heights performs poorly within the accessibility analysis with key amenities limited to open spaces and infrequent public transport services. A future local shopping centre zone has been provided for in close proximity to the Bayview Pier. Due to topographical constraints, accessibility in this location is likely to remain constrained in the longer term.

## 7.2 Demand

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Areas which perform well under the various demand measures identified are generally well aligned with those which have performed best under the accessibility analysis. This is shown overleaf in Figure 17.

Generally, there is alignment of the higher levels of accessibility and demand. This analysis identifies three primary demand nodes within the District – Queenstown Town Centre, Wānaka Town Centre and Frankton Local Shopping Centre which all benefit from a concentration of land with a high relative value and proximity to a wide range of amenities.



**Figure 17 - Relative Demand Bivariate Analysis**

### 7.3 Spatial Implications

The Proposed District Plans zones including centres, medium and high residential density's, generally align with the areas identified as being highly accessible and where there is shown to be a demand for housing.

The accessibility and demand analysis indicates that the spatial extent of areas where more intensive residential activities can occur could be expanded in accordance with the requirements of the NPSUD. In particular, higher levels of intensification in Queenstown around the edges of the town centre (including parts of the PC50 area), Frankton and around the edges of the Wānaka Town Centre are likely to be suitable. Some provision for increased densities around the Three Parks area is also recommended noting that accessibility is likely to improve in this area as build out continues.

An example of what this may mean across QLDC is provided in Appendix 1 and Appendix 2 of this memo. These provide two potential spatial configurations for different zoning options that are interrelated with potential amendments to the existing rule framework set out in the various residential and business zonings within the PDP.<sup>15</sup> This provides for high density residential activities (via high density residential and mixed-use zones) in and around the Queenstown and Wānaka Town Centres. More moderate levels of intensification via a Medium Density Residential zone and some High Density Residential are then proposed as one transitions away from the main centres as well as around the more accessible nodes of Frankton. In addition to the spatial extent of any zonings, consideration will also need to be given to the supporting rules framework (i.e. they cannot be viewed independently from one another). Changes to the rules framework

<sup>15</sup> The recommended zoning options contained in Appendix 1 and 2 do not take into account development constraints ("Qualifying matters"). As such, there will likely be a need to consider the impacts of other relevant matters (e.g. natural hazards) when determining a preferred spatial arrangement of zoning.

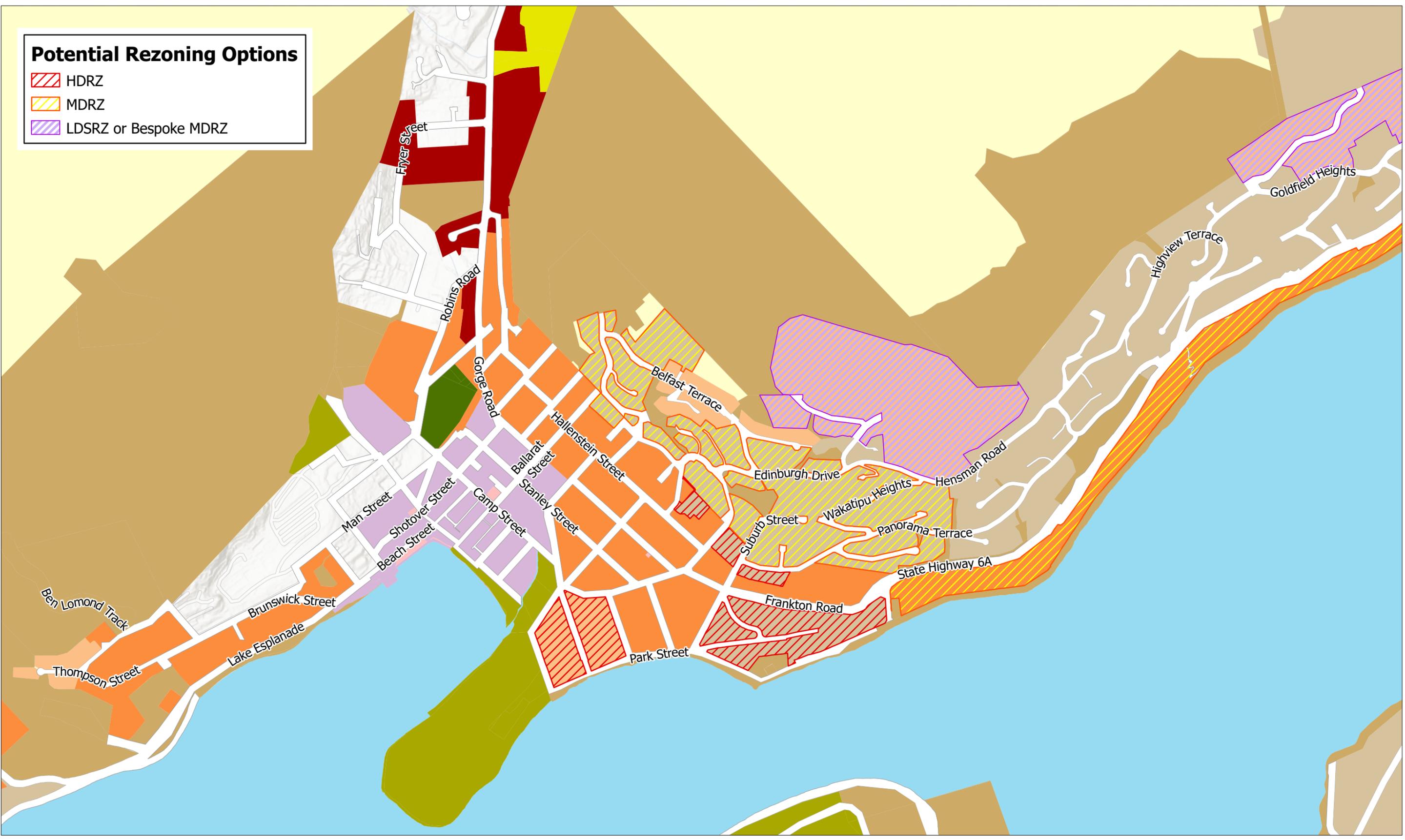
(including “Qualifying Matters”) may also influence the final spatial extent of different business and residential zones.

Other areas such as Five Mile and Remarkables Park, which are controlled by Special Zones under the Operative District Plan generally feature very enabling planning provisions in relation to heights and densities and further changes to these are not considered necessary. The exception to this is Activity Area 1 of Remarkables Park which is set aside for Low Density Residential Uses. Most of this area is contiguous with an area of high to very high accessibility and, longer term, would be a suitable location for more intensive residential uses noting its proximity to a range of commercial and community amenities, as well as employment opportunities.

Appendix 1 – Potential Rezoning Option 1

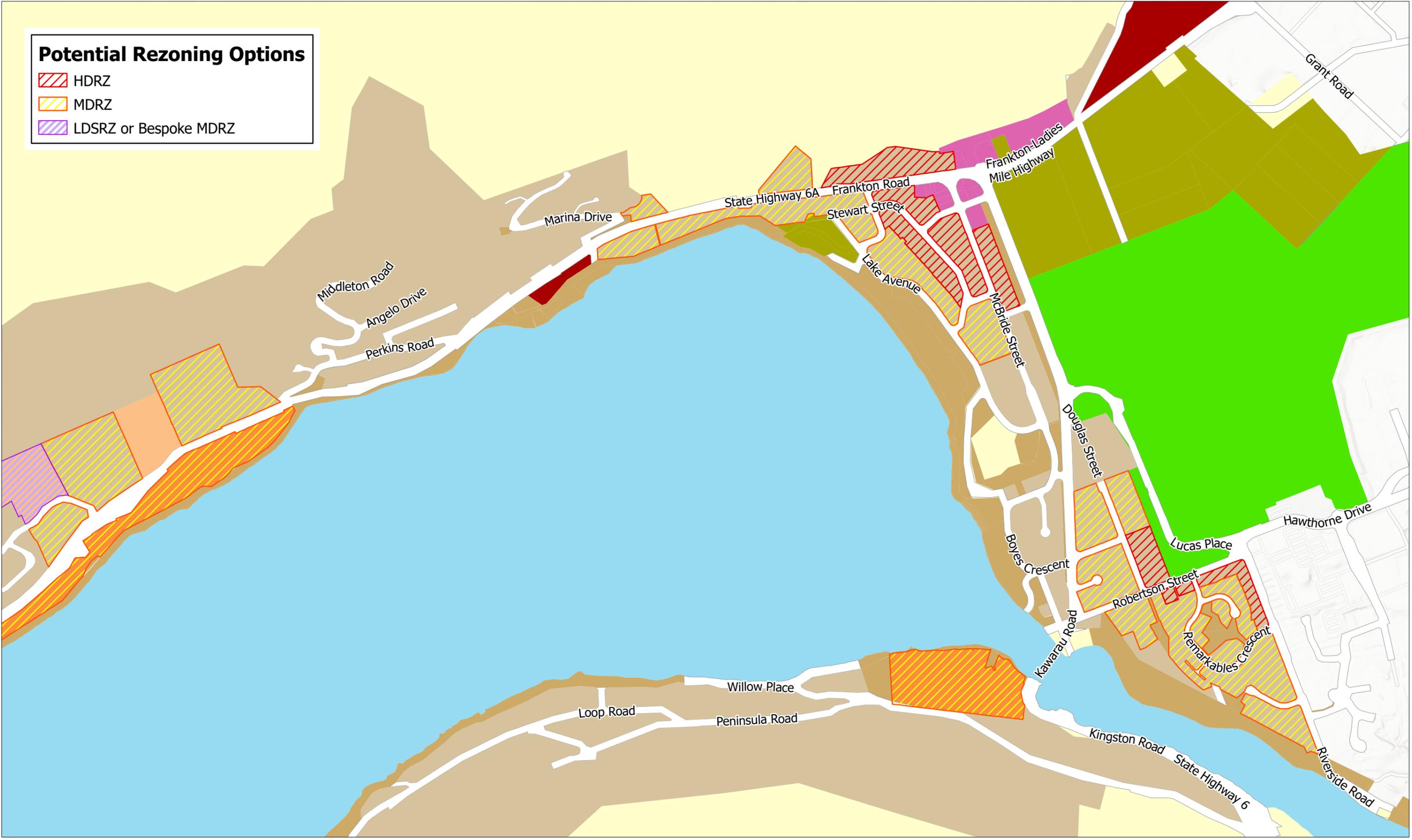
### Potential Rezoning Options

-  HDRZ
-  MDRZ
-  LDSRZ or Bespoke MDRZ



### Potential Rezoning Options

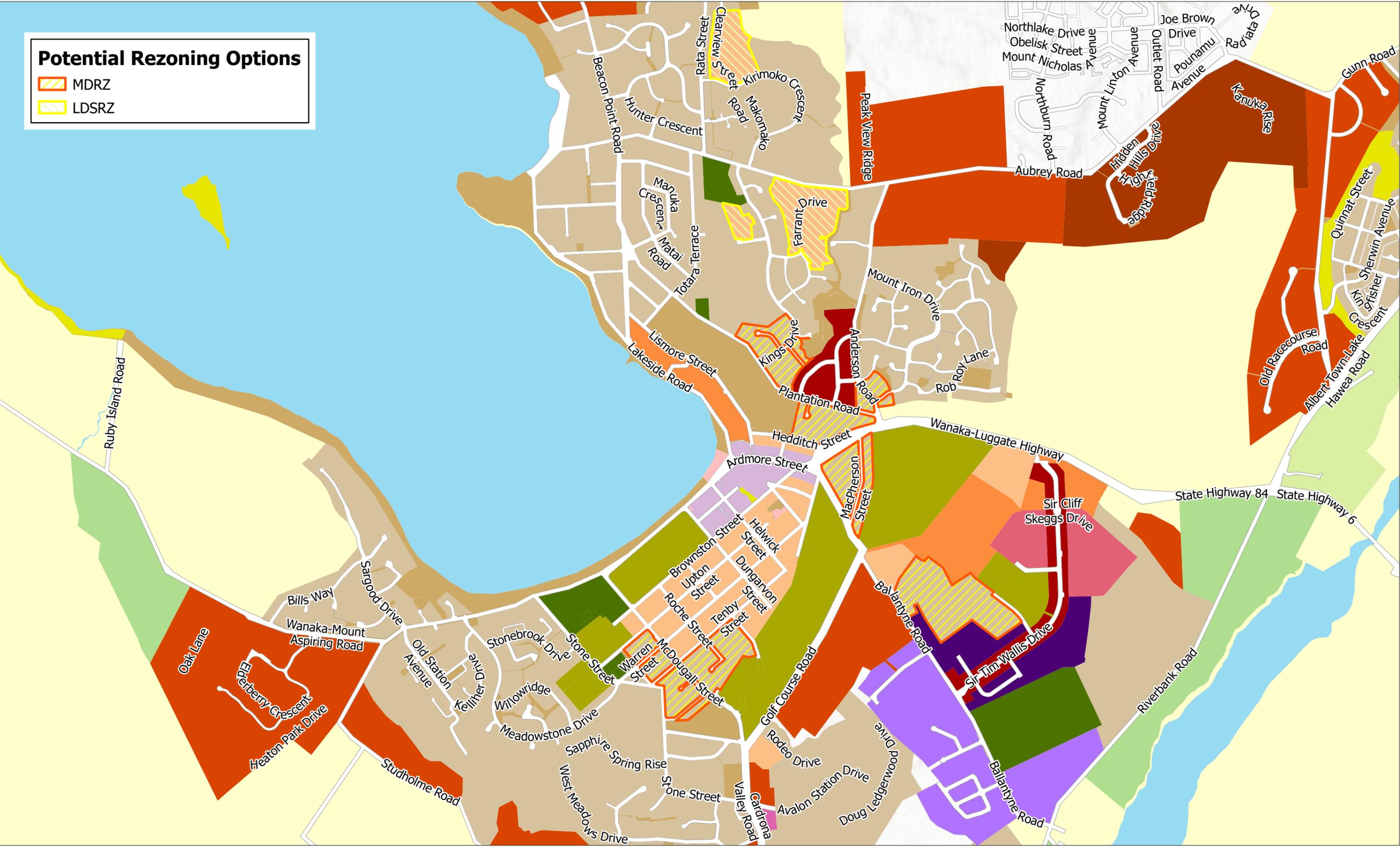
-  HDRZ
-  MDRZ
-  LDSRZ or Bespoke MDRZ



Note: The impact of the Airport Noise Contours have not been considered in the above recommendations.

# Potential Rezoning Options

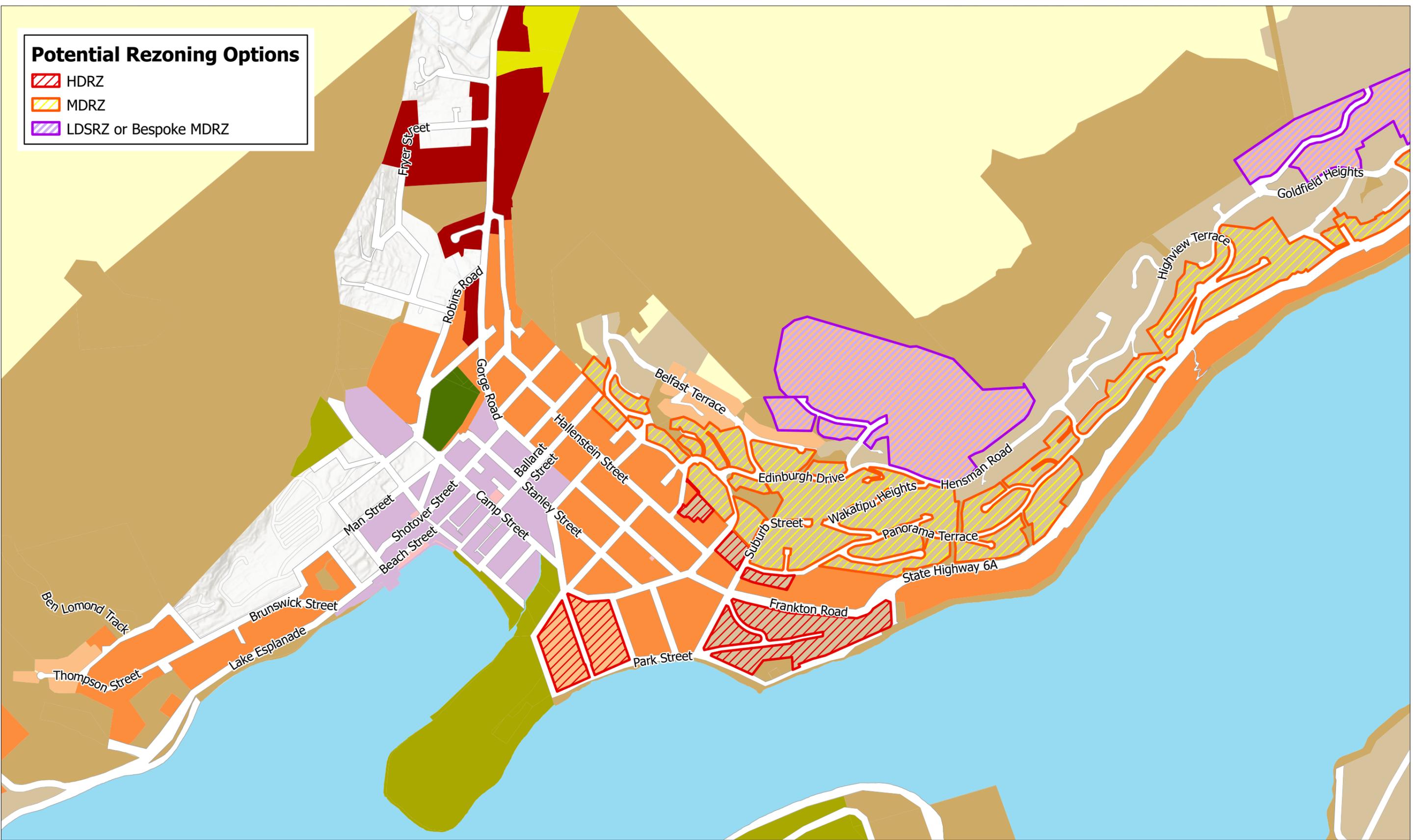
- MDRZ
- LDSRZ



Appendix 2 – Potential Rezoning Option 2

### Potential Rezoning Options

-  HDRZ
-  MDRZ
-  LDSRZ or Bespoke MDRZ



### Potential Rezoning Options

-  HDRZ
-  MDRZ
-  LDSRZ or Bespoke MDRZ



Note: The impact of the Airport Noise Contours have not been considered in the above recommendations.

