Queenstown Lakes District Intensification Economic Assessment

Intensification Plan Variation

16 May 2023 – Final

m.e consulting

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Contents

Figures

Tables

1 Introduction

Market Economics (M.E) have been commissioned by Queenstown Lakes District Council (QLDC) to undertake an economic assessment of residential demand and capacity and other relevant urban form considerations to inform the development of provisions for an intensification plan variation. The economic assessment is used to inform the planning assessment, which develops the spatial and provision options for intensification, as well as informing the section 32 report for the plan variation.

The intensification plan variation is being undertaken as QLDC (a tier 2 territorial authority) is required to provide sufficient district plan capacity in key areas of accessibility within the urban environment. Policy 5 of the National Policy Statement on Urban Development (NPS-UD[1]) requires that "*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*".

QLDC have developed a series of spatial and planning provision options (Options 1 to 6) for intensification around key nodes and/or corridors of accessibility across the urban environment. M.E have conducted analysis of the total market size and projected growth for higher density development in each location and assessed the capacity of provisions within each location under the proposed options. Together these assess the adequacy of the options in meeting the NPS-UD Policy 5 requirements.

The assessment builds off (but has evolved to some degree from) the existing base of capacity and demand modelling undertaken by M.E for QLDC's NPS-UD Housing and Business Capacity and Demand Assessment (HBA) in 2021[2]. The HBA relied on a combination of operative district plan (ODP) zoning and notified stage 3 proposed district plan (PDP) zoning in the short-medium term. Further demand modelling has been undertaken to model a revised market shift toward medium to higher density dwellings with the allowance for this type of proposed intensification capacity. An updated capacity assessment has modelled zoning provisions as they apply today, as well as the capacity for higher density development through applying the proposed higher density provisions in the short-medium term in key accessibility areas and intensification provisions across the residential (and commercial) areas of the urban environment.

1.1 Report Structure

The assessment contained within this report is structured as follows:

- Section 2 estimates the current and projected future market size for medium to higher density dwellings. Demand by dwelling typology is estimated by location across Queenstown Lakes District's (QLD's) urban environment. This will inform the potential demand for residential development by dwelling type in key areas of accessibility.

[1] Ministry for the Environment, 2020. *National Policy Statement on Urban Development 2020,* July 2020.

[2] The HBA 2021 covered housing only.

- Section 3 provides an overview of the key modelling changes and extensions undertaken since the 2021 HBA to appropriately model the changes in enabled residential development patterns, update the local market conditions and incorporate updated planning information.
- Section 4 models the capacity for residential dwellings enabled by the planning provisions under Options 1, 2, 5 and 6. Capacity is modelled by dwelling typology and location across QLD's urban environment.
- Section 5 models the estimated commercial feasibility of capacity for residential dwellings enabled by the planning provisions under Options 1, 2, 5 and 6. Capacity is modelled by dwelling typology and location across QLD's urban environment.
- Sections 2, 4 and 5 are brought together in Section 6, which compares the residential demand with the plan enabled and commercially feasible capacity under each of the options. This assesses the adequacy of each option in allowing for higher density development in key areas of accessibility[3].
- Section 7 provides a brief discussion of on the high-level economic costs and benefits of the intensification options relative to the do-nothing scenario, with commentary on the effectiveness and efficiency of different intensification options relative to the updated HBA baseline.
- Concluding remarks are in Section 8.
- Appendices 1 to 4 provide further detail to support the text in the main body of the report.
- Two further appendices are included in the report (Appendices 5 and 6). These contain copies of memos that M.E prepared early in the project and prior to the development of the intensification options. Appendix 5 contains a cluster analysis of capacity underpinning the HBA 2021. Appendix 6 provides a sensitivity analysis of the M.E commercial feasibility model.

[3] Although we note, this assessment does not meet the requirements of an HBA which requires demand to be compared with infrastructure ready and reasonably expected to be realised capacity.

2 Residential Dwelling Demand

This section estimates the size of the market demand for residential dwellings by type and location in QLD's urban environment. In particular, it assesses the potential scale of dwelling demand for higher density dwellings that will be further enabled through the proposed residential intensification options.

2.1 Introduction

To meet the NPS-UD Policy 2 and 5 requirements, QLDC seeks to understand the likely level of demand for residential development in key locations to assess the adequacy (sufficiency) of the proposed provisions in catering for that demand in those intensification locations and across the remainder of the general suburban area. It is also important to understand the likely market size to assess the appropriateness of the spatial extent of provisions. The combination of the level of market demand and location and extent of the provisions will affect the likely future urban form outcomes. The adequacy of provisions and potential urban form effects will be considered in subsequent stages of analysis that draw together the market demand and capacity assessments.

2.2 Approach

The market demand assessment builds off the detailed demand assessment undertaken by M.E for the HBA 2021 along with updated dwelling projections[4] from QLDC. It uses the existing modelling capability[5] to generate a baseline demand projection for dwellings by type across the main urban areas of the district. This is based off existing patterns of dwelling development by location with a degree of future dwelling type preference shift across different household types consistent with that applied within the HBA.

This assessment then undertakes further analysis to model the effects on dwelling demand if a larger market shift were to occur through time. This may occur through the further planning provision for intensification and the household trade-offs between dwelling type, location, size and price.

The demand assessment ultimately estimates the likely future demand for different types of dwelling typologies that correspond to different types of location across the urban environment. The analysis considers both the total dwelling demand base as well as the net increase in demand (i.e. growth in each time period). It provides a picture of the total market size, as well as the net increase from growth within the market.

Demand has been estimated for the following dwelling typologies:

- Higher density attached dwellings – these range from higher density terraced housing up to vertically attached apartments.

[4] Queenstown Lakes District Council, 2022. *QLDC Demand Projections,* May 2022.

[5] This is the M.E 2021 Queenstown Housing Demand and Affordability Model.

- Other attached dwellings – these range from lower density attached dwellings, such as duplex pairs and one-level attached units, up to terraced housing.
- Detached dwellings – these range from larger standalone houses on full sites, up to smaller standalone houses on much smaller sites that could potentially occur under higher density provisions.

Importantly, the assessment recognises that there is likely to be a level of overlap between different types of dwelling demand. Demand for one type of dwelling could potentially be met through dwelling supply in a different market segment. Households typically make trade-offs between price, size and location, which often results in demand substitution between different dwelling typologies. Furthermore, underlying demand preferences may not correspond to final dwelling choices based on consumer constraints such as household budget or travel efficiency. For instance, a household may have an underlying preference for a standalone dwelling on a full site. However, they may instead choose to occupy a similar sized attached dwelling on a smaller site in a more accessible location.

Further details on the approach used to model demand by dwelling type, including preference shifts and market substitution are contained in Appendix 1.

2.3 Residential Demand by Dwelling Typology and Location

This section contains the modelled results from the residential market demand analysis in relation to each of the dwelling categories described above and in Appendix 1. It presents results for the baseline updated demand projections and higher market substitution scenarios. These refer to the level of market substitution that are estimated to occur within the share of the market to which the substitution is applied. The updated baseline projections contain the same gradual preference shift to that of the HBA 2021, while the higher substitution scenario contains a higher level of market substitution across dwelling types.

Under the higher substitution scenario, 30% of the detached dwelling demand is estimated to be met through attached dwellings (almost all within the lower density attached dwellings), and 42% of the lower density attached dwelling demand is estimated to be met within higher density attached dwellings (apartments and higher density terraced housing).

In the first instance, the modelled results for the projected demand for the intensification provisions at the total urban area level are presented. These are then compared to the structure of demand projected for the HBA 2021. Lastly, the modelled results are then disaggregated spatially by geographic catchment area.

2.3.1 Total Urban Area Level Modelled Results

The modelled projected demand by dwelling typology is shown in Table 2-1 (baseline updated projections scenario) and Table 2-2 (higher market substitution scenario). The upper part of the tables shows the total projected demand by dwelling typology in the current base (2021) and short (2024), medium (2031) and long-term (2051). The lower section of each table shows the net increase of demand across each of these periods. The right-hand side of the tables show the structure of demand by dwelling typology within each year as well as the structure of the net changes in dwelling demand.

Table 2-1: Projected Queenstown Lakes District Urban Demand by Dwelling Typology: Baseline Demand Scenario

Updated Baseline Projections Scenario								
	DWELLING TYPOLOGY							
	Detached	Duplex/Terrace	Apartments	TOTAL	Detached	Duplex/ Terrace	Apartments	TOTAL
YEAR	Projected Demand				Share of Demand			
2021	16,300	2,800	600	**19,700**	83%	14%	3%	**100%**
2024	18,700	3,000	700	**22,300**	84%	13%	3%	**100%**
2031	21,200	4,700	1,000	**27,000**	79%	17%	4%	**100%**
2051	27,000	10,500	2,200	**39,700**	68%	26%	5%	**100%**
	Net Change				Share of Net Change			
2021-2024	2,400	100	100	**2,600**	93%	5%	3%	**100%**
2021-2031	5,000	1,900	400	**7,300**	69%	26%	6%	**100%**
2021-2051	10,800	7,600	1,600	**20,000**	54%	38%	8%	**100%**
2024-2031	2,600	1,700	400	**4,700**	55%	37%	8%	**100%**
2031-2051	5,800	5,800	1,200	**12,700**	46%	45%	9%	**100%**

Source: M.E Residential Intensification Analysis, 2022 and M.E Queenstown Residential Demand and Affordability Model, 2021.

Table 2-2: Projected Queenstown Lakes District Urban Demand by Dwelling Typology: Baseline Demand Scenario

Higher Market Substitution Scenario								
	DWELLING TYPOLOGY							
	Detached	Duplex/Terrace	Apartments	TOTAL	Detached	Duplex/ Terrace	Apartments	TOTAL
YEAR	Projected Demand				Share of Demand			
2021	16,300	2,800	600	**19,700**	83%	14%	3%	**100%**
2024	18,500	3,100	700	**22,300**	83%	14%	3%	**100%**
2031	20,500	5,000	1,500	**27,000**	76%	18%	6%	**100%**
2051	24,300	10,400	4,900	**39,700**	61%	26%	12%	**100%**
	Net Change				Share of Net Change			
2021-2024	2,200	300	100	**2,600**	85%	11%	4%	**100%**
2021-2031	4,200	2,100	900	**7,300**	58%	29%	13%	**100%**
2021-2051	8,100	7,600	4,300	**20,000**	41%	38%	22%	**100%**
2024-2031	2,000	1,900	800	**4,700**	43%	40%	17%	**100%**
2031-2051	3,900	5,400	3,400	**12,700**	30%	43%	27%	**100%**

Source: M.E Residential Intensification Analysis, 2022 and M.E Queenstown Residential Demand and Affordability Model, 2021.

The tables show that there is a projected net increase in demand for an additional 20,000 dwellings across the district's urban environment over the long-term (2021-2051). This is based on the QLDC updated projection series and, in in accordance with the NPS-UD requirements, includes the 15%-20% margins on net increases in future demand. When margins are excluded, there is a net increase for an additional 17,100 urban dwellings.

If delivered by the market, the long-term demand would double the existing urban area dwelling base, to reach a total 39,700 dwellings by 2051 (or 36,800 dwellings excluding the margin). The updated projections show that resident households account for most of the existing dwelling base and projected net increase

in demand. The share of future dwelling demand from other categories (primarily tourism demand), is projected to be lower than its share of the existing base, but to increase gradually through time.

Detached dwellings are estimated to currently account for over four-fifths (83%) of the existing dwelling base, with 14% as low to medium density attached dwellings and 3% as higher density attached dwellings. This reflects much of the patterns of urban expansion across the district which are heavily dominated by detached dwellings.

The tables show that the typology structure of dwelling demand is projected to gradually change through time. Under the updated baseline projection scenario, this structure is projected to shift to a structure of around two-thirds (68%) of long-term demand for detached dwellings and nearly one-third for attached dwellings. Around 5% of the long-term total demand is projected for higher density attached apartment dwellings. This is projected to result in a total long-term (2051) demand for 2,200 apartments (and 12,600 attached dwellings overall).

In the short-term, most of the net additional demand is for detached dwellings under this scenario. Around 93% of the short-term net growth is in detached dwellings. This reflects the current greenfield growth patterns of standalone dwellings. It takes into account the location of market growth, where a sizeable share of the growth occurs in locations of greenfield urban expansion which is dominated by standalone dwellings.

The share of demand for attached dwellings is projected to gradually increase through time, to account for nearly half (46%) of the long-term net additional dwelling demand. Attached dwellings are projected to account for over half (54%) of the net increase in dwelling demand occurring within the long-term (2031-2051). Within this, the share of attached dwelling demand for higher density attached dwellings (apartments) is projected to increase through time. Apartments are projected to account for 8% of the long-term net increase in demand, and around 5% of the total dwelling stock.

Under the updated baseline projection scenario, there is a projected demand for a net additional 10,800 detached dwellings. There is also demand for an additional 9,200 attached dwellings, of which it is estimated that 1,600 dwellings are for higher density dwellings. The timing of demand growth differs by dwelling type, with higher shares of demand for attached dwellings occurring in the long-term than detached dwellings. The share of attached dwellings as higher density dwellings is projected to increase through time.

The higher market substitution scenario contains the same level and timing of total projected dwelling demand growth as the baseline scenario. The spatial distribution of growth is also the same at the catchment level as a function of the input projections. However, the spatial distribution of demand growth within the catchment areas may differ in response to differences in the geographic patterns of supply of each dwelling typology within the catchment areas.

Under the higher substitution scenario there is a greater shift toward medium to higher density attached dwellings through time. Over half (59%) of the net additional long-term growth (2021-2051) is projected to occur in attached dwellings, with 22% as higher density attached dwellings (apartments). This results in a total long-term demand for 15,300 attached dwellings – a projected net increase of around 11,900 additional dwellings to the estimated existing base of 3,400 attached dwellings.

The higher substitution scenario has a projected net increase for an additional 4,300 apartment dwellings over the long-term. Combined with the existing base, this would create a total market size of 4,900 apartment dwellings.

The share of growth into attached dwellings is also projected to increase through time under the higher substitution scenario. In the long-term (2031-2051), 70% of the projected demand growth is estimated to occur in attached dwellings; and over a quarter (27%) in higher density attached dwellings. The total long-term demand (2021-2051) for detached dwellings is estimated to be lower than the baseline scenario with a projected net additional 8,100 detached dwellings.

Under each scenario, it is likely that a share of the net additional demand for dwellings will be met through redevelopment. This means that the total dwellings constructed are likely to need to be greater than the projected net increases to take account of the existing dwellings that are removed during the redevelopment process. This will also contribute to the changes in the structure of dwelling demand where sites that are redeveloped are more likely to contain lower density detached dwellings, with redevelopment occurring as attached dwellings.

The overall level of density at which dwellings are developed within each typology is also likely to gradually increase through time. In the short to medium-term, there is more likely to be an increase in the lower to medium density attached dwellings. These mainly include horizontally-attached dwellings. They are generally 1 to 2 storeys, with a smaller number of 3-level walk-ups. Examples include one-level attached units, townhouse/duplex pairs and terraced housing. Demand for these dwellings is likely to typically occur across much for the general suburban areas, but with a greater relative concentration within the walkable catchments of higher accessibility/amenity areas as households make trade-offs between location, dwelling type and price.

In many cases, lower to medium density attached dwellings are able to provide viable alternatives for households that would otherwise seek a standalone dwelling. Lower density forms of attached dwellings, such as townhouses, offer many of the same dwelling size and attribute characteristics of standalone dwellings, and in similar locations, albeit on a smaller average site area.

There may also be a level of market substitution to other attached dwellings within this category as households' trade-off price and location. A high share (56%-58%) of the district's current and projected future urban household base is in 1-2 person households, generally placing demand on smaller dwelling size requirements. This may mean that duplex dwellings and terraced housing within higher amenity areas may form an attractive option for these households.

Activity in QLD's apartment market is currently small, but is becoming more established in central areas of higher amenity. Growth in the market is more likely to occur over the medium to long-term as developers gain more confidence in this form of development. Part of this demand is also likely to be driven by non-resident demand with apartments forming attractive accommodation options in central, high-amenity locations.

The modelled projected demand for apartments predominantly occurs through substitution of demand from other attached dwellings, with smaller shares occurring as base demand growth from the existing patterns in the projected household structure, and substitution from detached dwellings. The demand for apartment dwellings is likely to be focussed around the nodes of higher accessibility, particularly within the

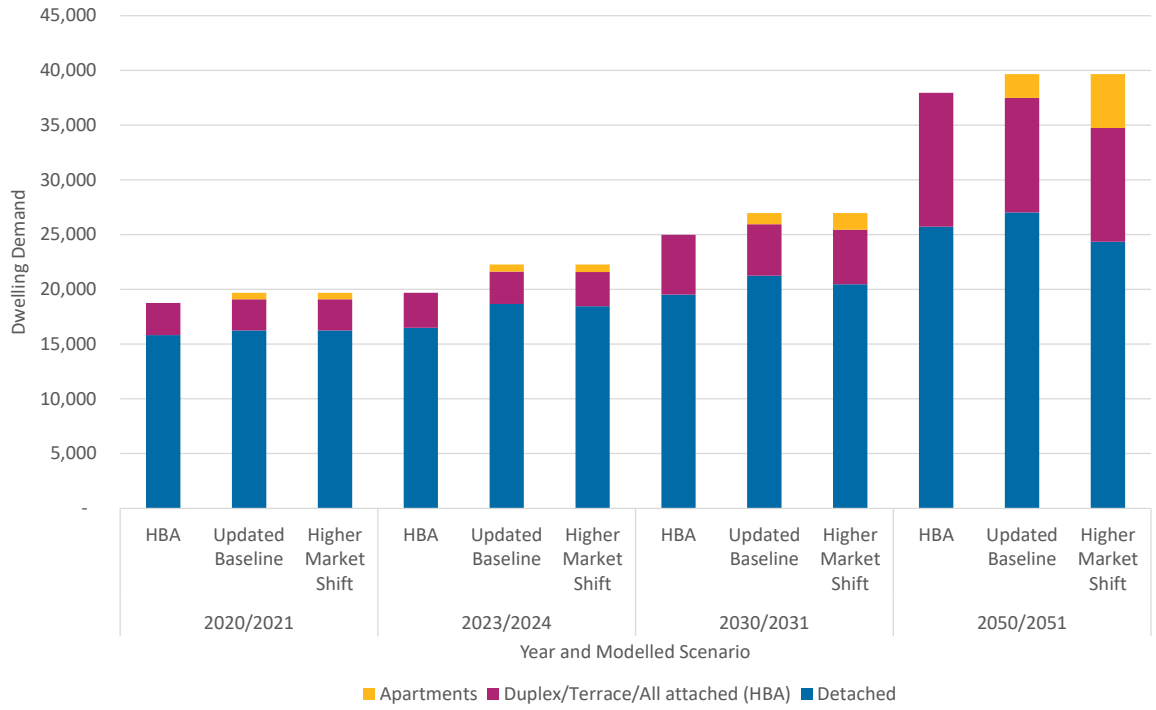
Queenstown town centre and surrounding area, based on patterns observed across most other urban economies. The demand may not all be met through vertically attached apartments. A share is also likely to be met through higher density (horizontally attached) terraced housing, up to three storeys. This is likely to be the case in locations such as Wanaka where the market is less well established for higher density, vertically-attached dwellings.

In other urban economies this type of higher density horizontally attached development has typically occurred in nodes and areas of higher accessibility.

Comparison to Base Scenario and HBA 2021

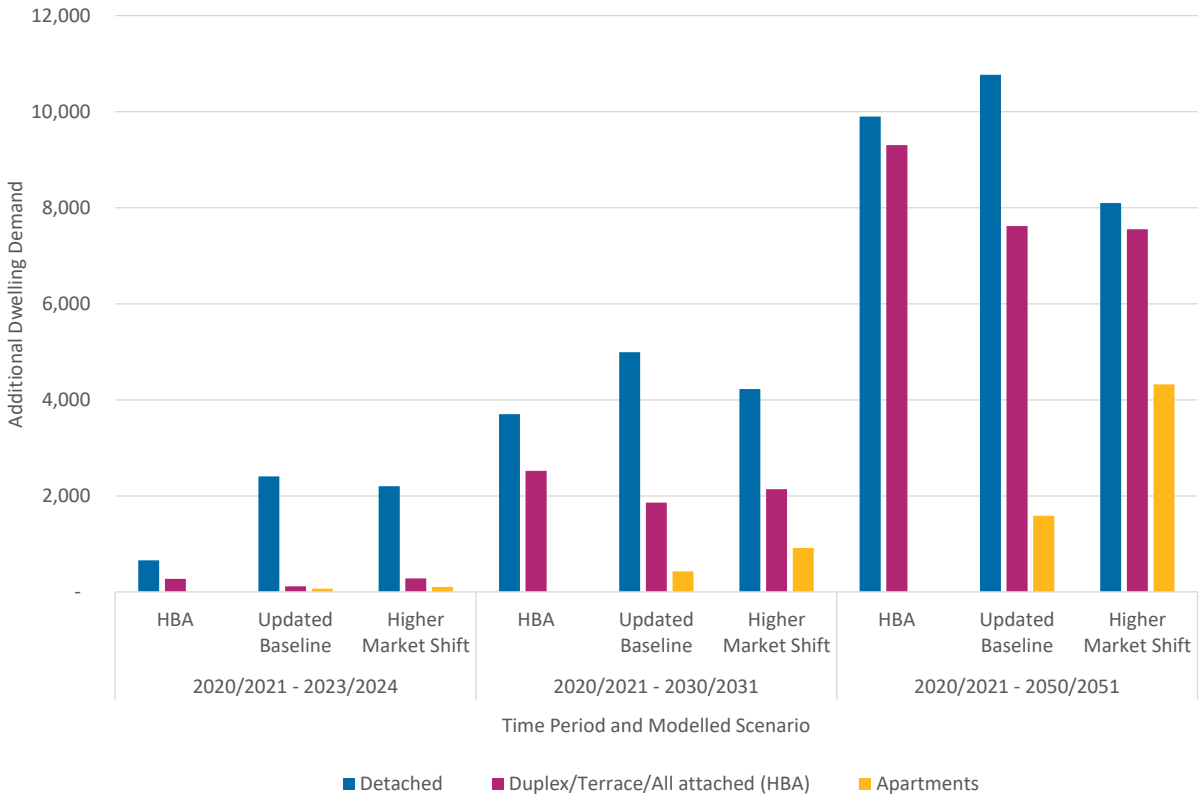
The total projected demand by dwelling type under each of the modelled scenarios is shown in Figure 2-1, and the net increase by typology within each time period, within Figure 2-2. These figures highlight the difference in the structure of demand by typology between each of the scenarios. The attached dwelling demand in the HBA scenario includes all attached dwellings (i.e. duplex, terraced housing, apartments, etc), and should be compared to the sum of the yellow and maroon sections of the other modelled scenarios where they have been further disaggregated. It is important to consider both the structure of demand growth (net changes) as well as the resulting effect on the distribution of demand across the total dwelling stock. The typology structure of new supply through time is likely to differ to that of the existing dwelling stock, driving more gradual overall changes in the total dwelling estate through time.

Figure 2-1: Projected Total Dwelling Demand by Typology and Modelled Scenario



Source: M.E Residential Intensification Analysis, 2022 and M.E QLD Residential Demand and Affordability Model, 2021.

Figure 2-2: Projected Net Change in Dwelling Demand by Typology and Modelled Scenario



Source: M.E Residential Intensification Analysis, 2022 and M.E QLD Residential Demand and Affordability Model, 2021.

The overall level of demand within the Updated Baseline and Higher Market Shift scenarios is equal, where both scenarios use the same total projection series (QLDC updated dwelling demand projections). The differences between the scenarios occur in relation to the distribution of demand by dwelling typology. The total demand under the HBA is lower due to a combination of the use of the previous projection series (current at the time of the HBA 2021) and a slight difference from the HBA reporting from one year prior to the updated modelling within each time period (e.g. 2020 vs. 2021).

All three scenarios show a gradual change in the structure of demand through time with an increase in the share of demand for attached dwellings. As discussed, this occurs as a function of changes in the underlying demographic structure of households together with modelled preference shifts. There is also some locational influence on the differences in the level of preference shift between the HBA and Updated Baseline scenarios where growth in the latter is more focused in lower density areas in the short to medium-term.

In the base year (2021), it is estimated that over four-fifths (83%-84%) of the dwelling demand is for detached dwellings. Over the short-term, both modelled scenarios using the updated projection series estimate that the large majority of additional demand (85% to 93%) will continue to be for detached dwellings and occur at a higher share than the existing share of detached dwellings within the current estate. This is largely due to the geographic distribution of growth in the short-term concentrated into areas of greenfield expansion, which are dominated by detached dwellings. In contrast, the HBA projection series estimates that the share of additional dwelling demand occurring as detached dwellings decreases

in the short-term (relative to the current base), where 71% of the additional demand is for detached dwellings.

The projected patterns of growth are similar during the medium-term between the HBA and Higher Market Shift scenarios. Under these scenarios, 41%-42% of the additional dwelling demand over this time period (2020/21 – 2030/31) is projected to occur as attached dwellings. This results in a projected shift in the total dwelling estate (current plus projected future demand) to have between one-fifth and one-quarter (22%-24%) of demand in attached dwellings (compared to 16%-17% of the current estate).

Smaller changes in growth patterns are projected to occur in the medium-term under the Updated Baseline scenario. Nearly one-third (31%) of additional demand is projected to occur as attached dwellings, increasing the total demand share of attached dwellings to 21%. The medium-term attached dwelling growth pattern demand differs between the Updated Baseline and Higher Market Shift scenarios. A higher share of this demand occurs as higher density attached dwellings (higher density terraced housing and apartments) in the Higher Market Shift scenario.

The Higher Market Shift scenario differs further to the other modelled scenarios during the long-term. Over this period (2021-2051), less than half (41%) of the additional dwelling demand, under this scenario, occurs as detached dwellings. This results in an estimated 61% of long-term demand for detached dwellings. In comparison, over half (52%-54%) of the long-term demand in the other modelled scenarios is for detached dwellings, resulting in over two-thirds (68%) of the total long-term demand (current base plus projected future demand) for detached dwellings.

The nature of long-term demand for attached dwellings differs between the Updated Baseline and Higher Market Shift modelled scenarios. A higher share of the latter is projected to occur as higher density terraced housing and apartment dwellings. These are projected to account for over one-fifth (22%) of the additional long-term demand under the Higher Market Shift scenario. In comparison, these account for 8% of the Updated Baseline additional long-term demand, with attached dwellings more generally focussed on lower to medium-density development such as duplex pairs, town houses, units and terraced houses.

The projected future patterns of demand are partly reflected in recent building consents. Although recent greenfield development has focused on detached dwellings, increasing shares of consents are for attached dwellings. Around half (46%-50%) of the recent dwelling consents have been for attached dwellings within the district, which is in line with the share of future additional dwelling demand where 46% to 59% is projected to occur as attached dwellings. The share is higher, at around three-quarters (69%-78%) within the core urban areas of Queenstown (Eastern/Frankton/Quail, Queenstown/Arthurs Point, and Kelvin Heights/Southern Corridor.

The share of actual recent consents as apartment dwellings is lower than the projected future demand estimated under the Higher Market Shift scenario at the district level. However, within the core central areas of Queenstown, the share of consents as apartments is substantially higher. The Higher Market Shift scenario projected future share of demand as apartments is consistent with the patterns of new dwelling consents in New Zealand's larger urban economies (e.g. Auckland, Wellington and Hamilton).

2.3.2 Spatial Distribution of Demand

This section shows the modelled dwelling demand disaggregated spatially across the seven catchment areas of urban dwelling demand described in Appendix 1, Table 0-1. Table 2-3 and Table 2-4 show the total dwelling demand by typology in each time period across the seven catchments under the Updated Baseline and Higher Market Substitution scenarios respectively. The net changes in dwelling demand from the base year across each typology and location are shown in Table 2-5 and Table 2-6 for each scenario.

Over half (61%) of the district's urban dwelling demand currently occurs within the urban areas of the Wakatipu Ward. Within the ward, it is concentrated into the main urban areas of Queenstown Central/Arthurs Point, the urban areas stretching eastward up through Frankton, Quail Rise and the Eastern Corridor (which combined, account for 42% of the district's current urban dwelling demand). A further 9% of the district's current urban demand base occurs within Kelvin Heights/Southern Corridor.

Around 39% of the current dwelling demand is located within the Wanaka Ward. Almost all of this occurs within the main urban area of Wanaka and the smaller urban settlement of Lake Hawea.

The structure of the current urban dwelling demand base differs by location across the district's urban areas. Higher shares of the dwelling demand in the central areas of Queenstown are in attached dwellings than in other locations, although detached dwellings still account for over three-quarters of the demand in this location. The Queenstown/Arthurs Point catchment area contains nearly one-third of the district's current demand for urban attached dwellings. This pattern of demand differs to the other main urban areas of the Wakatipu Ward. These areas have higher shares of detached dwellings than the district overall.

Over the long-term, there is a net increase in total dwelling demand projected for all of the district's urban catchment areas. The Southern Corridor area has the fastest projected urban growth over all three time-periods, containing one of the largest shares of projected total dwelling demand growth over the long-term according to council projections. The share of total demand in the Kelvin Heights/Southern Corridor catchment is projected to double, with the area projected to contain nearly one-fifth of the district's urban dwelling demand in the long-term. Based on current planning provision, much of this growth is likely to occur through urban greenfield expansion within the Southern Corridor area.

Faster demand growth is also projected to occur within the main eastern urban areas of the Wakatipu Ward. The share of demand in the Eastern/Frankton/Quail catchment is projected to increase from 18% to 20% in the long-term. Together with the Kelvin Heights/Southern Corridor catchment, these areas are projected to contain half (49%) of the district's long-term urban dwelling demand growth.

There is also a large projected total dwelling demand growth within the Wanaka/Lake Hawea catchment area. This is the district's largest projected net change in total dwelling demand (+7,100 dwellings over the long-term). It is projected to occur at a slower rate than Wakatipu Ward southern and eastern main urban areas, with a rate similar to that of the district's urban areas overall.

Dwelling demand within the central Queenstown/Arthurs Point catchment area is projected to grow at a slower rate than other urban areas of the district. It is projected to account for only 9% of long-term dwelling demand growth (+1,900 dwellings), despite containing around one-quarter of the district's current urban dwelling demand base. The share of urban demand within this area is consequently projected to decrease from 24% (in 2021) to 16% in the long-term.

There are projected changes to the dwelling typology structure of demand by location through time. Under both scenarios, there is a shift toward more attached dwellings, which occurs to a greater extent within the Higher Market Shift scenario as discussed above.

Changes to Dwelling Typology Structure of Demand: Updated Baseline Scenario

Under the Updated Baseline scenario, the Queenstown/Arthurs Point catchment is projected to continue to move toward a structure with higher shares of attached dwellings relative to other parts of the district. Over three-quarters of the projected long-term growth is in attached dwellings within this catchment.

The Kelvin Heights/Southern Corridor catchment area is still dominated by detached dwelling demand under the Updated Baseline Scenario. There are higher projected shares (67%) of long-term growth in detached dwellings than in other locations. There is some gradual shift toward attached dwellings in this catchment, albeit at a slower rate than other urban areas within the district.

The Wanaka/Hawea catchment is also projected to gradually shift toward a greater share of attached dwellings, but at a slightly slower rate than the district overall. Under this scenario, it ends up with 29% of long-term total demand for attached dwellings, compared to 32% for the district's urban areas overall.

The remainder of the district's urban catchment areas are projected to gradually shift toward a higher share of attached dwellings at a similar rate to the district overall under this scenario.

Changes to Dwelling Typology Structure of Demand: Higher Market Shift Scenario

There is an increased shift toward more attached dwelling demand under the Higher Market Shift Scenario. Over half (57%) of the long-term projected apartment dwelling growth is projected to occur across the main urban areas of Wakatipu Ward. These include the Queenstown/Arthurs Point, Eastern/Frankton/ Quail Rise, and Kelvin Heights/Southern Corridor catchments. Apartment demand within these locations is likely to occur broadly across this wider combined urban area with a level of flexibility for the market to meet the demand across a range of locations and typologies within this area. The nature of apartments are likely to differ across this area, ranging from higher density, vertically-attached apartments within central areas, to medium-density intensive terraced housing/3-level walk-up apartments across the areas more broadly. Within this, almost all of the Queenstown/Arthurs Point urban area long-term dwelling growth is projected to occur as attached dwellings.

The Wanaka/Lake Hawea catchment also has higher proportions of attached dwelling demand under this scenario. With a long-term projected net increase of 1,500 apartment dwellings (and total demand for 1,700 apartment dwellings), it has a large share of the district's long-term urban apartment dwelling demand.

The nature of apartment dwelling demand and patterns of supply are likely to differ between locations. Demand for apartment dwellings ranges from horizontally attached 2 to 3-level walk-up apartments in the form of more intensive terraced housing, up to higher density vertically-attached apartment buildings. Demand in more central locations, such as Queenstown central, is more likely to be met within the higher end of the apartment density spectrum, while patterns of demand in outer urban areas and Wanaka are more likely to contain a higher share of medium-density apartments.

Table 2-3: Modelled Total Demand by Dwelling Typology and Catchment: Updated Baseline Projections Scenario

Updated Baseline Projections Scenario								
	DWELLING TYPOLOGY							
	Detached	Duplex/ Terrace	Apartments	TOTAL	Detached	Duplex/ Terrace	Apartments	TOTAL
Catchment	**Projected Demand**				**Share of Demand Type**			
	2021				**2021**			
Arrowtown	1,200	200	40	**1,500**	8%	7%	7%	**7%**
Eastern/Frankton/Quail	2,900	500	100	**3,500**	18%	18%	18%	**18%**
Queenstown/Arthurs	3,600	900	200	**4,700**	22%	31%	31%	**24%**
Kelvin Heights/Southern Corridor	1,600	200	40	**1,900**	10%	7%	7%	**9%**
Wakatipu Small Township/Other	400	50	10	**400**	2%	2%	2%	**2%**
Wanaka/Hawea	6,300	1,000	200	**7,400**	38%	35%	35%	**38%**
Wanaka Small Township/Other	300	20	-	**300**	2%	1%	1%	**1%**
Total Urban Environment	**16,300**	**2,800**	**600**	**19,700**	**100%**	**100%**	**100%**	**100%**
	2024				**2024**			
Arrowtown	1,300	200	40	**1,500**	7%	6%	6%	**7%**
Eastern/Frankton/Quail	3,500	500	100	**4,100**	19%	18%	18%	**18%**
Queenstown/Arthurs	3,900	800	200	**4,900**	21%	28%	28%	**22%**
Kelvin Heights/Southern Corridor	2,200	300	60	**2,500**	12%	9%	9%	**11%**
Wakatipu Small Township/Other	400	70	10	**500**	2%	2%	2%	**2%**
Wanaka/Hawea	7,100	1,000	200	**8,400**	38%	35%	35%	**38%**
Wanaka Small Township/Other	300	20	10	**300**	2%	1%	1%	**2%**
Total Urban Environment	**18,700**	**3,000**	**700**	**22,300**	**100%**	**100%**	**100%**	**100%**
	2031				**2031**			
Arrowtown	1,200	300	60	**1,500**	6%	6%	6%	**6%**
Eastern/Frankton/Quail	4,000	900	200	**5,200**	19%	20%	20%	**19%**
Queenstown/Arthurs	3,900	1,200	300	**5,300**	18%	26%	26%	**20%**
Kelvin Heights/Southern Corridor	3,300	400	90	**3,800**	16%	8%	8%	**14%**
Wakatipu Small Township/Other	500	100	30	**700**	2%	3%	3%	**2%**
Wanaka/Hawea	8,000	1,700	400	**10,000**	38%	36%	36%	**37%**
Wanaka Small Township/Other	400	70	10	**500**	2%	1%	1%	**2%**
Total Urban Environment	**21,200**	**4,700**	**1,000**	**27,000**	**100%**	**100%**	**100%**	**100%**
	2051				**2051**			
Arrowtown	1,100	400	80	**1,500**	4%	4%	4%	**4%**
Eastern/Frankton/Quail	5,400	2,100	400	**8,000**	20%	20%	20%	**20%**
Queenstown/Arthurs	4,000	2,100	400	**6,500**	15%	20%	20%	**16%**
Kelvin Heights/Southern Corridor	5,200	1,700	300	**7,200**	19%	16%	16%	**18%**
Wakatipu Small Township/Other	700	300	70	**1,100**	3%	3%	3%	**3%**
Wanaka/Hawea	10,100	3,600	800	**14,500**	37%	35%	35%	**37%**
Wanaka Small Township/Other	600	200	40	**800**	2%	2%	2%	**2%**
Total Urban Environment	**27,000**	**10,500**	**2,200**	**39,700**	**100%**	**100%**	**100%**	**100%**

Source: M.E Residential Intensification Analysis, 2022 and M.E QLD Residential Demand and Affordability Model, 2021.

Table 2-4: Modelled Total Demand by Dwelling Typology and Catchment: Higher Market Shift Scenario

Higher Market Shift Scenario								
	DWELLING TYPOLOGY							
	Detached	Duplex/ Terrace	Apartments	TOTAL	Detached	Duplex/ Terrace	Apartments	TOTAL
Catchment	Projected Demand				Share of Demand Type			
	2021				2021			
Arrowtown	1,200	200	40	**1,500**	8%	7%	7%	**7%**
Eastern/Frankton/Quail	3,000	500	100	**3,500**	18%	18%	18%	**18%**
Queenstown/Arthurs	3,600	900	200	**4,700**	22%	31%	31%	**24%**
Kelvin Heights/Southern Corridor	1,600	200	40	**1,900**	10%	7%	7%	**9%**
Wakatipu Small Township/Other	400	50	10	**400**	2%	2%	2%	**2%**
Wanaka/Hawea	6,300	1,000	200	**7,400**	38%	35%	35%	**38%**
Wanaka Small Township/Other	300	20	-	**300**	2%	1%	1%	**1%**
Total Urban Environment	**16,400**	**2,800**	**600**	**19,700**	**100%**	**100%**	**100%**	**100%**
	2024				2024			
Arrowtown	1,300	200	40	**1,500**	7%	6%	6%	**7%**
Eastern/Frankton/Quail	3,400	600	100	**4,100**	19%	18%	18%	**18%**
Queenstown/Arthurs	3,900	900	200	**4,900**	21%	27%	27%	**22%**
Kelvin Heights/Southern Corridor	2,200	300	70	**2,500**	12%	10%	10%	**11%**
Wakatipu Small Township/Other	400	70	20	**500**	2%	2%	2%	**2%**
Wanaka/Hawea	7,000	1,100	200	**8,400**	38%	35%	35%	**38%**
Wanaka Small Township/Other	300	30	10	**300**	2%	1%	1%	**2%**
Total Urban Environment	**18,400**	**3,100**	**700**	**22,300**	**100%**	**100%**	**100%**	**100%**
	2031				2031			
Arrowtown	1,200	200	80	**1,500**	6%	5%	5%	**6%**
Eastern/Frankton/Quail	3,800	1,000	300	**5,200**	19%	20%	20%	**19%**
Queenstown/Arthurs	3,800	1,200	400	**5,400**	19%	24%	24%	**20%**
Kelvin Heights/Southern Corridor	3,100	500	200	**3,800**	15%	11%	11%	**14%**
Wakatipu Small Township/Other	500	100	40	**700**	2%	3%	3%	**2%**
Wanaka/Hawea	7,600	1,800	500	**10,000**	38%	36%	36%	**37%**
Wanaka Small Township/Other	400	80	20	**500**	2%	2%	2%	**2%**
Total Urban Environment	**20,300**	**5,000**	**1,500**	**27,000**	**100%**	**100%**	**100%**	**100%**
	2051				2051			
Arrowtown	1,000	300	200	**1,500**	4%	3%	3%	**4%**
Eastern/Frankton/Quail	4,800	2,200	1,000	**8,000**	20%	21%	21%	**20%**
Queenstown/Arthurs	3,800	1,800	900	**6,600**	16%	18%	18%	**17%**
Kelvin Heights/Southern Corridor	4,400	1,900	900	**7,200**	18%	18%	18%	**18%**
Wakatipu Small Township/Other	600	300	200	**1,100**	3%	3%	3%	**3%**
Wanaka/Hawea	9,000	3,700	1,700	**14,500**	37%	35%	35%	**37%**
Wanaka Small Township/Other	500	200	100	**800**	2%	2%	2%	**2%**
Total Urban Environment	**24,100**	**10,400**	**4,900**	**39,700**	**100%**	**100%**	**100%**	**100%**

Source: M.E Residential Intensification Analysis, 2022 and M.E QLD Residential Demand and Affordability Model, 2021.

Table 2-5: Projected Net Change in Demand by Typology and Catchment: Updated Baseline Projection Scenario

Updated Baseline Projections Scenario								
	DWELLING TYPOLOGY							
	Detached	Duplex/ Terrace	Apartments	TOTAL	Detached	Duplex/ Terrace	Apartments	TOTAL
Catchment	**Projected Demand**				**Share of Demand Type**			
	2021-2024				**2021**			
Arrowtown	30	-20	0	**10**	1%	-16%	-2%	**0%**
Eastern/Frankton/Quail	500	30	10	**600**	22%	27%	21%	**22%**
Queenstown/Arthurs	300	-50	0	**200**	12%	-45%	1%	**9%**
Kelvin Heights/Southern Corridor	600	70	20	**700**	25%	58%	27%	**27%**
Wakatipu Small Township/Other	70	20	0	**90**	3%	14%	7%	**3%**
Wanaka/Hawea	800	60	30	**900**	34%	55%	43%	**36%**
Wanaka Small Township/Other	70	10	0	**70**	3%	6%	3%	**3%**
Total Urban Environment	**2,400**	**100**	**70**	**2,600**	**100%**	**100%**	**100%**	**100%**
	2021-2031				**2024**			
Arrowtown	-60	70	20	**20**	-1%	4%	4%	**0%**
Eastern/Frankton/Quail	1,100	400	100	**1,600**	22%	24%	23%	**22%**
Queenstown/Arthurs	200	300	80	**700**	5%	18%	19%	**9%**
Kelvin Heights/Southern Corridor	1,700	200	40	**2,000**	35%	10%	10%	**27%**
Wakatipu Small Township/Other	100	80	20	**200**	3%	4%	4%	**3%**
Wanaka/Hawea	1,700	700	200	**2,600**	34%	38%	38%	**35%**
Wanaka Small Township/Other	100	50	10	**200**	3%	3%	3%	**3%**
Total Urban Environment	**5,000**	**1,900**	**400**	**7,300**	**100%**	**100%**	**100%**	**100%**
	2021-2051				**2031**			
Arrowtown	-200	200	40	**60**	-2%	3%	3%	**0%**
Eastern/Frankton/Quail	2,500	1,600	300	**4,400**	23%	21%	21%	**22%**
Queenstown/Arthurs	400	1,200	200	**1,900**	4%	16%	16%	**9%**
Kelvin Heights/Southern Corridor	3,600	1,500	300	**5,300**	33%	19%	19%	**27%**
Wakatipu Small Township/Other	300	300	60	**700**	3%	4%	4%	**3%**
Wanaka/Hawea	3,900	2,700	600	**7,100**	36%	35%	35%	**35%**
Wanaka Small Township/Other	300	200	40	**600**	3%	2%	2%	**3%**
Total Urban Environment	**10,800**	**7,600**	**1,600**	**20,000**	**100%**	**100%**	**100%**	**100%**

Source: M.E Residential Intensification Analysis, 2022 and M.E QLD Residential Demand and Affordability Model, 2021.

Table 2-6: Projected Net Change in Demand by Typology and Catchment: Higher Market Shift Scenario

Higher Market Shift Scenario								
	DWELLING TYPOLOGY							
	Detached	Duplex/ Terrace	Apartments	TOTAL	Detached	Duplex/ Terrace	Apartments	TOTAL
Catchment	**Projected Demand**				**Share of Demand Type**			
	2021-2024				**2021**			
Arrowtown	10	-10	0	**10**	0%	-5%	0%	**0%**
Eastern/Frankton/Quail	500	70	20	**600**	22%	24%	21%	**22%**
Queenstown/Arthurs	200	-30	10	**200**	10%	-10%	6%	**9%**
Kelvin Heights/Southern Corridor	500	100	30	**700**	27%	37%	25%	**27%**
Wakatipu Small Township/Other	60	20	10	**90**	3%	7%	5%	**3%**
Wanaka/Hawea	700	100	40	**900**	34%	43%	40%	**35%**
Wanaka Small Township/Other	60	10	0	**70**	3%	4%	3%	**3%**
Total Urban Environment	**2,000**	**300**	**100**	**2,600**	**100%**	**100%**	**100%**	**100%**
	2021-2031				**2024**			
Arrowtown	-80	50	30	**20**	-2%	2%	4%	**0%**
Eastern/Frankton/Quail	900	500	200	**1,600**	22%	23%	22%	**22%**
Queenstown/Arthurs	100	300	200	**700**	3%	14%	19%	**9%**
Kelvin Heights/Southern Corridor	1,500	300	100	**1,900**	37%	16%	13%	**27%**
Wakatipu Small Township/Other	100	90	30	**200**	3%	4%	3%	**3%**
Wanaka/Hawea	1,300	800	300	**2,600**	34%	38%	37%	**35%**
Wanaka Small Township/Other	100	60	20	**200**	3%	3%	2%	**3%**
Total Urban Environment	**3,900**	**2,100**	**900**	**7,300**	**100%**	**100%**	**100%**	**100%**
	2021-2051				**2031**			
Arrowtown	-200	100	100	**60**	-3%	2%	3%	**0%**
Eastern/Frankton/Quail	1,800	1,600	900	**4,400**	23%	22%	21%	**22%**
Queenstown/Arthurs	100	1,000	700	**1,900**	2%	13%	16%	**9%**
Kelvin Heights/Southern Corridor	2,700	1,700	800	**5,300**	36%	22%	20%	**27%**
Wakatipu Small Township/Other	200	300	100	**700**	3%	4%	3%	**3%**
Wanaka/Hawea	2,700	2,700	1,500	**7,100**	35%	35%	35%	**35%**
Wanaka Small Township/Other	300	200	100	**600**	3%	3%	2%	**3%**
Total Urban Environment	**7,700**	**7,600**	**4,300**	**20,000**	**100%**	**100%**	**100%**	**100%**

Source: M.E Residential Intensification Analysis, 2022 and M.E QLD Residential Demand and Affordability Model, 2021.

3 Residential Capacity Modelling Approach

M.E have modelled the residential dwelling capacity enabled by the proposed intensification options within QLD. The assessment firstly calculates the total capacity enabled under the proposed zoning extents and planning provisions (plan enabled capacity) and then estimates the plan enabled dwelling construction options that are likely to represent feasible development options for commercial developers (commercially feasible capacity). The modelling extends upon that undertaken for the HBA 2021 to reflect the changes in the nature and location of enabled dwellings as well as changes within the local market. This section provides an overview of the further modelling approach development since the HBA 2021.

3.1 Introduction and Structure

QLDCs proposed intensification options increase the level of development that is provided for within the district's urban areas. In many locations, the provisions enable a substantial increase in the level of development relative to the existing enabled baseline level of development. This occurs through both an increase in the yields enabled within each parcel as well as the physical extent of the development which can occur. In some areas, this reflects a substantially different level and type of development to that of historical development patterns.

This section firstly (Section 3.2) outlines the modelled planning options (Options 1 to 6) that were provided to M.E for evaluation.[6] These form the basis for the comparison of changes in capacity to that of the existing baseline provisions. The next part (Section 3.3) then outlines the main modelled *extensions* and *changes* that have been undertaken from the HBA 2021 to ensure that the shift in potential dwelling development patterns is appropriately captured (as well as any other changes in assumptions that were considered appropriate). The HBA 2021 contains the technical documentation for the base capacity modelling approach and is not repeated here. The final part of this section explains the structure of the outputs, with Appendix 2 setting out the key changes since the HBA 2021 modelling. The results of the capacity modelling are then contained within the following report sections (4 and 5).

3.2 Modelled Intensification Options

There are 6 different modelled options of intensification that have been developed by QLDC and Barker & Associates (B&A). These broadly include different stages of intensification of nodes, corridors and the general suburban area. The total residential dwelling capacity is calculated under each of the proposed options as well as the estimated increase in capacity from the existing baseline planning provisions.

[6] Any changes or modifications to these original options will not be captured in this report and may warrant further evaluation using the models developed for this report.

The planning provisions that define the modelled options occur through a combination of changes to the base zoning and spatial extent of zones as well as changes to the provisions within the zones. The zoning information has been supplied as GIS shapefiles by QLDC. The PDP Decisions Version zones forms the base layer, with further GIS files identifying any changes to the zones or their spatial extent from this base layer. The proposed provisions have been supplied by QLDC in the document of Section 32 Draft Options[7].

The modelled scenarios are set out below:

- **Baseline Capacity:** The baseline capacity is the existing baseline from which changes in capacity from the proposed provisions are measured. It uses the PDP Decisions Versions zoning (as supplied by QLDC) and applies the existing planning provisions within these zoned areas.
- **Option 1 (Change zoning around commercial nodes and make the associated provisions more enabling):** This option generally strengthens key nodes within the district's urban areas by increasing the densities enabled within commercial zones and upzoning the residential areas surrounding the key nodes within the district. It also increases the density provisions within the High Density Residential (HDR), Medium Density Residential (MDR) and Arrowtown Residential Historic Management (ARHM) zones from the baseline provisions. It is noted that there is some downzoning of the existing HDR Zone within Wanaka. This option does not include provision for Comprehensive Residential Developments (CRDs) within the Lower Density Suburban Residential (LDSR) zone.
- **Option 2 (Change zoning around commercial nodes and corridors and make the associated provisions more enabling):** This option generally strengthens the key nodes and corridors within the district's urban areas. This is also achieved through increasing the densities enabled within the commercial zones and upzoning the residential areas surrounding both key nodes and corridors within the district. It also increases the density provisions within the HDR, MDR and ARHM zones from the baseline provisions. As above, this option also removes the provision for CRDs within the LDSR zone.
- **Option 3 (Option 1 + changes to the standards in the LDSR Zone relating to building heights, average site area, and minimum lot area (subdivision chapter)):** This option generally strengthens nodes within the district's urban areas, as well as applies some intensification within the general suburban areas (LDSR Zone). It uses the same planning inputs as Option 1, with the exception of the LDSR Zone. The intensification applied within this zone occurs through the increased building height allowances on sites.
- **Option 4 (Option 2 + changes to the standards in the LDSR Zone relating to building heights, average site area, and minimum lot area (subdivision chapter)):** This option generally strengthens nodes and corridors within the district's urban areas, as well as applies some intensification within the general suburban areas (LDSR Zone). It uses the same planning inputs as Option 2, with the exception of the LDSR Zone. The intensification applied within this zone occurs through the increased building height allowances on sites.

[7] The M.E modelling applies the provisions contained within the Draft Options document, supplied 2 December 2022 (draft 4), although one later amendment to maximum building heights in the Wanaka Town Centre was able to be captured in time for modelling for this report.

- **Option 5 (Option 2 + apply the Government's Medium Density Residential Standards to the land zoned LDR and MDR):** This option generally increases the densities enabled within nodes within the district's urban areas as well as across the general suburban areas. Intensification within the nodes occurs in the same way as Options 1 and 3. Intensification within the general suburban areas occurs through changing the LDSR Zone to MDR Zone. It then applies the central government Medium Density Residential Standards (MDRS) for tier-1 councils to the MDR Zone.
- **Option 6 (Option 2 + apply a modified approach to the Medium Density Residential Standards to the land zoned LDSR and MDR):** This option generally increases the densities enabled within nodes within the district's urban areas as well as across the general suburban areas. Intensification within the nodes occurs in the same way as Options 1 and 3. Intensification within the general suburban areas occurs through changing the LDSR Zone to MDR Zone. It then applies the QLDC proposed provisions within the MDR Zone. The key difference to the MDRS is that the QLDC MDR provisions include a maximum density control of 150m^2 per dwelling.

Reporting of Options 3 and 4

We have examined the changed LDSR zone provisions within Options 3 and 4 but find that these do not affect modelled capacity. These relate to the increased height allowances and change in consenting requirements to develop at the land use consent pathway density (i.e., density of 1 in 300m^2).

We note that increased height allowances within the zone will increase the flexibility for developers, but consider that this is unlikely to affect the number of dwellings that could be constructed on each site as dwellings can already be constructed within the existing height allowances at these densities. The land area required per dwelling instead forms the key factor in determining the number of dwellings able to be constructed, which is not altered by the additional height allowance at these densities.

In addition, we note that Options 3 and 4 remove the requirement for a land use consent to develop at densities up to one dwelling per 300m^2 of land area. As agreed with QLDC, this density is already reflected within the baseline modelling assumptions for the LDSR Zone within Options 1 and 2. As such, while this change in requirements may increase the ease of the development pathway, it does not affect M.E's modelled capacity.

As a result, the modelled capacity under Options 3 and 4 is the same as that modelled under Options 1 and 2 respectively. Consequently, we do not report on capacity for Options 3 and 4 in remaining report sections.

The following section outlines the main modelling extensions and changes that have been applied within the current modelling of the proposed intensification provisions. It also includes the key modelling assumptions.

3.3 Structure of Capacity Outputs

3.3.1 Output Capacity Measure

The modelled capacity is expressed as the net additional dwellings that can be accommodated within each zone and location across the district's urban areas. These are potential net additional dwellings to the existing dwelling stock.

3.3.2 Types of Capacity

The modelling first calculates the net additional dwellings theoretically enabled under the planning provisions ("plan enabled capacity"). It then estimates which outputs of the plan enabled capacity would represent potentially commercially feasible development options for a commercial developer ("commercially feasible capacity").

The commercially feasible capacity shows the potential range of development options that may represent feasible options if they were available to the market. It is important not to confuse the commercially feasible results with growth (i.e. difference between capacity vs. growth). They show the range of opportunity available, with a portion of these likely to be taken up that is more in line with the level of demand within the district.

The model operates at the parcel level, calculating the different potential dwelling yields across a range of development options. Both plan enabled and commercially feasible capacity are calculated at the parcel level, meaning that both assessments reflect the individual parcel attributes and individually test each option. The results are then aggregated up to the reporting areas.

3.3.3 Spatial Structure of Outputs and Development Pathways

The modelling calculates the capacity across both the existing urban areas and greenfield areas of future urban expansion. The existing urban areas are those areas that are already urbanised that fall within the spatial extent of the existing urban edge. Greenfield areas are areas zoned for future urban expansion that are not yet urbanised.

The analysis excludes the capacity on greenfield area Special Zones as these have always been reported separately by QLDC for the HBAs based on developer information and structure plans.

There are two modelled development pathways within the existing urban area – both of which are modelled and reported:

- Infill capacity refers to the number of additional dwellings that can be constructed within the existing urban area without the removal or demolition of any existing dwellings. It typically involves the construction of additional dwellings on the vacant areas of parcels (e.g. constructing an additional dwelling in a large back or front yard area of an already developed property parcel).
- Redevelopment capacity refers to the number of additional dwellings that can be constructed within the existing urban area through the redevelopment of sites. It involves the demolition or removal of existing dwellings on a site and the subsequent construction of a greater number of dwellings on the same site.[8]

3.3.4 Modelled Dwelling Typologies

A range of dwelling typologies have been modelled on each parcel within each of the above development pathways. Different typology categories are also included within the modelling undertaken for the HBA

[8] Replacing a small standalone dwelling with a larger new standalone dwelling does not result in a net increase in dwellings on the parcel.

2021 but have been applied in different locations and zones. They have also been substantially recalibrated to reflect the changes in the nature of dwellings with the intensification provisions.

The following lists the dwelling typologies modelled and describes any difference in their application, within each zone, to the HBA 2021. It also describes the nature of the dwellings constructed within each category, as this may differ substantially to the characteristics of each typology under lower density provisions:

- Detached dwellings: These range from smaller two-storey detached dwellings on smaller sites (at a minimum, around 200m^2) up to larger single level detached dwellings on general suburban scale sites.
- Attached dwellings: These include a range of different dwelling typologies. They range from single level attached units up to higher density, horizontally-attached terraced houses. Dwellings within the higher density range can include two to three-level walk up terraced houses/apartments.
- Terraced housing: These are higher density horizontally attached dwellings and are included as a separate dwelling typology to reflect either the upper end of the horizontally-attached typologies, or more intensive terraced housing if enabled under the zone. They are generally higher density horizontally attached dwellings that are two to three-level walk up terraced houses/apartments. In some zones, the modelling applies higher density assumptions to these dwellings than the attached dwellings category.
- Vertical apartments: These include vertically attached apartment dwellings in buildings that are up to the maximum height enabled within the zone. These dwellings are modelled within the commercial zones that allow for residential uses and within the HDR Zone.

The capacity results also include maximums (across the four modelled typologies) of each of infill and redevelopment capacity within the existing urban area. A maximum combination total is also included within the greenfield areas of the existing urban area.[9] Here, the model returns the greatest yield for each parcel out of the infill and redevelopment capacity options. Under the plan enabled capacity, the maximum redevelopment option will almost always represent the greatest yield. However, under the commercially feasible capacity often only a subset of the development options will be feasible (e.g. infill detached dwellings). This means that the model selects the highest yield from this subset (i.e. feasible dwellings), often resulting in smaller feasible maximums on a parcel than plan enabled maximums.

Each of the modelling dwelling typologies have different site size requirements. They also have different relationships between dwelling size and land area, where smaller sites can generally be developed more efficiently with attached dwellings (than detached dwellings).

3.3.5 Key Changes to HBA 2021 Modelling

Further detail is provided in Appendix 2 on the key changes that have occurred since the QLD HBA 2021 capacity modelling. This is important context for comparing the baseline capacity adopted in this report, with previously reporting residential capacity.

[9] But excluding the Special Zones.

4 Plan Enabled Residential Dwelling Capacity

This section contains our assessment of the residential dwelling capacity enabled by QLDC's proposed planning provisions (focussing on Options 1-2 and 5-6) across the existing and planned future urban environment (excluding Special Zones). It calculates the capacity for additional residential development enabled by the proposed provisions. These do not take into account the commercial feasibility of constructing the capacity (which is instead is addressed in Section 5) or the infrastructure constraints to development.

4.1 Introduction

The following sub-sections contain the results of plan enabled capacity under each of the modelled options.[10] As set out in Section 3, the calculations are undertaken at a parcel level and then aggregated to the same reporting areas used within the HBA 2021 and, separately, by zone.

The capacity results are net additional dwellings where the existing dwellings have been removed from the calculated gross yields on each parcel. The tables within the following sub-sections show the net additional dwellings in accordance with the capacity structure outlined in Section 3.

The first portion of the table shows the modelled capacity within each typology for infill development, including a maximum yield across the four typologies[11]. The middle section contains the redevelopment capacity across the four dwelling options, including maximums for redevelopment as well as redevelopment and infill options combined. The remainder of the table shows the greenfield capacity (non-Special Zones) in this structure.

Importantly, the columns within the table are not additive. The maximum columns show the maximum yield combinations within each development pathway (infill, redevelopment or greenfield), as well as the final column containing the total across the greenfield and existing urban areas.

The section firstly reports the plan enabled capacity within each modelled option individually. The capacity enabled is then summarised across the options in the final sub-section.

[10] But excluding options 3 and 4, which for the purpose of M.E's modelling, produce the same results as options 1 and 2.

[11] The maximum yield has been calculated at the parcel level and then aggregated to each location within the table. This means that the maximums within the commercially feasible tables will in most cases not align with the largest column value by typology. This is because some parcels may have feasible development options across higher density dwelling options, while others may only have feasible capacity for lower yield options. Therefore, the aggregation of feasible yields at the parcel level is a combination of some development within higher density typologies, and others at lower density typologies.

4.2 Plan Enabled Residential Capacity: Baseline

The plan enabled capacity under the baseline scenario is shown by location in Table 4-1 and by zone in Table 4-2.

In total, there is an existing baseline capacity for an additional 59,500 dwellings within Queenstown's current and planned future urban areas. This excludes further capacity occurring within the greenfield special zone area. This additional capacity amounts to around three times the size of the existing dwelling base, meaning that the urban area could theoretically accommodate over four times the size of the existing dwelling base if it were completely redeveloped to the highest intensity.

Around three-quarters of the modelled capacity occurs within the existing urban area (43,800 dwellings), although this share is lower if the Special Zones greenfield capacity is included. The Queenstown Town Centre reporting area (as distinct from the zone[12]) accounts for nearly half of the existing urban capacity, with the next largest share occurring within the Wanaka Town Centre reporting area (28%).

The structure of enabled capacity within these two largest locations differs substantially. It is dominated by apartments within Queenstown Town Centre, with a larger focus on lower to medium-density typologies (detached and attached) within Wanaka Town Centre reporting area.

The location and nature of greenfield area capacity differs to that of the existing urban area. The largest areas of plan enabled capacity include Quail Rise, Wanaka Town Centre, Kelvin Heights and Queenstown Town Centre reporting areas. With the exception of Quail Rise and Queenstown Town Centre areas, capacity in these locations is more focussed on lower to medium density development. This reflects the zone structure and existing development patterns of these locations.

Capacity under the baseline scenario is concentrated into the LDSR and HDR zones. Together these zones account for nearly three-quarters of the plan enabled capacity.

The LDSR zone accounts for a larger proportion of the capacity within the existing urban area and greenfield areas and is dominated by detached or attached dwellings. In contrast, the HDR zone capacity is concentrated in the existing urban area, with a greater focus on apartment dwellings.

[12] Maps are provided in the HBA 2021 that show reporting area boundaries.

Table 4-1: Plan Enabled Capacity by Location in QLD Urban Area: Baseline Scenario

	INFILL					REDEVELOPMENT						GREENFIELD[2]					
Reporting Area	Detached	Attached[1]	Terraced	Vertical Apartments	Max Infill	Detached	Attached[1]	Terraced	Vertical Apartments	Max Redevelopment	Max Infill or Redevelopment	Detached	Attached[1]	Terraced	Vertical Apartments	Max Greenfield	Greenfield Max and Infill or Redevelopment
Arrowtown	200	200	20	-	200	1,000	1,000	300	-	1,000	1,000	100	100	-	-	100	1,100
Arthurs Point	400	500	200	700	1,000	1,100	1,200	400	1,400	2,300	2,300	600	600	200	-	600	2,900
Eastern Corridor	400	400	20	-	400	1,400	1,400	30	-	1,400	1,400	400	300	50	-	400	1,800
Frankton	200	200	-	60	200	900	900	-	200	1,000	1,000	100	100	-	-	100	1,100
Kelvin Heights	400	500	200	400	700	1,200	1,300	300	600	1,600	1,600	2,500	2,500	80	50	2,600	4,100
Outer Wakatipu	-	-	-	-	-	30	50	50	200	200	200	10	-	-	-	10	200
Quail Rise	20	20	-	-	20	30	30	-	-	30	30	400	700	700	4,600	4,700	4,700
Queenstown Town Centre	1,900	2,200	1,300	5,100	6,400	4,400	5,300	3,500	19,000	21,600	21,600	1,200	1,200	500	1,000	2,000	23,600
Small Township - Wakatipu	-	-	-	-	-	200	-	-	-	200	200	100	-	-	-	100	400
Southern Corridor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wakatipu Ward Sub-Total	3,500	3,900	1,700	6,300	8,900	10,300	11,200	4,500	21,400	29,400	29,400	5,400	5,500	1,600	5,600	10,600	40,000
Cardrona	50	-	-	-	50	60	-	-	-	60	60	100	-	-	-	100	200
Lake Hawea	600	600	-	20	600	1,800	1,800	-	40	1,800	1,800	1,300	1,200	-	-	1,300	3,100
Luggate	100	90	-	-	100	200	90	-	-	200	200	400	400	-	-	400	600
Outer Wanaka	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wanaka Town Centre	3,700	3,300	500	600	4,100	11,000	10,300	1,400	1,600	12,400	12,400	3,200	3,000	200	80	3,300	15,600
Wanaka Ward Sub-Total	4,400	4,000	500	600	4,900	13,000	12,200	1,400	1,600	14,400	14,400	5,000	4,600	200	80	5,100	19,500
Total Urban Environment	**7,900**	**7,900**	**2,200**	**6,900**	**13,800**	**23,300**	**23,300**	**6,000**	**23,000**	**43,800**	**43,800**	**10,400**	**10,100**	**1,800**	**5,700**	**15,700**	**59,500**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] Dwellings within this category are horizontally attached and occur at low to medium densities, dependant upon the zone. They range from single-level pairs of attached units up to terraced housing. Terraced housing has also been provided as a category to demonstrate either the upper end of the horizontally-attached typologies, or more intensive terraced housing if enabled under the zone.

[2] Greenfield capacity does not include dwellings within Special Zones, which are reported separately largely based on structure planning or other developer information.

Table 4-2: Plan Enabled Capacity by Zone in QLD Urban Area: Baseline Scenario

	INFILL					REDEVELOPMENT						GREENFIELD[2]					
Zone	Detached	Attached[1]	Terraced	Vertical Apartments	Max Infill	Detached	Attached[1]	Terraced	Vertical Apartments	Max Redevelopment	Max Infill or Redevelopment	Detached	Attached[1]	Terraced	Vertical Apartments	Max Greenfield	Greenfield Max and Infill or Redevelopment
High Density Residential	1,000	1,500	1,500	5,200	5,200	2,200	3,500	3,500	15,300	15,300	15,300	400	700	700	2,800	2,800	18,100
HDR Subzone A	-	-	-	10	10	40	40	40	300	300	300	-	-	-	-	-	300
HDR Subzone B	60	60	60	400	400	300	300	300	2,400	2,400	2,400	70	70	70	400	400	2,800
Medium Density Residential	700	700	700	-	700	1,900	1,900	1,900	-	1,900	1,900	1,000	1,000	1,000	-	1,000	2,800
Medium Density Residential-Arrowtown	20	20	20	-	20	300	300	300	-	300	300	-	-	-	-	-	300
Lower Density Suburban Residential	5,700	5,700	-	-	5,700	17,400	17,400	-	-	17,400	17,400	8,300	8,300	-	-	8,300	25,700
Arrowtown Residential Historic Management	10	10	-	-	10	30	30	-	-	30	30	-	-	-	-	-	30
Settlements	70	-	-	-	70	400	-	-	-	400	400	300	-	-	-	300	700
Large Lot Residential A	400	-	-	-	400	800	-	-	-	800	800	400	-	-	-	400	1,100
Large Lot Residential B	40	-	-	-	40	60	-	-	-	60	60	-	-	-	-	-	60
Queenstown Town Centre	-	-	-	200	200	-	-	-	1,500	1,500	1,500	-	-	-	-	-	1,500
Wanaka Town Centre	-	-	-	10	10	-	-	-	200	200	200	-	-	-	-	-	200
Arrowtown Town Centre	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Local Shopping Centre	-	-	-	70	70	-	-	-	200	200	200	-	-	-	100	100	300
Business Mixed Use	-	-	-	1,000	1,000	-	-	-	3,200	3,200	3,200	-	-	-	2,400	2,400	5,600
TOTAL	**7,900**	**7,900**	**2,200**	**6,900**	**13,800**	**23,300**	**23,300**	**6,000**	**23,000**	**43,800**	**43,800**	**10,400**	**10,100**	**1,800**	**5,700**	**15,700**	**59,500**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] Dwellings within this category are horizontally attached and occur at low to medium densities, dependant upon the zone. They range from single-level pairs of attached units up to terraced housing. Terraced housing has also been provided as a category to demonstrate either the upper end of the horizontally-attached typologies, or more intensive terraced housing if enabled under the zone.

[2] Greenfield capacity does not include dwellings within Special Zones, which are reported separately largely based on structure planning or other developer information.

4.3 Plan Enabled Residential Capacity: Option 1

The plan enabled capacity under proposed Option 1 is shown by location in Table 4-3 and by zone in Table 4-4. This modelled option intensifies the enabled capacity within nodes within the existing urban area.

The proposed provisions increase the plan enabled capacity by 14% from that modelled under the existing baseline provisions to reach a total capacity for an additional 37,700 dwellings. The largest net increases occur within the existing urban area, where capacity is increased by around 18%. There is little change within the greenfield areas.

The largest increases in capacity occur within the medium density typologies of attached and terraced housing, with some increase also occurring within the vertically-attached apartments as well as detached dwellings. The increase in detached dwelling capacity is likely to occur through growth in the number of smaller detached dwellings within the upzoned areas, which differs substantially to the past lower density patterns of detached dwelling development across parts of the suburban area. The largest increases as medium to higher density development reflect the more intensive provisions of the residential upzoned areas than their existing baseline zone.

The largest areas of capacity increase (from the baseline scenario) occur within the Queenstown Town Centre and Wanaka Town Centre reporting areas. The increase in the nodes within these areas increases their share of capacity within the district's urban environment to account for just over two-thirds of the plan enabled capacity. The MDR Zone has the largest increase in capacity from the baseline scenario, accounting for around three-quarters of the capacity increase. The next largest increases occur within the Wanaka Town Centre reporting area, and HDR zones, although part of the HDR increase is offset by an area of downzoning to MDR Zone (with a proposed density of 1 in 150m^2) within Wanaka under this Option.

The share of total capacity within the higher intensity zones (HDR and MDR) increases under this scenario, with corresponding decreases in the share of capacity within the LDSR Zone.

Table 4-3: Plan Enabled Capacity by Location in QLD Urban Area: Option 1

Reporting Area	INFILL					REDEVELOPMENT						GREENFIELD[2]					
	Detached	Attached[1]	Terraced	Vertical Apartments	Max Infill	Detached	Attached[1]	Terraced	Vertical Apartments	Max Redevelopment	Max Infill or Redevelopment	Detached	Attached[1]	Terraced	Vertical Apartments	Max Greenfield	Greenfield Max and Infill or Redevelopment
Arrowtown	200	200	30	-	200	1,100	1,500	700	10	1,500	1,500	100	100	-	-	100	1,600
Arthurs Point	400	500	200	-	500	1,100	1,200	300	20	1,200	1,200	600	600	-	-	600	1,800
Eastern Corridor	400	400	30	-	400	1,400	1,400	50	-	1,400	1,400	400	300	50	-	400	1,800
Frankton	200	200	100	200	400	1,000	1,200	500	500	1,700	1,700	100	100	10	-	100	1,900
Kelvin Heights	400	500	200	-	500	1,200	1,300	300	-	1,300	1,300	2,500	2,500	100	100	2,600	3,900
Outer Wakatipu	-	-	-	-	-	40	50	50	-	50	50	10	-	-	-	10	60
Quail Rise	20	20	-	-	20	30	30	-	-	30	30	500	700	900	5,200	5,300	5,300
Queenstown Town Centre	2,100	2,600	2,200	4,800	6,700	5,100	7,100	7,300	21,800	26,100	26,200	1,200	1,200	400	1,200	2,200	28,400
Small Township - Wakatipu	-	-	-	-	-	200	-	-	-	200	200	100	-	-	-	100	400
Southern Corridor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3,700	4,400	2,700	5,000	8,700	11,300	13,700	9,100	22,400	33,600	33,600	5,500	5,600	1,500	6,500	11,500	45,100
Cardrona	50	-	-	-	50	60	-	-	-	60	60	100	-	-	-	100	200
Lake Hawea	600	600	-	40	600	1,800	1,800	-	80	1,900	1,900	1,300	1,200	-	-	1,300	3,100
Luggate	100	90	-	-	100	200	90	-	-	200	200	400	400	-	-	400	600
Outer Wanaka	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wanaka Town Centre	3,900	3,800	1,200	700	4,900	12,100	12,500	4,000	2,000	15,300	15,300	3,200	3,000	50	200	3,300	18,600
	4,700	4,500	1,200	700	5,700	14,100	14,400	4,000	2,000	17,400	17,400	5,000	4,600	50	200	5,100	22,500
	8,400	**8,900**	**3,900**	**5,800**	**14,500**	**25,400**	**28,100**	**13,200**	**24,400**	**50,900**	**51,000**	**10,500**	**10,100**	**1,600**	**6,600**	**16,600**	**67,700**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] Dwellings within this category are horizontally attached and occur at low to medium densities, dependant upon the zone. They range from single-level pairs of attached units up to terraced housing. Terraced housing has also been provided as a category to demonstrate either the upper end of the horizontally-attached typologies, or more intensive terraced housing if enabled under the zone.

[2] Greenfield capacity does not include dwellings within Special Zones, which are reported separately largely based on structure planning or other developer information.

Table 4-4: Plan Enabled Capacity by Zone in QLD Urban Area: Option 1

	INFILL					REDEVELOPMENT						GREENFIELD[2]					
Zone	Detached	Attached[1]	Terraced	Vertical Apartments	Max Infill	Detached	Attached[1]	Terraced	Vertical Apartments	Max Redevelopment	Max Infill or Redevelopment	Detached	Attached[1]	Terraced	Vertical Apartments	Max Greenfield	Greenfield Max and Infill or Redevelopment
High Density Residential	400	600	900	3,500	3,500	1,400	2,300	3,700	15,100	15,100	15,200	500	700	1,000	3,500	3,500	18,600
HDR Subzone A	-	-	10	20	20	40	70	100	400	400	400	-	-	-	-	-	400
HDR Subzone B	60	90	100	500	500	300	400	800	3,100	3,100	3,100	70	100	100	500	500	3,600
Medium Density Residential	2,000	2,800	2,800	-	2,800	5,800	8,600	8,600	-	8,600	8,600	500	500	500	-	500	9,100
Medium Density Residential-Arrowtown	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lower Density Suburban Residential	5,400	5,400	-	-	5,400	16,700	16,700	-	-	16,700	16,700	8,800	8,800	-	-	8,800	25,500
Arrowtown Residential Historic Management	10	20	-	-	20	30	70	-	-	70	70	-	-	-	-	-	80
Settlements	70	-	-	-	70	400	-	-	-	400	400	300	-	-	-	300	700
Large Lot Residential A	400	-	-	-	400	800	-	-	-	800	800	400	-	-	-	400	1,100
Large Lot Residential B	40	-	-	-	40	60	-	-	-	60	60	-	-	-	-	-	60
Queenstown Town Centre	-	-	-	100	100	-	-	-	1,000	1,000	1,000	-	-	-	-	-	1,000
Wanaka Town Centre	-	-	-	200	200	-	-	-	500	500	600	-	-	-	-	-	600
Arrowtown Town Centre	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Local Shopping Centre	-	-	-	100	100	-	-	-	300	300	300	-	-	-	300	300	500
Business Mixed Use	-	-	-	1,300	1,300	-	-	-	4,000	4,000	4,000	-	-	-	2,400	2,400	6,400
TOTAL	**8,400**	**8,900**	**3,900**	**5,800**	**14,500**	**25,400**	**28,100**	**13,200**	**24,400**	**50,900**	**51,000**	**10,500**	**10,100**	**1,600**	**6,600**	**16,600**	**67,700**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] Dwellings within this category are horizontally attached and occur at low to medium densities, dependant upon the zone. They range from single-level pairs of attached units up to terraced housing. Terraced housing has also been provided as a category to demonstrate either the upper end of the horizontally-attached typologies, or more intensive terraced housing if enabled under the zone.

[2] Greenfield capacity does not include dwellings within Special Zones, which are reported separately largely based on structure planning or other developer information.

4.4 Plan Enabled Residential Capacity: Option 2

The plan enabled capacity under proposed Option 2 is shown by location in Table 4-5 and by zone in Table 4-6. This option intensifies development options within both nodes and corridors.

The intensification of corridors (in addition to nodes) under Option 2 increases the plan enabled capacity by a further 5,700 dwellings, to reach a total plan enabled capacity of 73,400 additional dwellings. This equates to a 23% increase to the existing baseline capacity (+13,900 dwellings).

The further increases in capacity under Option 2 all occur within the Wakatipu Ward. They occur mainly in the Queenstown Town Centre reporting area, followed by Kelvin Heights and Frankton reporting areas. This further centralises capacity across the district where Queenstown Town Centre reporting area further increases its share of capacity to 44% (compared to 40% under the existing baseline).

Almost all of the further increase in capacity within this option (from Option 1) occurs within the HDR Zone, with a smaller share within the MDR Zone. Most of this occurs where corridor areas were downzoned from HDR to MDR under Option 1 (to increase the relativities of nodes), but then upzoned again to HDR under Option 2. This has occurred around the Frankton Arm and Kelvin Heights. In Wanaka, capacity within the central node area around the township and inner suburban area has been upzoned through an expanded application of the MDR Zone, with most areas previously having a LDSR Zone. The HDR Zone areas within Wanaka have been downzoned to MDR Zone under this modelled option.

Table 4-5: Plan Enabled Capacity by Location in QLD Urban Area: Option 2

Reporting Area	INFILL					REDEVELOPMENT						GREENFIELD[2]					
	Detached	Attached[1]	Terraced	Vertical Apartments	Max Infill	Detached	Attached[1]	Terraced	Vertical Apartments	Max Redevelopment	Max Infill or Redevelopment	Detached	Attached[1]	Terraced	Vertical Apartments	Max Greenfield	Greenfield Max and Infill or Redevelopment
Arrowtown	200	200	30	-	200	1,100	1,500	700	10	1,500	1,500	100	100	-	-	100	1,600
Arthurs Point	400	500	200	-	500	1,100	1,200	300	20	1,200	1,200	600	600	-	-	600	1,800
Eastern Corridor	400	400	30	-	400	1,400	1,400	50	-	1,400	1,400	400	300	50	-	400	1,800
Frankton	200	300	300	200	500	1,200	1,700	1,100	500	2,200	2,200	200	200	100	-	200	2,300
Kelvin Heights	400	500	300	1,100	1,400	1,200	1,300	400	1,400	2,400	2,400	2,500	2,500	100	100	2,600	5,000
Outer Wakatipu	-	-	-	-	-	40	50	50	-	50	50	10	-	-	-	10	60
Quail Rise	20	20	-	-	20	30	30	-	-	30	30	500	700	900	5,200	5,300	5,300
Queenstown Town Centre	2,200	2,800	2,600	6,600	8,400	5,200	7,400	8,200	26,300	30,300	30,300	1,200	1,200	400	1,200	2,200	32,600
Small Township - Wakatipu	-	-	-	-	-	200	-	-	-	200	200	100	-	-	-	100	400
Southern Corridor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3,800	4,700	3,400	7,900	11,300	11,600	14,500	10,900	28,300	39,300	39,300	5,600	5,600	1,700	6,500	11,500	50,900
Cardrona	50	-	-	-	50	60	-	-	-	60	60	100	-	-	-	100	200
Lake Hawea	600	600	-	40	600	1,800	1,800	-	80	1,900	1,900	1,300	1,200	-	-	1,300	3,100
Luggate	100	90	-	-	100	200	90	-	-	200	200	400	400	-	-	400	600
Outer Wanaka	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wanaka Town Centre	3,900	3,800	1,200	700	4,900	12,100	12,500	4,000	2,000	15,300	15,300	3,200	3,000	50	200	3,300	18,600
	4,700	4,500	1,200	700	5,700	14,100	14,400	4,000	2,000	17,400	17,400	5,000	4,600	50	200	5,100	22,500
	8,500	**9,200**	**4,600**	**8,700**	**17,000**	**25,700**	**28,900**	**14,900**	**30,300**	**56,700**	**56,700**	**10,600**	**10,200**	**1,700**	**6,600**	**16,700**	**73,400**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] Dwellings within this category are horizontally attached and occur at low to medium densities, dependant upon the zone. They range from single-level pairs of attached units up to terraced housing. Terraced housing has also been provided as a category to demonstrate either the upper end of the horizontally-attached typologies, or more intensive terraced housing if enabled under the zone.

[2] Greenfield capacity does not include dwellings within Special Zones, which are reported separately largely based on structure planning or other developer information.

Table 4-6: Plan Enabled Capacity by Zone in QLD Urban Area: Option 2

	INFILL					REDEVELOPMENT						GREENFIELD[2]					
Zone	Detached	Attached[1]	Terraced	Vertical Apartments	Max Infill	Detached	Attached[1]	Terraced	Vertical Apartments	Max Redevelopment	Max Infill or Redevelopment	Detached	Attached[1]	Terraced	Vertical Apartments	Max Greenfield	Greenfield Max and Infill or Redevelopment
High Density Residential	800	1,200	1,800	6,400	6,400	2,000	3,200	5,200	21,000	21,000	21,000	500	700	1,000	3,500	3,500	24,500
HDR Subzone A	-	-	10	20	20	40	70	100	400	400	400	-	-	-	-	-	400
HDR Subzone B	60	90	100	500	500	300	400	800	3,100	3,100	3,100	70	100	100	500	500	3,600
Medium Density Residential	2,000	2,700	2,700	-	2,700	5,900	8,800	8,800	-	8,800	8,800	600	600	600	-	600	9,400
Medium Density Residential-Arrowtown	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lower Density Suburban Residential	5,200	5,200	-	-	5,200	16,300	16,300	-	-	16,300	16,300	8,700	8,700	-	-	8,700	25,000
Arrowtown Residential Historic Management	10	20	-	-	20	30	70	-	-	70	70	-	-	-	-	-	80
Settlements	70	-	-	-	70	400	-	-	-	400	400	300	-	-	-	300	700
Large Lot Residential A	400	-	-	-	400	800	-	-	-	800	800	400	-	-	-	400	1,100
Large Lot Residential B	40	-	-	-	40	60	-	-	-	60	60	-	-	-	-	-	60
Queenstown Town Centre	-	-	-	100	100	-	-	-	1,000	1,000	1,000	-	-	-	-	-	1,000
Wanaka Town Centre	-	-	-	200	200	-	-	-	500	500	600	-	-	-	-	-	600
Arrowtown Town Centre	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Local Shopping Centre	-	-	-	100	100	-	-	-	300	300	300	-	-	-	300	300	500
Business Mixed Use	-	-	-	1,300	1,300	-	-	-	4,000	4,000	4,000	-	-	-	2,400	2,400	6,400
TOTAL	**8,500**	**9,200**	**4,600**	**8,700**	**17,000**	**25,700**	**28,900**	**14,900**	**30,300**	**56,700**	**56,700**	**10,600**	**10,200**	**1,700**	**6,600**	**16,700**	**73,400**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] Dwellings within this category are horizontally attached and occur at low to medium densities, dependant upon the zone. They range from single-level pairs of attached units up to terraced housing. Terraced housing has also been provided as a category to demonstrate either the upper end of the horizontally-attached typologies, or more intensive terraced housing if enabled under the zone.

[2] Greenfield capacity does not include dwellings within Special Zones, which are reported separately largely based on structure planning or other developer information.

4.5 Plan Enabled Residential Capacity: Option 5

The plan enabled capacity under proposed Option 5 is shown by location in Table 4-7 and by zone in Table 4-8. This option intensifies nodes and also enables intensification to occur across the extent of the residential suburban area. The intensification occurs through the conversion of the LDSR Zone to the MDR Zone together with the application of the central government MDRS to the MDR Zone.

This modelled option has the largest plan enabled capacity of all the modelled scenarios. It enables an additional 149,400 dwellings to the existing dwelling stock. If the existing urban area were redeveloped to the maximum densities enabled within this option, then it could accommodate over seven times the size of the existing dwelling base.

The capacity enabled under this option is over twice that enabled under the existing baseline (+151%). It enables an additional 89,900 dwellings.

Option 5 enables a pattern of development that is a lot more dispersed than the existing baseline, which result in more dispersed growth patterns than under planning provisions that have a greater relative focus on intensification within central areas. The relative dispersal occurs both at the broader and more localised spatial scales.

At the broader scale, it provides for much greater capacity in less central areas of the district, in addition to the intensification within central areas. It consequently reduces the share of capacity within the central reporting area of Queenstown Town Centre to 26%. This is a substantive relative reduction from its share of baseline capacity (40%) and the levels of increased concentration under Options 1 and 3 (42% and 44% respectively).

This option does increase the share of capacity within the Wanaka Town Centre reporting area to 37%, compared to the baseline scenario of 26%. This covers the areas of Wanaka township and Albert Town, therefore increasing the share of activity within this northern node of the district.

At the localised spatial scale, this option reduces the relative level of concentration into nodes within different parts of the district. While it includes the same provisions for intensification within the nodes, it also enables substantial intensification across the extent of the general suburban area in the form of medium density development. The effect is to remove a large share of the enabled density gradient between central nodes and their surrounding suburban areas.

Under Option 5, the difference in enabled density within nodes (from the surrounding area) is instead restricted to only the commercial zones themselves and any area of surrounding HDR Zone, if present. There is a large increase in capacity within the MDR Zone under Option 5 from both the existing baseline and Option 1 (where only nodes are intensified). The substantive size of the net increase is reflective of a combination of the increased scale across which the zone is applied as well as the significant differences in densities enabled between the MDR and LDSR zones.

Table 4-7: Plan Enabled Capacity by Location in QLD Urban Area: Option 5

Reporting Area	INFILL					REDEVELOPMENT						GREENFIELD[2]					
	Detached	Attached[1]	Terraced	Vertical Apartments	Max Infill	Detached	Attached[1]	Terraced	Vertical Apartments	Max Redevelopment	Max Infill or Redevelopment	Detached	Attached[1]	Terraced	Vertical Apartments	Max Greenfield	Greenfield Max and Infill or Redevelopment
Arrowtown	300	400	600	-	600	2,000	3,300	5,500	10	5,600	5,600	100	100	300	-	300	5,900
Arthurs Point	600	800	1,300	-	1,300	1,900	2,700	4,300	20	4,300	4,300	800	800	1,700	-	1,700	5,900
Eastern Corridor	600	800	1,200	-	1,200	2,500	3,700	5,900	-	5,900	5,900	500	400	800	-	900	6,900
Frankton	200	300	500	200	700	1,500	2,200	3,600	500	4,100	4,100	200	200	300	-	300	4,500
Kelvin Heights	600	800	1,200	-	1,200	2,200	3,200	5,200	-	5,200	5,200	3,800	3,800	7,500	100	7,600	12,800
Outer Wakatipu	-	-	-	-	-	40	50	80	-	80	80	10	-	-	-	10	80
Quail Rise	20	30	50	-	50	50	60	100	-	100	100	500	700	1,100	5,200	5,400	5,500
Queenstown Town Centre	2,700	3,700	5,600	4,800	9,300	6,700	10,400	17,500	21,800	34,800	34,900	1,600	1,700	3,200	1,200	4,100	39,000
Small Township - Wakatipu	-	-	-	-	-	200	-	-	-	200	200	100	-	-	-	100	400
Southern Corridor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5,000	6,900	10,400	5,000	14,400	17,100	25,600	42,200	22,400	60,300	60,400	7,700	7,700	14,900	6,500	20,500	80,900
Cardrona	50	-	-	-	50	60	-	-	-	60	60	100	-	-	-	100	200
Lake Hawea	1,000	1,300	2,000	40	2,100	3,200	4,500	7,300	80	7,400	7,400	1,900	1,800	3,600	-	3,700	11,000
Luggate	200	200	300	-	400	200	200	300	-	400	400	600	600	1,200	-	1,200	1,700
Outer Wanaka	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wanaka Town Centre	5,600	7,000	10,600	700	11,700	19,600	26,800	43,600	2,000	46,400	46,400	4,600	4,500	8,900	200	9,200	55,700
	6,800	8,600	13,000	700	14,200	23,100	31,500	51,200	2,000	54,200	54,300	7,300	6,900	13,700	200	14,300	68,500
	11,800	**15,500**	**23,400**	**5,800**	**28,600**	**40,200**	**57,100**	**93,400**	**24,400**	**114,500**	**114,600**	**15,000**	**14,600**	**28,600**	**6,600**	**34,800**	**149,400**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] Dwellings within this category are horizontally attached and occur at low to medium densities, dependant upon the zone. They range from single-level pairs of attached units up to terraced housing. Terraced housing has also been provided as a category to demonstrate either the upper end of the horizontally-attached typologies, or more intensive terraced housing if enabled under the zone.

[2] Greenfield capacity does not include dwellings within Special Zones, which are reported separately largely based on structure planning or other developer information.

Table 4-8: Plan Enabled Capacity by Zone in QLD Urban Area: Option 5

	INFILL					REDEVELOPMENT						GREENFIELD[2]					
Zone	Detached	Attached[1]	Terraced	Vertical Apartments	Max Infill	Detached	Attached[1]	Terraced	Vertical Apartments	Max Redevelopment	Max Infill or Redevelopment	Detached	Attached[1]	Terraced	Vertical Apartments	Max Greenfield	Greenfield Max and Infill or Redevelopment
High Density Residential	400	600	900	3,500	3,500	1,400	2,300	3,700	15,100	15,100	15,200	500	700	1,000	3,500	3,500	18,600
HDR Subzone A	-	-	10	20	20	40	70	100	400	400	400	-	-	-	-	-	400
HDR Subzone B	60	90	100	500	500	300	400	800	3,100	3,100	3,100	70	100	100	500	500	3,600
Medium Density Residential	10,800	14,800	22,300	-	22,300	37,300	54,300	88,800	-	88,800	88,800	13,700	13,800	27,500	-	27,500	116,300
Medium Density Residential-Arrowtown	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lower Density Suburban Residential	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arrowtown Residential Historic Management	10	20	-	-	20	30	70	-	-	70	70	-	-	-	-	-	80
Settlements	70	-	-	-	70	400	-	-	-	400	400	300	-	-	-	300	700
Large Lot Residential A	400	-	-	-	400	800	-	-	-	800	800	400	-	-	-	400	1,100
Large Lot Residential B	40	-	-	-	40	60	-	-	-	60	60	-	-	-	-	-	60
Queenstown Town Centre	-	-	-	100	100	-	-	-	1,000	1,000	1,000	-	-	-	-	-	1,000
Wanaka Town Centre	-	-	-	200	200	-	-	-	500	500	600	-	-	-	-	-	600
Arrowtown Town Centre	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Local Shopping Centre	-	-	-	100	100	-	-	-	300	300	300	-	-	-	300	300	500
Business Mixed Use	-	-	-	1,300	1,300	-	-	-	4,000	4,000	4,000	-	-	-	2,400	2,400	6,400
TOTAL	**11,800**	**15,500**	**23,400**	**5,800**	**28,600**	**40,200**	**57,100**	**93,400**	**24,400**	**114,500**	**114,600**	**15,000**	**14,600**	**28,600**	**6,600**	**34,800**	**149,400**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] Dwellings within this category are horizontally attached and occur at low to medium densities, dependant upon the zone. They range from single-level pairs of attached units up to terraced housing. Terraced housing has also been provided as a category to demonstrate either the upper end of the horizontally-attached typologies, or more intensive terraced housing if enabled under the zone.

[2] Greenfield capacity does not include dwellings within Special Zones, which are reported separately largely based on structure planning or other developer information.

The capacity increase within the MDR Zone within Option 5 is substantially larger than that under Option 6 where the LDSR Zone is also converted to MDR Zone (discussed below). The difference occurs as a result of the differences between the MDR Zone densities proposed within QLDC provisions and those adopted from the MDRS.

The QLDC provisions (applied to the MDR Zone in Option 6) include a maximum density control of 150m^2 per dwelling, meaning that a site of 450m^2 is required to accommodate three dwellings. In contrast, the MDRS enables up to three dwellings on each site, which would apply to the MDR Zone lot formation size of 250m^2 within the plan enabled capacity. Within the modelling, a smaller minimum required land area assumption of 100m^2 per dwelling[13] has therefore been applied to terraced housing to model the level of development when the MDRS provisions are applied.

4.6 Plan Enabled Residential Capacity: Option 6

The plan enabled capacity under proposed Option 6 is shown by location in Table 4-9 and by zone in Table 4-10. This option intensifies nodes and also enables intensification to occur across the extent of the residential suburban area. The intensification occurs through the conversion of the LDSR Zone to the MDR Zone. The key difference to Option 5 is that the QLDC provisions within the MDR are applied instead of the MDRS. These include a maximum density control of 150m^2 per dwelling as noted above.

In Option 6, there is a large increase in plan enabled capacity from the existing baseline, but at a significantly lower level than within Option 5. There is a plan enabled capacity for an additional 101,300 dwellings, which represents a 70% increase in capacity from the existing baseline.

Despite the lower capacity within this option (in comparison to Option 5), the level of take-up would be likely to have less difference between the two options. This is because both options enable a similar form of medium density development in the same locations.

Similar to Option 5, this option also results in a lower level of concentration of capacity within key nodes with less distinction between the nodes and their surrounding residential areas.

Similar to Option 5, the increases in capacity within Option 6 also all occur within the MDR.

[13] The MDRS provisions applied to the MDR Zone lot size of 250m^2 could result in a maximum density of 3 dwellings per 250m^2, equating to an average density of 83m^2 per dwelling. However, this has been limited to 100m^2 per dwelling within the modelling to remain conservative based on analysis of land area requirements of more intensive terraced housing developments in other locations.

Table 4-9: Plan Enabled Capacity by Location in QLD Urban Area: Option 6

Reporting Area	INFILL					REDEVELOPMENT						GREENFIELD[2]					
	Detached	Attached[1]	Terraced	Vertical Apartments	Max Infill	Detached	Attached[1]	Terraced	Vertical Apartments	Max Redevelopment	Max Infill or Redevelopment	Detached	Attached[1]	Terraced	Vertical Apartments	Max Greenfield	Greenfield Max and Infill or Redevelopment
Arrowtown	300	400	400	-	400	2,000	3,300	3,200	10	3,300	3,300	100	100	100	-	100	3,400
Arthurs Point	600	800	800	-	800	1,900	2,700	2,700	20	2,700	2,700	800	800	800	-	800	3,500
Eastern Corridor	600	800	800	-	800	2,500	3,700	3,700	-	3,700	3,700	500	400	400	-	500	4,200
Frankton	200	300	300	200	500	1,500	2,200	2,200	500	2,800	2,800	200	200	200	-	200	2,900
Kelvin Heights	600	800	800	-	800	2,200	3,200	3,200	-	3,200	3,200	3,800	3,800	3,800	100	3,900	7,100
Outer Wakatipu	-	-	-	-	-	40	50	50	-	50	50	10	-	-	-	10	60
Quail Rise	20	30	30	-	30	50	60	60	-	60	60	500	700	900	5,200	5,300	5,400
Queenstown Town Centre	2,600	3,700	4,000	4,800	7,800	6,700	10,400	12,200	21,900	29,600	29,600	1,600	1,700	1,700	1,200	2,700	32,300
Small Township - Wakatipu	-	-	-	-	-	200	-	-	-	200	200	100	-	-	-	100	400
Southern Corridor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5,000	6,900	7,200	5,000	11,200	17,100	25,600	27,300	22,500	45,500	45,600	7,700	7,700	8,000	6,500	13,700	59,200
Cardrona	50	-	-	-	50	60	-	-	-	60	60	100	-	-	-	100	200
Lake Hawea	1,000	1,300	1,300	40	1,400	3,200	4,500	4,500	80	4,600	4,600	1,900	1,800	1,800	-	1,900	6,500
Luggate	200	200	200	-	200	200	200	200	-	300	300	600	600	600	-	600	900
Outer Wanaka	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wanaka Town Centre	5,600	7,000	7,000	700	8,100	19,600	26,800	26,800	2,000	29,600	29,700	4,600	4,500	4,500	200	4,800	34,500
	6,800	8,500	8,500	700	9,800	23,100	31,500	31,500	2,000	34,500	34,600	7,300	6,900	6,900	200	7,400	42,000
	11,800	**15,400**	**15,700**	**5,800**	**21,000**	**40,200**	**57,100**	**58,800**	**24,500**	**80,000**	**80,200**	**15,000**	**14,600**	**14,900**	**6,700**	**21,100**	**101,300**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] Dwellings within this category are horizontally attached and occur at low to medium densities, dependant upon the zone. They range from single-level pairs of attached units up to terraced housing. Terraced housing has also been provided as a category to demonstrate either the upper end of the horizontally-attached typologies, or more intensive terraced housing if enabled under the zone.

[2] Greenfield capacity does not include dwellings within Special Zones, which are reported separately largely based on structure planning or other developer information.

Table 4-10: Plan Enabled Capacity by Zone in QLD Urban Area: Option 6

Zone	INFILL					REDEVELOPMENT						GREENFIELD[2]					
	Detached	Attached[1]	Terraced	Vertical Apartments	Max Infill	Detached	Attached[1]	Terraced	Vertical Apartments	Max Redevelopment	Max Infill or Redevelopment	Detached	Attached[1]	Terraced	Vertical Apartments	Max Greenfield	Greenfield Max and Infill or Redevelopment
High Density Residential	400	600	900	3,500	3,500	1,400	2,300	3,700	15,100	15,100	15,200	500	700	1,000	3,500	3,500	18,600
HDR Subzone A	-	-	10	20	20	40	70	100	400	400	400	-	-	-	-	-	400
HDR Subzone B	60	90	100	500	500	300	400	800	3,200	3,200	3,200	70	100	100	500	500	3,700
Medium Density Residential	10,700	14,700	14,700	-	14,700	37,300	54,300	54,300	-	54,300	54,300	13,700	13,800	13,800	-	13,800	68,100
Medium Density Residential-Arrowtown	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lower Density Suburban Residential	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arrowtown Residential Historic Management	10	20	-	-	20	30	70	-	-	70	70	-	-	-	-	-	80
Settlements	70	-	-	-	70	400	-	-	-	400	400	300	-	-	-	300	700
Large Lot Residential A	400	-	-	-	400	800	-	-	-	800	800	400	-	-	-	400	1,100
Large Lot Residential B	40	-	-	-	40	60	-	-	-	60	60	-	-	-	-	-	60
Queenstown Town Centre	-	-	-	100	100	-	-	-	1,000	1,000	1,000	-	-	-	-	-	1,000
Wanaka Town Centre	-	-	-	200	200	-	-	-	500	500	600	-	-	-	-	-	600
Arrowtown Town Centre	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Local Shopping Centre	-	-	-	100	100	-	-	-	300	300	300	-	-	-	300	300	500
Business Mixed Use	-	-	-	1,300	1,300	-	-	-	4,000	4,000	4,000	-	-	-	2,400	2,400	6,400
TOTAL	**11,800**	**15,400**	**15,700**	**5,800**	**21,000**	**40,200**	**57,100**	**58,800**	**24,500**	**80,000**	**80,200**	**15,000**	**14,600**	**14,900**	**6,700**	**21,100**	**101,300**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] Dwellings within this category are horizontally attached and occur at low to medium densities, dependant upon the zone. They range from single-level pairs of attached units up to terraced housing. Terraced housing has also been provided as a category to demonstrate either the upper end of the horizontally-attached typologies, or more intensive terraced housing if enabled under the zone.

[2] Greenfield capacity does not include dwellings within Special Zones, which are reported separately largely based on structure planning or other developer information.

4.7 Summary of Plan Enabled Capacity by Modelled Option

The plan enabled capacity is summarised across the different modelled options in Table 4-11 and Figure 4-1. These provide a comparison of the overall capacity enabled within each modelled option.

Table 4-11 shows the total plan enabled capacity within each typology and development option (upper portion of table). The middle and lower portions of the table then show the net and percentage difference in plan enabled capacity under each modelled option from the existing baseline capacity.

There is a modelled baseline plan enabled capacity for a net additional 59,500 dwellings to the existing dwelling stock. This excludes further capacity which is enabled within the Special Zone areas (which is still significant in certain Special Zones). A large share of capacity occurs within the LDSR Zone. This reflects the current spatial extent of this zone. Vertically-attached apartments also account for a large portion of this capacity, with the largest shares occurring within the HDR Zone.

The modelling shows that there are sizeable increases to the baseline capacity enabled through the proposed intensification provisions. In most cases, these occur incrementally through the progression of intensification provisions within each modelled option.

The intensification of nodes (Option 1) increases the plan enabled capacity by 14% - a net increase of 8,100 dwellings – to reach a plan enabled capacity of 67,700 additional dwellings. Most of the capacity increases occur within the existing urban area under this option, which corresponds to the location of the intensification of nodes.

Enabling greater capacity within both the nodes and corridors (Option 2) increases the plan enabled capacity by 23% from the baseline. This equates to a net increase of 13,900 dwellings, to reach a total plan enabled capacity of a net additional 73,400 dwellings. Most of the capacity increases occur within the existing urban area under this option, which corresponds to the location of the intensification of nodes and corridors. The largest proportional increases in capacity occur within the medium density terraced housing typologies within this option. Most of the change occurs as a result of changes in the spatial extent of the MDR and HDR.

If the per dwelling density control of 150m^2 per dwelling were relaxed within the MDR Zone areas (in addition to the proposed intensification provisions), then the enabled capacity within Options 1 and 2 would increase further to 73,900 and 80,000 respectively. Relaxing this control would increase the baseline capacity by around 24% to 34% (compared to around 14% to 23% with the density restriction applied).[14] This would increase the capacity for more intensive terraced housing development within the central areas of nodes and corridors.

The plan enabled capacity increases significantly under Options 5 and 6. These modelled options increase the baseline capacity by 151% and 70% respectively, resulting in a total plan enabled capacity for 149,400 and 101,300 additional dwellings. The large capacity increases under these options occur due to a combination of the relativities in densities between the MDR and LDSR zones together with the extent across which this is applied.

[14] Copies of these alternative results are included in Appendix 3.

Table 4-11: Plan Enabled Capacity by Modelled Scenario in QLD Urban Area and Change from Existing Baseline Capacity

Modelled Scenario	INFILL					REDEVELOPMENT						GREENFIELD[2]					
	Detached	Attached[1]	Terraced	Vertical Apartments	Max Infill	Detached	Attached[1]	Terraced	Vertical Apartments	Max Redevelopment	Max Infill or Redevelopment	Detached	Attached[1]	Terraced	Vertical Apartments	Max Greenfield	Greenfield Max and Infill or Redevelopment
	Net Additional Dwelling Capacity																
Baseline	7,900	7,900	2,200	6,900	13,800	23,300	23,300	6,000	23,000	43,800	43,800	10,400	10,100	1,800	5,700	15,700	59,500
Option 1	8,400	8,900	3,900	5,800	14,500	25,400	28,100	13,200	24,400	50,900	51,000	10,500	10,100	1,600	6,600	16,600	67,700
Option 2	8,500	9,200	4,600	8,700	17,000	25,700	28,900	14,900	30,300	56,700	56,700	10,600	10,200	1,700	6,600	16,700	73,400
Option 5	11,800	15,500	23,400	5,800	28,600	40,200	57,100	93,400	24,400	114,500	114,600	15,000	14,600	28,600	6,600	34,800	149,400
Option 6	11,800	15,400	15,700	5,800	21,000	40,200	57,100	58,800	24,500	80,000	80,200	15,000	14,600	14,900	6,700	21,100	101,300
	Net Change in Dwelling Capacity from Baseline Capacity																
Option 1	500	1,000	1,700	-1,100	700	2,200	4,800	7,200	1,400	7,200	7,200	90	30	-200	900	900	8,100
Option 2	600	1,300	2,400	1,800	3,300	2,500	5,600	9,000	7,300	12,900	12,900	100	60	-70	900	1,000	13,900
Option 5	3,900	7,600	21,200	-1,100	14,800	17,000	33,800	87,400	1,400	70,700	70,800	4,500	4,500	26,800	900	19,100	89,900
Option 6	3,800	7,500	13,500	-1,100	7,200	17,000	33,800	52,900	1,500	36,300	36,300	4,500	4,500	13,100	900	5,400	41,700
	Percentage Change in Dwelling Capacity from Baseline Capacity																
Option 1	6%	13%	75%	-17%	5%	9%	20%	121%	6%	16%	16%	1%	0%	-10%	16%	6%	14%
Option 2	8%	16%	107%	26%	24%	11%	24%	150%	31%	29%	29%	1%	1%	-4%	16%	6%	23%
Option 5	49%	97%	955%	-17%	108%	73%	145%	1468%	6%	162%	162%	44%	44%	1520%	16%	122%	151%
Option 6	48%	95%	609%	-16%	52%	73%	145%	888%	6%	83%	83%	44%	44%	742%	16%	34%	70%

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

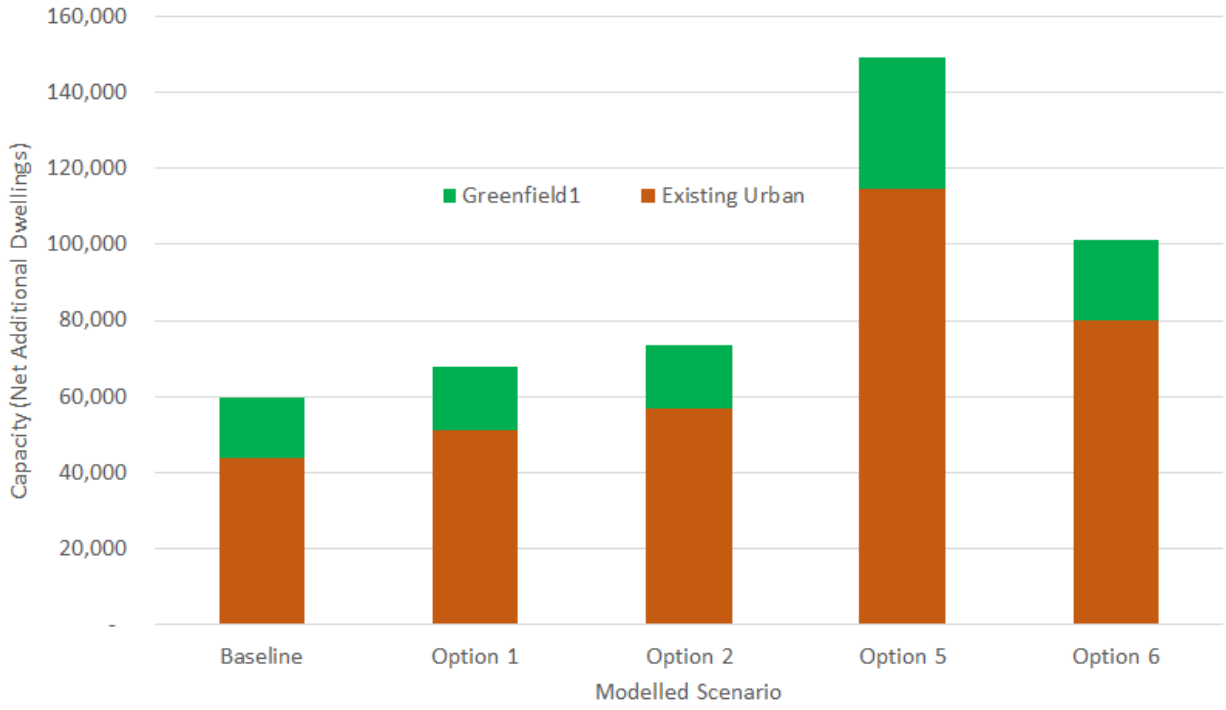
[1] Dwellings within this category are horizontally attached and occur at low to medium densities, dependant upon the zone. They range from single-level pairs of attached units up to terraced housing. Terraced housing has also been provided as a category to demonstrate either the upper end of the horizontally-attached typologies, or more intensive terraced housing if enabled under the zone.

[2] Greenfield capacity does not include dwellings within Special Zones, which are reported separately largely based on structure planning or other developer information.

The difference in capacity enabled between Options 5 and 6 relates to the relaxation of the proposed 150m^2 per dwelling density control within the MDR Zone. The difference is substantive in net terms due to the spatial extent across which it is applied.

Options 5 and 6 would enable a large-scale dispersal of development capacity across much of QLD's outer suburban area. It would be much less concentrated into areas of higher amenity and accessibility and would generate less differentiation in urban form. The degree to which this may disperse intensification and lower potential concentration around key nodes is dependent upon the relative market size for this density.

Figure 4-1: Plan Enabled Capacity by Modelled Scenario in QLD Urban Area (Excluding Special Zones)



Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

1 Greenfield Capacity does not include dwellings within Special Zones.

5 Commercially Feasible Residential Dwelling Capacity

This section contains our assessment of the plan enabled residential dwelling capacity that is estimated to be commercially feasible across the existing and planned future urban environment (excluding Special Zones). It calculates the feasibility of the modelled plan enabled capacity to identify which areas of capacity are likely to represent feasible development options for a commercial developer.

5.1 Introduction

Understanding the types and location of plan-enabled capacity that is likely to represent feasible development options for commercial developers is an important stage in understanding the implications of these policies and proposed provisions. It indicates the types of dwellings and locations are more likely to be taken up as dwelling capacity delivered by the market through time.

Only a portion of the capacity enabled by the provisions is likely to represent commercially feasible options for developers. Over time, a greater range of development options and densities are likely become feasible in different locations with market growth.

Importantly, commercially feasible capacity should not be confused with growth or the level of development able to be sustained or delivered by the market. It is instead a measure of the potentially feasible capacity development options, some of which is likely to get taken up by the market with growth. Refer to the QLDC HBA 2021 for a more detailed description of the measure of commercially feasible capacity.

The following sub-sections contain the results of commercially feasible capacity under each of the modelled options.[15] As set out in Section 3, the calculations are undertaken at a parcel level and then aggregated to the reporting areas used within the HBA 2021 and, separately, by zone.

The capacity results are net additional dwellings where the existing dwellings have been removed from the calculated gross yields on each parcel. The tables within the following sub-sections show the net additional dwellings in accordance with the capacity structure outlined in Section 3. The outputs within this section follow the same structure as those within the plan enabled capacity (Section 4).

The section firstly reports the commercially feasible capacity within each modelled scenario individually. The capacity enabled is then summarised across the scenarios in the final sub-section.

[15] But excluding options 3 and 4 (see previous comments).

5.2 Commercially Feasible Capacity: Baseline

The commercially feasible capacity under the baseline scenario is shown by location in Table 5-1 and by zone in Table 5-2.

A high share (just over half, 54%) of the baseline plan enabled capacity is estimated to currently represent commercially feasible options for commercial developers. There is an estimated feasible capacity of around 31,900 dwellings. Importantly, this indicates the potentially feasible development opportunity for commercial developers and not the scale of additional development able to be currently sustained or delivered by the market. A portion of this feasible capacity is likely to be delivered by the market, which is likely to be closer to the level of projected demand within the urban area.

Under the current provisions, the highest levels of feasibility occur within the lower to medium density dwelling typologies. These include detached dwellings, up to more intensive horizontally-attached (terraced) housing. Lower shares of the higher density, vertically-attached apartment capacity is estimated to be currently feasible. However, this market is growing within QLD and is likely to become more established through time.

The largest areas of feasible capacity include the Wanaka Town Centre and Queenstown Town Centre reporting areas. While Queenstown Town Centre has a large net feasible capacity, its share of plan enabled capacity that is estimated to represent feasible development options for developers is lower than the urban area overall. This is because a high proportion of its plan enabled capacity occurs as vertically-attached apartments, where this typology generally has lower levels of feasibility.

The largest proportion of feasible capacity occurs within the LDSR. This reflects the large spatial extent of the zone. There are also higher levels of feasibility within this zone where 79% of plan enabled capacity is estimated to be feasible. This reflects the well-established development patterns across the district within this zone.

A higher share (86%) of the plan enabled capacity within the MDRZ is feasible. This accounts for a smaller proportion of total feasible capacity due to the more limited extent of the zone.

The second largest share of feasible capacity occurs within the HDRZ. However, the share of plan enabled capacity within this zone that is estimated to be feasible is lower where a high share occurs within the vertically-attached apartment typology with currently lower rates of feasibility.

Table 5-1: Commercially Feasible Capacity by Location in QLD Urban Area: Baseline Scenario

	INFILL					REDEVELOPMENT						GREENFIELD[2]					
Reporting Area	Detached	Attached[1]	Terraced	Vertical Apartments	Max Infill	Detached	Attached[1]	Terraced	Vertical Apartments	Max Redevelopment	Max Infill or Redevelopment	Detached	Attached[1]	Terraced	Vertical Apartments	Max Greenfield	Greenfield Max and Infill or Redevelopment
Arrowtown	100	100	-	-	100	400	300	50	-	400	400	100	100	-	-	100	500
Arthurs Point	400	500	200	-	500	700	700	300	-	800	800	600	300	200	-	600	1,400
Eastern Corridor	300	300	-	-	300	700	400	-	-	700	800	300	30	-	-	300	1,000
Frankton	100	100	-	-	100	600	600	-	-	600	700	80	50	-	-	80	800
Kelvin Heights	400	400	200	400	700	600	700	300	600	1,000	1,100	2,500	2,500	80	-	2,500	3,600
Outer Wakatipu	-	-	-	-	-	30	50	50	-	50	50	-	-	-	-	-	50
Quail Rise	20	-	-	-	20	30	-	-	-	30	30	-	-	-	-	-	30
Queenstown Town Centre	1,800	2,000	1,300	2,400	4,000	2,800	3,400	2,400	4,400	7,300	8,200	1,200	1,100	500	400	1,500	9,700
Small Township - Wakatipu	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Southern Corridor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3,200	3,500	1,700	2,900	5,700	6,000	6,200	3,100	5,000	10,900	12,000	4,700	4,100	700	400	5,100	17,100
Cardrona	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake Hawea	500	500	-	-	500	1,500	1,300	-	-	1,500	1,600	1,200	1,100	-	-	1,200	2,700
Luggate	100	40	-	-	100	90	40	-	-	90	100	400	-	-	-	400	500
Outer Wanaka	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wanaka Town Centre	3,400	3,000	500	300	3,600	7,800	6,400	1,200	600	8,300	8,500	3,100	2,800	200	-	3,100	11,600
	4,000	3,500	500	300	4,100	9,500	7,700	1,200	600	9,900	10,200	4,600	4,000	200	-	4,600	14,800
	7,200	**6,900**	**2,200**	**3,200**	**9,900**	**15,500**	**13,900**	**4,300**	**5,600**	**20,800**	**22,200**	**9,300**	**8,100**	**900**	**400**	**9,700**	**31,900**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] Dwellings within this category are horizontally attached and occur at low to medium densities, dependant upon the zone. They range from single-level pairs of attached units up to terraced housing. Terraced housing has also been provided as a category to demonstrate either the upper end of the horizontally-attached typologies, or more intensive terraced housing if enabled under the zone.

[2] Greenfield capacity does not include dwellings within Special Zones, which are reported separately largely based on structure planning or other developer information.

Table 5-2: Commercially Feasible Capacity by Zone in QLD Urban Area: Baseline Scenario

	INFILL					REDEVELOPMENT						GREENFIELD[2]					Greenfield
Zone	Detached	Attached[1]	Terraced	Vertical Apartments	Max Infill	Detached	Attached[1]	Terraced	Vertical Apartments	Max Redevelopment	Max Infill or Redevelopment	Detached	Attached[1]	Terraced	Vertical Apartments	Max Greenfield	Max and Infill or Redevelopment
High Density Residential	1,000	1,500	1,500	2,800	3,400	1,500	2,600	2,600	4,300	5,700	6,400	70	100	100	-	100	6,500
HDR Subzone A	-	-	-	-	-	20	20	20	20	40	40	-	-	-	-	-	40
HDR Subzone B	60	60	60	300	300	200	200	200	900	1,000	1,100	70	70	70	400	400	1,500
Medium Density Residential	700	700	700	-	700	1,500	1,400	1,500	-	1,500	1,600	800	800	800	-	800	2,400
Medium Density Residential-Arrowtown	10	-	-	-	10	100	50	50	-	100	100	-	-	-	-	-	100
Lower Density Suburban Residential	5,200	4,800	-	-	5,200	11,700	9,600	-	-	11,700	12,100	8,200	7,100	-	-	8,200	20,400
Arrowtown Residential Historic Management	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Settlements	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Large Lot Residential A	300	-	-	-	300	500	-	-	-	500	500	100	-	-	-	100	600
Large Lot Residential B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Queenstown Town Centre	-	-	-	80	80	-	-	-	300	300	300	-	-	-	-	-	300
Wanaka Town Centre	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arrowtown Town Centre	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Local Shopping Centre	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Business Mixed Use	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	**7,200**	**6,900**	**2,200**	**3,200**	**9,900**	**15,500**	**13,900**	**4,300**	**5,600**	**20,800**	**22,200**	**9,300**	**8,100**	**900**	**400**	**9,700**	**31,900**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] Dwellings within this category are horizontally attached and occur at low to medium densities, dependant upon the zone. They range from single-level pairs of attached units up to terraced housing. Terraced housing has also been provided as a category to demonstrate either the upper end of the horizontally-attached typologies, or more intensive terraced housing if enabled under the zone.

[2] Greenfield capacity does not include dwellings within Special Zones, which are reported separately largely based on structure planning or other developer information.

5.3 Commercially Feasible Capacity: Option 1

The commercially feasible capacity under proposed Option 1 is shown by location in Table 5-3 and by zone in Table 5-4. This option enables intensification within nodes.

The estimated feasible capacity increases by 28% from the baseline with the intensification of nodes under Option 1. Under this option, there is an estimated feasible capacity of an additional 40,700 dwellings from the existing dwelling stock.

Most of this capacity occurs within the existing urban areas. These areas also have the largest modelled increase from the baseline capacity as they contain the areas (nodes) of intensification within Option 1.

The level of feasibility also increases relative to plan enabled capacity where the share of feasible plan enabled capacity increases to 60% (compared to 54% under the baseline). This occurs through a combination of an increase in the potential yields on parcels that are feasible as well as an increase in the number of parcels that are estimated to contain feasible development options.

The largest increases in feasible capacity, from the baseline, occur within the Queenstown Town Centre and Wanaka Town Centre reporting areas, which correspond to the location of the intensification of nodes. The share of capacity as feasible within Queenstown Town Centre increases under this scenario.

The largest increases in feasible capacity have occurred within the terraced housing typology. This corresponds to the types of capacity enabled within the HDR and MDR zones, which form the main types of intensification.

Table 5-3: Commercially Feasible Capacity by Location in QLD Urban Area: Option 1

	INFILL					REDEVELOPMENT						GREENFIELD[2]					Greenfield Max and Infill or Redevelopment
Reporting Area	Detached	Attached[1]	Terraced	Vertical Apartments	Max Infill	Detached	Attached[1]	Terraced	Vertical Apartments	Max Redevelopment	Max Infill or Redevelopment	Detached	Attached[1]	Terraced	Vertical Apartments	Max Greenfield	
Arrowtown	200	200	20	-	200	500	700	500	-	800	800	100	100	-	-	100	900
Arthurs Point	400	500	200	-	500	700	700	200	-	800	800	500	200	-	-	500	1,400
Eastern Corridor	300	300	-	-	300	700	400	-	-	700	800	300	30	-	-	300	1,000
Frankton	200	200	100	-	200	700	800	300	-	900	900	80	60	10	-	80	1,000
Kelvin Heights	400	400	200	-	400	700	700	300	-	700	800	2,500	2,500	100	-	2,500	3,300
Outer Wakatipu	-	-	-	-	-	40	50	50	-	50	50	-	-	-	-	-	50
Quail Rise	20	-	-	-	20	30	-	-	-	30	30	70	-	500	-	500	600
Queenstown Town Centre	2,000	2,500	2,200	3,700	5,600	3,400	5,000	5,800	6,300	12,000	14,000	1,200	1,200	400	500	1,700	15,600
Small Township - Wakatipu	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Southern Corridor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3,500	4,000	2,700	3,700	7,200	6,800	8,300	7,100	6,300	15,900	18,100	4,700	4,100	1,000	500	5,700	23,800
Cardrona	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake Hawea	500	500	-	-	500	1,500	1,300	-	-	1,500	1,600	1,200	1,100	-	-	1,200	2,700
Luggate	100	40	-	-	100	90	40	-	-	90	100	400	-	-	-	400	500
Outer Wanaka	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wanaka Town Centre	3,600	3,500	1,200	40	4,000	9,100	8,800	3,700	40	10,300	10,600	3,000	2,800	50	-	3,000	13,600
	4,200	4,000	1,200	40	4,600	10,800	10,200	3,700	40	11,900	12,300	4,600	3,900	50	-	4,600	16,900
	7,700	**8,000**	**3,800**	**3,700**	**11,800**	**17,600**	**18,500**	**10,900**	**6,400**	**27,800**	**30,400**	**9,400**	**8,000**	**1,000**	**500**	**10,300**	**40,700**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] Dwellings within this category are horizontally attached and occur at low to medium densities, dependant upon the zone. They range from single-level pairs of attached units up to terraced housing. Terraced housing has also been provided as a category to demonstrate either the upper end of the horizontally-attached typologies, or more intensive terraced housing if enabled under the zone.

[2] Greenfield capacity does not include dwellings within Special Zones, which are reported separately largely based on structure planning or other developer information.

Table 5-4: Commercially Feasible Capacity by Zone in QLD Urban Area: Option 1

	INFILL					REDEVELOPMENT						GREENFIELD[2]					Greenfield Max and Infill or Redevelopment
Zone	Detached	Attached[1]	Terraced	Vertical Apartments	Max Infill	Detached	Attached[1]	Terraced	Vertical Apartments	Max Redevelopment	Max Infill or Redevelopment	Detached	Attached[1]	Terraced	Vertical Apartments	Max Greenfield	
High Density Residential	400	600	900	3,100	3,200	700	1,400	2,800	3,800	5,800	7,500	70	100	600	-	600	8,100
HDR Subzone A	-	-	10	20	20	20	50	100	30	100	100	-	-	-	-	-	100
HDR Subzone B	60	90	100	500	500	200	300	600	1,900	2,100	2,300	70	100	100	500	500	2,800
Medium Density Residential	2,000	2,800	2,800	-	2,800	4,800	7,300	7,300	-	7,300	7,500	400	300	300	-	400	7,900
Medium Density Residential-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lower Density Suburban Res	4,900	4,500	-	-	4,900	11,400	9,400	-	-	11,400	11,800	8,700	7,500	-	-	8,700	20,500
Arrowtown Residential Histo	-	10	-	-	10	-	10	-	-	10	20	-	-	-	-	-	20
Settlements	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Large Lot Residential A	300	-	-	-	300	500	-	-	-	500	500	100	-	-	-	100	600
Large Lot Residential B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Queenstown Town Centre	-	-	-	100	100	-	-	-	600	600	600	-	-	-	-	-	600
Wanaka Town Centre	-	-	-	40	40	-	-	-	40	40	80	-	-	-	-	-	80
Arrowtown Town Centre	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Local Shopping Centre	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Business Mixed Use	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	**7,700**	**8,000**	**3,800**	**3,700**	**11,800**	**17,600**	**18,500**	**10,900**	**6,400**	**27,800**	**30,400**	**9,400**	**8,000**	**1,000**	**500**	**10,300**	**40,700**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] Dwellings within this category are horizontally attached and occur at low to medium densities, dependant upon the zone. They range from single-level pairs of attached units up to terraced housing. Terraced housing has also been provided as a category to demonstrate either the upper end of the horizontally-attached typologies, or more intensive terraced housing if enabled under the zone.

[2] Greenfield capacity does not include dwellings within Special Zones, which are reported separately largely based on structure planning or other developer information.

5.4 Commercially Feasible Capacity: Option 2

The commercially feasible capacity under proposed option 2 is shown by location in Table 5-5 and by zone in Table 5-6. This option enables intensification within nodes and corridors.

The estimated feasible capacity increases further under Option 2, with the addition of corridor intensification, to reach a total of around 45,000 additional dwellings from the existing dwelling base. This equates to a 41% increase from the estimated baseline feasible capacity.

The largest additional increases (from Option 1) are modelled to occur within the Queenstown Town Centre reporting area. These predominantly occur as vertically-attached apartments within the HDRZ.

The relative levels of feasibility (i.e. share of plan enabled capacity estimated to be feasible) are similar under Option 2 to Option 1. This suggests that the pattern of intensification into nodes and corridors is similar to the typology structure of intensification into nodes enabled under Option 1.

Table 5-5: Commercially Feasible Capacity by Location in QLD Urban Area: Option 2

	INFILL					REDEVELOPMENT						GREENFIELD[2]					
Reporting Area	Detached	Attached[1]	Terraced	Vertical Apartments	Max Infill	Detached	Attached[1]	Terraced	Vertical Apartments	Max Redevelopment	Max Infill or Redevelopment	Detached	Attached[1]	Terraced	Vertical Apartments	Max Greenfield	Greenfield Max and Infill or Redevelopment
Arrowtown	200	200	20	-	200	500	700	500	-	800	800	100	100	-	-	100	900
Arthurs Point	400	500	200	-	500	700	700	200	-	800	800	500	200	-	-	500	1,400
Eastern Corridor	300	300	-	-	300	700	400	-	-	700	800	300	30	-	-	300	1,000
Frankton	200	300	200	-	300	900	1,000	500	-	1,100	1,200	100	100	100	-	100	1,300
Kelvin Heights	400	400	300	200	700	600	700	400	100	1,000	1,000	2,500	2,500	100	-	2,500	3,600
Outer Wakatipu	-	-	-	-	-	40	50	50	-	50	50	-	-	-	-	-	50
Quail Rise	20	-	-	-	20	30	-	-	-	30	30	70	-	500	-	500	600
Queenstown Town Centre	2,100	2,700	2,600	5,500	7,200	3,500	5,300	6,700	10,100	15,600	17,600	1,200	1,200	400	500	1,700	19,300
Small Township - Wakatipu	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Southern Corridor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3,600	4,300	3,400	5,700	9,200	7,100	8,800	8,400	10,200	20,000	22,300	4,800	4,200	1,100	500	5,800	28,100
Cardrona	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake Hawea	500	500	-	-	500	1,500	1,300	-	-	1,500	1,600	1,200	1,100	-	-	1,200	2,700
Luggate	100	40	-	-	100	90	40	-	-	90	100	400	-	-	-	400	500
Outer Wanaka	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wanaka Town Centre	3,600	3,500	1,200	40	4,000	9,100	8,800	3,700	40	10,300	10,600	3,000	2,800	50	-	3,000	13,600
	4,200	4,000	1,200	40	4,600	10,800	10,200	3,700	40	11,900	12,300	4,600	3,900	50	-	4,600	16,900
	7,800	**8,300**	**4,500**	**5,700**	**13,700**	**17,800**	**19,000**	**12,100**	**10,300**	**31,900**	**34,500**	**9,400**	**8,100**	**1,100**	**500**	**10,400**	**45,000**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] Dwellings within this category are horizontally attached and occur at low to medium densities, dependant upon the zone. They range from single-level pairs of attached units up to terraced housing. Terraced housing has also been provided as a category to demonstrate either the upper end of the horizontally-attached typologies, or more intensive terraced housing if enabled under the zone.

[2] Greenfield capacity does not include dwellings within Special Zones, which are reported separately largely based on structure planning or other developer information.

Table 5-6: Commercially Feasible Capacity by Zone in QLD Urban Area: Option 2

	INFILL					REDEVELOPMENT						GREENFIELD[2]					
Zone	Detached	Attached[1]	Terraced	Vertical Apartments	Max Infill	Detached	Attached[1]	Terraced	Vertical Apartments	Max Redevelopment	Max Infill or Redevelopment	Detached	Attached[1]	Terraced	Vertical Apartments	Max Greenfield	Greenfield Max and Infill or Redevelopment
High Density Residential	800	1,200	1,800	5,100	5,400	1,300	2,300	4,300	7,700	10,300	12,100	70	100	600	-	600	12,700
HDR Subzone A	-	-	10	20	20	20	50	100	30	100	100	-	-	-	-	-	100
HDR Subzone B	60	90	100	500	500	200	300	600	1,900	2,100	2,300	70	100	100	500	500	2,800
Medium Density Residential	1,900	2,600	2,600	-	2,600	4,700	7,100	7,100	-	7,200	7,300	500	400	400	-	500	7,800
Medium Density Residential-Arrowtown	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lower Density Suburban Residential	4,700	4,400	-	-	4,700	11,200	9,300	-	-	11,200	11,500	8,700	7,500	-	-	8,700	20,200
Arrowtown Residential Historic Management	-	10	-	-	10	-	10	-	-	10	20	-	-	-	-	-	20
Settlements	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Large Lot Residential A	300	-	-	-	300	500	-	-	-	500	500	100	-	-	-	100	600
Large Lot Residential B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Queenstown Town Centre	-	-	-	100	100	-	-	-	600	600	600	-	-	-	-	-	600
Wanaka Town Centre	-	-	-	40	40	-	-	-	40	40	80	-	-	-	-	-	80
Arrowtown Town Centre	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Local Shopping Centre	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Business Mixed Use	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	**7,800**	**8,300**	**4,500**	**5,700**	**13,700**	**17,800**	**19,000**	**12,100**	**10,300**	**31,900**	**34,500**	**9,400**	**8,100**	**1,100**	**500**	**10,400**	**45,000**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] Dwellings within this category are horizontally attached and occur at low to medium densities, dependant upon the zone. They range from single-level pairs of attached units up to terraced housing. Terraced housing has also been provided as a category to demonstrate either the upper end of the horizontally-attached typologies, or more intensive terraced housing if enabled under the zone.

[2] Greenfield capacity does not include dwellings within Special Zones, which are reported separately largely based on structure planning or other developer information.

5.5 Commercially Feasible Capacity: Option 5

The commercially feasible capacity under proposed option 5 is shown by location in Table 5-7 and by zone in Table 5-8. This option intensifies nodes and also enables intensification to occur across the extent of the residential suburban area. The intensification occurs through the conversion of the LDSR Zone to the MDR Zone together with the application of the central government MDRS to the MDR Zone.

There are estimated to be large increases in the feasible capacity under Option 5. Under this option, there is an estimated total feasible capacity for an additional 124,300 dwellings from the existing dwellings. This is a large increase (+92,400 dwellings) from the existing baseline, with a feasible capacity of around four times the size of the potentially feasible development opportunity under the existing provisions.

The large increases in feasible capacity occur across the general suburban area where the LDSR Zone instead becomes the MDR Zone. This has a large effect on feasibility due to the large increase in yields enabled on these sites under this change in zone. This increase is largest under this scenario with the removal of the 150m^2 per dwelling density control, meaning that more intensive terraced housing is modelled.

Increases in potential yields on sites has a large relative effect on feasible capacity as well as the feasibility of sites. Part of the increase occurs through the increase in yields on already feasible sites, while the increased yield also increases the share of parcels that may represent potentially feasible options for developers. This is seen where there is a greater increase in the feasible capacity than the plan enabled capacity relative to the baseline.

Option 5 shows a pattern of feasible development opportunity that is a lot more dispersed than the existing baseline. If enabled, this is likely to result in more dispersed growth patterns than under planning provisions that have a greater relative focus on intensification within central areas. The relative dispersal occurs both at the broader and more localised spatial scales.

Enabling this larger intensification across the general suburban area is not likely to substantially translate into growth of this more intensive terraced housing dwelling market. It will instead be more likely to disperse the levels of intensification that occur across the general residential area, with less concentration of medium to higher density residential development within the core areas of accessibility around nodes and corridors.

Table 5-7: Commercially Feasible Capacity by Location in QLD Urban Area: Option 5

Reporting Area	INFILL					REDEVELOPMENT						GREENFIELD[2]					Greenfield Max and Infill or Redevelopment
	Detached	Attached[1]	Terraced	Vertical Apartments	Max Infill	Detached	Attached[1]	Terraced	Vertical Apartments	Max Redevelopment	Max Infill or Redevelopment	Detached	Attached[1]	Terraced	Vertical Apartments	Max Greenfield	
Arrowtown	300	400	600	-	600	1,400	2,300	5,300	-	5,300	5,300	100	100	300	-	300	5,600
Arthurs Point	600	800	1,300	-	1,300	1,300	1,800	4,000	-	4,000	4,000	800	800	1,700	-	1,700	5,600
Eastern Corridor	600	700	1,200	-	1,200	1,500	1,800	4,600	-	4,600	4,600	400	90	800	-	800	5,400
Frankton	200	300	500	-	500	1,200	1,600	3,000	-	3,000	3,000	200	200	300	-	300	3,300
Kelvin Heights	600	800	1,200	-	1,200	1,600	2,500	4,900	-	4,900	4,900	3,800	3,800	7,500	-	7,500	12,400
Outer Wakatipu	-	-	-	-	-	40	50	80	-	80	80	-	-	-	-	-	80
Quail Rise	20	30	50	-	50	40	60	90	-	90	90	70	-	700	-	700	800
Queenstown Town Centre	2,600	3,700	5,600	3,700	8,200	4,600	7,600	15,500	6,300	20,600	22,500	1,600	1,700	3,200	500	3,600	26,100
Small Township - Wakatipu	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Southern Corridor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4,900	6,800	10,300	3,700	13,100	11,600	17,500	37,400	6,300	42,500	44,500	6,900	6,600	14,400	500	14,800	59,300
Cardrona	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake Hawea	1,000	1,300	2,000	-	2,000	3,200	4,400	7,300	-	7,300	7,300	1,800	1,800	3,600	-	3,600	10,900
Luggate	200	200	300	-	300	200	200	300	-	300	300	600	600	1,200	-	1,200	1,600
Outer Wanaka	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wanaka Town Centre	5,500	6,900	10,600	40	11,000	17,900	24,200	42,800	40	43,300	43,500	4,500	4,500	8,900	-	9,000	52,500
	6,600	8,400	13,000	40	13,300	21,300	28,700	50,400	40	50,900	51,100	6,900	6,800	13,700	-	13,800	64,900
	11,500	**15,200**	**23,300**	**3,700**	**26,400**	**32,900**	**46,300**	**87,800**	**6,400**	**93,400**	**95,600**	**13,900**	**13,500**	**28,200**	**500**	**28,600**	**124,300**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] Dwellings within this category are horizontally attached and occur at low to medium densities, dependant upon the zone. They range from single-level pairs of attached units up to terraced housing. Terraced housing has also been provided as a category to demonstrate either the upper end of the horizontally-attached typologies, or more intensive terraced housing if enabled under the zone.

[2] Greenfield capacity does not include dwellings within Special Zones, which are reported separately largely based on structure planning or other developer information.

Table 5-8: Commercially Feasible Capacity by Zone in QLD Urban Area: Option 5

	INFILL					REDEVELOPMENT						GREENFIELD[2]					
Zone	Detached	Attached[1]	Terraced	Vertical Apartments	Max Infill	Detached	Attached[1]	Terraced	Vertical Apartments	Max Redevelopment	Max Infill or Redevelopment	Detached	Attached[1]	Terraced	Vertical Apartments	Max Greenfield	Greenfield Max and Infill or Redevelopment
High Density Residential	400	600	900	3,100	3,200	700	1,400	2,800	3,800	5,800	7,500	70	100	600	-	600	8,100
HDR Subzone A	-	-	10	20	20	20	50	100	30	100	100	-	-	-	-	-	100
HDR Subzone B	60	90	100	500	500	200	300	600	1,900	2,100	2,300	70	100	100	500	500	2,800
Medium Density Residential	10,600	14,500	22,300	-	22,300	31,600	44,500	84,200	-	84,300	84,500	13,600	13,300	27,400	-	27,400	111,900
Medium Density Residential-Arrowtown	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lower Density Suburban Residential	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arrowtown Residential Historic Management	-	10	-	-	10	-	10	-	-	10	20	-	-	-	-	-	20
Settlements	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Large Lot Residential A	300	-	-	-	300	500	-	-	-	500	500	100	-	-	-	100	600
Large Lot Residential B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Queenstown Town Centre	-	-	-	100	100	-	-	-	600	600	600	-	-	-	-	-	600
Wanaka Town Centre	-	-	-	40	40	-	-	-	40	40	80	-	-	-	-	-	80
Arrowtown Town Centre	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Local Shopping Centre	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Business Mixed Use	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	**11,500**	**15,200**	**23,300**	**3,700**	**26,400**	**32,900**	**46,300**	**87,800**	**6,400**	**93,400**	**95,600**	**13,900**	**13,500**	**28,200**	**500**	**28,600**	**124,300**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] Dwellings within this category are horizontally attached and occur at low to medium densities, dependant upon the zone. They range from single-level pairs of attached units up to terraced housing. Terraced housing has also been provided as a category to demonstrate either the upper end of the horizontally-attached typologies, or more intensive terraced housing if enabled under the zone.

[2] Greenfield capacity does not include dwellings within Special Zones, which are reported separately largely based on structure planning or other developer information.

5.6 Commercially Feasible Capacity: Option 6

The commercially feasible capacity under proposed option 6 is shown by location in Table 5-9 and by zone in Table 5-10. This option intensifies nodes and also enables intensification to occur across the extent of the residential suburban area. The intensification occurs through the conversion of the LDSR Zone to the MDR Zone. The key difference to Option 5 is that the QLDC provisions within the MDR are applied instead of the MDRS. These include a maximum density control of 150m^2 per dwelling.

Option 6 also has a large modelled increase in feasible development capacity from the existing baseline. There is a total estimated feasible development capacity for an additional 72,600 dwellings from the existing dwelling base. This equates to a 128% increase in feasible capacity from the existing baseline.

Similar to Option 5, the increased feasible development capacity enabled under this option (in comparison to only intensification of nodes under Option 1 and smaller suburban intensification under Option 3) occurs within the general suburban area. This occurs through the increased yields on these parcels through the greater densities within the MDR Zone.

This option is also likely to result in development patterns that are more dispersed growth patterns than under planning provisions that have a greater relative focus on intensification within central areas. The relative dispersal occurs both at the broader and more localised spatial scales.

The main difference to Option 5 is the application of the maximum density control of 150m^2 per dwelling within the MDR Zone. This difference in density still enables the development of terraced housing, albeit at a lower intensity. There is some effect on feasibility where a lower proportion of the general suburban parcels are estimated to be feasible development options (than under Option 5), but the spatial extent of their patterns across the zone area similar.

Table 5-9: Commercially Feasible Capacity by Location in QLD Urban Area: Option 6

Reporting Area	INFILL					REDEVELOPMENT						GREENFIELD[2]					Greenfield Max and Infill or Redevelopment
	Detached	Attached[1]	Terraced	Vertical Apartments	Max Infill	Detached	Attached[1]	Terraced	Vertical Apartments	Max Redevelopment	Max Infill or Redevelopment	Detached	Attached[1]	Terraced	Vertical Apartments	Max Greenfield	
Arrowtown	300	400	400	-	400	1,400	2,300	2,300	-	2,400	2,400	100	100	100	-	100	2,600
Arthurs Point	600	800	800	-	800	1,300	1,800	1,800	-	1,800	1,900	800	800	800	-	800	2,700
Eastern Corridor	600	700	700	-	800	1,500	1,800	1,800	-	2,000	2,100	400	90	90	-	400	2,500
Frankton	200	300	300	-	300	1,200	1,600	1,600	-	1,700	1,700	200	200	200	-	200	1,900
Kelvin Heights	600	800	800	-	800	1,600	2,500	2,500	-	2,500	2,500	3,800	3,800	3,800	-	3,800	6,200
Outer Wakatipu	-	-	-	-	-	40	50	50	-	50	50	-	-	-	-	-	50
Quail Rise	20	30	30	-	30	40	60	60	-	60	60	70	-	500	-	500	600
Queenstown Town Centre	2,600	3,600	4,000	3,600	6,600	4,600	7,600	9,300	6,500	14,600	16,600	1,600	1,700	1,700	500	2,100	18,700
Small Township - Wakatipu	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Southern Corridor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4,900	6,700	7,100	3,600	9,800	11,600	17,500	19,400	6,500	25,100	27,300	6,900	6,600	7,200	500	7,900	35,200
Cardrona	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake Hawea	1,000	1,300	1,300	-	1,300	3,200	4,400	4,400	-	4,400	4,400	1,800	1,800	1,800	-	1,800	6,300
Luggate	200	200	200	-	200	200	200	200	-	200	200	600	600	600	-	600	800
Outer Wanaka	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wanaka Town Centre	5,400	6,900	6,900	40	7,300	17,900	24,200	24,200	40	25,500	25,800	4,500	4,500	4,500	-	4,500	30,300
	6,500	8,400	8,400	40	8,800	21,300	28,700	28,800	40	30,100	30,400	6,900	6,800	6,800	-	6,900	37,400
	11,400	**15,100**	**15,500**	**3,700**	**18,600**	**32,900**	**46,300**	**48,100**	**6,500**	**55,200**	**57,700**	**13,900**	**13,500**	**14,000**	**500**	**14,900**	**72,600**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] Dwellings within this category are horizontally attached and occur at low to medium densities, dependant upon the zone. They range from single-level pairs of attached units up to terraced housing. Terraced housing has also been provided as a category to demonstrate either the upper end of the horizontally-attached typologies, or more intensive terraced housing if enabled under the zone.

[2] Greenfield capacity does not include dwellings within Special Zones, which are reported separately largely based on structure planning or other developer information.

Table 5-10: Commercially Feasible Capacity by Zone in QLD Urban Area: Option 6

	INFILL					REDEVELOPMENT						GREENFIELD[2]					
Zone	Detached	Attached[1]	Terraced	Vertical Apartments	Max Infill	Detached	Attached[1]	Terraced	Vertical Apartments	Max Redevelopment	Max Infill or Redevelopment	Detached	Attached[1]	Terraced	Vertical Apartments	Max Greenfield	Greenfield Max and Infill or Redevelopment
High Density Residential	400	600	900	3,100	3,200	700	1,400	2,800	3,800	5,800	7,500	70	100	600	-	600	8,100
HDR Subzone A	-	-	10	-	10	20	50	100	30	100	100	-	-	-	-	-	100
HDR Subzone B	60	90	100	500	500	200	300	600	2,100	2,200	2,400	70	100	100	500	500	2,900
Medium Density Residential	10,600	14,400	14,400	-	14,500	31,600	44,500	44,600	-	46,000	46,500	13,600	13,300	13,300	-	13,600	60,100
Medium Density Residential-Arrowtown	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lower Density Suburban Residential	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arrowtown Residential Historic Management	-	10	-	-	10	-	10	-	-	10	20	-	-	-	-	-	20
Settlements	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Large Lot Residential A	300	-	-	-	300	500	-	-	-	500	500	100	-	-	-	100	600
Large Lot Residential B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Queenstown Town Centre	-	-	-	100	100	-	-	-	600	600	600	-	-	-	-	-	600
Wanaka Town Centre	-	-	-	40	40	-	-	-	40	40	80	-	-	-	-	-	80
Arrowtown Town Centre	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Local Shopping Centre	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Business Mixed Use	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	**11,400**	**15,100**	**15,500**	**3,700**	**18,600**	**32,900**	**46,300**	**48,100**	**6,500**	**55,200**	**57,700**	**13,900**	**13,500**	**14,000**	**500**	**14,900**	**72,600**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] Dwellings within this category are horizontally attached and occur at low to medium densities, dependant upon the zone. They range from single-level pairs of attached units up to terraced housing. Terraced housing has also been provided as a category to demonstrate either the upper end of the horizontally-attached typologies, or more intensive terraced housing if enabled under the zone.

[2] Greenfield capacity does not include dwellings within Special Zones, which are reported separately largely based on structure planning or other developer information.

5.7 Summary of Commercially Feasible Capacity by Modelled Scenario

The commercially feasible capacity is summarised across the different modelled options in Table 5-11 and Figure 5-1. These provide a comparison of the overall capacity enabled within each modelled option.

Table 5-11 shows the total proportion of plan enabled capacity that is estimated to represent potentially commercially feasible development opportunities within each typology and development option (upper portion of table). The middle and lower portions of the table then show the net and percentage difference in commercially feasible capacity under each modelled option from the existing baseline capacity.

It is estimated that around half of the baseline plan enabled capacity currently represents potentially feasible development options if it were available to the market. Under the current provisions there is an estimated total feasible capacity of 31,900 dwellings.

Higher shares of greenfield capacity are estimated to be currently feasible, with a focus on detached dwellings. This excludes further capacity which is enabled within the greenfield Special Zone areas. Attached and terraced housing options form a greater proportion of the feasible capacity within the existing urban area.

Similar to plan enabled capacity, there is also a significant increase in the amount of feasible capacity as a result of the nodes/nodes and corridors options from the baseline capacity (Options 1 and 2). Overall, capacity increases by between 8,800 additional dwellings to 13,100 additional dwellings respectively in comparison to that already enabled within the existing baseline. This equates to a 28% to 41% increase from the existing baseline under Options 1 and 2. Within this, the intensification of Nodes increases feasible capacity to 40,700 dwellings. The intensification of both Nodes and Corridors increases feasible capacity to 45,000 dwellings.

Some of the increase in feasible capacity, under Options 1 and 2, occurs as a direct result of the increase in the number of dwellings enabled on each site within the plan enabled capacity. I.e. sites already feasible continue to be feasible, but with a higher enabled yield. Some of the increase also occurs as a result of the relative increase in the feasibility of having higher yields – i.e. a greater proportion of sites become feasible to develop, or sites become feasible to develop across a greater range of typologies through enabling higher yields.

Under these options (1 and 2), the share of plan enabled capacity that is estimated to be commercially feasible increases from around half (54%) under the baseline scenario to around 60% to 61% with the intensification of nodes and corridors.

The estimated commercially feasible capacity increases significantly under Options 5 and 6. These modelled options increase the baseline capacity by 290% to 128% respectively, resulting in a total feasible capacity for 124,300 and 72,600 additional dwellings respectively. The large capacity increases under these scenarios occur due to a combination of the relativities in densities between the MDR and LDSR zones together with the extent across which this is applied.

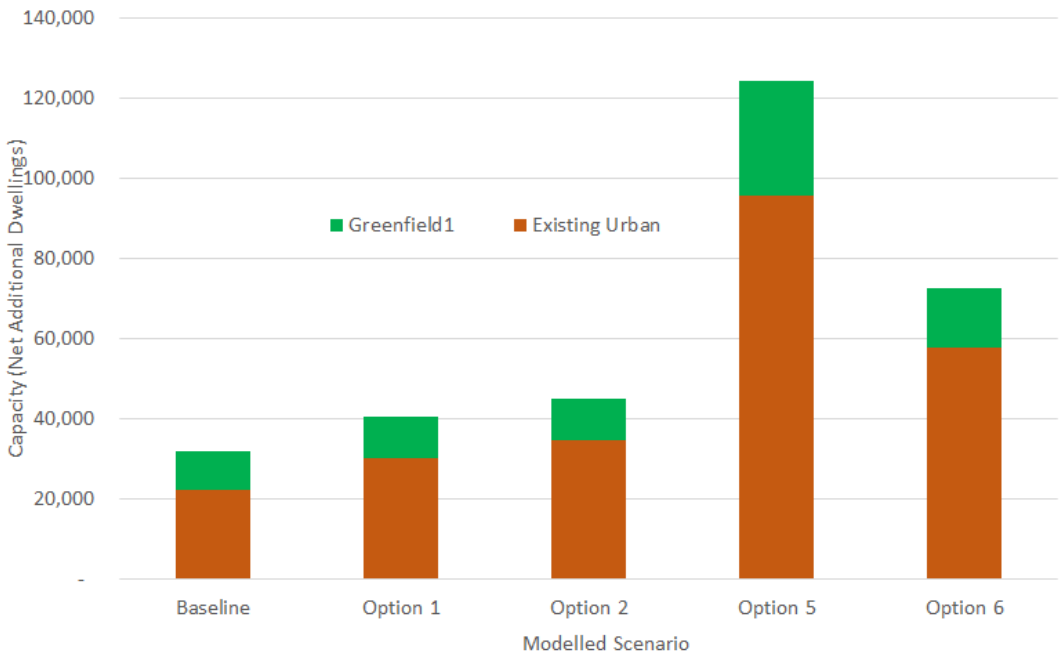
Options 5 and 6 would enable a large-scale dispersal of development capacity across much of QLD's outer suburban area. As discussed above, it would be much less concentrated into areas of higher amenity and accessibility and would generate less differentiation in urban form.

The degree to which this may disperse intensification and lower potential concentration around key nodes is dependent upon the relative market size for this density. Enabling this larger intensification across the general suburban area is not likely to substantially translate into growth of this more intensive terraced housing dwelling market. It will instead be more likely to disperse the levels of intensification that occur across the general residential area, with less concentration of medium to higher density residential development within the core areas of accessibility around nodes and corridors.

The difference in capacity enabled between Options 5 and 6 relates to the relaxation of the proposed 150m^2 per dwelling density control within the MDRZ. The difference is substantive in net terms due to the spatial extent across which it is applied.

If the MDRZ density control were also relaxed under Options 1 and 2, then it would increase the estimated feasible capacity to 47,400 dwellings (nodes) and 52,100 dwellings (nodes and corridors). This would increase the commercially feasible capacity by 49% to 63% from the existing baseline, compared to around 28% to 41% with the density restriction applied.[16] In contrast to Option 5, relaxing the MDRZ density control under these options would be likely to instead direct and encourage relatively more intensification to occur in nodes and corridors.

Figure 5-1: Commercially Feasible Capacity by Modelled Scenario in QLD Urban Area



[1] Greenfield Capacity does not include dwellings within

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

[16] Refer Appendix 3 for copies of these alternative result tables.

Table 5-11: Commercially Feasible Capacity by Modelled Scenario in QLD Urban Area and Change from Existing Baseline Capacity

Modelled Scenario	INFILL					REDEVELOPMENT						GREENFIELD[2]					Greenfield Max and Infill or Redevelopment
	Detached	Attached[1]	Terraced	Vertical Apartments	Max Infill	Detached	Attached[1]	Terraced	Vertical Apartments	Max Redevelopment	Max Infill or Redevelopment	Detached	Attached[1]	Terraced	Vertical Apartments	Max Greenfield	
Net Additional Dwelling Capacity																	
Baseline	7,200	6,900	2,200	3,200	9,900	15,500	13,900	4,300	5,600	20,800	22,200	9,300	8,100	900	400	9,700	31,900
Option 1	7,700	8,000	3,800	3,700	11,800	17,600	18,500	10,900	6,400	27,800	30,400	9,400	8,000	1,000	500	10,300	40,700
Option 2	7,800	8,300	4,500	5,700	13,700	17,800	19,000	12,100	10,300	31,900	34,500	9,400	8,100	1,100	500	10,400	45,000
Option 5	11,500	15,200	23,300	3,700	26,400	32,900	46,300	87,800	6,400	93,400	95,600	13,900	13,500	28,200	500	28,600	124,300
Option 6	11,400	15,100	15,500	3,700	18,600	32,900	46,300	48,100	6,500	55,200	57,700	13,900	13,500	14,000	500	14,900	72,600
Net Change in Dwelling Capacity from Baseline Capacity																	
Option 1	500	1,100	1,700	500	1,900	2,100	4,600	6,600	800	7,000	8,200	40	- 40	100	100	600	8,800
Option 2	600	1,400	2,300	2,600	3,900	2,400	5,100	7,800	4,700	11,100	12,400	100	60	200	100	700	13,100
Option 5	4,300	8,300	21,100	500	16,500	17,500	32,400	83,500	800	72,600	73,400	4,600	5,400	27,200	100	18,900	92,400
Option 6	4,200	8,200	13,300	500	8,700	17,500	32,400	43,800	900	34,400	35,500	4,600	5,400	13,100	100	5,200	40,700
Percentage Change in Dwelling Capacity from Baseline Capacity																	
Option 1	7%	16%	77%	17%	19%	14%	33%	154%	14%	34%	37%	0%	0%	12%	25%	7%	28%
Option 2	9%	20%	108%	81%	39%	15%	37%	183%	85%	53%	56%	1%	1%	23%	25%	7%	41%
Option 5	59%	119%	973%	17%	167%	113%	233%	1952%	14%	349%	331%	49%	67%	2904%	25%	195%	290%
Option 6	59%	118%	611%	16%	88%	113%	233%	1025%	17%	165%	160%	49%	67%	1395%	28%	53%	128%

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] Dwellings within this category are horizontally attached and occur at low to medium densities, dependant upon the zone. They range from single-level pairs of attached units up to terraced housing. Terraced housing has also been provided as a category to demonstrate either the upper end of the horizontally-attached typologies, or more intensive terraced housing if enabled under the zone.

[2] Greenfield capacity does not include dwellings within Special Zones, which are reported separately largely based on structure planning or other developer information.

6 Comparison of Capacity with Demand

Analysis within this section forms an important part of assessing the adequacy of the proposed options for the intensification plan variation in meeting demand within QLD's urban environment. It compares the projected demand for different dwelling typologies from Section 2 with the capacity to accommodate additional dwellings within QLDC's existing urban area, modelled in Sections 4 and 5.

6.1 Introduction and Approach

QLDC's proposed intensification plan variation is intended to provide for sufficient capacity within the urban environment to meet demand within the existing urban area with a geographic structure that encourages sustainable and efficient urban form. It aims to provide for a range of different dwelling options and in locations of high accessibility and amenity.

The analysis compares the feasible capacity with the level of demand and considers the share of plan enabled and commercially feasible capacity that would be required to be taken up to meet projected demand.

The first stage of this section compares the feasible development capacity with the projected demand across each typology and location. This stage also has consideration for the total capacity enabled under the plan. It is important to understand the level of opportunity provided by the Plan beyond the share which is estimated to be commercially feasible as non-planning factors form a substantial component of the effect on feasibility.

It is important to note that this stage of the assessment does not consider the implications of any infrastructure constraints. This is important to show the effects of the zoned provision and feasibility without being masked by the effects of infrastructure. The infrastructure constraints are then considered subsequently in Section 6.4.

The second stage then considers more closely the adequacy of provision for higher density residential development in key areas of accessibility. It compares the redevelopment capacity for vertically-attached apartment dwellings in these locations with the projected demand for this higher density development.

It is important to compare the capacity for higher density development with level of market demand to understand the effect of potential take-up on achieving the urban form intensification objectives. The spatial extent of the provisions (i.e., a direct determinant of capacity) combined with the size of the market demand will influence the degree to which higher density growth is concentrated into core areas of accessibility.

We consider that the appropriate spatial extent of higher density provisions is likely to differ between urban economies. Key commercial centres within larger urban economies are more likely to be able to support higher density development across greater spatial extents from the core of the accessible area. Higher density development within wider walkable catchments in these larger urban economies is more likely to function together with the core node of the accessible area. This would result in nodes of activities that

effectively function together to produce a sustainable urban form with observable concentrations of density supporting the viability of the commercial node (discussed further in Section 7).

In contrast, there is likely to be lower demand for higher density development in smaller urban economies or areas where the market for higher density development is unlikely to become well-established. If the same spatial extent of higher density provisions suited to larger economies were applied in a smaller economy, they would be likely to cover areas that extend, on a relative basis, to cover significant shares of the general suburban areas. In smaller urban economies, it is considerably less likely that development further away from the central node of the accessible area would function together with the commercial centre. This is due to a combination of the overall level of demand for higher density development as well as the more localised effects of these centres.

Moreover, if higher density residential provisions are applied across more extensive areas, then it increases the possibility for opportunistic development to occur in locations that do not function together with the core node of accessibility. Any take-up of these developments is likely to represent a significant share of the total demand for higher density development, thus reducing the likelihood of the development occurring in more appropriate locations that function together with and support the viability of commercial activity/amenity in accessible nodes, producing a more sustainable urban form. It is therefore important to consider the spatial extent of the proposed provisions together with their location.

6.2 Capacity and Demand by Type and Location

The tables in the following sub-sections compare the modelled capacity and demand for different types of dwellings in each location for each of the modelled options (i.e., Options 1, 2, 5 and 6). They provide an overview of the balances between capacity and demand across the existing and future urban environment.

6.2.1 Structure of Table Outputs

There are two tables provided for each of the modelled options to show the comparisons under the different patterns of projected demand (refer to Section 2). The first tables for each option contain a future demand scenario that reflects the existing baseline patterns of demand. The second tables contain the higher market substitution scenario where patterns of demand gradually shift toward higher densities through time. The demand projections (from Section 2) are contained within the first columns of each table. These are provided by dwelling typology and location.

The projected feasible capacity is contained within the second set of columns within each table. The capacity totals by typology presented in the first four columns of this section differ to those in Section 5[17] as each parcel has been allocated to a singular development pathway based on the highest profit margin (at the exclusion of other options)[18]. This creates a conservative comparison because the total capacity is larger if each parcel were instead developed to the highest yield (which is considered in the final columns

[17] While the totals differ, the outputs are consistent with those in sections 4 and 5 as they are extracted from within the same set of parcel-level modelled outputs.

[18] For example, it may be feasible to develop a parcel as either two detached houses, or 4 attached dwellings. If the detached dwellings have a higher percentage profit margin, this scenario has then allocated the development outcome to this typology, producing the lower yield option.

of the table). This section also contains a total – "TOTAL (Max Yield)" – which is the total maximum feasible yield[19] and aligns with the totals presented in Section 5.

The capacity within the table also includes that occurring within Special Zones (excluded from the modelling in sections 4 and 5. This has been obtained directly from that provided by QLDC during the 2021 HBA. It includes only the portion of capacity that is projected to be feasible within the short-term, to remain consistent with the current market comparison within the modelled capacity. This amounts to around 45% of the projected total long-term feasible capacity within the Special Zones.

The third set of columns then show the difference between the feasible capacity and the projected demand from the first sections of the tables. This is a direct subtraction of the demand from the capacity. A positive value shows that there is greater feasible capacity within a typology than demand, while a negative value may indicate a shortfall.

It is important to note that the comparisons contained within the tables are further conservative in that they contain only current market estimates of feasible capacity. Within a growing urban economy, feasible capacity generally increases through time where a greater range of locations and development options become feasible with market growth.

The final section of the table has been included to show the further potential feasible development capacity within each typology if development patterns instead occurred in line with the maximum potential feasible yield. These have been expressed as the difference between the highest profit allocation to the yield (second section of the table) and the maximum feasible yield within each typology. This is important to consider because not all developed parcels are likely to occur as the development option with the greatest profit margin. Only a share of the market demand is likely to fall within the highest margin development options. There is likely to be capacity delivered across a range of other still feasible options if they align with market demand and the developer is still able to make a sufficient profit.

The final section of the table indicates the potential for these development patterns to occur within other feasible areas of the market. For instance, if there are substantive patterns of shortfalls indicated in one typology (where capacity is allocated to the highest margin option), but there are corresponding large surpluses in capacity within another typology, then the additional total potential feasible capacity indicates the degree to which there is potential to instead develop in other feasible options that align with the indicated shortfalls.

The following sub-sections contain the assessments for each of the modelled options.

6.2.2 Capacity vs. Demand: Baseline Scenario

The comparison between capacity and demand under the existing baseline modelled scenario for the baseline demand scenario is shown in Table 6-1. It shows that there are no significant shortfalls in capacity projected to occur within the short-term.

[19] This is where the feasible capacity within each parcel has been allocated to the feasible option that produces the greatest yield. For example, a parcel could have two feasible detached dwellings (margin of 30%) or four feasible attached dwellings (margin of 25%), and have an infeasible plan-enabled option for 10 vertically-attached dwelling (margin of 12%). Within this total, the model would allocate the capacity to the attached yield of four.

In the medium-term, there are no projected shortfalls in capacity by location at the total level. Although, there are some projected shortfalls in attached dwelling capacity within the eastern urban parts (Eastern Corridor, Frankton and Quail Rise area) of the Wakatipu Ward and within the Wanaka/Hawea urban area. However, both areas have surpluses in feasible capacity in detached dwellings and apartments as well as large amounts of additional feasible capacity within attached/terraced housing (final section of the table).

Together these factors indicate that there is likely to be potential for the market to develop some capacity at the highest margins, with some capacity instead developed in other areas corresponding with the scale of market demand. There is likely to be greater potential for this to occur within Wanaka/Hawea given the larger sizes of the surpluses and additional feasible capacity. While this could potentially occur within the eastern areas, it does require higher rates of uptake of the feasible capacity.

In the long-term, there are areas that are indicated to have a projected shortfall in capacity. At the total level, these include the eastern urban areas of the Wakatipu Ward and the small township areas. While there is a significant shortfall indicated within the eastern area, it is notable that there is a significant amount of additional feasible capacity (approximately an additional 2,700 dwellings) within this area in the long-term within the Spatial Plan long-term growth areas (not included in the modelling).

There are also shortfalls indicated to occur across all areas for the attached/terraced housing typology. However, the final section of the table indicates that there is significant scope to develop parcels in this typology rather than detached dwellings (where there is an indicated surplus).

The comparison between capacity and demand under a high substitution demand scenario in relation to the existing baseline provisions is shown in Table 6-2.

The patterns of projected shortfalls are exacerbated in the medium and long-term under this demand scenario. The projected shortfalls become larger in the attached/terraced housing typology and also occur within the vertically-attached apartment typology.

Similar to the baseline demand scenario, it is likely that some of these shortfalls can be resolved through the market delivery of capacity in areas of the market that are less profitable, albeit still estimated to be commercially feasible.

A significant share of the vertically-attached dwelling shortfalls may resolve through time as market growth increases the share of this typology that is estimated to be feasible. Currently, only around one-fifth of the plan-enabled capacity within this typology is estimated to be commercially feasible. There is a large amount of additional plan-enabled apartment capacity, a share of which is likely to become feasible in response to market growth.

Table 6-1: Comparison of Capacity and Projected Demand (Low Substitution Demand Scenario): Baseline Scenario

	Projected Demand				Capacity (Max Profit Allocation)[1]					Capacity less Demand					Additional Potential Development[2]			
	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL	Detached	Attached/Terrace[3]	Apartments[4]	TOTAL	TOTAL (Max Yield)	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL	TOTAL (Max Yield)	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL
Catchment																		
	Short-Term: 2024				**Short-Term: 2024**					**Short-Term: 2024**					**Short-Term: 2024**			
Arrowtown	1,300	200	40	**1,500**	1,700	200	40	**2,000**	**2,000**	500	20	-	**500**	**500**	40	400	-	**40**
Eastern/Frankton/Quail	3,500	500	100	**4,100**	4,700	500	1,800	**7,000**	**7,000**	1,200	- 30	1,600	**2,800**	**2,900**	500	2,000	-	**80**
Queenstown/Arthurs	3,900	800	200	**4,900**	8,400	1,800	1,600	**11,900**	**16,400**	4,600	1,000	1,400	**7,000**	**11,500**	800	5,200	5,100	**4,500**
Kelvin Heights/Southern Corridor	2,200	300	60	**2,500**	6,300	500	400	**7,200**	**7,400**	4,100	200	300	**4,700**	**4,900**	100	3,200	300	**200**
Wakatipu Small Township/Other	400	70	10	**500**	700	200	10	**900**	**900**	300	100	-	**400**	**400**	-	50	-	**20**
Wanaka/Hawea	7,100	1,000	200	**8,400**	19,700	1,300	1,000	**22,000**	**23,200**	12,600	200	800	**13,600**	**14,800**	1,100	12,000	500	**1,300**
Wanaka Small Township/Other	300	20	10	**300**	1,000	80	-	**1,100**	**1,100**	700	60	-	**800**	**800**	-	300	-	**-**
Total Urban Environment	**18,700**	**3,000**	**700**	**22,300**	**42,600**	**4,600**	**4,800**	**52,000**	**58,100**	**23,900**	**1,600**	**4,200**	**29,700**	**35,800**	**2,500**	**23,200**	**5,900**	**6,100**
	Medium-Term: 2031				**Medium-Term: 2031**					**Medium-Term: 2031**					**Medium-Term: 2031**			
Arrowtown	1,200	300	60	**1,500**	1,700	200	40	**2,000**	**2,000**	500	- 70	- 20	**500**	**500**	40	400	-	**40**
Eastern/Frankton/Quail	4,000	900	200	**5,200**	4,700	500	1,800	**7,000**	**7,000**	700	- 400	1,600	**1,800**	**1,900**	500	2,000	-	**80**
Queenstown/Arthurs	3,900	1,200	300	**5,300**	8,400	1,800	1,600	**11,900**	**16,400**	4,600	600	1,400	**6,500**	**11,100**	800	5,200	5,100	**4,500**
Kelvin Heights/Southern Corridor	3,300	400	90	**3,800**	6,300	500	400	**7,200**	**7,400**	3,000	100	300	**3,400**	**3,600**	100	3,200	300	**200**
Wakatipu Small Township/Other	500	100	30	**700**	700	200	10	**900**	**900**	200	50	- 20	**200**	**200**	-	50	-	**20**
Wanaka/Hawea	8,000	1,700	400	**10,000**	19,700	1,300	1,000	**22,000**	**23,200**	11,700	- 400	600	**11,900**	**13,200**	1,100	12,000	500	**1,300**
Wanaka Small Township/Other	400	70	10	**500**	1,000	80	-	**1,100**	**1,100**	600	20	- 10	**600**	**600**	-	300	-	**-**
Total Urban Environment	**21,200**	**4,700**	**1,000**	**27,000**	**42,600**	**4,600**	**4,800**	**52,000**	**58,100**	**21,300**	**- 100**	**3,800**	**25,000**	**31,100**	**2,500**	**23,200**	**5,900**	**6,100**
	Long-Term: 2051				**Long-Term: 2051**					**Long-Term: 2051**					**Long-Term: 2051**			
Arrowtown	1,100	400	80	**1,500**	1,700	200	40	**2,000**	**2,000**	700	- 200	- 40	**400**	**500**	40	400	-	**40**
Eastern/Frankton/Quail	5,400	2,100	400	**8,000**	4,700	500	1,800	**7,000**	**7,000**	- 700	- 1,600	1,300	**- 1,000**	**- 900**	500	2,000	-	**80**
Queenstown/Arthurs	4,000	2,100	400	**6,500**	8,400	1,800	1,600	**11,900**	**16,400**	4,400	- 300	1,200	**5,300**	**9,900**	800	5,200	5,100	**4,500**
Kelvin Heights/Southern Corridor	5,200	1,700	300	**7,200**	6,300	500	400	**7,200**	**7,400**	1,200	- 1,200	20	**30**	**300**	100	3,200	300	**200**
Wakatipu Small Township/Other	700	300	70	**1,100**	700	200	10	**900**	**900**	10	- 200	- 60	**- 200**	**- 200**	-	50	-	**20**
Wanaka/Hawea	10,100	3,600	800	**14,500**	19,700	1,300	1,000	**22,000**	**23,200**	9,600	- 2,400	200	**7,400**	**8,700**	1,100	12,000	500	**1,300**
Wanaka Small Township/Other	600	200	40	**800**	1,000	80	-	**1,100**	**1,100**	400	- 100	- 40	**300**	**300**	-	300	-	**-**
Total Urban Environment	**27,000**	**10,500**	**2,200**	**39,700**	**42,600**	**4,600**	**4,800**	**52,000**	**58,100**	**15,600**	**- 5,900**	**2,600**	**12,300**	**18,400**	**2,500**	**23,200**	**5,900**	**6,100**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] These outputs reflect a parcel level allocation of capacity to the typology with the greatest estimated profit margin.

[2] These outputs show the difference between the highest profit margin allocation to the typology and the total potential capacity enabled under the typology. The typology outputs are not additive, with the 'Total' column providing the maximum potential additional capacity.

[3] This is a combination of the 'Attached' and 'Terraced Housing' typologies.

[4] These include vertically-attached apartments. Horizontally-attached apartments are included under the 'Attached/Terrace' typology.

Table 6-2: Comparison of Capacity and Projected Long-Term Demand (High Substitution Demand Scenario): Baseline Scenario

	Projected Demand				Capacity (Max Profit Allocation)[1]					Capacity less Demand					Additional Potential Development[2]			
	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL	Detached	Attached/Terrace[3]	Apartments[4]	TOTAL	TOTAL (Max Yield)	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL	TOTAL (Max Yield)	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL
Catchment																		
	Short-Term: 2024				**Short-Term: 2024**					**Short-Term: 2024**					**Short-Term: 2024**			
Arrowtown	1,300	200	40	**1,500**	1,700	200	40	**2,000**	**2,000**	500	10	-	**500**	**500**	40	400	-	**40**
Eastern/Frankton/Quail	3,400	600	100	**4,100**	4,700	500	1,800	**7,000**	**7,000**	1,300	- 60	1,600	**2,800**	**2,900**	500	2,000	-	**80**
Queenstown/Arthurs	3,900	900	200	**4,900**	8,400	1,800	1,600	**11,900**	**16,400**	4,600	1,000	1,400	**7,000**	**11,500**	800	5,200	5,100	**4,500**
Kelvin Heights/Southern Corridor	2,200	300	70	**2,500**	6,300	500	400	**7,200**	**7,400**	4,200	200	300	**4,700**	**4,900**	100	3,200	300	**200**
Wakatipu Small Township/Other	400	70	20	**500**	700	200	10	**900**	**900**	300	100	- 10	**400**	**400**	-	50	-	**20**
Wanaka/Hawea	7,000	1,100	200	**8,400**	19,700	1,300	1,000	**22,000**	**23,200**	12,700	200	800	**13,600**	**14,800**	1,100	12,000	500	**1,300**
Wanaka Small Township/Other	300	30	10	**300**	1,000	80	-	**1,100**	**1,100**	700	60	-	**800**	**800**	-	300	-	**-**
Total Urban Environment	**18,400**	**3,100**	**700**	**22,300**	**42,600**	**4,600**	**4,800**	**52,000**	**58,100**	**24,200**	**1,400**	**4,100**	**29,700**	**35,800**	**2,500**	**23,200**	**5,900**	**6,100**
	Medium-Term: 2031				**Medium-Term: 2031**					**Medium-Term: 2031**					**Medium-Term: 2031**			
Arrowtown	1,200	200	80	**1,500**	1,700	200	40	**2,000**	**2,000**	600	- 50	- 30	**500**	**500**	40	400	-	**40**
Eastern/Frankton/Quail	3,800	1,000	300	**5,200**	4,700	500	1,800	**7,000**	**7,000**	900	- 500	1,500	**1,800**	**1,900**	500	2,000	-	**80**
Queenstown/Arthurs	3,800	1,200	400	**5,400**	8,400	1,800	1,600	**11,900**	**16,400**	4,700	600	1,300	**6,500**	**11,000**	800	5,200	5,100	**4,500**
Kelvin Heights/Southern Corridor	3,100	500	200	**3,800**	6,300	500	400	**7,200**	**7,400**	3,300	- 20	200	**3,400**	**3,700**	100	3,200	300	**200**
Wakatipu Small Township/Other	500	100	40	**700**	700	200	10	**900**	**900**	200	40	- 30	**200**	**200**	-	50	-	**20**
Wanaka/Hawea	7,600	1,800	500	**10,000**	19,700	1,300	1,000	**22,000**	**23,200**	12,000	- 500	500	**11,900**	**13,200**	1,100	12,000	500	**1,300**
Wanaka Small Township/Other	400	80	20	**500**	1,000	80	-	**1,100**	**1,100**	700	10	- 20	**600**	**600**	-	300	-	**-**
Total Urban Environment	**20,300**	**5,000**	**1,500**	**27,000**	**42,600**	**4,600**	**4,800**	**52,000**	**58,100**	**22,300**	**- 400**	**3,300**	**25,000**	**31,100**	**2,500**	**23,200**	**5,900**	**6,100**
	Long-Term: 2051				**Long-Term: 2051**					**Long-Term: 2051**					**Long-Term: 2051**			
Arrowtown	1,000	300	200	**1,500**	1,700	200	40	**2,000**	**2,000**	700	- 100	- 100	**400**	**500**	40	400	-	**40**
Eastern/Frankton/Quail	4,800	2,200	1,000	**8,000**	4,700	500	1,800	**7,000**	**7,000**	- 70	- 1,600	800	**- 1,000**	**- 900**	500	2,000	-	**80**
Queenstown/Arthurs	3,800	1,800	900	**6,600**	8,400	1,800	1,600	**11,900**	**16,400**	4,700	- 40	800	**5,300**	**9,800**	800	5,200	5,100	**4,500**
Kelvin Heights/Southern Corridor	4,400	1,900	900	**7,200**	6,300	500	400	**7,200**	**7,400**	2,000	- 1,400	- 500	**40**	**300**	100	3,200	300	**200**
Wakatipu Small Township/Other	600	300	200	**1,100**	700	200	10	**900**	**900**	90	- 100	- 100	**- 200**	**- 200**	-	50	-	**20**
Wanaka/Hawea	9,000	3,700	1,700	**14,500**	19,700	1,300	1,000	**22,000**	**23,200**	10,600	- 2,400	- 700	**7,400**	**8,700**	1,100	12,000	500	**1,300**
Wanaka Small Township/Other	500	200	100	**800**	1,000	80	-	**1,100**	**1,100**	500	- 100	- 100	**300**	**300**	-	300	-	**-**
Total Urban Environment	**24,100**	**10,400**	**4,900**	**39,700**	**42,600**	**4,600**	**4,800**	**52,000**	**58,100**	**18,500**	**- 5,800**	**- 90**	**12,300**	**18,400**	**2,500**	**23,200**	**5,900**	**6,100**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] These outputs reflect a parcel level allocation of capacity to the typology with the greatest estimated profit margin.

[2] These outputs show the difference between the highest profit margin allocation to the typology and the total potential capacity enabled under the typology. The typology outputs are not additive, with the 'Total' column providing the maximum potential additional capacity.

[3] This is a combination of the 'Attached' and 'Terraced Housing' typologies.

[4] These include vertically-attached apartments. Horizontally-attached apartments are included under the 'Attached/Terrace' typology.

6.2.3 Capacity vs. Demand: Option 1

The comparison between capacity and demand under Option 1 for the baseline demand scenario is shown in Table 6-3. It shows that there are no significant shortfalls in capacity projected to occur within either the short or medium-term.

In the long-term, the projected shortfalls are substantially reduced (from the baseline capacity scenario) with the additional capacity enabled through the intensification of nodes under Option 1. The eastern urban areas of the Wakatipu Ward and the Kelvin Heights/Southern Corridor areas are indicated as the areas most likely to experience a shortfall based on the proposed provisions. However, as noted above, it is notable that these areas have significant amounts of feasible capacity within the Spatial Plan long-term growth areas.

Similar to the existing baseline, there are general indicated shortfalls across the attached/terraced housing typology. However, these are likely to be able to be addressed through development in occurring feasibly in these areas of the market, albeit at a lower margin than detached dwellings.

The comparison between capacity and demand under a high substitution demand scenario in relation to the Option 1 provisions is shown in Table 6-4. This shows similar patterns of potential shortfalls, which are exacerbated by the higher share of growth assumed to occur in more intensive dwellings.

Similar to the baseline provisions scenario, it is likely that much of these shortfalls may be met through market growth in higher density dwellings through time, or development in other parts of the feasible development opportunity.

Table 6-3 : Comparison of Capacity and Projected Demand (Low Substitution Demand Scenario): Option 1

	Projected Demand				Capacity (Max Profit Allocation)[1]					Capacity less Demand					Additional Potential Development[2]			
	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL	Detached	Attached/Terrace[3]	Apartments[4]	TOTAL	TOTAL (Max Yield)	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL	TOTAL (Max Yield)	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL
Catchment																		
	Short-Term: 2024				**Short-Term: 2024**					**Short-Term: 2024**					**Short-Term: 2024**			
Arrowtown	1,300	200	40	**1,500**	1,700	600	40	**2,300**	**2,400**	400	400	-	**800**	**900**	200	500	-	**80**
Eastern/Frankton/Quail	3,500	500	100	**4,100**	4,800	1,000	1,800	**7,600**	**7,800**	1,400	500	1,600	**3,500**	**3,700**	600	2,000	-	**200**
Queenstown/Arthurs	3,900	800	200	**4,900**	7,900	5,600	2,000	**15,500**	**22,300**	4,000	4,800	1,800	**10,600**	**17,400**	1,800	4,800	8,500	**6,800**
Kelvin Heights/Southern Corridor	2,200	300	60	**2,500**	6,400	600	100	**7,100**	**7,200**	4,200	300	60	**4,600**	**4,600**	70	3,200	-	**60**
Wakatipu Small Township/Other	400	70	10	**500**	700	200	10	**900**	**900**	300	100	-	**400**	**400**	-	50	-	**10**
Wanaka/Hawea	7,100	1,000	200	**8,400**	20,500	1,800	1,000	**23,300**	**25,300**	13,400	800	700	**15,000**	**16,900**	1,500	13,800	-	**1,900**
Wanaka Small Township/Other	300	20	10	**300**	1,000	80	-	**1,100**	**1,100**	700	60	-	**800**	**800**	-	300	-	**-**
Total Urban Environment	**18,700**	**3,000**	**700**	**22,300**	**43,100**	**9,800**	**4,900**	**57,900**	**66,900**	**24,400**	**6,900**	**4,300**	**35,600**	**44,600**	**4,200**	**24,600**	**8,500**	**9,000**
	Medium-Term: 2031				**Medium-Term: 2031**					**Medium-Term: 2031**					**Medium-Term: 2031**			
Arrowtown	1,200	300	60	**1,500**	1,700	600	40	**2,300**	**2,400**	500	300	- 20	**800**	**900**	200	500	-	**80**
Eastern/Frankton/Quail	4,000	900	200	**5,200**	4,800	1,000	1,800	**7,600**	**7,800**	800	60	1,600	**2,500**	**2,600**	600	2,000	-	**200**
Queenstown/Arthurs	3,900	1,200	300	**5,300**	7,900	5,600	2,000	**15,500**	**22,300**	4,100	4,400	1,700	**10,200**	**16,900**	1,800	4,800	8,500	**6,800**
Kelvin Heights/Southern Corridor	3,300	400	90	**3,800**	6,400	600	100	**7,100**	**7,200**	3,100	200	40	**3,300**	**3,400**	70	3,200	-	**60**
Wakatipu Small Township/Other	500	100	30	**700**	700	200	10	**900**	**900**	200	50	- 20	**200**	**200**	-	50	-	**10**
Wanaka/Hawea	8,000	1,700	400	**10,000**	20,500	1,800	1,000	**23,300**	**25,300**	12,500	100	600	**13,300**	**15,200**	1,500	13,800	-	**1,900**
Wanaka Small Township/Other	400	70	10	**500**	1,000	80	-	**1,100**	**1,100**	600	20	- 10	**600**	**600**	-	300	-	**-**
Total Urban Environment	**21,200**	**4,700**	**1,000**	**27,000**	**43,100**	**9,800**	**4,900**	**57,900**	**66,900**	**21,900**	**5,100**	**3,900**	**30,900**	**39,900**	**4,200**	**24,600**	**8,500**	**9,000**
	Long-Term: 2051				**Long-Term: 2051**					**Long-Term: 2051**					**Long-Term: 2051**			
Arrowtown	1,100	400	80	**1,500**	1,700	600	40	**2,300**	**2,400**	600	200	- 40	**800**	**800**	200	500	-	**80**
Eastern/Frankton/Quail	5,400	2,100	400	**8,000**	4,800	1,000	1,800	**7,600**	**7,800**	- 500	- 1,100	1,300	- **400**	- **200**	600	2,000	-	**200**
Queenstown/Arthurs	4,000	2,100	400	**6,500**	7,900	5,600	2,000	**15,500**	**22,300**	3,900	3,500	1,500	**9,000**	**15,700**	1,800	4,800	8,500	**6,800**
Kelvin Heights/Southern Corridor	5,200	1,700	300	**7,200**	6,400	600	100	**7,100**	**7,200**	1,200	- 1,100	- 200	- **70**	- **10**	70	3,200	-	**60**
Wakatipu Small Township/Other	700	300	70	**1,100**	700	200	10	**900**	**900**	20	- 200	- 60	- **200**	- **200**	-	50	-	**10**
Wanaka/Hawea	10,100	3,600	800	**14,500**	20,500	1,800	1,000	**23,300**	**25,300**	10,400	- 1,800	200	**8,800**	**10,800**	1,500	13,800	-	**1,900**
Wanaka Small Township/Other	600	200	40	**800**	1,000	80	-	**1,100**	**1,100**	400	- 100	- 40	**300**	**300**	-	300	-	**-**
Total Urban Environment	**27,000**	**10,500**	**2,200**	**39,700**	**43,100**	**9,800**	**4,900**	**57,900**	**66,900**	**16,100**	**- 600**	**2,700**	**18,200**	**27,200**	**4,200**	**24,600**	**8,500**	**9,000**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] These outputs reflect a parcel level allocation of capacity to the typology with the greatest estimated profit margin.

[2] These outputs show the difference between the highest profit margin allocation to the typology and the total potential capacity enabled under the typology. The typology outputs are not additive, with the 'Total' column providing the maximum potential additional capacity.

[3] This is a combination of the 'Attached' and 'Terraced Housing' typologies.

[4] These include vertically-attached apartments. Horizontally-attached apartments are included under the 'Attached/Terrace' typology.

Table 6-4 : Comparison of Capacity and Projected Long-Term Demand (High Substitution Demand Scenario): Option 1

	Projected Demand				Capacity (Max Profit Allocation)[1]					Capacity less Demand					Additional Potential Development[2]			
	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL	Detached	Attached/Terrace[3]	Apartments[4]	TOTAL	TOTAL (Max Yield)	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL	TOTAL (Max Yield)	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL
Catchment																		
	Short-Term: 2024				**Short-Term: 2024**					**Short-Term: 2024**					**Short-Term: 2024**			
Arrowtown	1,300	200	40	**1,500**	1,700	600	40	**2,300**	**2,400**	500	400	-	**800**	**900**	200	500	-	**80**
Eastern/Frankton/Quail	3,400	600	100	**4,100**	4,800	1,000	1,800	**7,600**	**7,800**	1,400	400	1,600	**3,500**	**3,700**	600	2,000	-	**200**
Queenstown/Arthurs	3,900	900	200	**4,900**	7,900	5,600	2,000	**15,500**	**22,300**	4,100	4,800	1,800	**10,600**	**17,400**	1,800	4,800	8,500	**6,800**
Kelvin Heights/Southern Corridor	2,200	300	70	**2,500**	6,400	600	100	**7,100**	**7,200**	4,200	300	60	**4,600**	**4,600**	70	3,200	-	**60**
Wakatipu Small Township/Other	400	70	20	**500**	700	200	10	**900**	**900**	300	100	- 10	**400**	**400**	-	50	-	**10**
Wanaka/Hawea	7,000	1,100	200	**8,400**	20,500	1,800	1,000	**23,300**	**25,300**	13,500	700	700	**15,000**	**16,900**	1,500	13,800	-	**1,900**
Wanaka Small Township/Other	300	30	10	**300**	1,000	80	-	**1,100**	**1,100**	700	60	-	**800**	**800**	-	300	-	**-**
Total Urban Environment	**18,400**	**3,100**	**700**	**22,300**	**43,100**	**9,800**	**4,900**	**57,900**	**66,900**	**24,700**	**6,700**	**4,200**	**35,600**	**44,600**	**4,200**	**24,600**	**8,500**	**9,000**
	Medium-Term: 2031				**Medium-Term: 2031**					**Medium-Term: 2031**					**Medium-Term: 2031**			
Arrowtown	1,200	200	80	**1,500**	1,700	600	40	**2,300**	**2,400**	500	300	- 30	**800**	**900**	200	500	-	**80**
Eastern/Frankton/Quail	3,800	1,000	300	**5,200**	4,800	1,000	1,800	**7,600**	**7,800**	1,000	-	1,500	**2,500**	**2,600**	600	2,000	-	**200**
Queenstown/Arthurs	3,800	1,200	400	**5,400**	7,900	5,600	2,000	**15,500**	**22,300**	4,100	4,400	1,600	**10,200**	**16,900**	1,800	4,800	8,500	**6,800**
Kelvin Heights/Southern Corridor	3,100	500	200	**3,800**	6,400	600	100	**7,100**	**7,200**	3,300	50	- 40	**3,300**	**3,400**	70	3,200	-	**60**
Wakatipu Small Township/Other	500	100	40	**700**	700	200	10	**900**	**900**	200	40	- 30	**200**	**200**	-	50	-	**10**
Wanaka/Hawea	7,600	1,800	500	**10,000**	20,500	1,800	1,000	**23,300**	**25,300**	12,900	40	400	**13,300**	**15,200**	1,500	13,800	-	**1,900**
Wanaka Small Township/Other	400	80	20	**500**	1,000	80	-	**1,100**	**1,100**	700	10	- 20	**600**	**600**	-	300	-	**-**
Total Urban Environment	**20,300**	**5,000**	**1,500**	**27,000**	**43,100**	**9,800**	**4,900**	**57,900**	**66,900**	**22,800**	**4,900**	**3,400**	**30,900**	**39,900**	**4,200**	**24,600**	**8,500**	**9,000**
	Long-Term: 2051				**Long-Term: 2051**					**Long-Term: 2051**					**Long-Term: 2051**			
Arrowtown	1,000	300	200	**1,500**	1,700	600	40	**2,300**	**2,400**	700	200	- 100	**800**	**800**	200	500	-	**80**
Eastern/Frankton/Quail	4,800	2,200	1,000	**8,000**	4,800	1,000	1,800	**7,600**	**7,800**	90	- 1,100	800	- **400**	- **200**	600	2,000	-	**200**
Queenstown/Arthurs	3,800	1,800	900	**6,600**	7,900	5,600	2,000	**15,500**	**22,300**	4,100	3,800	1,100	**9,000**	**15,700**	1,800	4,800	8,500	**6,800**
Kelvin Heights/Southern Corridor	4,400	1,900	900	**7,200**	6,400	600	100	**7,100**	**7,200**	2,000	- 1,300	- 800	- **70**	-	70	3,200	-	**60**
Wakatipu Small Township/Other	600	300	200	**1,100**	700	200	10	**900**	**900**	100	- 100	- 100	- **200**	- **200**	-	50	-	**10**
Wanaka/Hawea	9,000	3,700	1,700	**14,500**	20,500	1,800	1,000	**23,300**	**25,300**	11,500	- 1,800	- 700	**8,800**	**10,800**	1,500	13,800	-	**1,900**
Wanaka Small Township/Other	500	200	100	**800**	1,000	80	-	**1,100**	**1,100**	500	- 100	- 100	**300**	**300**	-	300	-	**-**
Total Urban Environment	**24,100**	**10,400**	**4,900**	**39,700**	**43,100**	**9,800**	**4,900**	**57,900**	**66,900**	**19,000**	- **500**	- **10**	**18,200**	**27,200**	**4,200**	**24,600**	**8,500**	**9,000**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] These outputs reflect a parcel level allocation of capacity to the typology with the greatest estimated profit margin.

[2] These outputs show the difference between the highest profit margin allocation to the typology and the total potential capacity enabled under the typology. The typology outputs are not additive, with the 'Total' column providing the maximum potential additional capacity.

[3] This is a combination of the 'Attached' and 'Terraced Housing' typologies.

[4] These include vertically-attached apartments. Horizontally-attached apartments are included under the 'Attached/Terrace' typology.

6.2.4 Capacity vs. Demand: Option 2

The comparison between capacity and demand under Option 2 for the baseline demand scenario is shown in Table 6-5 and for the higher demand substitution scenario in Table 6-6.

Both demand scenarios show that there are no significant shortfalls in capacity projected to occur within either the short or medium-term under Option 2. The indicated shortfalls in capacity within the Wakatipu Ward's eastern urban areas are also reduced with the additional capacity provided under this option.

The reduction in long-term attached/terraced housing capacity shortfalls suggest that these typologies have a greater relative feasibility under this option. This is likely to occur through the intensification within centralised areas of higher amenity where higher intensity development (with greater yields per parcel) is likely to exceed the feasibility of development at lower densities.

Table 6-5: Comparison of Capacity and Projected Demand (Low Substitution Demand Scenario): Option 2

	Projected Demand				Capacity (Max Profit Allocation)[1]					Capacity less Demand					Additional Potential Development[2]			
	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL	Detached	Attached/Terrace[3]	Apartments[4]	TOTAL	TOTAL (Max Yield)	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL	TOTAL (Max Yield)	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL
Catchment																		
	Short-Term: 2024				**Short-Term: 2024**					**Short-Term: 2024**					**Short-Term: 2024**			
Arrowtown	1,300	200	40	**1,500**	1,700	600	40	**2,300**	**2,400**	400	400	-	**800**	**900**	200	500	-	**80**
Eastern/Frankton/Quail	3,500	500	100	**4,100**	5,100	1,000	1,800	**7,800**	**8,100**	1,600	500	1,600	**3,700**	**4,000**	600	2,300	-	**300**
Queenstown/Arthurs	3,900	800	200	**4,900**	7,800	6,300	2,300	**16,400**	**25,900**	3,900	5,500	2,100	**11,500**	**21,000**	2,100	4,900	12,200	**9,600**
Kelvin Heights/Southern Corridor	2,200	300	60	**2,500**	6,200	900	100	**7,200**	**7,400**	4,000	600	60	**4,700**	**4,900**	200	3,000	200	**200**
Wakatipu Small Township/Other	400	70	10	**500**	700	200	10	**900**	**900**	300	100	-	**400**	**400**	-	50	-	**10**
Wanaka/Hawea	7,100	1,000	200	**8,400**	20,500	1,800	1,000	**23,300**	**25,300**	13,400	800	700	**15,000**	**16,900**	1,500	13,800	-	**1,900**
Wanaka Small Township/Other	300	20	10	**300**	1,000	80	-	**1,100**	**1,100**	700	60	-	**800**	**800**	-	300	-	**-**
Total Urban Environment	**18,700**	**3,000**	**700**	**22,300**	**43,000**	**10,900**	**5,200**	**59,100**	**71,200**	**24,400**	**7,900**	**4,500**	**36,800**	**48,900**	**4,500**	**24,800**	**12,400**	**12,100**
	Medium-Term: 2031				**Medium-Term: 2031**					**Medium-Term: 2031**					**Medium-Term: 2031**			
Arrowtown	1,200	300	60	**1,500**	1,700	600	40	**2,300**	**2,400**	500	300	- 20	**800**	**900**	200	500	-	**80**
Eastern/Frankton/Quail	4,000	900	200	**5,200**	5,100	1,000	1,800	**7,800**	**8,100**	1,100	70	1,600	**2,700**	**3,000**	600	2,300	-	**300**
Queenstown/Arthurs	3,900	1,200	300	**5,300**	7,800	6,300	2,300	**16,400**	**25,900**	3,900	5,100	2,000	**11,000**	**20,600**	2,100	4,900	12,200	**9,600**
Kelvin Heights/Southern Corridor	3,300	400	90	**3,800**	6,200	900	100	**7,200**	**7,400**	2,900	500	40	**3,400**	**3,600**	200	3,000	200	**200**
Wakatipu Small Township/Other	500	100	30	**700**	700	200	10	**900**	**900**	200	50	- 20	**200**	**200**	-	50	-	**10**
Wanaka/Hawea	8,000	1,700	400	**10,000**	20,500	1,800	1,000	**23,300**	**25,300**	12,500	100	600	**13,300**	**15,200**	1,500	13,800	-	**1,900**
Wanaka Small Township/Other	400	70	10	**500**	1,000	80	-	**1,100**	**1,100**	600	20	- 10	**600**	**600**	-	300	-	**-**
Total Urban Environment	**21,200**	**4,700**	**1,000**	**27,000**	**43,000**	**10,900**	**5,200**	**59,100**	**71,200**	**21,800**	**6,100**	**4,200**	**32,100**	**44,200**	**4,500**	**24,800**	**12,400**	**12,100**
	Long-Term: 2051				**Long-Term: 2051**					**Long-Term: 2051**					**Long-Term: 2051**			
Arrowtown	1,100	400	80	**1,500**	1,700	600	40	**2,300**	**2,400**	600	200	- 40	**800**	**800**	200	500	-	**80**
Eastern/Frankton/Quail	5,400	2,100	400	**8,000**	5,100	1,000	1,800	**7,800**	**8,100**	- 300	- 1,100	1,300	- **100**	**100**	600	2,300	-	**300**
Queenstown/Arthurs	4,000	2,100	400	**6,500**	7,800	6,300	2,300	**16,400**	**25,900**	3,800	4,300	1,800	**9,800**	**19,400**	2,100	4,900	12,200	**9,600**
Kelvin Heights/Southern Corridor	5,200	1,700	300	**7,200**	6,200	900	100	**7,200**	**7,400**	1,100	- 800	- 200	**60**	**300**	200	3,000	200	**200**
Wakatipu Small Township/Other	700	300	70	**1,100**	700	200	10	**900**	**900**	20	- 200	- 60	- **200**	- **200**	-	50	-	**10**
Wanaka/Hawea	10,100	3,600	800	**14,500**	20,500	1,800	1,000	**23,300**	**25,300**	10,400	- 1,800	200	**8,800**	**10,800**	1,500	13,800	-	**1,900**
Wanaka Small Township/Other	600	200	40	**800**	1,000	80	-	**1,100**	**1,100**	400	- 100	- 40	**300**	**300**	-	300	-	**-**
Total Urban Environment	**27,000**	**10,500**	**2,200**	**39,700**	**43,000**	**10,900**	**5,200**	**59,100**	**71,200**	**16,000**	**400**	**3,000**	**19,400**	**31,500**	**4,500**	**24,800**	**12,400**	**12,100**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] These outputs reflect a parcel level allocation of capacity to the typology with the greatest estimated profit margin.

[2] These outputs show the difference between the highest profit margin allocation to the typology and the total potential capacity enabled under the typology. The typology outputs are not additive, with the 'Total' column providing the maximum potential additional capacity.

[3] This is a combination of the 'Attached' and 'Terraced Housing' typologies.

[4] These include vertically-attached apartments. Horizontally-attached apartments are included under the 'Attached/Terrace' typology.

Table 6-6: Comparison of Capacity and Projected Long-Term Demand (High Substitution Demand Scenario): Option 2

	Projected Demand				Capacity (Max Profit Allocation)[1]					Capacity less Demand					Additional Potential Development[2]			
	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL	Detached	Attached/Terrace[3]	Apartments[4]	TOTAL	TOTAL (Max Yield)	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL	TOTAL (Max Yield)	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL
Catchment																		
	Short-Term: 2024				**Short-Term: 2024**					**Short-Term: 2024**					**Short-Term: 2024**			
Arrowtown	1,300	200	40	**1,500**	1,700	600	40	**2,300**	**2,400**	500	400	-	**800**	**900**	200	500	-	**80**
Eastern/Frankton/Quail	3,400	600	100	**4,100**	5,100	1,000	1,800	**7,800**	**8,100**	1,600	400	1,600	**3,700**	**4,000**	600	2,300	-	**300**
Queenstown/Arthurs	3,900	900	200	**4,900**	7,800	6,300	2,300	**16,400**	**25,900**	3,900	5,500	2,100	**11,500**	**21,000**	2,100	4,900	12,200	**9,600**
Kelvin Heights/Southern Corridor	2,200	300	70	**2,500**	6,200	900	100	**7,200**	**7,400**	4,100	600	60	**4,700**	**4,900**	200	3,000	200	**200**
Wakatipu Small Township/Other	400	70	20	**500**	700	200	10	**900**	**900**	300	100	- 10	**400**	**400**	-	50	-	**10**
Wanaka/Hawea	7,000	1,100	200	**8,400**	20,500	1,800	1,000	**23,300**	**25,300**	13,500	700	700	**15,000**	**16,900**	1,500	13,800	-	**1,900**
Wanaka Small Township/Other	300	30	10	**300**	1,000	80	-	**1,100**	**1,100**	700	60	-	**800**	**800**	-	300	-	**-**
Total Urban Environment	**18,400**	**3,100**	**700**	**22,300**	**43,000**	**10,900**	**5,200**	**59,100**	**71,200**	**24,600**	**7,700**	**4,500**	**36,800**	**48,900**	**4,500**	**24,800**	**12,400**	**12,100**
	Medium-Term: 2031				**Medium-Term: 2031**					**Medium-Term: 2031**					**Medium-Term: 2031**			
Arrowtown	1,200	200	80	**1,500**	1,700	600	40	**2,300**	**2,400**	500	300	- 30	**800**	**900**	200	500	-	**80**
Eastern/Frankton/Quail	3,800	1,000	300	**5,200**	5,100	1,000	1,800	**7,800**	**8,100**	1,200	10	1,500	**2,700**	**3,000**	600	2,300	-	**300**
Queenstown/Arthurs	3,800	1,200	400	**5,400**	7,800	6,300	2,300	**16,400**	**25,900**	4,000	5,200	1,900	**11,000**	**20,600**	2,100	4,900	12,200	**9,600**
Kelvin Heights/Southern Corridor	3,100	500	200	**3,800**	6,200	900	100	**7,200**	**7,400**	3,200	300	- 40	**3,400**	**3,600**	200	3,000	200	**200**
Wakatipu Small Township/Other	500	100	40	**700**	700	200	10	**900**	**900**	200	40	- 30	**200**	**200**	-	50	-	**10**
Wanaka/Hawea	7,600	1,800	500	**10,000**	20,500	1,800	1,000	**23,300**	**25,300**	12,900	40	400	**13,300**	**15,200**	1,500	13,800	-	**1,900**
Wanaka Small Township/Other	400	80	20	**500**	1,000	80	-	**1,100**	**1,100**	700	10	- 20	**600**	**600**	-	300	-	**-**
Total Urban Environment	**20,300**	**5,000**	**1,500**	**27,000**	**43,000**	**10,900**	**5,200**	**59,100**	**71,200**	**22,700**	**5,900**	**3,700**	**32,100**	**44,200**	**4,500**	**24,800**	**12,400**	**12,100**
	Long-Term: 2051				**Long-Term: 2051**					**Long-Term: 2051**					**Long-Term: 2051**			
Arrowtown	1,000	300	200	**1,500**	1,700	600	40	**2,300**	**2,400**	700	200	- 100	**800**	**800**	200	500	-	**80**
Eastern/Frankton/Quail	4,800	2,200	1,000	**8,000**	5,100	1,000	1,800	**7,800**	**8,100**	300	- 1,100	800	- **100**	**100**	600	2,300	-	**300**
Queenstown/Arthurs	3,800	1,800	900	**6,600**	7,800	6,300	2,300	**16,400**	**25,900**	4,000	4,500	1,400	**9,800**	**19,400**	2,100	4,900	12,200	**9,600**
Kelvin Heights/Southern Corridor	4,400	1,900	900	**7,200**	6,200	900	100	**7,200**	**7,400**	1,900	- 1,000	- 800	**60**	**300**	200	3,000	200	**200**
Wakatipu Small Township/Other	600	300	200	**1,100**	700	200	10	**900**	**900**	100	- 100	- 100	- **200**	- **200**	-	50	-	**10**
Wanaka/Hawea	9,000	3,700	1,700	**14,500**	20,500	1,800	1,000	**23,300**	**25,300**	11,500	- 1,800	- 700	**8,800**	**10,800**	1,500	13,800	-	**1,900**
Wanaka Small Township/Other	500	200	100	**800**	1,000	80	-	**1,100**	**1,100**	500	- 100	- 100	**300**	**300**	-	300	-	**-**
Total Urban Environment	**24,100**	**10,400**	**4,900**	**39,700**	**43,000**	**10,900**	**5,200**	**59,100**	**71,200**	**19,000**	**500**	**300**	**19,400**	**31,500**	**4,500**	**24,800**	**12,400**	**12,100**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] These outputs reflect a parcel level allocation of capacity to the typology with the greatest estimated profit margin.

[2] These outputs show the difference between the highest profit margin allocation to the typology and the total potential capacity enabled under the typology. The typology outputs are not additive, with the 'Total' column providing the maximum potential additional capacity.

[3] This is a combination of the 'Attached' and 'Terraced Housing' typologies.

[4] These include vertically-attached apartments. Horizontally-attached apartments are included under the 'Attached/Terrace' typology.

6.2.5 Capacity vs. Demand: Option 5

The comparison between capacity and demand under Option 5 for the baseline demand scenario is shown in Table 6-7 and for the higher demand substitution scenario in Table 6-8.

There are no significant projected shortfalls in estimated feasible capacity within this scenario across any time period when assessing total capacity. There is a large amount of additional capacity feasible through medium density development across the general suburban area under Option 5. This results in very large surpluses in capacity within the districts central urban areas of Wanaka and Queenstown where the feasible development opportunity exceeds long-term demand multiple times. There are also large surpluses in the eastern and southern parts of Queenstown's main urban area, along with Arrowtown.

Under this scenario, long-term shortfalls in detached dwelling capacity emerge within the Kelvin Heights/Southern corridor area. This is due to the concentration of the highest margin development options into the attached/terraced housing typology as a result of the higher yields across the general suburban areas. Despite this shortfall, the final section of the tables suggests that there is likely to be plenty of feasible development options within the detached dwelling typology that occur at lower, albeit still feasible, margins.

The large increase in medium density development options across the general suburban area has meant that there are very minor areas of shortfall within this typology when development is allocated to the highest margin option. It is important to note however, that there is also unlikely to be shortfalls in this typology under other scenarios due to the large amount of feasible capacity outside of the highest profit areas of the market.

Table 6-7: Comparison of Capacity and Projected Demand (Low Substitution Demand Scenario): Option 5

	Projected Demand				Capacity (Max Profit Allocation)[1]					Capacity less Demand					Additional Potential Development[2]			
	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL	Detached	Attached/Terrace[3]	Apartments[4]	TOTAL	TOTAL (Max Yield)	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL	TOTAL (Max Yield)	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL
Catchment																		
	Short-Term: 2024				**Short-Term: 2024**					**Short-Term: 2024**					**Short-Term: 2024**			
Arrowtown	1,300	200	40	**1,500**	1,300	5,600	40	**6,900**	**7,100**	- 10	5,500	-	**5,400**	**5,600**	1,500	200	-	**200**
Eastern/Frankton/Quail	3,500	500	100	**4,100**	5,400	4,600	1,800	**11,700**	**14,800**	1,900	4,100	1,600	**7,600**	**10,600**	1,500	5,800	-	**3,000**
Queenstown/Arthurs	3,900	800	200	**4,900**	5,700	19,800	2,000	**27,500**	**37,000**	1,800	19,000	1,800	**22,600**	**32,100**	6,600	5,700	8,500	**9,500**
Kelvin Heights/Southern Corridor	2,200	300	60	**2,500**	3,300	12,700	100	**16,100**	**16,300**	1,100	12,400	60	**13,500**	**13,700**	5,300	300	-	**200**
Wakatipu Small Township/Other	400	70	10	**500**	700	200	10	**900**	**900**	300	100	-	**400**	**400**	-	80	-	**40**
Wanaka/Hawea	7,100	1,000	200	**8,400**	16,000	41,600	1,000	**58,600**	**72,300**	8,900	40,500	700	**50,200**	**63,900**	18,500	22,300	-	**13,700**
Wanaka Small Township/Other	300	20	10	**300**	1,300	80	-	**1,400**	**2,200**	1,000	60	-	**1,000**	**1,800**	-	1,600	-	**800**
Total Urban Environment	**18,700**	**3,000**	**700**	**22,300**	**33,700**	**84,500**	**4,900**	**123,100**	**150,500**	**15,000**	**81,600**	**4,300**	**100,900**	**128,200**	**33,500**	**35,800**	**8,500**	**27,300**
	Medium-Term: 2031				**Medium-Term: 2031**					**Medium-Term: 2031**					**Medium-Term: 2031**			
Arrowtown	1,200	300	60	**1,500**	1,300	5,600	40	**6,900**	**7,100**	80	5,400	- 20	**5,400**	**5,600**	1,500	200	-	**200**
Eastern/Frankton/Quail	4,000	900	200	**5,200**	5,400	4,600	1,800	**11,700**	**14,800**	1,400	3,700	1,600	**6,600**	**9,600**	1,500	5,800	-	**3,000**
Queenstown/Arthurs	3,900	1,200	300	**5,300**	5,700	19,800	2,000	**27,500**	**37,000**	1,900	18,600	1,700	**22,200**	**31,600**	6,600	5,700	8,500	**9,500**
Kelvin Heights/Southern Corridor	3,300	400	90	**3,800**	3,300	12,700	100	**16,100**	**16,300**	- 30	12,300	40	**12,300**	**12,500**	5,300	300	-	**200**
Wakatipu Small Township/Other	500	100	30	**700**	700	200	10	**900**	**900**	200	50	- 20	**200**	**300**	-	80	-	**40**
Wanaka/Hawea	8,000	1,700	400	**10,000**	16,000	41,600	1,000	**58,600**	**72,300**	8,100	39,900	600	**48,600**	**62,200**	18,500	22,300	-	**13,700**
Wanaka Small Township/Other	400	70	10	**500**	1,300	80	-	**1,400**	**2,200**	900	20	- 10	**900**	**1,700**	-	1,600	-	**800**
Total Urban Environment	**21,200**	**4,700**	**1,000**	**27,000**	**33,700**	**84,500**	**4,900**	**123,100**	**150,500**	**12,400**	**79,800**	**3,900**	**96,200**	**123,500**	**33,500**	**35,800**	**8,500**	**27,300**
	Long-Term: 2051				**Long-Term: 2051**					**Long-Term: 2051**					**Long-Term: 2051**			
Arrowtown	1,100	400	80	**1,500**	1,300	5,600	40	**6,900**	**7,100**	200	5,200	- 40	**5,400**	**5,500**	1,500	200	-	**200**
Eastern/Frankton/Quail	5,400	2,100	400	**8,000**	5,400	4,600	1,800	**11,700**	**14,800**	- 30	2,500	1,300	**3,800**	**6,800**	1,500	5,800	-	**3,000**
Queenstown/Arthurs	4,000	2,100	400	**6,500**	5,700	19,800	2,000	**27,500**	**37,000**	1,700	17,700	1,500	**21,000**	**30,400**	6,600	5,700	8,500	**9,500**
Kelvin Heights/Southern Corridor	5,200	1,700	300	**7,200**	3,300	12,700	100	**16,100**	**16,300**	- 1,900	11,000	- 200	**8,900**	**9,100**	5,300	300	-	**200**
Wakatipu Small Township/Other	700	300	70	**1,100**	700	200	10	**900**	**900**	20	- 200	- 60	- **200**	- **200**	-	80	-	**40**
Wanaka/Hawea	10,100	3,600	800	**14,500**	16,000	41,600	1,000	**58,600**	**72,300**	5,900	37,900	200	**44,100**	**57,800**	18,500	22,300	-	**13,700**
Wanaka Small Township/Other	600	200	40	**800**	1,300	80	-	**1,400**	**2,200**	700	- 100	- 40	**600**	**1,300**	-	1,600	-	**800**
Total Urban Environment	**27,000**	**10,500**	**2,200**	**39,700**	**33,700**	**84,500**	**4,900**	**123,100**	**150,500**	**6,700**	**74,100**	**2,700**	**83,500**	**110,800**	**33,500**	**35,800**	**8,500**	**27,300**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] These outputs reflect a parcel level allocation of capacity to the typology with the greatest estimated profit margin.

[2] These outputs show the difference between the highest profit margin allocation to the typology and the total potential capacity enabled under the typology. The typology outputs are not additive, with the 'Total' column providing the maximum potential additional capacity.

[3] This is a combination of the 'Attached' and 'Terraced Housing' typologies.

[4] These include vertically-attached apartments. Horizontally-attached apartments are included under the 'Attached/Terrace' typology.

Table 6-8: Comparison of Capacity and Projected Long-Term Demand (High Substitution Demand Scenario): Option 5

	Projected Demand				Capacity (Max Profit Allocation)[1]					Capacity less Demand					Additional Potential Development[2]			
	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL	Detached	Attached/Terrace[3]	Apartments[4]	TOTAL	TOTAL (Max Yield)	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL	TOTAL (Max Yield)	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL
Catchment																		
	Short-Term: 2024				**Short-Term: 2024**					**Short-Term: 2024**					**Short-Term: 2024**			
Arrowtown	1,300	200	40	**1,500**	1,300	5,600	40	**6,900**	**7,100**	-	5,400	-	**5,400**	**5,600**	1,500	200	-	**200**
Eastern/Frankton/Quail	3,400	600	100	**4,100**	5,400	4,600	1,800	**11,700**	**14,800**	2,000	4,000	1,600	**7,600**	**10,600**	1,500	5,800	-	**3,000**
Queenstown/Arthurs	3,900	900	200	**4,900**	5,700	19,800	2,000	**27,500**	**37,000**	1,900	18,900	1,800	**22,600**	**32,100**	6,600	5,700	8,500	**9,500**
Kelvin Heights/Southern Corridor	2,200	300	70	**2,500**	3,300	12,700	100	**16,100**	**16,300**	1,100	12,300	60	**13,500**	**13,800**	5,300	300	-	**200**
Wakatipu Small Township/Other	400	70	20	**500**	700	200	10	**900**	**900**	300	100	- 10	**400**	**400**	-	80	-	**40**
Wanaka/Hawea	7,000	1,100	200	**8,400**	16,000	41,600	1,000	**58,600**	**72,300**	9,000	40,500	700	**50,200**	**63,900**	18,500	22,300	-	**13,700**
Wanaka Small Township/Other	300	30	10	**300**	1,300	80	-	**1,400**	**2,200**	1,000	60	-	**1,000**	**1,800**	-	1,600	-	**800**
Total Urban Environment	**18,400**	**3,100**	**700**	**22,300**	**33,700**	**84,500**	**4,900**	**123,100**	**150,500**	**15,300**	**81,400**	**4,200**	**100,900**	**128,200**	**33,500**	**35,800**	**8,500**	**27,300**
	Medium-Term: 2031				**Medium-Term: 2031**					**Medium-Term: 2031**					**Medium-Term: 2031**			
Arrowtown	1,200	200	80	**1,500**	1,300	5,600	40	**6,900**	**7,100**	90	5,400	- 30	**5,400**	**5,600**	1,500	200	-	**200**
Eastern/Frankton/Quail	3,800	1,000	300	**5,200**	5,400	4,600	1,800	**11,700**	**14,800**	1,500	3,600	1,500	**6,600**	**9,600**	1,500	5,800	-	**3,000**
Queenstown/Arthurs	3,800	1,200	400	**5,400**	5,700	19,800	2,000	**27,500**	**37,000**	2,000	18,600	1,600	**22,200**	**31,600**	6,600	5,700	8,500	**9,500**
Kelvin Heights/Southern Corridor	3,100	500	200	**3,800**	3,300	12,700	100	**16,100**	**16,300**	200	12,100	- 40	**12,300**	**12,500**	5,300	300	-	**200**
Wakatipu Small Township/Other	500	100	40	**700**	700	200	10	**900**	**900**	200	40	- 30	**200**	**300**	-	80	-	**40**
Wanaka/Hawea	7,600	1,800	500	**10,000**	16,000	41,600	1,000	**58,600**	**72,300**	8,400	39,800	400	**48,600**	**62,200**	18,500	22,300	-	**13,700**
Wanaka Small Township/Other	400	80	20	**500**	1,300	80	-	**1,400**	**2,200**	900	10	- 20	**900**	**1,700**	-	1,600	-	**800**
Total Urban Environment	**20,300**	**5,000**	**1,500**	**27,000**	**33,700**	**84,500**	**4,900**	**123,100**	**150,500**	**13,400**	**79,600**	**3,400**	**96,200**	**123,500**	**33,500**	**35,800**	**8,500**	**27,300**
	Long-Term: 2051				**Long-Term: 2051**					**Long-Term: 2051**					**Long-Term: 2051**			
Arrowtown	1,000	300	200	**1,500**	1,300	5,600	40	**6,900**	**7,100**	200	5,300	- 100	**5,400**	**5,500**	1,500	200	-	**200**
Eastern/Frankton/Quail	4,800	2,200	1,000	**8,000**	5,400	4,600	1,800	**11,700**	**14,800**	600	2,500	800	**3,800**	**6,800**	1,500	5,800	-	**3,000**
Queenstown/Arthurs	3,800	1,800	900	**6,600**	5,700	19,800	2,000	**27,500**	**37,000**	1,900	17,900	1,100	**21,000**	**30,400**	6,600	5,700	8,500	**9,500**
Kelvin Heights/Southern Corridor	4,400	1,900	900	**7,200**	3,300	12,700	100	**16,100**	**16,300**	- 1,100	10,800	- 800	**8,900**	**9,100**	5,300	300	-	**200**
Wakatipu Small Township/Other	600	300	200	**1,100**	700	200	10	**900**	**900**	100	- 100	- 100	- **200**	- **200**	-	80	-	**40**
Wanaka/Hawea	9,000	3,700	1,700	**14,500**	16,000	41,600	1,000	**58,600**	**72,300**	7,000	37,900	- 700	**44,100**	**57,800**	18,500	22,300	-	**13,700**
Wanaka Small Township/Other	500	200	100	**800**	1,300	80	-	**1,400**	**2,200**	800	- 100	- 100	**600**	**1,300**	-	1,600	-	**800**
Total Urban Environment	**24,100**	**10,400**	**4,900**	**39,700**	**33,700**	**84,500**	**4,900**	**123,100**	**150,500**	**9,600**	**74,200**	- **10**	**83,500**	**110,800**	**33,500**	**35,800**	**8,500**	**27,300**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] These outputs reflect a parcel level allocation of capacity to the typology with the greatest estimated profit margin.

[2] These outputs show the difference between the highest profit margin allocation to the typology and the total potential capacity enabled under the typology. The typology outputs are not additive, with the 'Total' column providing the maximum potential additional capacity.

[3] This is a combination of the 'Attached' and 'Terraced Housing' typologies.

[4] These include vertically-attached apartments. Horizontally-attached apartments are included under the 'Attached/Terrace' typology.

6.2.6 Capacity vs. Demand: Option 6

The comparison between capacity and demand under Option 6 for the baseline demand scenario is shown in Table 6-9 and for the higher demand substitution scenario in Table 6-10.

There are similar patterns in capacity vs. demand in Option 6 to those in Option 5. The largest difference occurs in the long-term in the eastern parts of the Wakatipu Ward urban area where there is a projected shortfall in attached/terraced housing. However, it is likely that some of this shortfall could be met through development in other parts of the market beyond that of the areas of highest margin. This may be limited as the surplus in detached dwellings within this typology is lower than the attached/terraced shortfall. As noted above, there is significant additional feasible capacity in this location within the Spatial Plan long-term growth areas.

Table 6-9: Comparison of Capacity and Projected Demand (Low Substitution Demand Scenario): Option 6

	Projected Demand				Capacity (Max Profit Allocation)[1]					Capacity less Demand					Additional Potential Development[2]			
	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL	Detached	Attached/Terrace[3]	Apartments[4]	TOTAL	TOTAL (Max Yield)	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL	TOTAL (Max Yield)	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL
Catchment																		
	Short-Term: 2024				**Short-Term: 2024**					**Short-Term: 2024**					**Short-Term: 2024**			
Arrowtown	1,300	200	40	**1,500**	2,000	1,600	40	**3,700**	**4,000**	800	1,400	-	**2,200**	**2,500**	700	1,100	-	**300**
Eastern/Frankton/Quail	3,500	500	100	**4,100**	6,200	1,100	1,800	**9,100**	**10,200**	2,800	500	1,600	**4,900**	**6,000**	700	4,400	-	**1,100**
Queenstown/Arthurs	3,900	800	200	**4,900**	9,900	6,500	2,000	**18,400**	**26,700**	6,000	5,700	1,800	**13,500**	**21,800**	2,400	8,500	8,700	**8,300**
Kelvin Heights/Southern Corridor	2,200	300	60	**2,500**	7,900	1,700	100	**9,700**	**10,100**	5,700	1,400	60	**7,200**	**7,600**	700	5,000	-	**400**
Wakatipu Small Township/Other	400	70	10	**500**	700	200	10	**900**	**900**	300	100	-	**400**	**400**	-	50	-	**10**
Wanaka/Hawea	7,100	1,000	200	**8,400**	30,600	5,100	1,000	**36,700**	**45,400**	23,600	4,000	700	**28,300**	**37,100**	3,900	31,200	-	**8,700**
Wanaka Small Township/Other	300	20	10	**300**	1,300	80	-	**1,400**	**1,400**	1,000	60	-	**1,000**	**1,100**	-	800	-	**50**
Total Urban Environment	**18,700**	**3,000**	**700**	**22,300**	**58,700**	**16,300**	**4,900**	**79,900**	**98,800**	**40,000**	**13,300**	**4,300**	**57,600**	**76,500**	**8,400**	**51,100**	**8,700**	**18,900**
	Medium-Term: 2031				**Medium-Term: 2031**					**Medium-Term: 2031**					**Medium-Term: 2031**			
Arrowtown	1,200	300	60	**1,500**	2,000	1,600	40	**3,700**	**4,000**	900	1,400	- 20	**2,200**	**2,500**	700	1,100	-	**300**
Eastern/Frankton/Quail	4,000	900	200	**5,200**	6,200	1,100	1,800	**9,100**	**10,200**	2,200	100	1,600	**3,900**	**5,000**	700	4,400	-	**1,100**
Queenstown/Arthurs	3,900	1,200	300	**5,300**	9,900	6,500	2,000	**18,400**	**26,700**	6,000	5,300	1,700	**13,100**	**21,400**	2,400	8,500	8,700	**8,300**
Kelvin Heights/Southern Corridor	3,300	400	90	**3,800**	7,900	1,700	100	**9,700**	**10,100**	4,600	1,300	40	**5,900**	**6,300**	700	5,000	-	**400**
Wakatipu Small Township/Other	500	100	30	**700**	700	200	10	**900**	**900**	200	50	- 20	**200**	**200**	-	50	-	**10**
Wanaka/Hawea	8,000	1,700	400	**10,000**	30,600	5,100	1,000	**36,700**	**45,400**	22,700	3,400	600	**26,700**	**35,400**	3,900	31,200	-	**8,700**
Wanaka Small Township/Other	400	70	10	**500**	1,300	80	-	**1,400**	**1,400**	900	20	- 10	**900**	**1,000**	-	800	-	**50**
Total Urban Environment	**21,200**	**4,700**	**1,000**	**27,000**	**58,700**	**16,300**	**4,900**	**79,900**	**98,800**	**37,400**	**11,600**	**3,900**	**52,900**	**71,800**	**8,400**	**51,100**	**8,700**	**18,900**
	Long-Term: 2051				**Long-Term: 2051**					**Long-Term: 2051**					**Long-Term: 2051**			
Arrowtown	1,100	400	80	**1,500**	2,000	1,600	40	**3,700**	**4,000**	1,000	1,200	- 40	**2,200**	**2,500**	700	1,100	-	**300**
Eastern/Frankton/Quail	5,400	2,100	400	**8,000**	6,200	1,100	1,800	**9,100**	**10,200**	800	- 1,100	1,300	**1,100**	**2,200**	700	4,400	-	**1,100**
Queenstown/Arthurs	4,000	2,100	400	**6,500**	9,900	6,500	2,000	**18,400**	**26,700**	5,900	4,500	1,500	**11,900**	**20,200**	2,400	8,500	8,700	**8,300**
Kelvin Heights/Southern Corridor	5,200	1,700	300	**7,200**	7,900	1,700	100	**9,700**	**10,100**	2,700	30	- 200	**2,500**	**2,900**	700	5,000	-	**400**
Wakatipu Small Township/Other	700	300	70	**1,100**	700	200	10	**900**	**900**	20	- 200	- 60	- **200**	- **200**	-	50	-	**10**
Wanaka/Hawea	10,100	3,600	800	**14,500**	30,600	5,100	1,000	**36,700**	**45,400**	20,500	1,400	200	**22,200**	**30,900**	3,900	31,200	-	**8,700**
Wanaka Small Township/Other	600	200	40	**800**	1,300	80	-	**1,400**	**1,400**	700	- 100	- 40	**600**	**600**	-	800	-	**50**
Total Urban Environment	**27,000**	**10,500**	**2,200**	**39,700**	**58,700**	**16,300**	**4,900**	**79,900**	**98,800**	**31,700**	**5,800**	**2,700**	**40,200**	**59,100**	**8,400**	**51,100**	**8,700**	**18,900**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] These outputs reflect a parcel level allocation of capacity to the typology with the greatest estimated profit margin.

[2] These outputs show the difference between the highest profit margin allocation to the typology and the total potential capacity enabled under the typology. The typology outputs are not additive, with the 'Total' column providing the maximum potential additional capacity.

[3] This is a combination of the 'Attached' and 'Terraced Housing' typologies.

[4] These include vertically-attached apartments. Horizontally-attached apartments are included under the 'Attached/Terrace' typology.

Table 6-10: Comparison of Capacity and Projected Long-Term Demand (High Substitution Demand Scenario): Option 6

	Projected Demand				Capacity (Max Profit Allocation)[1]					Capacity less Demand					Additional Potential Development[2]			
	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL	Detached	Attached/Terrace[3]	Apartments[4]	TOTAL	TOTAL (Max Yield)	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL	TOTAL (Max Yield)	Detached	Attached/ Terrace[3]	Apartments[4]	TOTAL
Catchment																		
	Short-Term: 2024				**Short-Term: 2024**					**Short-Term: 2024**					**Short-Term: 2024**			
Arrowtown	1,300	200	40	**1,500**	2,000	1,600	40	**3,700**	**4,000**	800	1,400	-	**2,200**	**2,500**	700	1,100	-	**300**
Eastern/Frankton/Quail	3,400	600	100	**4,100**	6,200	1,100	1,800	**9,100**	**10,200**	2,800	500	1,600	**4,900**	**6,000**	700	4,400	-	**1,100**
Queenstown/Arthurs	3,900	900	200	**4,900**	9,900	6,500	2,000	**18,400**	**26,700**	6,000	5,700	1,800	**13,500**	**21,800**	2,400	8,500	8,700	**8,300**
Kelvin Heights/Southern Corridor	2,200	300	70	**2,500**	7,900	1,700	100	**9,700**	**10,100**	5,700	1,400	60	**7,200**	**7,600**	700	5,000	-	**400**
Wakatipu Small Township/Other	400	70	20	**500**	700	200	10	**900**	**900**	300	100	- 10	**400**	**400**	-	50	-	**10**
Wanaka/Hawea	7,000	1,100	200	**8,400**	30,600	5,100	1,000	**36,700**	**45,400**	23,600	4,000	700	**28,300**	**37,100**	3,900	31,200	-	**8,700**
Wanaka Small Township/Other	300	30	10	**300**	1,300	80	-	**1,400**	**1,400**	1,000	60	-	**1,000**	**1,100**	-	800	-	**50**
Total Urban Environment	**18,400**	**3,100**	**700**	**22,300**	**58,700**	**16,300**	**4,900**	**79,900**	**98,800**	**40,300**	**13,200**	**4,200**	**57,600**	**76,500**	**8,400**	**51,100**	**8,700**	**18,900**
	Medium-Term: 2031				**Medium-Term: 2031**					**Medium-Term: 2031**					**Medium-Term: 2031**			
Arrowtown	1,200	200	80	**1,500**	2,000	1,600	40	**3,700**	**4,000**	900	1,400	- 30	**2,200**	**2,500**	700	1,100	-	**300**
Eastern/Frankton/Quail	3,800	1,000	300	**5,200**	6,200	1,100	1,800	**9,100**	**10,200**	2,400	70	1,500	**3,900**	**5,000**	700	4,400	-	**1,100**
Queenstown/Arthurs	3,800	1,200	400	**5,400**	9,900	6,500	2,000	**18,400**	**26,700**	6,100	5,400	1,600	**13,100**	**21,400**	2,400	8,500	8,700	**8,300**
Kelvin Heights/Southern Corridor	3,100	500	200	**3,800**	7,900	1,700	100	**9,700**	**10,100**	4,800	1,200	- 40	**5,900**	**6,300**	700	5,000	-	**400**
Wakatipu Small Township/Other	500	100	40	**700**	700	200	10	**900**	**900**	200	40	- 30	**200**	**200**	-	50	-	**10**
Wanaka/Hawea	7,600	1,800	500	**10,000**	30,600	5,100	1,000	**36,700**	**45,400**	23,000	3,300	400	**26,700**	**35,400**	3,900	31,200	-	**8,700**
Wanaka Small Township/Other	400	80	20	**500**	1,300	80	-	**1,400**	**1,400**	900	10	- 20	**900**	**1,000**	-	800	-	**50**
Total Urban Environment	**20,300**	**5,000**	**1,500**	**27,000**	**58,700**	**16,300**	**4,900**	**79,900**	**98,800**	**38,400**	**11,300**	**3,400**	**52,900**	**71,800**	**8,400**	**51,100**	**8,700**	**18,900**
	Long-Term: 2051				**Long-Term: 2051**					**Long-Term: 2051**					**Long-Term: 2051**			
Arrowtown	1,000	300	200	**1,500**	2,000	1,600	40	**3,700**	**4,000**	1,000	1,300	- 100	**2,200**	**2,500**	700	1,100	-	**300**
Eastern/Frankton/Quail	4,800	2,200	1,000	**8,000**	6,200	1,100	1,800	**9,100**	**10,200**	1,500	- 1,100	800	**1,100**	**2,200**	700	4,400	-	**1,100**
Queenstown/Arthurs	3,800	1,800	900	**6,600**	9,900	6,500	2,000	**18,400**	**26,700**	6,100	4,700	1,100	**11,900**	**20,200**	2,400	8,500	8,700	**8,300**
Kelvin Heights/Southern Corridor	4,400	1,900	900	**7,200**	7,900	1,700	100	**9,700**	**10,100**	3,500	- 200	- 800	**2,500**	**3,000**	700	5,000	-	**400**
Wakatipu Small Township/Other	600	300	200	**1,100**	700	200	10	**900**	**900**	100	- 100	- 100	- **200**	- **200**	-	50	-	**10**
Wanaka/Hawea	9,000	3,700	1,700	**14,500**	30,600	5,100	1,000	**36,700**	**45,400**	21,600	1,400	- 700	**22,200**	**30,900**	3,900	31,200	-	**8,700**
Wanaka Small Township/Other	500	200	100	**800**	1,300	80	-	**1,400**	**1,400**	800	- 100	- 100	**600**	**600**	-	800	-	**50**
Total Urban Environment	**24,100**	**10,400**	**4,900**	**39,700**	**58,700**	**16,300**	**4,900**	**79,900**	**98,800**	**34,600**	**5,900**	**-**	**40,200**	**59,100**	**8,400**	**51,100**	**8,700**	**18,900**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] These outputs reflect a parcel level allocation of capacity to the typology with the greatest estimated profit margin.

[2] These outputs show the difference between the highest profit margin allocation to the typology and the total potential capacity enabled under the typology. The typology outputs are not additive, with the 'Total' column providing the maximum potential additional capacity.

[3] This is a combination of the 'Attached' and 'Terraced Housing' typologies.

[4] These include vertically-attached apartments. Horizontally-attached apartments are included under the 'Attached/Terrace' typology.

6.2.7 Capacity vs. Demand: Summary of Modelled Scenarios

The difference between total feasible capacity and total demand for each location is summarised across the modelled scenarios in Table 6-11. This table contains only the demand and capacity balances for total capacity, which align directly with those in sections 6.2.2 to 6.2.6.

The balances within the upper portion of the table use the total capacity where capacity is allocated to the feasible typology of greatest margin (profit). The lower portion of the table applies the totals based on the highest yield feasible development option.

There are no significant patterns of shortfalls in the short or medium-term under any of the modelled scenarios. In the long-term, there are some areas of shortfall that may occur if the market is concentrated towards delivering capacity within the areas of highest margin.

Most of the modelled scenarios (Baseline provisions and Options 1 and 2) indicate that shortfalls in attached/terraced housing may occur within the long-term if capacity is concentrated into areas of highest margins. However, there is likely to be potential for the market to develop some capacity at the highest margins, with some capacity instead developed in other areas corresponding with the scale of market demand. The modelling indicates that there is substantial additional feasible capacity within this typology if it were constructed rather than within detached dwellings. Consequently, many of the potential shortfalls in attached dwellings are less likely to occur under most modelled scenarios.

The large amount of additional capacity within Options 5 and 6 generate very large surpluses in the district's central urban areas (when measured relative to feasible capacity). This is due to the additional medium density capacity enabled across the extent of the general suburban area. Within these options, there are low required uptake rates to meet demand. This indicates that these options are likely to result in a lower concentration of development within the centralised areas of highest amenity and with sufficient spatial concentration around core nodes. This is an important implication as it is less likely to result in an urban form that supports the intensification required for supporting the viability and vitality of centres as intended under the NPS-UD.

There are some locations within the Wakatipu Ward urban area that the modelling indicates are more likely to experience a long-term shortfall in capacity. These are the eastern areas, followed by the southern areas within some modelled scenarios. This can be seen in the small size of the surpluses, meaning that high rates of uptake are likely to be required to meet demand. It is important to note however, that this is based on commercially feasible capacity within the current market, where additional capacity is likely to become feasible through time[20].

[20] Modelling commercially feasible capacity in the short, medium and long-term using current ($2021) prices is consistent with the approach taken in the HBA 2021.

Table 6-11: Summary of Long-Term Capacity vs. Demand by Modelled Scenario

Catchment	Baseline	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
	Long-Term: Capacity less Demand						
	Total of Highest Profit Allocation[1]						
Arrowtown	400	800	800	800	800	5,400	2,200
Eastern/Frankton/Quail	-1,000	-400	-100	-300	-100	3,800	1,100
Queenstown/Arthurs	5,300	9,000	9,800	9,000	9,900	21,000	11,900
Kelvin Heights/Southern Corridor	40	-70	60	20	200	8,900	2,500
Wakatipu Small Township/Other	-200	-200	-200	-200	-200	-200	-200
Wanaka/Hawea	7,400	8,800	8,800	9,100	9,100	44,100	22,200
Wanaka Small Township/Other	300	300	300	300	300	600	600
Total Urban Environment	12,300	18,200	19,400	18,700	19,900	83,500	40,200
	Total of Highest Potential Yield[2]						
Arrowtown	500	800	800	900	900	5,500	2,500
Eastern/Frankton/Quail	-900	-200	100	300	600	6,800	2,200
Queenstown/Arthurs	9,800	15,700	19,400	16,400	20,000	30,400	20,200
Kelvin Heights/Southern Corridor	300	-	300	100	400	9,100	3,000
Wakatipu Small Township/Other	-200	-200	-200	-200	-200	-200	-200
Wanaka/Hawea	8,700	10,800	10,800	12,800	12,800	57,800	30,900
Wanaka Small Township/Other	300	300	300	300	300	1,300	600
Total Urban Environment	18,400	27,200	31,500	30,600	34,800	110,800	59,100

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

1 These outputs reflect a parcel level allocation of capacity to the typology with the greatest estimated profit margin.

2 These outputs reflec a parcel level allocation of capacity to the feasible typology with the highest yield.

It is important to consider the required levels of intensification within the existing urban environment to meet the projected long-term demand. Lower shares of capacity are typically taken up within existing urban areas than in greenfield areas, due to lower rates at which these options become available to the market. It is therefore important to understand the extent to which intensification within these areas is relied on to meet long-term growth.

Figure 6-1 and Figure 6-2 provide an estimate of the share of plan enabled and commercially feasible capacity within the existing urban area that would be required to meet long-term demand with different shares of growth occurring within the greenfield areas[21]. Each graph shows a range of required take-up of modelled capacity in each existing urban location.

The figures show that very low shares of the existing urban capacity would be required to meet demand within the central urban area of Queenstown/Arthurs Point and within Arrowtown under all modelled options. This reflects the large, enabled intensification options within the central Queenstown urban area. It suggests that the enabled development opportunity is large relative to demand and will provide a large amount of opportunity within which the market is able to respond.

The figures also suggest that the reliance on existing urban area intensification is reasonable over the long-term within Wanaka. The proposed intensification options would rely on up to 25% of plan enabled capacity

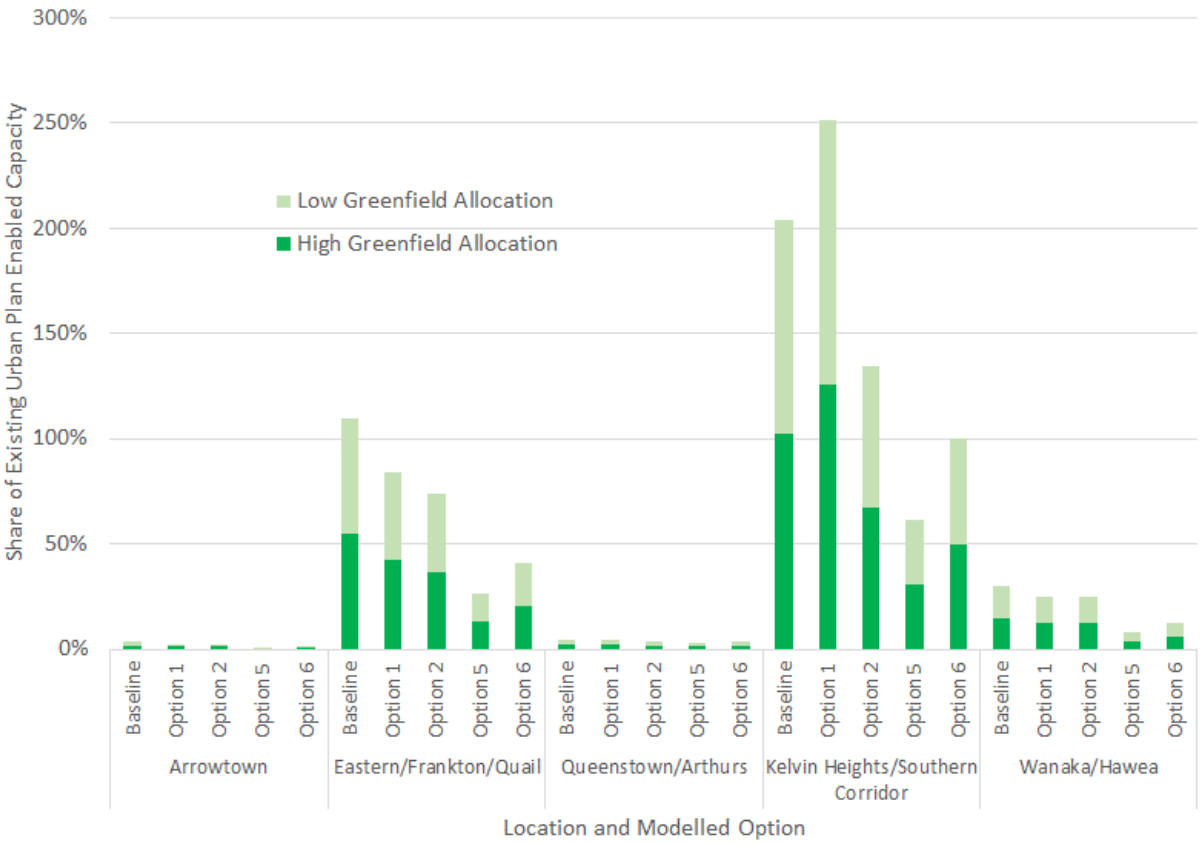
[21] The 'Low Greenfield Allocation' scenario assumes that up to 30% of demand growth would be met within the greenfield areas and the 'High Greenfield Allocation' scenario assumes that up to 70% of demand growth would be met within the greenfield areas. The balance of demand growth is then allocated to the existing urban area.

to be taken up within Wanaka over the long-term, compared to 30% under the existing baseline provisions. The share of commercially feasible capacity take-up under the proposed options is higher (at up to 35%), however this includes the capacity which is estimated to currently be feasible and does not include additional development opportunities which are likely to become feasible through time with market growth.

It is important to note that the above required shares within the existing urban areas include the long-term margin on demand (approximately 17%). This creates a conservative assessment where the actual required shares are likely to be lower.

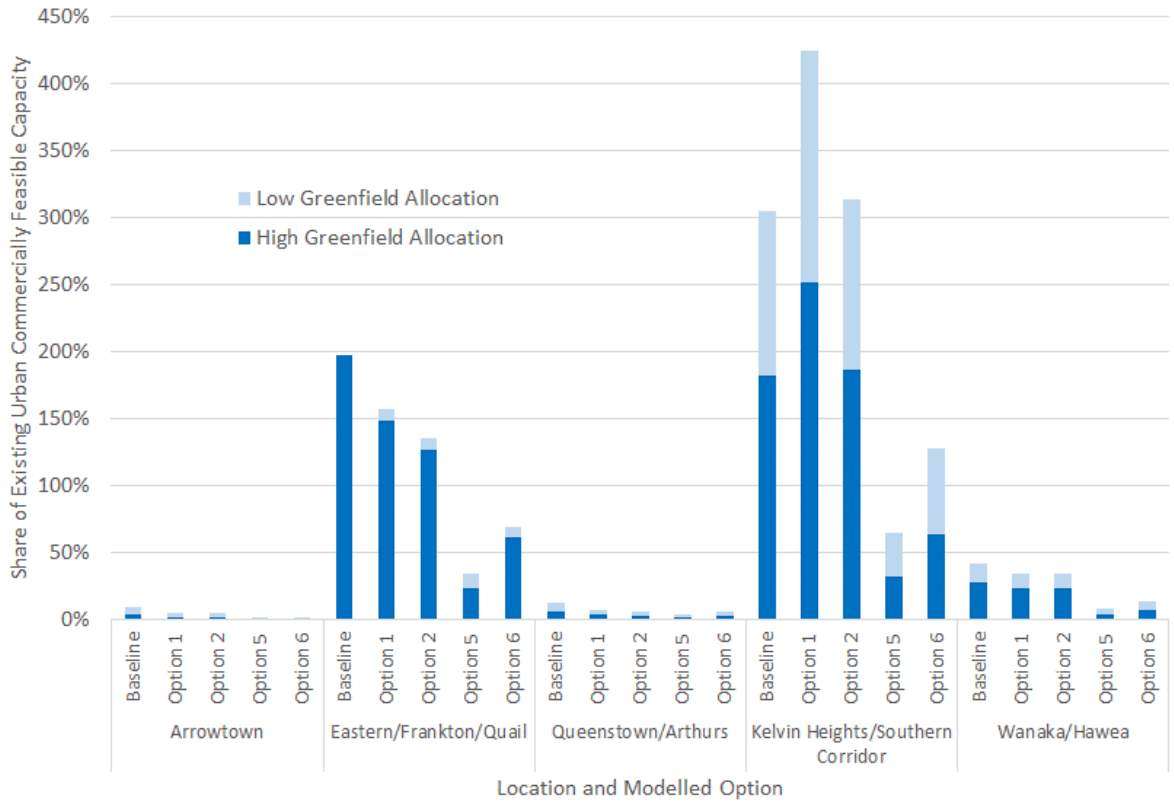
In contrast, the figures show that high levels of intensification are required within the outer suburban areas of Wakatipu Ward (Eastern/Frankton/Quail and Kelvin Heights/Southern Corridor) to meet projected long-term demand growth. The required shares are lower under Options 5 and 6 due to the additional capacity enabled in these locations within the proposed options.

Figure 6-1: Share of Existing Urban Plan Enabled Required to Meet Projected Long-Term Demand



Source: M.E QLDC Residential Intensification Model, 2023.

Figure 6-2: Share of Existing Urban Commercially Feasible Capacity Required to Meet Projected Long-Term Demand



Source: M.E QLDC Residential Intensification Model, 2023.

The Spatial Plan (or anticipated FDS) may add further substantial capacity to QLD in the long-term within the growth areas. Under the HBA 2021, there was an estimated long-term feasible capacity within Wanaka/Hawea of 7,800 dwellings, Southern Corridor (5,600 dwellings) and the Eastern Corridor (2,700 dwellings) as a result of indicative greenfield expansion areas identified. If provided, this may reduce the potential shortfalls within these parts of the district.

Importantly, the district overall has significantly larger feasible capacity than demand in the long-term. The analysis indicates that the main areas of constraint are likely to occur within the outer suburban areas of Queenstown, while there are large surpluses within the central Queenstown urban area. Addressing these potential areas of constraint at the localised level is a consideration, while there is the potential for intensification within the more central parts of the district.

6.3 Comparison of Capacity and Demand: Higher Density Residential Development

This section contains further examination of the level of provision for higher density residential development with the projected market size for this type of development. Higher density residential development refers to vertically-attached apartment dwellings. Within QLD, these are provided for within

the main town centres (Queenstown and Wanaka), other commercial zones (Local Shopping Centre and Business Mixed Use) and the HDR Zone.

Understanding the level of take up in this typology to meet demand is important in gauging the appropriateness of the provision for capacity. It initially determines whether there is sufficient opportunity provided relative to the projected market size for higher density development within key locations. Importantly, it also indicates the types of growth patterns relative to demand that are likely to be encouraged by the scale and spatial extent of the development capacity provided.

Higher density residential development is an important part of the residential supply within growing urban economies. It is important to appropriately locate this type of development within central areas of higher amenity and accessibility. Concentration of higher density growth within main nodes is important for increasing and supporting the vitality and viability of centres in the manner anticipated by the NPS-UD.

Conversely, if the provision for this type of capacity is too large, then the potential intensification may be spread too widely to generate the benefits of intensification around centres that would be more likely occur if it were concentrated around centres. Higher density development may also occur opportunistically in more distant locations that do not function together with the centre if the zoning extent is too broad. The density gradients around centres and the distance across which they function together with higher density development differs between urban economies of different sizes.

The following subsections show the share of capacity required to meet higher density demand within the urban area of each ward under each of the proposed options. The required uptake for both the commercially feasible and plan enabled capacity is calculated. It is important to also understand the level of uptake across the plan enabled capacity as the market is not yet well established in some locations, meaning that the potential future development patterns are unlikely to be reflected in the current market calculations of feasibility.

The assessment has been undertaken across each ward separately. It is appropriate to assess the adequacy of provision at this spatial scale as there is likely to be substitutability within these markets, and to a considerably lesser extent between the wards given the geographical separation.

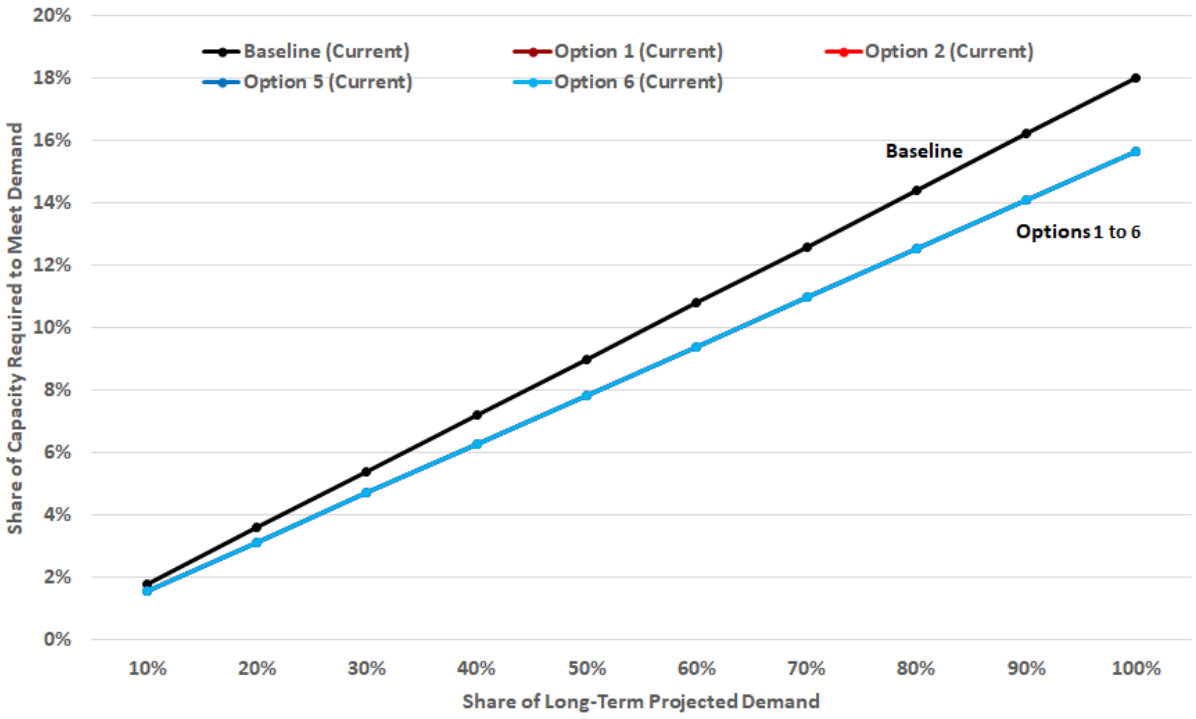
The vertical (y) axis on each graph in the following sub-sections shows the share of capacity uptake which is required to meet the projected long-term (2051) demand. The capacity is the maximum potential yield for vertically-attached dwellings achieved within either infill or redevelopment pathways, together with the greenfield provision (incl. Special Zones).

6.3.1 Wanaka Ward Higher Density Capacity and Demand

The share of plan enabled capacity required to be taken up to meet projected long-term demand under the baseline and high demand substitution scenarios are shown in Figure 6-3 and Figure 6-4.

Under the baseline demand scenario, it is estimated that 18% of the higher density capacity needs to be taken up to meet demand over the next 30 years under the current provisions. The overall increase in plan enabled capacity under Options 1 to 6 mean that the share needed to be taken up decreases to 16% across the same period.

Figure 6-3: Share of Modelled Plan Enabled Vertically-Attached Apartment Capacity Take-Up Required to Meet Projected Long-Term High Density Demand: Wanaka Ward (Baseline Demand Substitution Scenario)



Source: M.E QLDC Residential Intensification Model, 2022/2023.

Figure 6-4 shows that if there were a higher shift in demand to increased density dwellings, then the share of capacity required to meet demand increases. Under the baseline planning provisions scenario, nearly half (49%) of plan enabled capacity is required to meet demand, while 43% is required under Options 1 to 6.

These are reasonably high shares of plan enabled capacity required to meet demand. This is particularly the case within Options 1 to 6 where the provision for higher density development around the town centre node is limited to within the Wanaka Town Centre (WTC) Zone with no HDR Zone on the residential parcels adjacent to the WTC (with the HDR Zone re-zoned to MDR).

The assessment also includes provision for higher density development within the BMU zoned areas within the Three Parks area[22] and around Reece Crescent.[23] These areas contain plan enabled capacity for vertically-attached apartments but indicate that these areas are not yet likely to contain feasible development opportunities within the current market (but are likely to become feasible through time).

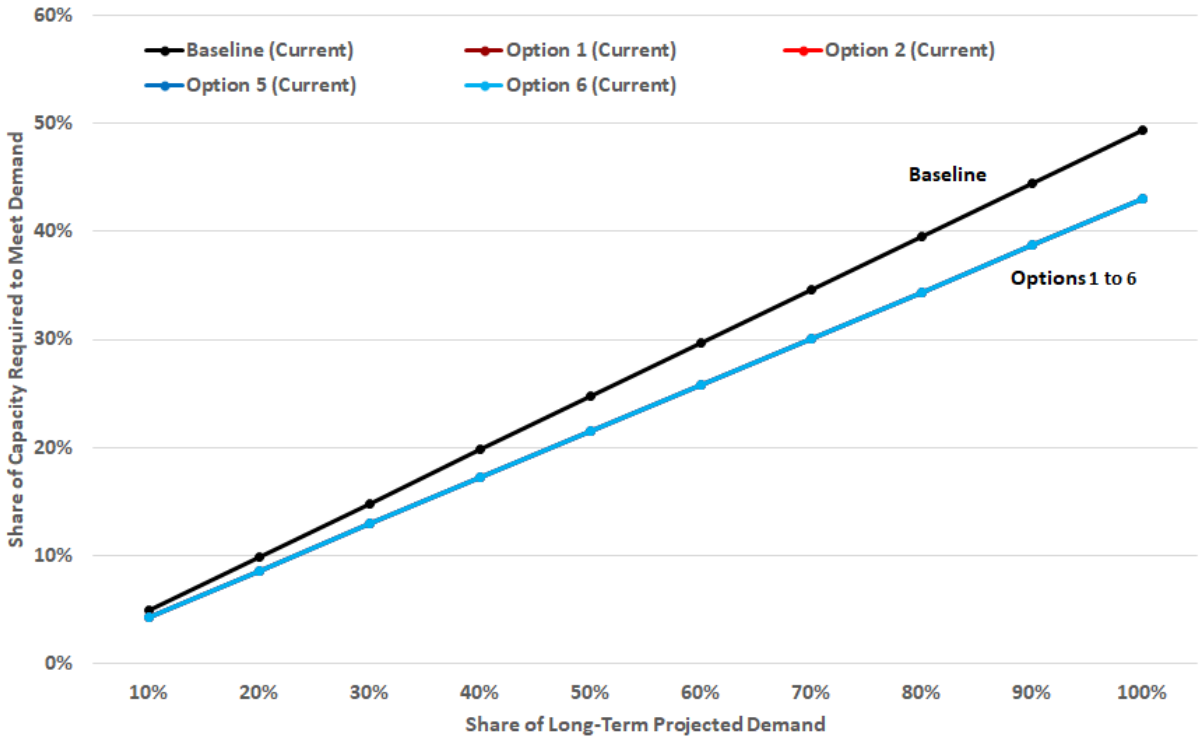
This provision would require a reasonably high level of redevelopment of the existing town centre and BMU zoned areas if all demand were met within this location and would need to occur within the context of other competing non-residential land uses. This is further considered below in relation to the commercially feasible capacity.

[22] Capacity information for this area has been obtained from the data provided by QLDC to inform the 2021 HBA. We understand this data has been obtained from developers and subdivision plans.

[23] Also identified as the Anderson Road area elsewhere in this report.

The three locations for vertically-attached apartment provision (described above) within the Wanaka urban area all contribute to meeting demand at the total Wanaka level. However, there are key differences between the locations of these areas that are likely to contribute to important differences in urban form within Wanaka. Specifically, these relate to the degree to which growth in each location supports the development of specific nodes (i.e., Town Centre vs. BMUZ (Reece Crescent) vs. Three Parks) within Wanaka. Higher density residential development within and immediately surrounding the town centre is more likely to support the viability and vitality of the town centre. In contrast, growth within the Three Parks and Reece Crescent areas is more likely to support the establishment of commercial nodes within those locations with a reduced effect on the WTC Zone. This is discussed further in Section 7.

Figure 6-4: Share of Modelled Plan Enabled Vertically-Attached Apartment Capacity Take-Up Required to Meet Projected Long-Term High Density Demand: Wanaka Ward (High Demand Substitution Scenario)

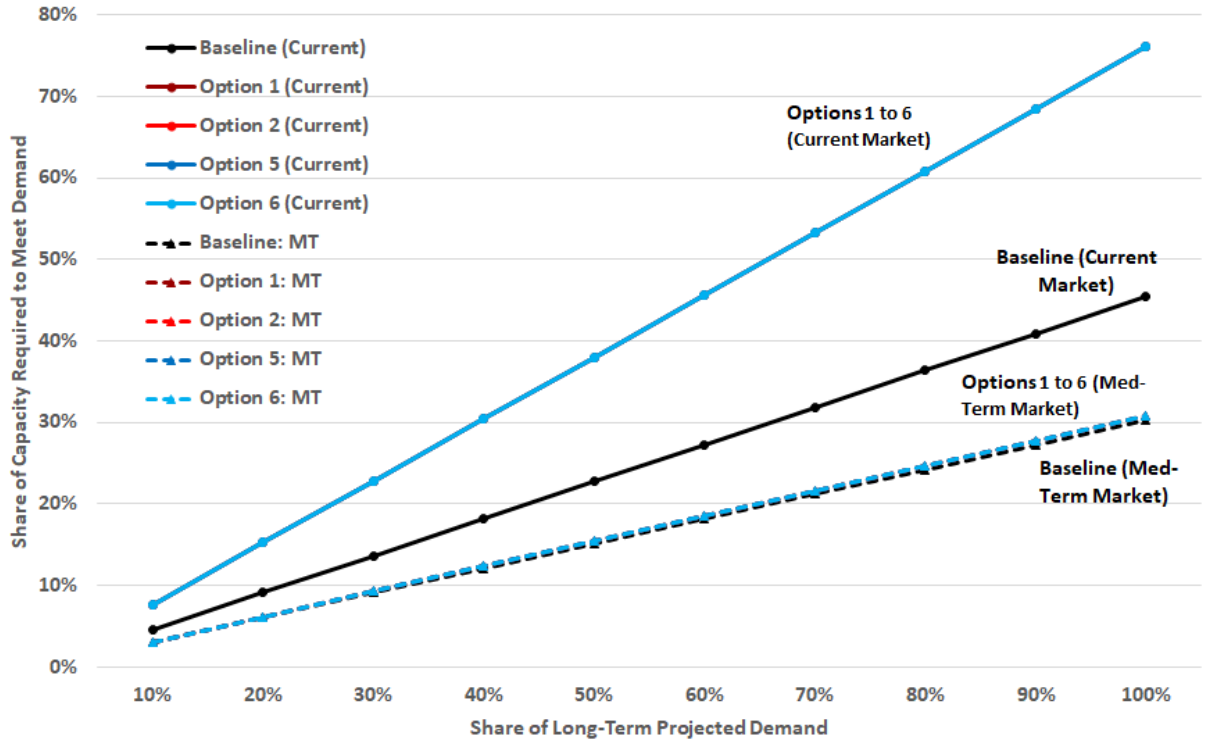


Source: M.E QLDC Residential Intensification Model, 2022/2023.

The share of commercially feasible capacity required to meet high density demand within Wanaka is shown in Figure 6-5 and Figure 6-6 under the baseline demand and high substitution demand scenarios respectively. In addition to the modelled current market feasible capacity (from Section 5), the graphs contain the projected feasible capacity across the medium-term (2032) (within the dashed lines for each modelled scenario). This is important because the higher density market is likely to become more established, and commercially feasible with market growth through time, and exceed the capacity estimated to be feasible within the current market.

Under the baseline demand scenario (Figure 6-5), between 45% and 76% of the currently commercially feasible capacity would be required to meet long-term demand. Allowing for market growth, this would decrease to between 30% and 31% of feasible capacity in the medium-term.

Figure 6-5: Share of Modelled Commercially Feasible Vertically-Attached Apartment Capacity Take-Up Required to Meet Projected Long-Term High Density Demand: Wanaka Ward (Baseline Demand Substitution Scenario)



Source: M.E QLDC Residential Intensification Model, 2022/2023.

Under the higher market substitution scenario (Figure 6-6), long-term demand would exceed the currently feasible capacity. Allowing for market growth over the medium-term, over half (83% to 84%) of the feasible capacity would be required to meet demand.

The modelling indicates that a high rate of both plan enabled and feasible development capacity would be required to meet long-term demand if there were demand substitution for higher density dwellings through time. The level of redevelopment required within the WTC Zone is high within the context of the zone, with the feasibility of redeveloping existing land uses reflected in the projected feasible capacity.

The required level of redevelopment to accommodate projected residential demand is sizeable and would reflect only a sub-set of the total redevelopment that would be likely to need to occur. This is because:

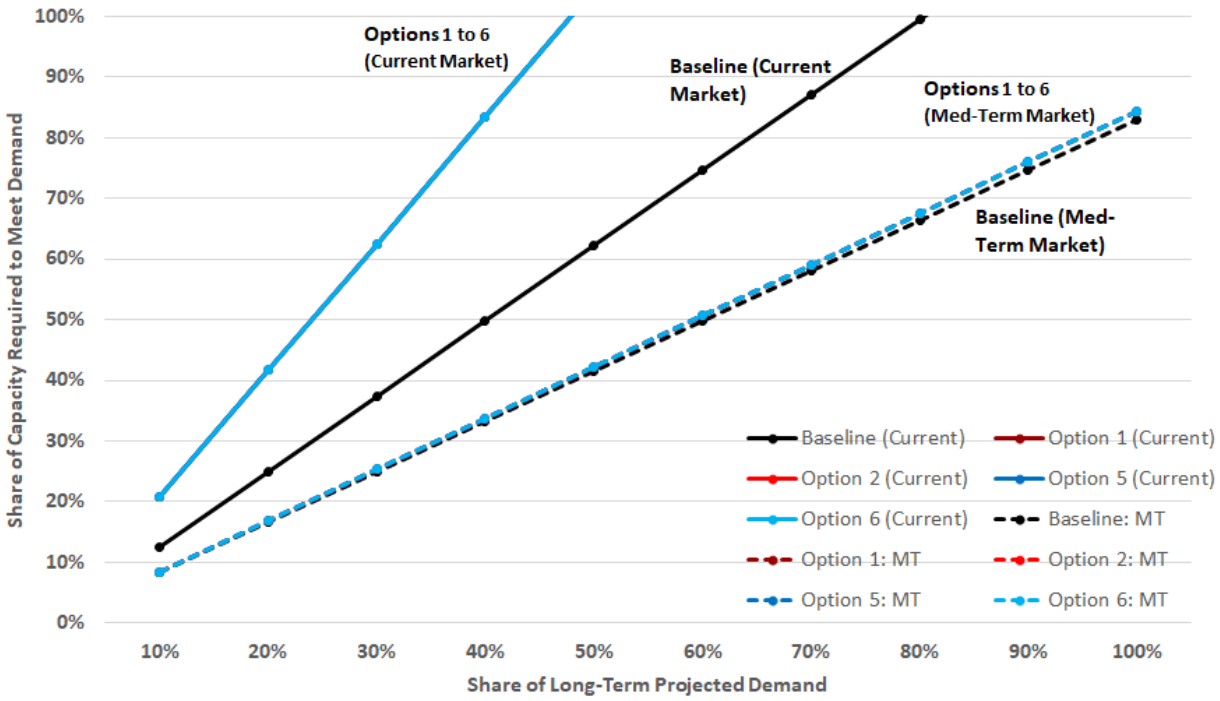
i. Redevelopment is also likely to need to occur to accommodate other non-residential land uses.
ii. A share of sites are likely to be developed at lower heights than the total 4 storey maximum provision proposed in the WTC Zone. Development of some sites at fewer storeys would directly increase the total share of sites required for redevelopment.

Together these factors mean that a significantly larger share of WTC parcels and BMU Zone areas would need to be redeveloped over the long-term than 43% of the plan enabled capacity (see Figure 6-4 above).

While these factors suggest that the proposed provisions may limit higher density development within Wanaka in the long-term, it is important to consider the timing and alternative provision in other zones within this location. The modelling suggests that any constraint is more likely to occur within the long-term.

It is likely that a share of higher density demand could also be met through intensive terraced housing. There is a level of substitutability of demand across different typologies, with apartment demand likely to also be able to be met at this density. Under Options 1 to 6, this is provided for in the areas surrounding the town centre through the MDR Zone.

Figure 6-6: Share of Modelled Commercially Feasible Vertically-Attached Apartment Capacity Take-Up Required to Meet Projected Long-Term High Density Demand: Wanaka Ward (High Demand Substitution Scenario)



Source: M.E QLDC Residential Intensification Model, 2022/2023.

6.3.2 Wakatipu Ward Higher Density Capacity and Demand

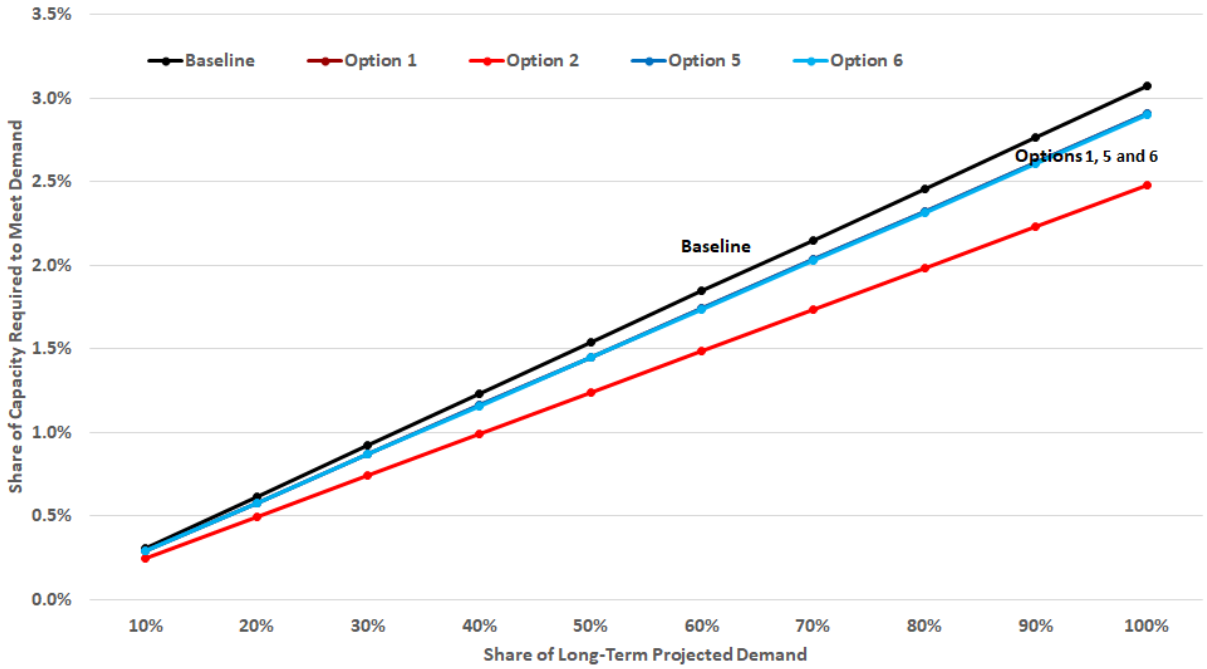
The share of plan enabled capacity required to be taken up to meet projected long-term demand under the baseline and high demand substitution scenarios are shown in Figure 6-7 and Figure 6-8.

There is substantially larger capacity for higher density development within the Wakatipu Ward with the greater provision for this type of development within the most central parts of the district's urban areas. Capacity for higher density development is spread across both the commercial zones (Queenstown Town Centre (QTC) Zone, BMU Zone and LSC Zone) and HDR Zone. As a result, there are lower shares of required uptake within this capacity to meet future projected demand.

Under the baseline demand scenario, it is estimated that 3.1% of the higher density capacity needs to be taken up to meet demand over the next 30 years under the current provisions. The overall increase in plan

enabled capacity under Options 1 to 6 mean that the share needed to be taken up decreases to between 2.5% and 2.9% across the same period.

Figure 6-7: Share of Modelled Plan Enabled Vertically-Attached Apartment Capacity Take-Up Required to Meet Projected Long-Term High Density Demand: Wakatipu Ward (Baseline Demand Substitution Scenario)



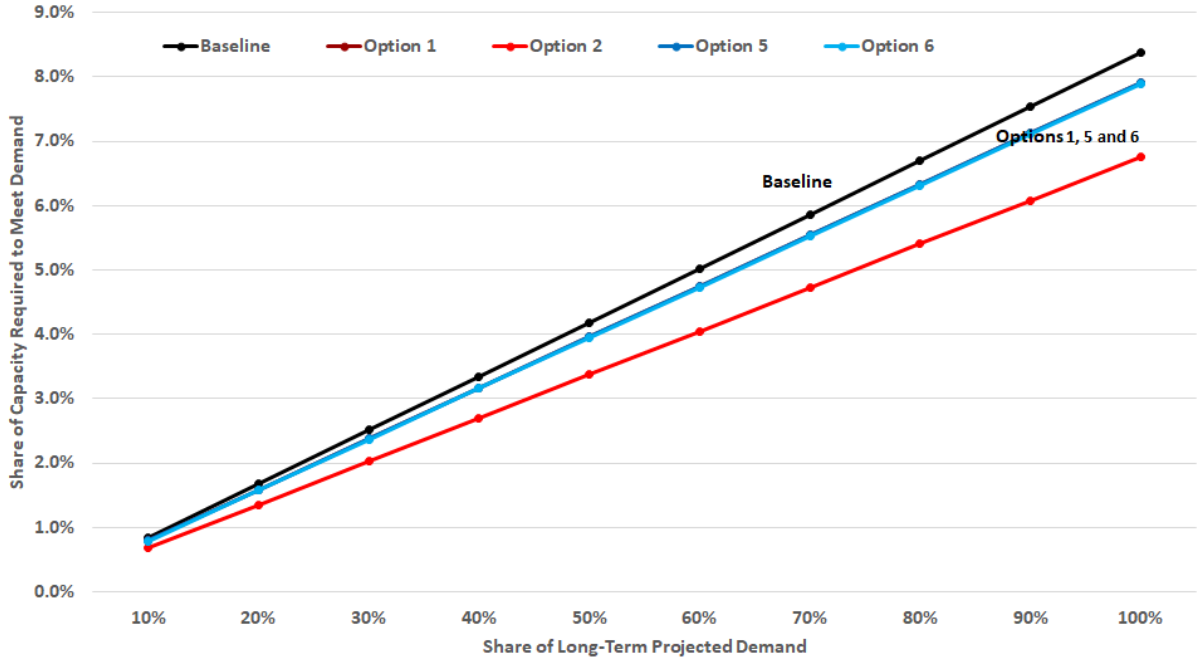
Source: M.E QLDC Residential Intensification Model, 2022/2023.

Figure 6-8 shows that if there were a higher shift in demand to increased density dwellings, then the share of capacity required to meet demand increases. Under the baseline planning provisions scenario, around 8.4% of plan enabled capacity is required to meet demand, while 6.8% to 7.9% is required under Options 1 to 6.

The share of capacity required to meet demand is much lower within the Wakatipu Ward than within Wanaka. However, there are important differences in the provision which relate to the contribution of higher density development within the development patterns of the zones generally.

A large share of the higher density capacity within the Wakatipu Ward occurs within the HDR Zone. Higher density development within this zone is likely to form part of an intensification continuum that also includes other types of residential development such as intensive terraced housing. As such, a low percentage uptake within this zone will not result in scattered residential development in isolation. The placement of this zone around the edges of the central area, and in areas of high natural amenity mean that higher density development within these areas is likely to function together with the main nodes over the long-term.

Figure 6-8: Share of Modelled Plan Enabled Vertically-Attached Apartment Capacity Take-Up Required to Meet Projected Long-Term High Density Demand: Wakatipu Ward (High Demand Substitution Scenario)



Source: M.E QLDC Residential Intensification Model, 2022/2023.

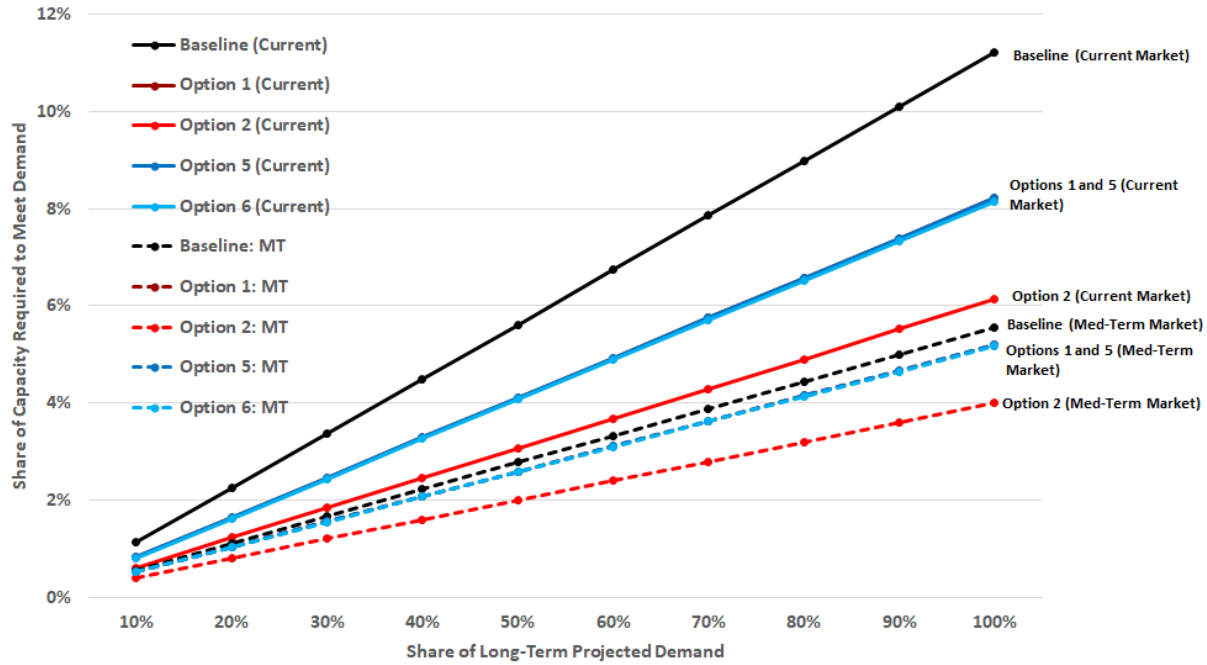
The share of commercially feasible capacity required to meet high density demand within the Wakatipu Ward is shown in Figure 6-9 and Figure 6-10 under the baseline demand and high substitution demand scenarios respectively. In addition to the modelled current market feasible capacity (from Section 5), the graphs contain the projected feasible capacity across the medium-term (2032) (within the dashed lines for each modelled scenario). This is important because the higher density market is likely to become more established, and commercially feasible with market growth through time, and exceed the capacity estimated to be feasible within the current market.

Under the baseline demand scenario (Figure 6-9), between 6% and 11% of the currently commercially feasible capacity would be required to meet long-term demand. Allowing for market growth, this would decrease to between 4% to 6% of feasible capacity in the medium-term.

Under the higher market substitution scenario (Figure 6-10), the share of feasible capacity required to meet long-term demand is greater. Within the current market, nearly one-third (31%) of capacity feasible under the existing provisions is required to meet long-term demand, and around one-fifth (17% to 22%) under the proposed provisions. Allowing for market growth over the medium-term, around 11% to 15% of the feasible capacity would be required to meet demand.

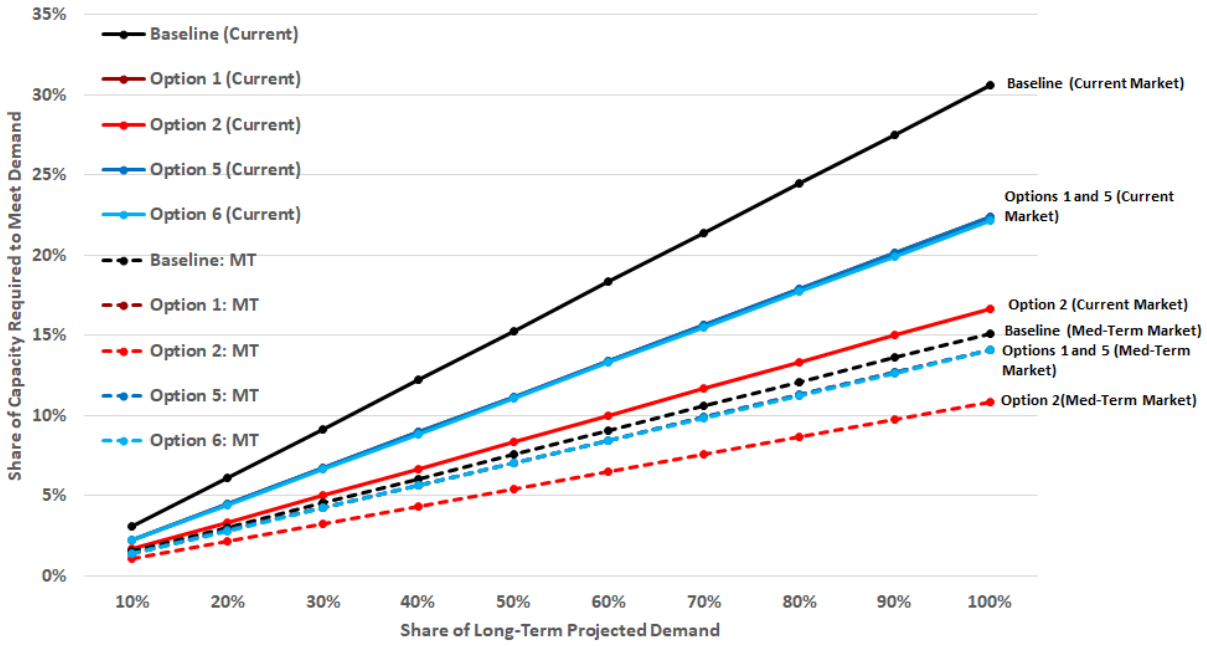
Together with other types of intensification (e.g. terraced housing) within the HDR Zone, the uptake required would allow a reasonable level of intensification to occur around the central parts of the Wakatipu Ward's urban areas. The location and extent of the proposed HDR Zone, together with the provision within commercial zones, provides sufficient scope for the residential market to intensify in these central areas within the Wakatipu Ward.

Figure 6-9: Share of Modelled Commercially Feasible Vertically-Attached Apartment Capacity Take-Up Required to Meet Projected Long-Term High Density Demand: Wakatipu Ward (Baseline Demand Substitution Scenario)



Source: M.E QLDC Residential Intensification Model, 2022/2023.

Figure 6-10: Share of Modelled Commercially Feasible Vertically-Attached Apartment Capacity Take-Up Required to Meet Projected Long-Term High Density Demand: Wakatipu Ward (High Demand Substitution Scenario)



Source: M.E QLDC Residential Intensification Model, 2022/2023.

6.4 Comparison of Capacity and Demand with Infrastructure Limits

It is important to understand how the patterns of demand and growth enabled through each of the proposed options relate to development infrastructure provision within the district's urban environment. This section compares both the demand and capacity by location with the location of capacity within the district's infrastructure networks.

6.4.1 Geographic Patterns of Main Infrastructure Constraints

The assessment within this section uses information on infrastructure constraints from the HBA 2021 (refer Section 7.1 of the main HBA 2021 Report) as this is the most recently available analysis. The additional dwelling capacity within each of the HBA reporting areas was calculated during the HBA in relation to the three waters and land transport infrastructure networks. The analysis identified the net additional dwellings that could be supported within each catchment as a function of the minimum dwellings across any network.

Capacity and demand have been assessed in relation to the levels of infrastructure capacity in all of the main infrastructure networks. These include the three waters (aggregated together and supplied to M.E) as well as transport infrastructure limits. The assessment has analysed the infrastructure limits within each area and then identified which network forms the greatest constraint within each location.

The infrastructure assessment in the HBA 2021 identified land transport as the dominant network constraint within the urban area. In summary, there are four bridges that limit growth across the urban area (based on peak hour service level). The bridges below limit growth in the following ways:

- The Albert Town bridge limits growth within the Lake Hawea and Outer Wanaka reporting areas.
- The Arthurs Point bridge limits growth within the Arthurs Point reporting area (north of the bridge) and half of the Arrowtown reporting area.
- The Shotover bridge limits growth in half of Arrowtown as well as the eastern urban areas of Queenstown (Eastern Corridor and Outer Wakatipu reporting areas).
- The Kawerau bridge limits growth in urban areas of the district south of Frankton. These include the Kelvin Heights, Southern Corridor and Outer Wakatipu reporting areas.

The central areas of Queenstown and Wanaka form the main places where growth is not limited by transport network constraints, as well as some of the outer minor urban settlements within each ward. These include the WTC, Luggate, Cardrona, QTC, Frankton, Quail Rise and Small Township – Wakatipu reporting areas. Growth in these locations will be likely to represent more sustainable patterns of urban form in relation to the district's wider network structure.

Although the transport network forms the dominant constraint, the assessment also examines separately the effects of the three waters infrastructure networks. This assessment provides a basis to understand how three waters infrastructure capacity constraints may impact available capacity if transport constraints were removed.

The following sub-sections firstly compare the patterns of projected future demand (from Section 2) with the patterns of infrastructure capacity, then the patterns of plan enabled and commercially feasible capacity with infrastructure. We examine three waters infrastructure capacity separately first, followed by three waters and land transport infrastructure capacity in combination.

6.4.2 Comparison of Projected Demand with Three Waters Only Infrastructure Capacity

The HBA 2021 provides a summary of existing and planned three waters infrastructure in the district's urban environment based on the three waters programme for the 2021/31 Long Term Plan and the 30-year infrastructure strategy.[24] It also describes the three waters infrastructure ready dwelling capacity that was collated by the Council for the HBA 2021 modelling (including assumptions and data limitations).[25] For brevity, that detail is not repeated here, but a summary of the resulting dwelling capacity anticipated to be serviced by three wates infrastructure is copied below:

> *Across the district, existing three waters capacity currently services 20,025 dwelling units in the urban environment (2020 estimate), which is slightly (4%) greater than estimated current urban dwellings in the Council's model (inclusive of Millbrook Special Zone) in that year. The existing buffer of serviced capacity plus planned investments are anticipated to increase the number of urban dwelling units able to be serviced by three waters infrastructure to just over 35,700 (growth of 186%) over the long term. In the Wānaka Ward, serviced dwelling capacity in the long term increases by 10,380 additional urban dwelling units (growth of 130% above existing dwellings[26]) and in the Wakatipu Ward, serviced urban dwellings more than doubles by 2050 (growth of 25,360 above existing dwellings or a 225% increase). The single area of greatest growth (investment) in three waters serviced dwellings is the Southern Corridor which would provide for an additional 10,740 dwellings by 2050.*

This section compares the patterns of projected future demand from Section 2 with the patterns of additional three waters infrastructure capacity estimated within the QLD HBA 2021. The infrastructure catchment areas have been aggregated to the demand projection locations within this section.

The patterns of three waters infrastructure capacity are compared with the projected demand by location in Figure 6-11. The graph indicates that there is likely to be a three waters infrastructure constraint in the short-term within parts of the district's urban areas that have the largest projected short-term demand growth. In the following locations, the projected demand exceeds the modelled infrastructure capacity:

- the outer urban areas of Wakatipu Ward beyond the central urban area (i.e., Eastern/ Frankton/Quail Rise and Kelvin Heights/Southern Corridor demand catchments);
- the main urban areas of Wanaka; and
- the main urban areas of Hawea.

[24] Section 7.1.1 of the HBA 2021 Main Report, including a summary of key infrastructure projects planned in the short, medium and long term in Section 1.1.9.

[25] Section 7.2.1 of the HBA 2021 Main Report.

[26] As estimated in the Three Waters Model, HBA 2021.

In particular, the modelled infrastructure capacity shows that within the Eastern Corridor and Quail Rise there is very limited three-waters infrastructure capacity which creates an infrastructure constraint in the short-term.

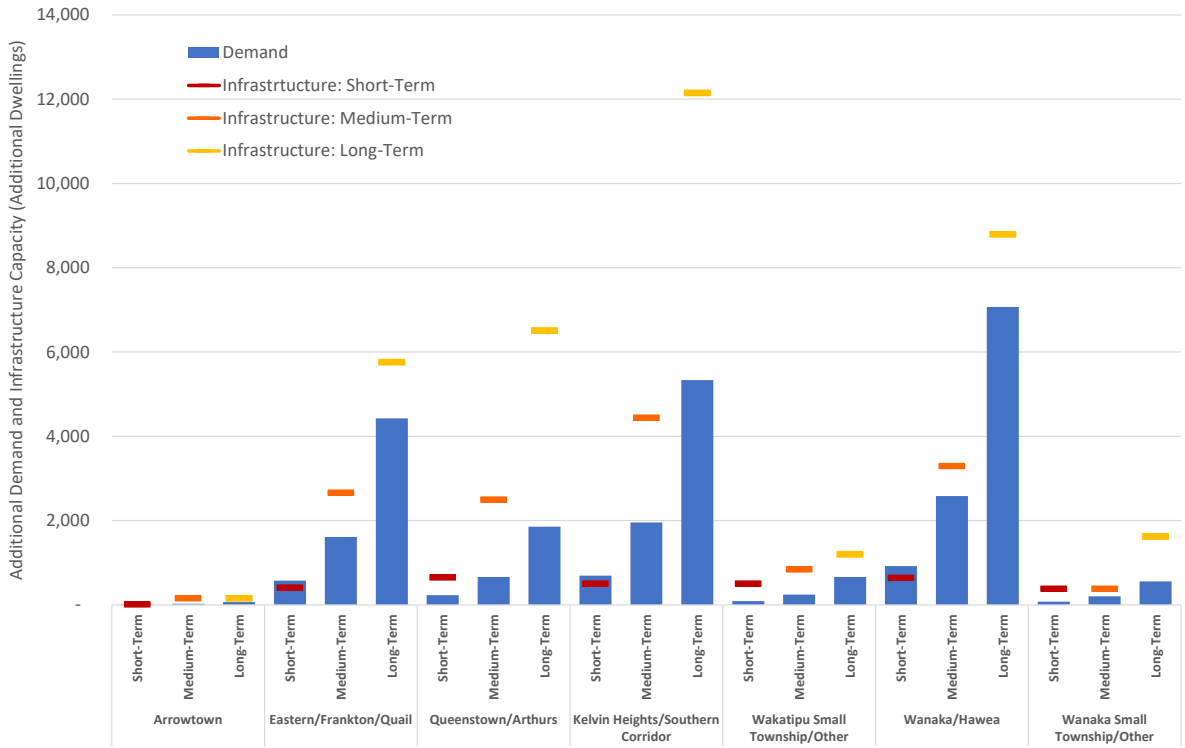
The modelling indicates that the short-term three waters infrastructure capacity is likely to exceed demand in all other locations.

In the medium to long-term, there are no indicated three waters infrastructure constraints. During these time-periods, the modelled three waters infrastructure capacity exceeds the projected demand. In most locations, the capacity exceeds demand by a sizeable margin. This suggests that there is an ability to accommodate a reasonable shift in the location of growth. For example, the modelling indicates that there is potential capacity to support a higher share of medium to long-term growth occurring within the more central areas of the Wakatipu Ward. This is relevant within the context of proposed intensification provisions that encourage a greater centralisation of growth.

We note that Council does have flexibility when it comes to how infrastructure delivery is prioritised, meaning that three waters funding could yet be reprioritised (or additional funding added) through the Annual Plan and Ten-Year Plan processes if more advanced strategic planning determines better ways to meet the needs of the local population.

The relationship between three waters infrastructure capacity and modelled dwelling capacity is assessed in Section 6.4.4.

Figure 6-11: Comparison of Projected Dwelling Demand with Additional Three Waters Infrastructure Capacity

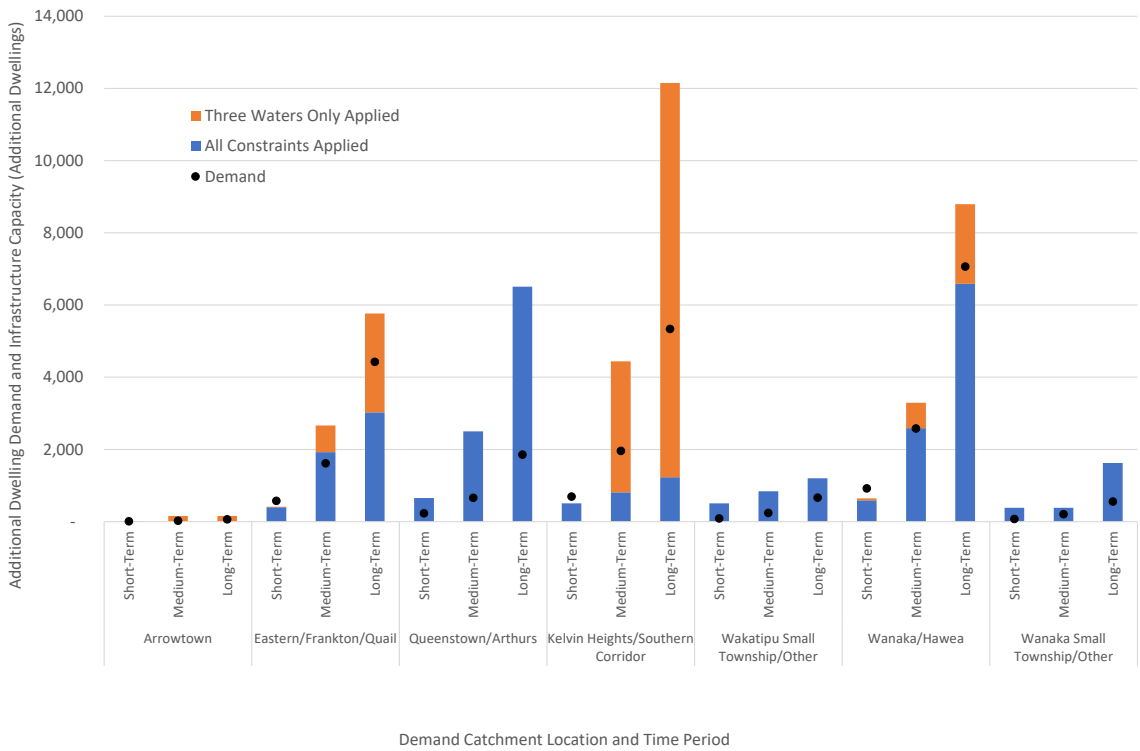


The additional infrastructure capacity enabled within each location by the removal of transport infrastructure network constraints and the relationship to demand is shown in Figure 6-12. The blue portions of the bars show the capacity within each location and time period when all (three waters and transport) infrastructure constraints are applied. The orange portions of the bars show the additional infrastructure capacity within each location if transport infrastructure constraints are not applied. Demand within each time period and location is shown by the black dots.

The graph shows that the removal of transport infrastructure constraints would have the largest effect on medium to long-term infrastructure capacity within the Kelvin Heights/Southern Corridor area. The Kawerau Bridge forms a significant constraint to growth across these areas (based on HBA 2021 assumptions). The removal of this constraint results in sizeable increases in infrastructure capacity to exceed medium and long-term demand by a sizeable margin. With transport infrastructure constraints applied, infrastructure capacity would instead be likely to constrain growth in this location as it would be substantially lower than demand across all time periods.

The removal of transport infrastructure constraints also increases the infrastructure capacity within the Eastern/Frankton/Quail and Wanaka/Hawea demand areas in the medium to long-term. Increasing the capacity within these locations also results in the long-term infrastructure capacity exceeding demand, meaning that growth in these locations would be less likely to be constrained by infrastructure. If transport infrastructure constraints are applied, then they are likely to constrain long-term growth.

Figure 6-12: Infrastructure Capacity by Infrastructure Network Constraint



6.4.3 Comparison of Projected Demand with Combined Infrastructure Capacity

This section compares the patterns of projected future demand from Section 2 with the patterns of additional infrastructure capacity estimated within the QLD HBA 2021 – being three waters and land transport constraints combined.

The infrastructure catchment areas have been aggregated to the demand projection locations within this section. However, it is important to note that in some locations these include both areas within and outside the transport infrastructure constraints. This applies to:

- The Eastern Corridor/Frankton/Quail Rise demand area, where the Eastern area is constrained by the Shotover Bridge, while this constraint does not apply to Frankton/Quail.
- The Wanaka/Hawea demand area where Hawea is constrained by the Albert Town bridge, while this constraint does not apply to Wanaka.

The patterns of combined infrastructure capacity are compared with the projected demand by location in Figure 6-13. The graph indicates that there are some significant areas of demand that are likely to be constrained by the combination of three waters and land transport infrastructure capacity. These mainly include the southern and eastern parts of the Wakatipu urban area, which are constrained by the Kawerau and Shotover bridges. The constraint within the latter may be larger than indicated by Figure 6-13 depending upon the distribution of demand between the Eastern Corridor and Frankton/Quail Rise areas. Constraints in the southern part of the urban area are indicated to occur from the short-term onwards – again driven by land transport (bridge) infrastructure constraints.

There may also be a constraint within Lake Hawea due to the Albert Town bridge, which is less visible through the combined demand across the Wanaka/Lake Hawea area.

Figure 6-13: Comparison of Projected Dwelling Demand with Additional Three Waters and Land Transport Infrastructure Capacity

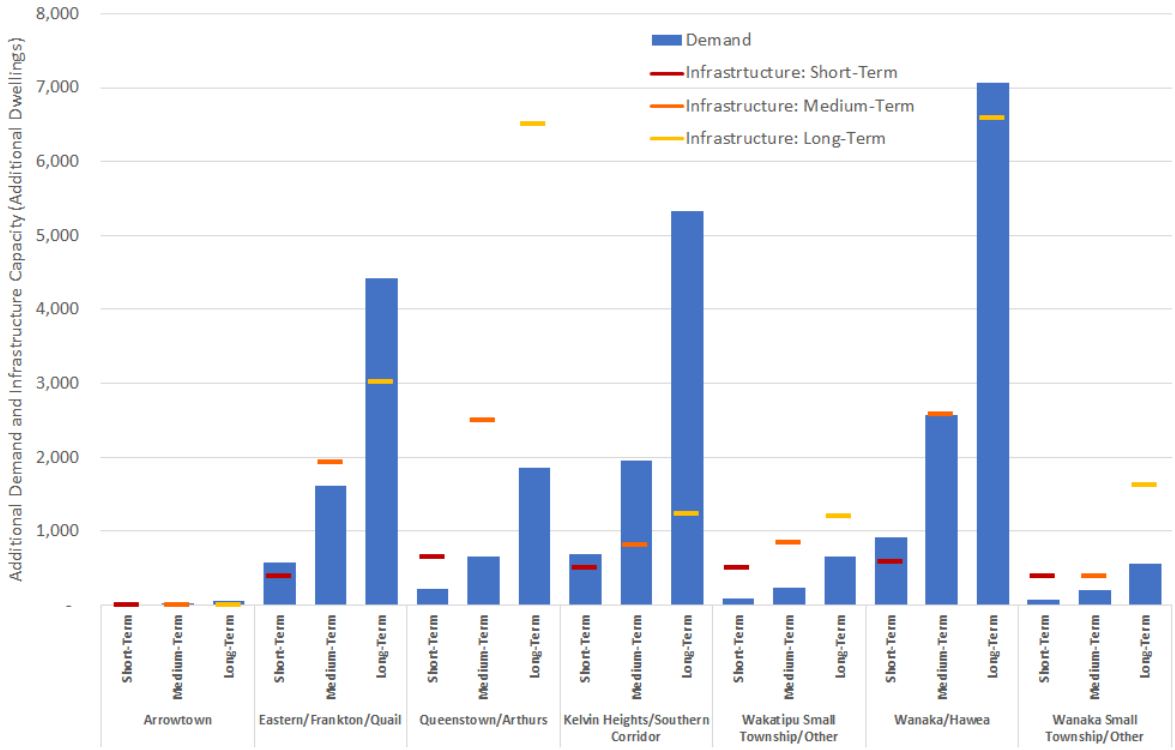


Figure 6-13 conversely shows that there is a large surplus of infrastructure capacity within the central part of Queenstown's urban area, which increases into the long-term. The level of capacity within this location is much greater than the underlying projected demand, which is largely due to the absence of a transport infrastructure constraint in this location and sufficient three waters infrastructure.

6.4.4 Comparison of Modelled Capacity with Three Waters Only Infrastructure Capacity

The patterns of three waters only infrastructure capacity are compared with the plan enabled and commercially feasible capacity modelled within each of the proposed options in Figure 6-14 and Figure 6-15.

The first graph shows the urban areas of the district grouped by the demand catchment locations. Within each area, it shows the total plan enabled and commercially feasible capacity under each modelled option together with the three waters infrastructure capacity for the short, medium and long-terms. The infrastructure capacity directly corresponds to that displayed in each demand location within Section 6.4.2.

The plan enabled, commercially feasible and three waters only infrastructure additional dwelling capacity have been aggregated by these locations. The capacity includes the total maximum yield combination across the existing urban and greenfield areas combined (including Special Zones). These are the maximum plan enabled and feasible totals across the dwelling typologies combined.

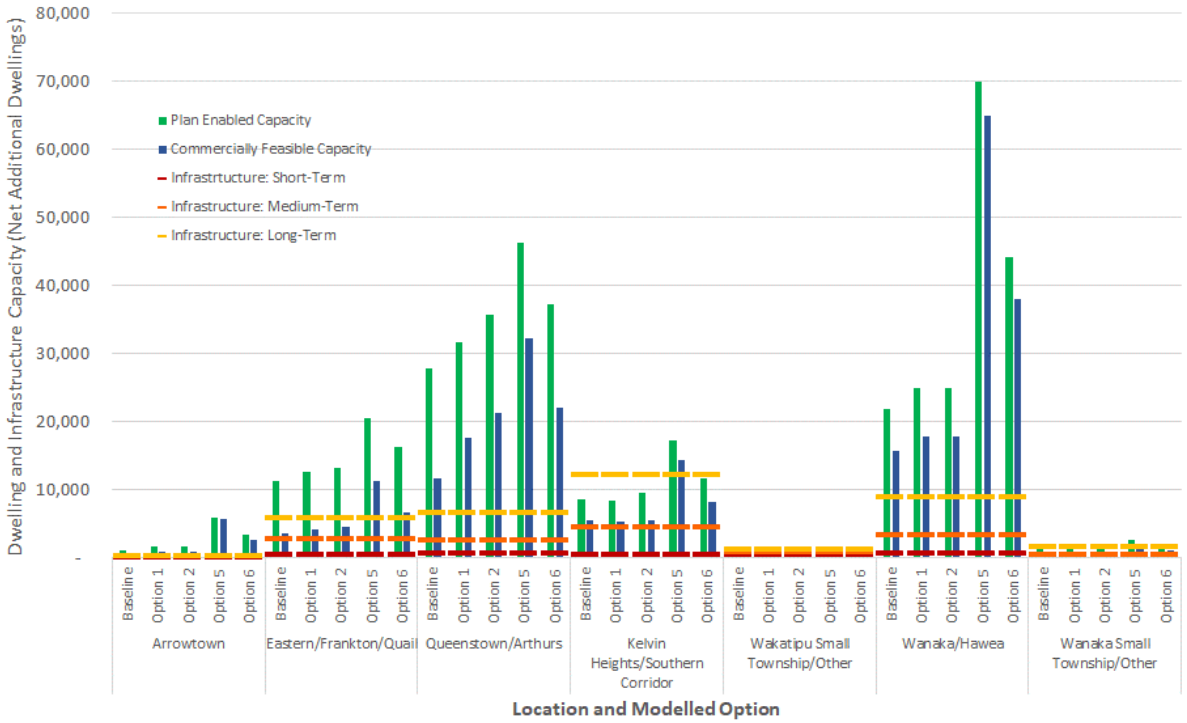
The assessment shows that the three waters infrastructure capacity broadly corresponds to the parts of the district with the largest urban capacity for additional dwellings. In these locations, the level of plan enabled dwelling capacity is generally substantially above the level of long-term three waters infrastructure capacity. The exception is Kelvin Heights/Southern Corridor where the infrastructure capacity exceeds the dwelling capacity in all modelled options, other than Option 5.

Figure 6-14 also shows that in some locations, the commercially feasible capacity exceeds the infrastructure capacity. This occurs within the central urban areas – demand catchments, Queenstown/Arthurs and Wanaka/Hawea.

Despite the differences in dwelling and infrastructure capacity, this by itself does not suggest that infrastructure is likely to constrain growth within the urban area in the long-term. This is because only a portion of either plan enabled or commercially feasible capacity is likely to get developed by the market. The enabled and feasible capacity are instead an indication of opportunities potentially available to the market, a share of which will be likely to get developed. It is more important to instead consider the alignment of the *pattern* of this plan enabled and feasible capacity with the pattern of three waters infrastructure capacity. The level of demand within these locations is well below the level of capacity and it is unlikely that any shift in demand in response to the additional capacity would be of a sufficient scale to exceed the long-term three waters capacity (refer to Section 6.4.2).

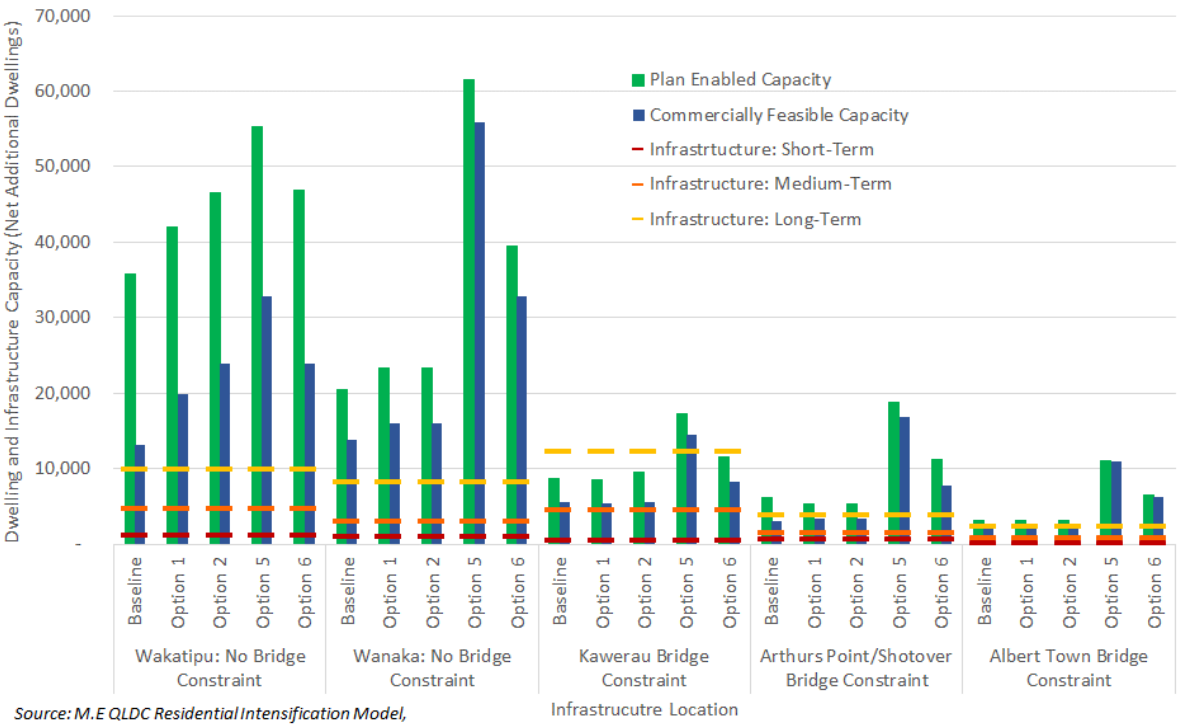
However, it is important to distinguish between dwelling capacity and the actual level of take-up of capacity, which is likely to be much closer to the level of demand. The dwelling capacity identifies the opportunity that may be available to the market, of which a portion is likely to be taken up. It is therefore important to consider the infrastructure capacity together with both demand and dwelling capacity.

Figure 6-14: Comparison of Plan Enabled and Commercially Feasible Capacity by Modelled Scenario with Three Waters Only Infrastructure Capacity: Demand Catchment Areas



Source: M.E QLDC Residential Intensification Model, 2022/2023, M.E 2021 QLDC HBA.

Figure 6-15: Comparison of Plan Enabled and Commercially Feasible Capacity by Modelled Scenario with Three Waters Only Infrastructure Capacity: Transport Catchment Areas



Source: M.E QLDC Residential Intensification Model, 2022/2023, M.E 2021 QLDC HBA.

The assessment shows that all of the modelled options have a reasonably high level of alignment between the distribution of three waters infrastructure and dwelling capacity. Between 94% and 96% of the plan enabled and feasible capacity occurs in locations that contain 92% of the long-term three waters infrastructure capacity. This shows that the main spatial effect of infrastructure limitations is related to the transport network capacity. The remainder of this section therefore assesses the dwelling and infrastructure capacity in relation to the geography of constraints within the transport infrastructure network. This approach consequently shows the capacity in these locations in relation to the constraint that would otherwise occur within the three waters network.

6.4.5 Comparison of Modelled Capacity with Combined Infrastructure Capacity

The patterns of combined three waters and land transport infrastructure capacity are compared with the plan enabled and commercially feasible capacity modelled within each of the proposed options in Figure 6-16.

The urban areas of the district have been grouped by location in relation to the main transport infrastructure constraints described above in Section 6.4.1. The first two locations are the central areas of Wakatipu and Wanaka wards (and minor urban settlements) that are not constrained by the bridges. The remaining three areas show the outer urban areas that are constrained by each of the bridges as described above.

The plan enabled, commercially feasible and combined infrastructure additional dwelling capacity have been aggregated by these locations. The capacity includes the total maximum yield combination across the existing urban and greenfield areas combined (including Special Zones). These are the maximum plan enabled and feasible totals across the dwelling typologies combined.

Figure 6-16 shows that both the plan enabled and commercially feasible capacity exceeds the combined infrastructure capacity across all locations. As above, this by itself does not suggest that infrastructure is likely to constrain growth within the urban area because only a portion of either plan enabled or commercially feasible capacity is likely to get developed by the market. The enabled and feasible capacity are instead an indication of opportunities potentially available to the market, a share of which will be likely to get developed. It is more important to instead consider the alignment of the *pattern* of this plan enabled and feasible capacity with the pattern of combined infrastructure capacity.

Figure 6-16 shows that the highest proportions of the modelled plan enabled and feasible dwelling capacity occurs within the district's urban areas that are not constrained by the bridge capacity. However, the degree to which the enabled capacity is concentrated into these areas differs by modelled scenario.

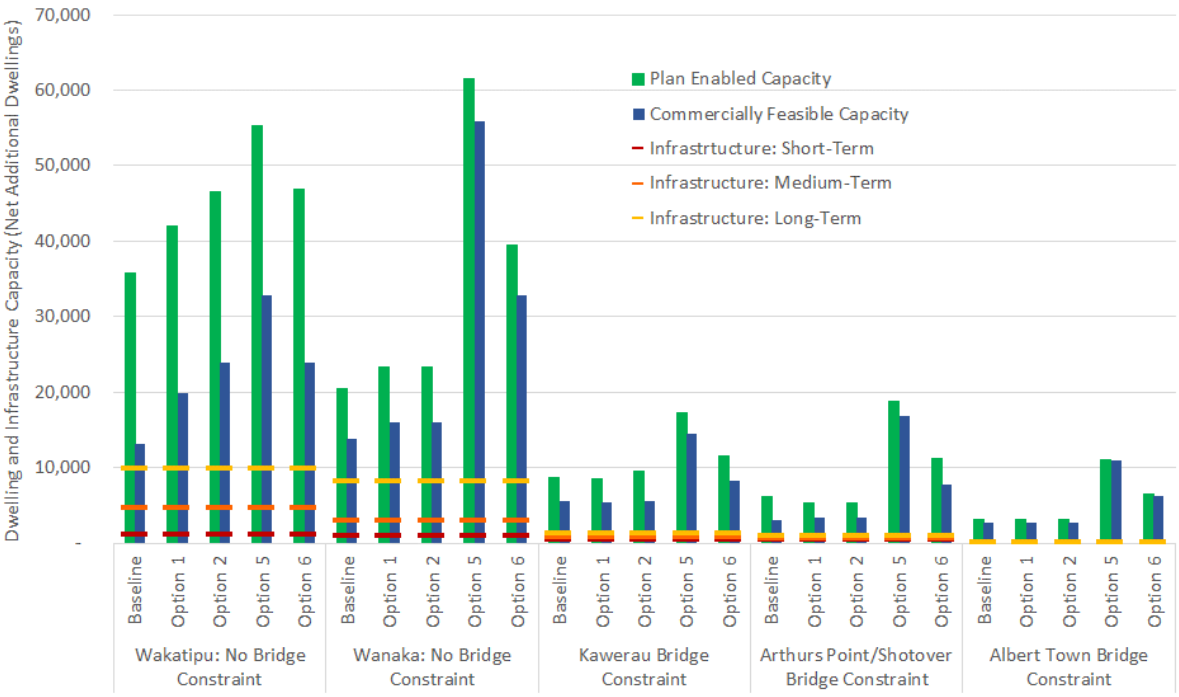
The modelled capacity within Options 1 and 2 generally has higher levels of concentration into the areas of greatest combined infrastructure capacity. This corresponds to the location of both the existing zoned areas for increased density as well as the patterns of additional capacity enabled through the intensification of nodes and corridors under these scenarios.

Again, the level of concentration of capacity into these areas within Options 5 and 6 is lower. Increased shares of capacity under these scenarios are contained within the outer parts of the district's urban areas that face land transport infrastructure constraints. This is due to the increased provision of capacity within

the general suburban areas (currently LDSR Zone), which form the main residential zoned provision within these outer areas.

The existing baseline level of capacity concentration into the less constrained areas is between that of Options 1 and 2, and Options 5 and 6.

Figure 6-16: Comparison of Plan Enabled and Commercially Feasible Capacity by Modelled Scenario with Combined Infrastructure Capacity



Source: M.E QLDC Residential Intensification Model, 2022/2023, M.E 2021 QLDC HBA.

The distribution of plan enabled and commercially feasible capacity within each of the combined infrastructure locations by each modelled scenario is shown in Table 6-12 (plan enabled capacity) and Table 6-13 (commercially feasible capacity). Each table analyses the distribution of both the total capacity modelled within each scenario, and then the additional capacity that each scenario enables relative to the existing baseline provisions. The latter is important because it indicates whether the changes to the patterns of capacity are likely align to a greater or lesser extent than the existing baseline with the infrastructure capacity.

Table 6-12 and Table 6-13 are structured as follows:

- The top portion of each tables shows the total net additional capacity within each option for the maximum dwelling yield combination across both existing urban and greenfield areas (incl. Special Zones) by infrastructure location.
- The upper middle portion calculates the share of capacity by infrastructure location within each scenario.

- The lower middle portion of the tables show the net additional capacity within Options 1 to 6 relative to the existing baseline by infrastructure location.
- The lower portion of the table calculates the share of the net additional enabled capacity by infrastructure location within each scenario.

The tables show that Options 1 and 2 have the highest shares of total plan enabled and feasible capacity occurring within areas with no bridge constraint. Approximately 80% of plan enabled capacity and 76% to 77% of commercially feasible capacity within these options occurs within these areas. Almost all of the additional capacity enabled under these options (from the existing baseline) occurs within the areas with no bridge constraint. This amounts to 97% to 99% of plan enabled capacity and 90% to 97% of the additional commercially feasible capacity. These patterns suggest that the intensification of nodes and corridors is likely to encourage growth into these areas relative to the existing baseline.

Options 5 and 6 have lower shares of enabled capacity within the areas without transport infrastructure constraints. Around three-quarters (71% to 75%) of total plan enabled capacity and between two-thirds and three-quarters (68% to 72%) of total feasible capacity within these options occurs within these areas.

While Options 5 and 6 enable similar or higher levels of total capacity within the central areas in comparison to other modelled scenarios, they also encourage a greater level of development within the less central suburban areas which have modelled transport infrastructure constraints. This means that the share of additional capacity from these options (relative to the existing baseline) that occurs in these outer areas is greater than under the other proposed options. Under these options, 25% to 29% of the additional plan enabled and commercially feasible capacity occurs in the outer areas constrained by transport infrastructure. In comparison, only 1% of the additional plan enabled capacity and 1% to 3% of the additional feasible capacity within Options 1 and 2 occurs within these outer infrastructure-constrained locations.

Table 6-12: Distribution of Plan Enabled Capacity by Combined Infrastructure Location within each Modelled Scenario

Infrastructure Location	Modelled Scenario				
	Baseline	Option 1	Option 2	Option 5	Option 6
	Plan Enabled Capacity				
Wakatipu: No Bridge Constraint	35,800	42,000	46,600	55,300	46,900
Wanaka: No Bridge Constraint	20,400	23,400	23,400	61,500	39,500
Total No Bridge Constraint	***56,200***	***65,300***	***69,900***	***116,800***	***86,500***
Kawerau Bridge Constraint	8,700	8,400	9,500	17,300	11,600
Arthurs Point/Shotover Bridge Constraint	6,100	5,300	5,300	18,800	11,300
Albert Town Bridge Constraint	3,100	3,100	3,100	11,000	6,500
Total with Bridge Constraint	***17,800***	***16,800***	***18,000***	***47,200***	***29,300***
	Share of Plan Enabled Capacity				
Wakatipu: No Bridge Constraint	48%	51%	53%	34%	41%
Wanaka: No Bridge Constraint	28%	28%	27%	37%	34%
Total No Bridge Constraint	***76%***	***79%***	***80%***	***71%***	***75%***
Kawerau Bridge Constraint	12%	10%	11%	11%	10%
Arthurs Point/Shotover Bridge Constraint	8%	6%	6%	11%	10%
Albert Town Bridge Constraint	4%	4%	4%	7%	6%
Total with Bridge Constraint	***24%***	***21%***	***20%***	***29%***	***25%***
	Additional Plan Enabled Capacity from Baseline				
Wakatipu: No Bridge Constraint		6,100	10,700	19,500	11,100
Wanaka: No Bridge Constraint		3,000	3,000	41,100	19,200
Total No Bridge Constraint		***9,100***	***13,700***	***60,500***	***30,300***
Kawerau Bridge Constraint		-200	900	8,700	2,900
Arthurs Point/Shotover Bridge Constraint		-800	-800	12,800	5,200
Albert Town Bridge Constraint		50	50	8,000	3,400
Total with Bridge Constraint		***-1,000***	***200***	***29,400***	***11,500***
	Share of Additional Plan Enabled Capacity from Baseline				
Wakatipu: No Bridge Constraint		75%	77%	22%	27%
Wanaka: No Bridge Constraint		37%	22%	46%	46%
Total No Bridge Constraint		***112%***	***99%***	***67%***	***72%***
Kawerau Bridge Constraint		-3%	6%	10%	7%
Arthurs Point/Shotover Bridge Constraint		-10%	-6%	14%	12%
Albert Town Bridge Constraint		1%	0%	9%	8%
Total with Bridge Constraint		***-12%***	***1%***	***33%***	***28%***

Source: M.E QLDC Residential Intensification Model, 2022/2023.

Table 6-13: Distribution of Commercially Feasible Capacity by Combined Infrastructure Location within each Modelled Scenario

Infrastructure Location	Modelled Scenario				
	Baseline	Option 1	Option 2	Option 5	Option 6
	Commercially Feasible Capacity				
Wakatipu: No Bridge Constraint	13,200	19,800	23,800	32,900	23,900
Wanaka: No Bridge Constraint	13,900	15,900	15,900	55,800	32,900
Total No Bridge Constraint	***27,000***	***35,800***	***39,800***	***88,700***	***56,800***
Kawerau Bridge Constraint	5,600	5,300	5,600	14,400	8,300
Arthurs Point/Shotover Bridge Constraint	3,000	3,400	3,400	16,800	7,800
Albert Town Bridge Constraint	2,700	2,700	2,700	10,900	6,300
Total with Bridge Constraint	***11,400***	***11,500***	***11,700***	***42,100***	***22,400***
	Share of Commercially Feasible Capacity				
Wakatipu: No Bridge Constraint	34%	42%	46%	25%	30%
Wanaka: No Bridge Constraint	36%	34%	31%	43%	42%
Total No Bridge Constraint	***70%***	***76%***	***77%***	***68%***	***72%***
Kawerau Bridge Constraint	15%	11%	11%	11%	10%
Arthurs Point/Shotover Bridge Constraint	8%	7%	7%	13%	10%
Albert Town Bridge Constraint	7%	6%	5%	8%	8%
Total with Bridge Constraint	***30%***	***24%***	***23%***	***32%***	***28%***
	Additional Commercially Feasible Capacity from Baseline				
Wakatipu: No Bridge Constraint		6,700	10,700	19,700	10,700
Wanaka: No Bridge Constraint		2,100	2,100	42,000	19,000
Total No Bridge Constraint		***8,700***	***12,700***	***61,700***	***29,700***
Kawerau Bridge Constraint		-300	-10	8,800	2,700
Arthurs Point/Shotover Bridge Constraint		400	400	13,700	4,800
Albert Town Bridge Constraint		0	0	8,100	3,500
Total with Bridge Constraint		***80***	***300***	***30,700***	***11,000***
	Share of Additional Commercially Feasible Capacity from Baseline				
Wakatipu: No Bridge Constraint		76%	82%	21%	26%
Wanaka: No Bridge Constraint		23%	16%	45%	47%
Total No Bridge Constraint		***99%***	***97%***	***67%***	***73%***
Kawerau Bridge Constraint		-3%	0%	10%	7%
Arthurs Point/Shotover Bridge Constraint		4%	3%	15%	12%
Albert Town Bridge Constraint		0%	0%	9%	9%
Total with Bridge Constraint		***1%***	***3%***	***33%***	***27%***

Source: M.E QLDC Residential Intensification Model, 2022/2023.

7 Costs and Benefits

This section provides a brief overview of the anticipated economic costs and benefits of the intensification options as a whole, relative to the baseline dwelling capacity.[27] It also considers costs and benefits from the perspective of business demand and capacity in commercial zones.

7.1 Costs and Benefits of the Intensification Plan Variation (Housing)

The proposed provisions are likely to generate changes through time to the nature and distribution of residential growth in QLD's urban area. Changes to growth patterns are likely to incrementally and cumulatively impact the city's urban form, becoming more significant through time. The nature of urban form has important impacts on the efficiency of spatial interactions across and within the city.

These factors give rise to a range of costs and benefits that are likely to flow from changes to the underlying planning structure. Part of the effect relates generally to the implementation of provisions for intensification and is observable in aggregate at the city level; while part relates to the location and spatial extent of the provisions and how they are applied within the urban environment. It is also important to evaluate the scale of the proposed provisions in relation to the likely market size for residential dwellings as the combination of these factors will affect the take-up of residential development and the urban form patterns that emerge.

7.1.1 City Level Aggregate Effects of Intensification Provisions

The implementation of intensification provisions is likely to generate an economic benefit to households through increasing the range of different housing options available across different locations.

The proposed provisions extend the range of dwellings enabled in some locations. This occurs across significant parts of the LDSR Zone under Options 1 and 2 (where upzoned to MDR Zone) and also across the entire suburban area under Options 5 and 6.

At the city level, the types of dwellings enabled range from smaller detached dwellings or townhouses, up to higher density horizontally attached terraced housing, and vertically-attached dwellings in central areas. In some areas, where not previously provided, this may further enable the substitution of demand across different dwelling typologies[28].

[27] At the time of drafting, M.E had not been asked to focus on a single preferred option.

[28] For example, the provision of smaller detached dwellings on smaller sites, or larger attached townhouse dwellings on smaller sites (where the construction of attached dwellings increases the size of the dwelling that can be constructed on a site) are lower to medium-density housing options that are likely to be able to meet a share of the demand that is currently met through standalone dwellings on larger sites. There is likely to be greater potential market substitution across these dwelling categories than between standalone dwellings on larger sites and higher density vertically attached apartments.

The provisions enabling smaller sites are likely to result in changes to the cost structures of dwelling construction and delivery due to changes in the nature of dwellings constructed. Generally, the provision of smaller sites is likely to result in more ability for the market to deliver smaller dwellings that are more appropriately scaled to the site size. The ability to form smaller site sizes increases the potential dwelling yield of sites. This is likely to increase the feasibility of redevelopment and development, particularly in higher value locations.

Notwithstanding the effects on urban form (covered below), the increased ability for the market to deliver a wider range of dwellings is likely to have a positive effect on housing affordability, at the city level, relative to the development patterns of new dwellings that would otherwise occur under the existing provisions.

It is important to note that there are significant areas within QLD's urban environment where medium to higher density dwellings are already enabled within the existing planning provisions. The effect of the proposed options is to expand the extent of this provision and enable intensification to occur in a greater range of locations. This has an effect on the aggregate city-level potential dwelling profile.

There are critical economic effects on urban form that relate to the *location* of these expanded provisions. These will differ across the options and are discussed within the sub-sections below.

7.1.2 Effects from the Location of Provisions

The *location* and *extent* of intensification provisions are important and affect the costs and benefits that may arise from changes to development patterns across the urban area. Part of the effects occur to private households involved in the transaction of individual dwellings, while the resulting development patterns have wider effects observed at the community and the city levels. The location of intensification provisions and the spatial extent across which they are applied determine the level of optimisation of effects of intensification and need to be considered together.

There are different spatial scales at which the location of provisions are important for QLD. They are distinct and generate different types of economic effects for the district. They relate to:

i. The overall macro spatial structure of the district's urban area – i.e. how the nodes are distributed across the urban environment and their positioning within the city's hierarchical urban economic structure. This is especially critical for infrastructure considerations within the district.
ii. The localised patterns of intensification around centres *within* different parts of the district – i.e. within each area, the extent to which growth is concentrated within and around centres.

Each of these aspects of location are discussed below.

Spatial Economic Structure of the District

The urban economic structure of the district relates to the higher-level distribution of nodes and areas of growth across the district, and their spatial inter-relationships. It affects the spatial operation and efficiency of interactions that occur across the city. Differences in this distribution also generate different patterns of demand for interactions across the urban area.

The distribution of the hierarchy of nodes and corridors together with other growth locations has important effects on the efficient functioning of the urban area. The relationship to the infrastructure networks are core among these for the district.

Based on the approach adopted in the HBA 2021, the district faces significant land transport infrastructure constraints. Growth in broad areas across the district are limited by capacity constraints at key bridges that serve large parts of the district's outer urban areas. The alignment of future development patterns with the central areas not constrained by these bridges is a critical determinant of the ability for households to interact with core nodes of amenity within the urban area. The assessment has found that Options 1 and 2 are likely to encourage the concentration of growth into central parts of the district. This is likely to result in an efficient pattern of growth across the district's urban economic structure as it aligns with infrastructure capacity and supports the development of central nodes.

The level of centralisation of growth into one or several core nodes affects the degree to which a core hub of activity can establish within the district. Establishing a main node within an urban hierarchy is important for providing a core commercial centre for businesses. Appropriate concentration of commercial activity into central business areas enables agglomeration economies to develop and increases the productivity of parts of the business sector.

A centralised node(s) also provides a location for activity to co-locate that serves wider urban catchments. It provides the critical mass to generate an expansive catchment area that supports an increased range and depth of commercial activity within the node. A more diversified commercial offering increases commercial amenity for households across the district.

The residential patterns of growth across the urban area affect the development of this urban economic structure. The location of growth patterns can reinforce and support the structure to different extents. Importantly, this occurs at both the broader spatial scale, as well as at a more localised level, such as the level of intensification around centres within an area (which is discussed in the following sub-section).

At a broader level, the distribution of growth into central vs. more peripheral locations affects the level of development of the general spatial structure. A higher share of growth within inner urban and inner suburban areas (such as under Options 1 and 2) is more likely to support the development of core nodes within the district. Growth in peripheral locations (facilitated by Options 5 and 6) will instead encourage a greater dispersal of commercial activity into a greater number of smaller, less central locations.

The level of centralisation of residential growth at this spatial scale differs across the proposed options. The options will support the establishment of main nodes within the urban structure to different degrees.

Localised Concentration around Centres and Core Nodes

The application of intensification provisions within key areas of accessibility is likely to have positive effects on urban form through supporting a centres-based structure and growth in more efficient centralised locations. This generates a range of benefits that accrue to both individual households and the wider community. Concentration of development into these areas increases the amenity received by households through greater accessibility. It also supports the viability of centres through the concentration of demand in local surrounding areas, thereby increasing the level of amenity provided by the centre to the community

within its catchment area (discussed further below). This is important as centres play an important social role and function in addition to the amenity offered by their commercial activities.

Increased centres' function and the concentration of growth around these key nodes has benefits through increasing the sustainability of urban form. This occurs through several mechanisms. These include a greater share of alternative mode trips (e.g. walking/cycling to the centre), increased travel efficiency at the city scale through the concentration of commercial and social activities within centres relative to a more dispersed distribution, and the increased viability of public transport options where transport hubs are supported by centres.

Further economic benefits that accrue to the public sector are also achieved through the implementation of growth patterns that support intensification within centres. Increased nodes of activity allow for the more efficient delivery of transport and social infrastructure through their concentration into centres. A concentration of residential demand within close proximity to these centres enables investment in this infrastructure to more efficiently serve a greater demand.

7.1.3 Effects from the Spatial Extent of Provisions

It is important to consider the spatial extent of any intensification provisions as this is likely to affect the type of urban form outcomes that are achieved, and the costs and benefits that flow from these development patterns.

The spatial extent of the provisions determines whether there is likely to be sufficient differentiation of development intensities across the urban area. The benefits of intensification rely on a level of concentration of growth around key nodes of accessibility and sufficient differentiation of these patterns within the urban area.

The application of specific surrounding catchment areas has different relative effects within different sized urban economies. Application of intensification areas across a constant distance across all urban economies will generally cover considerably larger shares of the total residential area in smaller urban economies. Depending upon the nature (dwelling scale, etc) of provisions, high relative coverage of urban areas may reduce the level of differentiation across the urban area[29]. This may reduce the degree to which growth is concentrated around key nodes of accessibility, potentially reducing the benefits associated with intensification into these areas set out in the previous sub-section.

The spatial extent of provisions that apply to the highest density development (e.g. vertically attached apartments) is also important to appropriately encourage growth that functions together with the centre and encourage development patterns that are appropriate for the surrounding urban environment. If the spatial extent of higher density development provisions are too large, then this may result in higher density developments occurring opportunistically within parts of the urban area that are less likely to function together with the centre. Moreover, these developments could potentially absorb a high share of the total higher density market demand. This may therefore reduce the likelihood of this development occurring elsewhere in locations that are more likely to function together with the centre and achieve the intensified urban form concentrated around centres.

[29] The share of urban area covered by a constant catchment distance tends to be inversely related to city size.

The concentration of growth into the core parts of accessible areas enables more efficient infrastructure provision. This occurs through the higher density of demand[30] as well as the timing and sequencing of growth. If intensification provisions are too widespread, then this reduces the ability to achieve infrastructure efficiencies and may increase infrastructure costs through the requirement to supply increased infrastructure across larger areas due to the possibility of intensification.

7.1.4 Effects from the Scale of Market Demand

The overall scale of market demand is likely to affect the appropriateness of the scale of intensification provisions by location. The level of market demand for different types of dwelling densities will affect the degree to which concentration of development within key areas of accessibility are achieved and the nature of that intensification.

Smaller urban economies typically have lower demand for the higher density dwelling typologies, such as vertically-attached apartments. This market is becoming increasingly established within certain parts of the district, with higher levels of development within the central areas of the Wakatipu Ward.

Lower demand in other less central parts of the district means that core nodes of accessibility are less able to sustain intensification of higher density dwellings than areas where there is greater market demand. A smaller market size increases the propensity for any higher density vertical development outside of the centre zone or not directly adjacent to the centre to form a standalone development that is less consistent with the surrounding urban environment.

In contrast, larger urban economies with higher demand are able to sustain higher density development across greater distances that function together with the centre and are consistent with the density gradient within the catchment area. Higher density vertical development was typically more consistently sustained across larger walkable catchment areas within higher value areas in larger urban economies.

In smaller urban economies, intensification patterns around centres are instead more likely to be characterised by medium density attached dwellings, such as those provided for within the MDR or HDR zones.

7.1.5 Summary

The capacity modelling has shown that all of the proposed options are likely to increase the level of potential development options at the city-scale relative to the existing baseline provisions. The intensification provisions will increase the range of dwelling types and sizes across a greater number of locations. They will provide greater flexibility to the market to develop sites more efficiently (at an individual level), as well as increase their feasibility through enabling higher yield.

However, the modelling indicates that the proposed options are likely to have significantly different effects on urban form. They encourage different types of development patterns across the district's urban areas, which gradually and incrementally through time contribute to the district's urban form. In aggregate, the

[30] Infrastructure costs are generally lower if demand is more spatially concentrated than the higher costs from more expansive networks required to serve more dispersed patterns of growth.

development patterns encouraged by some of the options may result in a less efficient urban form despite benefits occurring at the individual site level.

There are differences between the options at both the broader spatial economic structural scale as well as the more localised scale in relation to the level of growth which is concentrated into centres within areas. These will influence the economic effects, as set out above, generated by the growth patterns of the different options.

The largest differences are observed between Options 5 and 6 in comparison to Options 1 and 2. The first two options (Options 1 and 2) encourage the concentration of growth into the central parts of the district's urban areas. This occurs where the upzoning around nodes and corridors is applied to areas that are located within the central parts of the district, closest to the main central nodes of Queenstown and Wanaka town centres, as well as the suburban areas that are most accessible to these locations.

In contrast, Options 5 and 6 encourage more widespread patterns of growth that have a lower relative concentration of growth into the district's central urban areas. These options have large increases in enabled density across the extent of the suburban area. This is likely to encourage more widespread growth across the district as parcels are developed opportunistically and consequently lower levels of relative concentration into more central locations.

More widespread patterns of growth and lower relative concentrations into central parts of the district's urban areas are likely to generate adverse effects in relation to the constraints faced by transport infrastructure. Growth in peripheral locations does not optimise the alignment with the infrastructure capacity and is likely to adversely affect the ease of interaction across the city within the context of infrastructure constraints.

A greater dispersal in the balance of growth patterns between central and peripheral locations may also result in lower levels of development of the main urban nodes than may be achieved through a higher concentration of development within central areas. This may result in lower benefits associated with reinforcing the role and function of these largest centres.

Options 5 and 6 are also likely to reduce the level of concentration of growth around centres within each location. These options remove a large share of the differentiation in zoning between general suburban areas and locations immediately surrounding centres. This reduces the incentive to concentrate development around centres by way of higher enablement within these areas. It also disperses the market for more intensive development across the urban area, therefore diluting the level of growth around the centres.

Lower levels of growth around centres, mean that Options 5 and 6 are less likely to achieve the economic benefits associated with concentrating growth around centres. These are set out in the previous sub-sections and relate to supporting the viability and vitality of centres and generating a more sustainable pattern of urban form. This is also discussed further below.

There are also differences within the Wakatipu Ward between Options 1 and 2. Option 1 has a greater focus on nodes, while Option 2 spreads the intensification across both nodes and corridors.

At a broad spatial scale, both of these options encourage growth to occur within the central parts of the district's urban areas that align with the patterns of infrastructure provision. This is likely to encourage a

more efficient spatial structure through supporting the development of the main urban nodes within the district. The intensification provisions are also likely to be appropriately scaled to the local economic context to encourage patterns of growth and intensification that support the viability and vitality of the district's centres.

Option 2 is likely to enable greater choice and development options for the market through increasing the options for more intensive development within this central area. The additional development potential along corridors is less likely to reduce the intensification within and around centres as it is appropriately scaled and located. The presence of the HDR Zone also creates differentiation in potential densities surrounding the core centre areas.

7.2 Costs and Benefits of the Intensification Plan Variation (Business)

When evaluating the intensification options relative to each other and relative to the status quo (Baseline), Council needs to consider the potential for competing land uses in and around commercial centres and employment areas. That is, business and residential demand and how they interact. Here we consider the implications (costs and benefits) of the proposed intensification Options 1 and 2 from the perspective of business demand and capacity. We do not specifically address Options 5 and 6 here as they introduce residential capacity extensively throughout suburban areas in addition to intensification of nodes and/or corridors (and are likely to reduce the level of concentration of growth around centres, as discussed above).

In a general sense, Options 1 and 2 leave the spatial extent of commercial zones the same,[31] but intensify the residential capacity near or adjoining some existing commercial zones (with MDR or HDR zoning). Those commercial zones (nodes) that are close to new (or more) higher density residential intensification in the plan variation are the:

- WTC Zone
- QTC Zone
- BMU Zone (Reece Crescent)
- combined commercial zones in Three Parks
- Frankton LSC Zone (which adjoins the BMU Zone (Frankton North))
- Remarkables Park Shopping Centre, and
- BMU Zone (Frankton Marina)

7.2.1 Benefits to centres/commercial nodes from surrounding intensification

When centres are supported by a dense catchment of residential dwellings in their primary trade area, the suitability (feasibility) of those centres to support development can increase. Suitability of different

[31] With some exceptions in the QTC Zone (Isle Street sub-zone included) and Albert Town LSC Zone (commercial zoning reduced to reflect the area now available for commercial activity due to residential visitor accommodation development within the extent of the LSC Zone).

locations to successfully attract and support development of retail/commercial and/or commercial visitor accommodation activity was assessed in the Business Development Capacity Assessment 2017 (BDCA 2017) using a Multi Criteria Analysis (MCA).[32] The criteria considered important (in the local context) for encouraging development for each land use fall into two categories: characteristics that apply outside of the commercial zoning (but nearby) and characteristics that apply within the commercial zoning.

The Plan variation has a key influence on the characteristics of catchments around commercial zoning. M.E considers that the proposed intensification Options 1 and 2 will make a positive change to development suitability in the targeted centres/commercial nodes. Specifically, key criteria relevant to retail/commercial development include proximity to labour, exposure/profile, proximity to market and proximity to tourist accommodation. Increasing the density of residential development in land adjoining or near each of the commercial zones improves the potential for each of these criteria.[33] Proximity to labour is also a key criterion for commercial visitor accommodation development and encouraging more households to live in close proximity to centres provides a large, highly accessible labour force.

Intensifying residential capacity around commercial centres therefore creates a number of positive economic and social benefits for those centres and the businesses located in them. For example:

- The potential[34] for additional households within their walkable catchment increases demand for goods and services directed to those centres (without a necessarily corresponding increase in vehicle movements within the centre).
- Increased demand translates to increased foot traffic and vibrancy/vitality (enhanced social amenity).
- It increases the productivity of existing businesses and sustains net additional floorspace which will both reduce vacancies (where applicable)[35] and stimulate development of vacant sites (where applicable).

As business performance rises as a result of increased market demand around commercial centres, so does land and rental values for owners in those centres. Potential for increased returns facilitates capital investment in existing buildings (i.e. refurbishments and upgrades). This in turn improves the visual amenity of centres/commercial areas.

It also increases the commercial feasibility of redeveloping existing buildings that are underutilising the development potential of their sites (i.e. relative to plan enabled maximums). Redevelopment may allow the centres to sustain more business floorspace than the existing built environment (i.e. provide for new or larger businesses) which can increase the functional amenity of those centres. That is, a greater range of goods and services can be offered within the centre as a result of redevelopment. Alternatively, redevelopment may provide net additional capacity for new/more vertically-attached apartments on upper

[32] Suitability for industrial development was also assessed but is not discussed further here given the nature of the commercial zones that are the focus of the intensification options.

[33] Commercial Visitor Accommodation is a Restricted Discretionary Activity in the HDR Zone.

[34] The number of actual additional households will be driven by demand by dwelling type and location.

[35] Vacant tenancies in commercial zones have not been a significant issue in the district to date.

floors (discussed throughout this report), which in turn further adds to the demand, vibrancy and vitality of the centre.[36]

M.E considers that intensifying residential land use around the QTC and WTC will further support their role at the top of the centre hierarchy. Both town centres have some opportunities for infill development (vacant sites) and redevelopment. Options 1 and 2 enhance the likelihood of those opportunities being realised (compared with the status quo), while also improving social and functional amenity outcomes in the centres. This is particularly important given that both centres are subject to competition associated with retail development in Five Mile and Three Parks respectively. Intensification around the town centre zones helps with their resilience to supply changes across the centre network.

The proposed intensification around the BMU Zone (Reece Crescent) will support this business area, with some flow-on benefits for the WTC Zone which is still within walking distance. This BMU Zone has limited vacant land but considerable redevelopment potential. Options 1 and 2 enhance the likelihood of those opportunities being realised (compared with the status quo). It may also have the effect of changing the mix of businesses expected to locate in the zone in future to a minor degree. That is, it may take on more convenience retail and service activity, including hospitality, than might otherwise have been the case. The ability to serve a pseudo local centre/convenience role[37] for nearby resident households is enabled by the zone provisions[38] so no constraints are anticipated in terms of the BMU Zone being able to adjust to the opportunities provided by the residential intensification. Any such predicted changes in the future business mix are not expected to have material adverse effects on the WTC Zone as higher-order retail and service needs of those additional households supported in the proposed MDR Zone areas will still be directed to a combination of the WTC Zone and Three Parks in keeping with current shopping patterns.

Three Parks is an emerging town centre, that includes opportunities for large format retail. It also contains a large area of BMU Zone and a bespoke industrial, service and trade area (Three Parks Business Zone). Three Parks includes key community facilities (sporting and a school) and is adjacent to the General Industrial and Service Zone in Wanaka. Increasing the area of MDR Zone in close proximity to all of these commercial zones is considered an efficient use of the residential land resource. As with other intensification areas, it will increase the dwelling yield in this greenfield area in a typology that is considered feasible, and once developed will add to the vibrancy and vitality of the Three Parks BMU Zone and Commercial Zone. Residential upzoning also increases the size of the potential labour pool that is highly accessible to all of the commercial and industrial zones in this locality (with associated travel efficiencies).

The area around the Frankton LSC Zone has been proposed as a key node of residential intensification in Options 1 and 2, with upzoning for both HDR and MDR Zone. As discussed above, this is likely to significantly increase demand for convenience retail and service activity within the LSC Zone, and potentially could attract more core (weekly/comparison) retail[39] and office-based businesses than might otherwise be expected (or sustained in that location) under Baseline residential zoning.

The existing centre contains a mix of older development (largely on the south side of Frankton Road) and newer development (on the north side of the roundabout). The southern portions of the LSC Zone include

[36] See assumptions applied in the capacity model for mixed use zones in Appendix 4.

[37] In addition to a mixed business/employment role for the wider Upper Clutha catchment.

[38] I.e. through permitted, controlled and restricted discretionary conditions.

[39] Noting rule 15.4.7 applies.

vacant land and significant redevelopment potential. The proposed HDR and MDR Zone are likely to substantially increase the feasibility (suitability) of that infill development and redevelopment occurring in the future compared with the status quo.

The PDP also created new greenfield capacity east of the cemetery (Hansen Road) as part of the LSC Zone. The proposed residential intensification would provide relatively more investment certainty for the development of that site (with new businesses likely to be more sustainable through increased primary catchment household demand (in addition to pass-by traffic demand expected)). This is beneficial given that the site has a number of additional controls which constrain its development capacity relative to other land in the LSC Zone.[40]

If LSC zoning was to be retained in Frankton, M.E recommends that the rationale for some of those controls on the Hansen Road site, such as site coverage and retail/office caps, be re-visited to ensure that they are still appropriate in the context of the elevated role attributed to the centre by the proposed residential intensification.[41] We discuss the proposed change in zoning from LSC Zone to BMU Zone in Frankton further below.

The **Remarkables Park Special Zone** is a large employment area with considerable further development potential. The shopping centre is large and established on the western edge of the special zone. The special zone provides significant capacity for high density housing, with this all located to the east of the shopping centre. Plan variation options 1 and 2 include provision for more HDR Zone on the western side of the special zone, continuing down Robertson Street and up a portion of Douglas Street. They also provide MDR Zone immediately south of the shopping centre (within the special zone) and further to the west of Riverside Road and north of Robertson Road.

From an urban form perspective, this places the Remarkables Park shopping centre more in the middle of a node of higher density housing, rather than to the side of it. It improves accessibility on all sides of the shopping centre. This is considered to have positive economic and social effects on the shopping centre by increasing demand in the local catchment and generating more vibrancy and vitality in the centre than under the status quo. The Airport Zone and Lakes District Hospital (as employment nodes) are also likely to benefit from a larger potential workforce within easy reach of both employment areas. However, M.E has not considered the potential for increased reverse sensitivity risks for the Airport from intensifying housing within the Outer Control Boundary.

Last, we consider the anticipated positive effects of the proposed intensification near to the **BMU Zone (Frankton Marina)**. The BMUZ (Frankton Marina) may also experience increased demand as a result of intensification proposed east of the zone (Option 1), or east and north (Option 2). This is a relatively small business zone, with a mix of service activities and businesses associated with the marina. M.E does not anticipate that the changes in proposed residential zoning will be such that it stimulates material redevelopment of the BMU Zone,[42] but rather the local businesses may still experience some increased

[40] E.g. only 50% site coverage compared to 75% elsewhere in the zone (rule 15.5.1).

[41] It would be important to go back to the original assessment of the proposed zone extension.

[42] The topography of the land north of Frankton Road is estimated to limit the walkability of the area. If households are more inclined to use their vehicles, then more commercial areas become accessible which will spread any increased demand from this intensification area across a range of commercial zones, and not necessarily the BMU Zone (Frankton Marina) even though it is the closest.

productivity from a larger local customer base. M.E also considers it likely that the proposed intensification could have minor benefits for the commercial businesses located in the adjacent Marina (particularly food and beverage activities).

7.2.2 Benefits of proposed intensification provisions within Commercial Zones

The proposed intensification provisions also include **increases in maximum building height** in commercial zones. This includes increases in QTC Zone, parts of the WTC Zone, all LSC Zones, the BMU Zones in Wanaka and Three Parks and a minor adjustment in the BMU Zone (Frankton Marina). In most cases the Plan variation provides opportunity for one additional floor, or in some cases two additional floors. The additional 1.5m of height proposed in the BMU Zone (Frankton Marina) it not expected to change the number of floors that can be development but may help provide flexibility in building design, and it simplifies the PDP by using two height limits across BMU Zone locations (i.e., 16.5m and 20m).

M.E considers these maximum building height increases an appropriate and important response in conjunction with the proposed residential intensification of Options 1 and 2 for several reasons:

a) As discussed above, where surrounding catchments are intensified this creates more demand likely to be directed to those centres/mixed business areas (as the closest and therefore most convenient centre to access). Generating more demand and not increasing the capacity of the centres at the same time may lead to future supply constraints. Increasing the maximum building heights *potentially* creates additional business floorspace capacity that can allow the centres to expand (upwards) to respond to that demand growth.

   Care is needed though as increasing building heights will not have the benefit of increasing business floorspace capacity in all cases. Retail capacity is primarily limited to the ground floor, and in some cases, can be feasible on the first floor. Increasing building heights therefore rarely benefits retail capacity. Office and other commercial activities (including tourist accommodation) are feasible on ground and upper floors. Only in large centres would several floors of office space be sustained in a district such as QLD. The QLD economy is characterised by small to medium sized office-based businesses who would typically seek offices on a single floor (or only part of a single floor). Therefore, tenanting a multi-storey commercial office building is likely to require attracting several/many businesses which is more complex and can introduce a range of additional issues. Adding an additional floor (or two) may be utilised for additional office/commercial floorspace, or, based on assumptions modelled elsewhere in this report, may simply provide opportunities to include (or include more) residential apartments in mixed-use buildings. Appendix 4 provides a summary of the assumptions applied for this report (i.e., estimates of how different commercial zones will respond to changes in maximum building height with regard to floors used for business activity). We discuss this further with regard to potential costs of the plan variation below.

b) Increasing the maximum building height of centres/commercial nodes helps maintain the relativities of built form when residential heights adjacent to centres/nodes also increase. That is, is helps preserve a distance decay of building heights as you move from the centre (peak) to the centre fringe and through to the LDSR Zone.

c) Increasing the maximum building height can increase the feasibility of development/ redevelopment, especially when land values are high. As discussed in the HBA 2021, increasing building heights does add costs as construction methods change from 1-2 storeys to low rise and mid-rise typologies. However, above a certain number of floors, the cost increase is marginal and the feasibility increases. In the MCA carried out for the HBA 2021, centres that offer higher building heights were a key criterion for feasible hotel development. The proposed height increases would support this outcome in parts of the WTC and QTC Zones.

   Analysis in Section 5 of this report concludes that while the feasibility of vertically-attached apartments in commercial zones (i.e., mixed use buildings) is often relatively less feasible than low and medium density residential development, increasing the yield of apartments (through proposed changes in maximum building heights) increases feasibility compared to the Baseline planning provisions. Feasibility of mixed-use buildings (vertically-attached apartments) is also expected to increase over time in the district as demand grows and preferences change.

Another change proposed in the intensification options is to rezone the LSC Zone in Frankton to BMU Zone. A shift to BMU Zone (Frankton North) would have the effect of increasing the maximum building height from a current 10m (i.e., three storeys) to 20m (i.e. five storeys).[43] As discussed above, the LSC Zone in Frankton contains some vacant land (including but not limited to the Hansen Road site), and redevelopment potential focused south of Frankton Road. This is where the change to BMU Zone would likely be manifest in the medium-term.

Based solely on the height increase associated with the rezoning, BMU Zone would likely make any infill development and redevelopment in the existing centre area more feasible compared with the status quo LSC Zone. M.E is uncertain whether the rezoning would remove the constraints on the Hansen Road site or not. We have assumed for the purpose of this report that it might. This too would increase the feasibility of developing that site.

Activity changes associated with the change from LSC Zone to BMU Zone are less significant. They include more leniency on retail and office tenancy sizes as well as some comparison retail store types and visitor accommodation. Some service activities change from prohibited to non-complying. Daycare facilities become more stringently controlled (restricted discretionary rather than permitted activities). Overall, M.E considers that under BMU Zone, any new development or redevelopment could deliver a somewhat more diverse mix of activities compared to the status quo LSC Zone, and this may increase the functional amenity of the centre overall in the long-term.

It is relevant that there is already an extensive area of BMU Zone (Frankton North) adjacent to the LSC Zone and rezoning the LSC Zone will extend the area of BMU Zone development capacity. However, because much of the LSC Zone land is already developed, with some relatively new and intensive, M.E anticipates that the development around the Frankton Road roundabout will continue to have a different character to the rest of the BMU Zone (once it develops). We consider that it is likely that it will continue to function

[43] It has been assumed that in the absence of the rezoning to BMU Zone that the Frankton LSC Zone may also have a building height increase to 14m (indicatively up to 4 storeys).

more like a centre over the long-term than a mixed business area. The intensification proposed around the existing centre would further encourage that due to the opportunities to service the convenience retail and service needs of that immediate dense residential catchment (which will influence the activity mix likely to be supplied).

Overall, M.E considers that the change to BMU Zone in this location is likely to create a number of net additional benefits in terms of supporting further development in the centre, without compromising the ability of the locality to serve (retain) a centre role for the catchment community.

7.2.3 Costs of proposed intensification provisions

Does the residential intensification constrain the ability of the centres to expand horizontally in the future?

While Options 1 and 2 allow commercial zones to expand upwards (which may or may not effectively increase business floorspace capacity), some of the proposed residential intensification provisions potentially reduce the opportunity for selected commercial zones to expand outwards in the future (should that prove necessary to meet demand) compared to the status quo. This risk applies only to Three Parks, the BMU Zone (Reece Crescent) and the LSC Zone (Frankton) in our view.[44] In each instance, the provisions in Options 1 and 2 propose to upzone LDSR Zone on a commercial zone boundary to MDR or HDR Zone.

Expanding commercial zones into low density housing areas is never an easy proposition, but conceptually, it is easier than if the adjoining land is developed to medium or high density housing. As such, there is a potential opportunity cost to expand these three commercial areas in the future (i.e., a decrease in the relative ease of future expansion).

M.E has considered the business capacity sufficiency results from the Interim BDCA Update 2020 to test the significance of these potential opportunity costs.[45] While the BDCA did not consider the sufficiency of any particular centre or commercial zone location in isolation, the modelling indicated that there was (in aggregate) sufficient commercial and retail land enabled by the ODP, PDP and Spatial Plan to meet at least long-term demand for such land in the urban environment.[46] The surpluses of capacity were substantial for these land use categories. On that basis, M.E considers that the existing and planned zoning framework as a whole (including but not limited to the centre network) in the urban environment is adequately scaled to cater for projected long-term growth of retail and other commercial floorspace in urban areas.[47] Any potential opportunity costs for expanding Three Parks commercial zones, the BMU Zone (Reece Crescent) and the LSC Zone (Frankton) in the future is therefore estimated to be very minor.

[44] Upzoning (from LDSR Zone) around the QTC and WTC Zones is not on the commercial zone boundary (but expands the extent of higher density housing surrounding those centres). It is also estimated that greater potential lies in expanding the Remarkables Park Shopping Centre eastward (if needed in future) rather than westward or southward, and so the proposed upzoning of residential land does not cause any opportunity costs for that commercial centre in our view. The BMU Zone (Frankton Marina) is already constrained by Frankton Road and the marina.

[45] An updated BDCA is expected by mid-2023 as part of the updated HBA.

[46] Based on the more conservative Alternative Capacity scenario and calculated at the ward level.

[47] Any proposed expansions of commercial zoning in the future can still be considered on their merits.

7.2.4 Summary of Costs and Benefits for Commercial Zones

Options 1 and 2 maintain and further support the existing commercial zoning framework and have taken an integrated approach to providing opportunities for residential intensification around key commercial zones and, at the same time, providing opportunities for commercial centres to expand upwards to help manage future demand growth. Overall, M.E considers that these proposed intensification options and provisions – as they apply in and around commercial zones, will generate a number of social and economic benefits for commercial zones and no material economic and social costs.

It is noted that some intensification is proposed within the Queenstown Airport Outer Control Boundary (including but not limited to the LSC Zone in Frankton). The conclusions reached here (from the perspective of business demand and capacity) do not specifically account for any potential issues associated with the presence of the airport, and this is an area that may warrant further assessment.

7.3 Alternative Recommendations or Recommendations for Further Consideration?

There are two main aspects that we consider may warrant further consideration by QLDC. These include:

i. Further high density residential development provision surrounding WTC Zone.
ii. A removal of the proposed 150m^2 per unit density control in appropriate locations within the MDR Zone.

These aspects are discussed further below.

Higher Density Provision within Wanaka

The analysis has indicated that there may be constraints to higher density development within the WTC area in the long-term. The proposed provisions largely constrain high density development to occurring within the commercial town centre area (where proposed increases in maximum building height are only modest in the plan variation and business activities are estimated to compete strongly for capacity in new/redeveloped buildings), with some provision separately within the Three Parks area and BMU Zone area around Reece Crescent. This may result in a high level of redevelopment required within the town centre and BMU Zone (Reece Crescent) areas to meet the projected long-term demand if demand shifted toward more intensive forms of dwellings through time.

Based on this assessment, it may be appropriate to provide limited further opportunity for higher density development in residential areas immediately surrounding the WTC Zone area. This needs to be appropriately scaled and applied across a limited extent to ensure that higher density development within this location is likely to function together with and support the town centre.

While we note the provision for further higher density residential development within the BMU Zone areas is likely to contribute to meeting demand at the Wanaka total level, we consider that there are important differences in their contribution to growth at the localised level *within* Wanaka. Capacity within the BMU Zone areas is likely to support the viability and vitality of the WTC as a node to a lesser extent than higher density capacity within residential areas immediately adjacent to the WTC Zone. We therefore consider

that provision for higher density residential development within these town-centre-adjacent areas may provide appropriate opportunity for intensification to support the future role and function of the WTC.

Removal of Medium Density Residential Zone Density Control in Appropriate Locations

The feasibility modelling suggests that the removal of the 150m^2 per dwelling density control within the MDR Zone is likely to increase feasibility within this zone. We consider that the removal of this control in appropriate areas may warrant further consideration.

Increases in the feasibility of development within the MDR Zone may increase the level of concentration encouraged to occur around centres. If this density control is removed in Options 1 and 2, then this is likely to increase intensification around centres given the proposed location of the MDR Zone under these options.

We consider that it would be detrimental to remove this density control under Option 6 where the MDR Zone is applied across the entire suburban area (and note it is already removed within Option 5). This would increase the dispersal of more intensive growth, reducing the share occurring around centres as already discussed.

8 Concluding Remarks

QLDC has an important role in managing future urban growth across the district. It is important that adequate opportunity is provided for growth across a range of dwelling types in appropriate locations that encourage efficient patterns of urban form. The options proposed by QLDC are likely to generate different patterns of growth and corresponding economic effects.

A core factor for the district is to encourage patterns of growth that generate sustainable and efficient urban form. This occurs within the context of the district's spatial economic structure of nodes, corridors and other growth locations. Within this structure, there are key challenges and opportunities. These include infrastructure constraints, limiting growth within peripheral locations. There are also opportunities to support an efficient pattern of nodes (including centres) and growth areas across the district.

It is critical that an appropriate pattern of growth is achieved at both the broader level to support an efficient hierarchy and concentration within central areas of the district, as well as at the local level to support the intensification in and around centres. Positive urban form outcomes rely on achieving the appropriate distributions of growth at both of these spatial scales.

Planning plays an important role in establishing the parameters for this to occur. It encourages and enables different patterns of growth, providing opportunities for the market to deliver capacity. It is important that planning provides adequate opportunities for growth in appropriate locations.

QLD has existing baseline planning provisions that enable growth at different densities in a range of locations. There is some provision already for medium to higher density development within central areas, with lower density opportunities in suburban locations.

The intensification options proposed by QLDC predominantly add to the existing provisions by increasing development opportunities at different densities in a range of locations. There are important differences between the proposed options, meaning they are likely to encourage different patterns of growth.

This assessment has modelled the residential capacity enabled by the different proposed options and estimated which areas of this are likely to be feasible for commercial developers. It has then assessed these outputs in relation to the projected demand across different parts of the market as well as the alignment with infrastructure constraints and capacity across the district.

The analysis provides firstly an indication of the adequacy of the provisions to accommodate urban growth within the district. It also, crucially, examines how the growth patterns encouraged under each option are likely to contribute to urban form across the district. This is critical for understanding the potential economic effects of the proposed options.

The assessment has found that Options 1 and 2 are likely to encourage the concentration of growth into central parts of the district. This is likely to result in an efficient pattern of growth across the district's urban economic structure as it aligns with infrastructure capacity and supports the development of central nodes.

These Options (1 and 2) are also likely to encourage growth patterns that contribute positively to urban form at the localised level. This occurs through enabling intensification around centres and core areas of accessibility.

The level of opportunity provided by further enablement along corridors is also likely to support this centralised structure through an appropriate spatial extent and location of the proposed upzoning.

In contrast, Options 5 and 6 are less likely to encourage efficient patterns of growth across the district. These Options are likely to disperse growth into more peripheral locations, with correspondingly reduced shares within central areas. This does not align well with the patterns of infrastructure capacity and constraints within the district. A lower level of intensification into centres is also present at the local level under these Options.

The assessment has indicated a couple of areas for further potential consideration. Firstly, further long-term provision for higher density residential development across an appropriately scaled residential area surrounding the WTC. Secondly, the potential removal of the MDR Zone density control (150m^2 per dwelling) within appropriate locations under Options 1 and 2.

Appendix 1 – Demand Modelling Approach

This appendix provides further detail to the discussion contained in Section 2.1. The key stages of our demand modelling approach are set out in the sub-sections below.

Estimation of Baseline Market Demand

The *HBA M.E Queenstown Housing Demand and Affordability Model* converts the structure of underlying residential growth drivers into demand for different types of dwellings by location. These were presented for detached and attached dwellings by reporting area in the HBA 2021, largely as a function of the current and projected household demographic structure in each location.

The updated QLDC projections include a re-estimation of the existing base year household and dwelling structure. The Model has been recalibrated to reflect this updated base structure.

The first stage of the analysis provides a more detailed disaggregation of the structure of demand. It uses the modelling capability to produce estimates of baseline demand by the dwelling typologies outlined above. Specifically, it disaggregates attached dwellings into demand for higher density attached dwellings (e.g. apartments and higher density terraced housing) that are likely to occur in more central areas and key nodes of accessibility, and other attached housing (e.g. duplex pairs, terraced housing and single story attached units) that are likely to occur more broadly across the general suburban area.

Estimation of Future Market Demand from Household Structure

The next stage of modelling estimates the dwelling demand growth within each of the above typologies based on the projected changes in the structure of the household base through time and gradual changes in household preferences towards attached dwellings. Together these factors generate a baseline position of demand consistent with the patterns of dwellings by location within the HBA.

The model firstly captures any changes to the structure of demand that result from changes to the structure of the household base. The dwelling demand profile differs by household type, meaning that changes to the overall distribution of household types through time generate changes in the resulting patterns of dwelling demand. The model then applies a gradual rate of change to dwelling preferences toward attached dwellings. This reflects the observed trade-offs made by households within the existing market structure of dwelling supply gradually through time.

The *HBA M.E Queenstown Housing Demand and Affordability Model* was used to generate these baseline market demand structure through time across the updated QLDC dwelling projection series. The resulting baseline pattern of dwelling demand by type and location differs to the HBA 2021 as a result of the updated projections. Differences occur as a result of the overall total level of growth as well as the location of growth that occur directly from the projections. Locational differences in growth patterns also generate differences in the overall dwelling demand typology structure as a result of the differences in dwelling type patterns between areas.

The resulting projected demand by dwelling type and location forms the lower range estimate of demand preference shifts toward attached dwellings through time.

Analysis of Market Demand Substitution

This stage of the assessment analyses other market studies to gauge the levels of market demand substitution that may occur. M.E have undertaken a range of housing market assessments[48] in other urban economies across New Zealand that estimate how the patterns of housing demand differ between unconstrained household choices and then constrained choices[49] where households reveal the trade-offs they would make across different typologies and locations within budgetary constraints and market price points. They show the distribution of demand by dwelling typology within each of the unconstrained and constrained choice scenarios.

The relevant underlying data have been analysed from these studies to estimate the level of demand shift that occurs from one dwelling typology to another when choices are constrained. For example, it shows the share of detached dwelling demand that is likely to instead be met in attached dwellings within the existing market. These relative shifts have been analysed across different market sizes and market contexts. Patterns of dwelling consents by type and location have also been assessed within the building consent data to guide the modelled range.

A scenario of market substitution has been produced to apply to the QLD market taking into accounts its comparability to the markets used within the studies. This is then applied to the baseline demand structures in the previous stage of assessment to produce an upper range estimate of the market preference shift through time.

Application of Market Demand Substitution to the Queenstown Market

This assessment stage applies the estimated patterns of demand substitution to the QLD market to estimate how the future patterns of demand by dwelling typology that may be realised within the market. These have been estimated within the previous stage from the *Housing We'd Choose* studies that show the shift in dwelling type choices households make when they are constrained by budget.

Patterns of demand substitution are applied incrementally within QLD's urban area to reflect the rates of market churn through time of existing households and growth in new households. In doing this, the analysis only applies the demand substitution to households that are moving within the market, rather than the total household base.

In the short-term, the patterns of demand have been applied to 1% of the existing 2021 dwelling demand base, and just over one-fifth of the net demand increase. In the medium-term, these have been applied to 3% of the 2024 base and half of the net increase. In the long-term, these have been applied to 8% of the 2031 demand base and 80% of the net change in dwelling demand. The percentages take into account the average length of time households remain in a dwelling, the share of the market that may face constrained choices and the level of divergence required from the shift in established dwelling patterns within the market.

[48] These are the Housing We'd Choose studies, which have been undertaken by M.E in a range of urban economies across New Zealand. These follow a methodology established and tested by the Grattan Institute in Australia.

[49] Put simply, this compares the patterns of household preferences by dwelling type with the actual dwelling type choices that they are likely to make within the realities of the urban dwelling market.

Market substitution factors have been applied to minor shares of the existing household base to reflect a small level of household change through market churn[50], as well as only a share of the growth in the market base. Substitution conversions have not been applied to the whole share of the base that is likely to represent market churn, or the whole net increase in demand, as it reflects patterns of demand that respond to a combination of the existing dwelling demand supply structure and the potential future estate patterns of dwelling demand. The share of the market where substitution it applied increases gradually through time to reflect gradual increases in the relative proportion of the potential future estate through time.

Spatial Distribution of Dwelling Demand

The final stage of the demand assessment estimates the spatial distribution of dwelling demand by typology across different parts of QLD's urban environment.

The patterns of demand substitution have been calculated at the HBA 2021 reporting area scale (15 areas), then aggregated up into seven broader catchment areas. This has occurred through applying the rates of market substitution (outlined above) at the catchment level.

The catchment areas are summarised in relation to the HBA 2021 reporting areas and QLDC projections areas in Table 0-1. The final catchment areas reflect the broad spatial market areas within the QLD urban area.

It is important that demand is not spatially disaggregated further beyond this level, particularly within a smaller urban economy such as QLD. Within this lies an important distinction between the origin of demand and the location within which demand is met. Demand typically arises at a city or sub-city level where households are formed from demographic change within the existing base and the movement of households to the city generally. This demand is then met within a range of different locations within the urban area where households make location decisions across a number of different locations and types of locations within the market. The eventual location where demand is met is dependent upon the market supply and availability of choices within the market.

It is important that the assessment is able to compare the level of market demand arising at the city or sub-city level with a range of different options where demand can be met within these areas. A key focus is how the type of location corresponds with the level of market demand, taking into account the likely development patterns within these locations.

The output of this stage of analysis is the market demand by each of the dwelling typologies within each of the seven catchment areas. This is then compared in subsequent sections of the overall analysis to the level of capacity by type of location to accommodate this demand within each catchment to assess the adequacy of the proposed provisions.

[50] Generally, the average length of time a dwelling is occupied is around 7 years. This would result in a market churn of around 50% across 10 years, and 90% across 30 years.

Table 0-1: Alignment between Demand Catchment Areas, HBA Reporting Areas and Projection Areas

Demand Catchment Area	HBA Reporting Area	Projection Area
Arrowtown	Arrowtown	Arrowtown
Eastern/Frankton/Quail	Eastern Corridor	Ladies Mile
		Lake Hayes
		Lake Hayes Estate
		Shotover Country
	Frankton	Frankton
	Quail Rise	Quail Rise
Queenstown/Arthurs	Arthurs Point	Arthurs Point
	Queenstown Town Centre	Frankton Arm
		Queenstown Central
		Queenstown East
		Queenstown Hill
		Sunshine Bay-Fernhill
		Warren Park
Kelvin Heights/Southern Corridor	Kelvin Heights	Kelvin Heights
	Southern Corridor	Jacks Point
Wakatipu Small Township/Other	Outer Wakatipu	Glenorchy Other
		Millbrook
		Outer Wakatipu Other
		Wakatipu Basin Other
	Small Township - Wakatipu	Gibbston Valley
		Glenorchy Township
		Kingston
Wanaka/Hawea	Lake Hawea	Lake Hawea
	Wanaka Town Centre	Albert Town
		Wanaka Central
		Wanaka North
		Wanaka Waterfront
		Wanaka West
Wanaka Small Township/Other	Cardrona	Cardrona
	Luggate	Luggate
	Outer Wanaka	Hawea Flat
		Outer Wanaka
		Upper Clutha Valley Other

Appendix 2 – Changes in Capacity Modelling Since the HBA 2021

This sub-section summarises the key changes that have occurred since the QLD HBA 2021 capacity modelling. It should be read in conjunction with Section 3.

Changes to Base Zone Inputs

The modelling undertaken for the intensification plan variation uses an updated zoning file supplied by QLDC. The baseline zoning provisions apply the PDP Decisions Version zones. Our assessment of the updated zoning file identifies some zoning changes since the input zoning file used within the HBA 2021, as well as changes to the zoned extent of some parcels. Hence, the baseline capacity for this report is more current than the HBA 2021, and not directly comparable.

Updated Development Typologies

A process has been undertaken within the Model to reflect the more intensive patterns of development that are enabled by the intensification provisions in some locations. The model uses this process to estimate the size and composition of dwellings within each parcel.

The model firstly estimates the physical features of each potential dwelling on the formed parcels. It estimates the floorspace size and number of storeys of each dwelling, with the three different dwelling types (not additive) tested for each site. Significant re-calibration has been undertaken within the Model to reflect the development patterns enabled by the intensification provisions. This component of the HBA 2021 model is replaced with a new component that reflects the step-change in the nature of development under the intensification provisions. This is important because the relationships of dwelling size and type relative to site sizes are likely to be substantially different under the intensification provisions. This has implications for construction costs.

The model runs off a series of floor area ratio (FAR) curves that estimate the dwelling size that can be constructed on each site. These are established through assessing the dwelling sizes recently developed in higher density locations in other areas. They are also cross-checked against the three-dimensional parameters of the intensification provisions. This part of the model also estimates the number of storeys of each dwelling.

The outputs of this component of the model are the number of dwellings on each site, their floorspace size and storeys. This is calculated for each dwelling typology option (standalone dwellings vs. attached vs. terraced dwellings vs. apartments). These are not additive, but a maximum yield is identified for each parcel (as set out in Section 3.3.4) where the model selects the highest individual yield that can be constructed. These outputs form the inputs to the next stage of the model where the cost is calculated to construct each potential dwelling.

Construction Costs and Prices

In addition to the base level cost increases in construction since the HBA 2021, further cost increases have been applied within the model to reflect a shift in the average number of storeys per dwelling where per metre rates increase with the number of storeys. These have been applied at an individual level to reflect the estimated number of storeys of each dwelling. As such, there is a substantial per m^2 cost increase within the model from the HBA 2021 arising from a combination of base level shifts and changes in the nature of dwellings.

Sales Prices

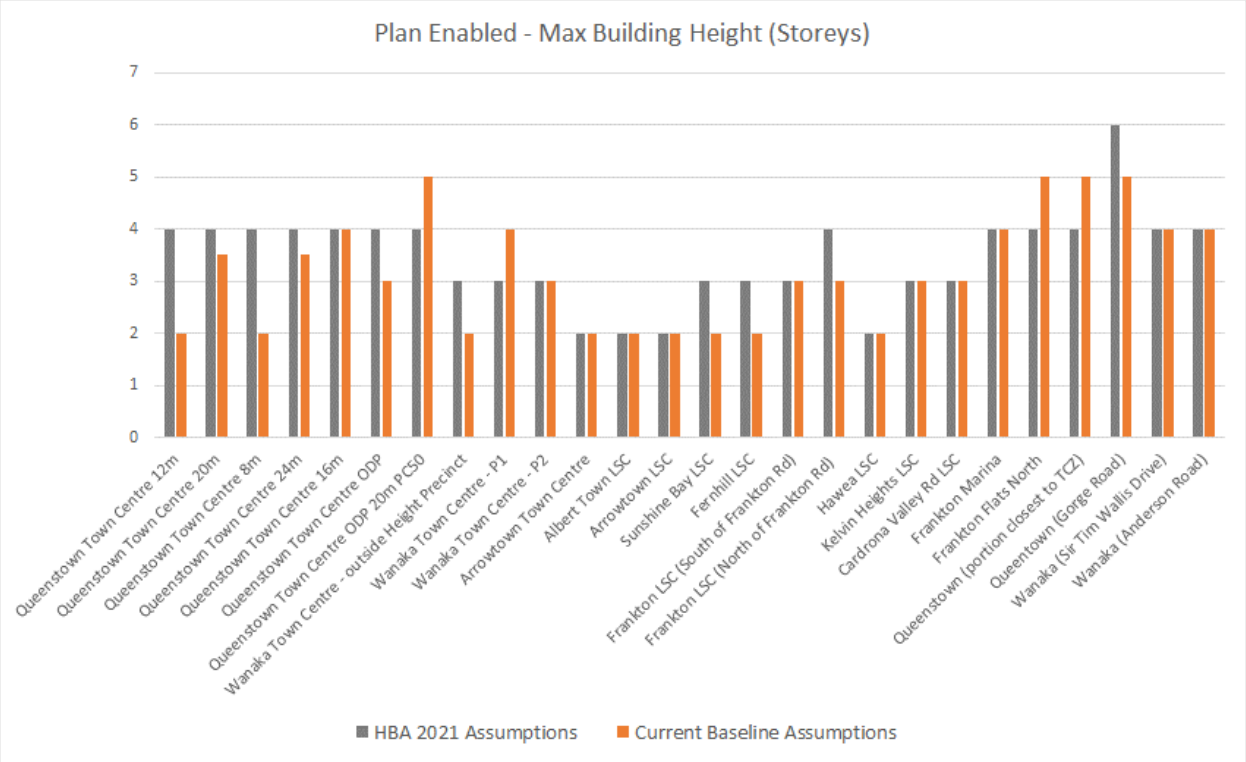
This component of the model has been updated significantly in some areas from the HBA 2021. Updates relate to the sales prices for higher density dwellings as well as the underlying spatial structure affecting prices.

Changes to Zone Provisions

There have been some changes in zone provisions to those applied within the HBA 2021. These have been agreed with QLDC prior to modelling. Key among these are:

- Application of (only) a $300m^2$ minimum site formation size within the LDSR Zone.
- Removal of a $115m^2$ per dwelling density limitation within the HDR Zone and allowing vertical apartment development to be controlled through height and three-dimensional provisions.
- Changes to the heights and assumed residential storey allocations within commercial zones that provide for vertically-attached residential development. This began with a refreshed approach to plan enabled maximum storeys in each commercial zone. The HBA 2021 assumptions around numbers of storeys was a legacy of the NPS-UDC assessment (HBA 2018) which did not require a reasonable expected to be realised capacity to be calculated. However, in agreement with Council at that time, we applied what was considered reasonably expected to be realised building heights rather than rely purely on plan enabled heights. This assumption was retained for consistency in the HBA 2021. However, for this Plan variation modelling, where changes in building heights are a key focus of planning options, we have reverted to a pure plan enabled approach to ensure that the model is sensitive to those changes. The changes made to baseline maximum building storeys since the HBA 2021 was published are summarised below. These changes in turn prompted a change to the number of floors estimated to be allocated to residential activity (on average) in each zone.[51]

[51] We have not shown those changes here for brevity, but the current assumptions can be derived from Appendix 4.



Technical Scope

The capacity modelling within Sections 4 and 5 does not include the capacity contained within Special Zones/Structure Plan areas. These were instead previously supplied separately by QLDC based on more certain developer plan/structure plan, etc yields.

Special Zone areas capacity is included within the final comparison of capacity with demand in Section 6, carrying over the results from the HBA 2021.

Initial Trigonometric Approach

The first key stage involves undertaking a trigonometric assessment of different parcel sizes to test the consistency of the proposed planning provisions within the HDR zone and the appropriateness of modelling parameters[52]. In summary, this approach determined the binding planning constraints for modelling plan-enabled capacity for apartments on parcels within the proposed HDR zone.

The next stage of the analysis builds off existing modelling capability developed for the HBA 2021[53]. In 2021, M.E developed a detailed parcel-level model for the HBA that calculated plan-enabled and commercially feasible residential capacity (measured in terms of net additional dwellings) on each property parcel. This model calculates capacity for lower to medium and higher density development across QLD's residential

[52] This process identified the total amount of floorspace that could occur within the three-dimensional building envelope determined by the height to boundary requirements for a range of different parcel sizes. For each potential storey, it determined whether the site cover or height to boundary requirements formed the applicable modelling parameter. The total floorspace was then divided into potential apartments, with the outdoor living space requirements being tested on the balance of the site.

[53] Application of the existing modelling capability ensures consistency with the HBA analysis in relation to the areas modelled and exclusions/constraints identified across the urban environment.

zones (as applicable) as well as higher density, vertically-attached apartments in the commercial zones though a sub-component within the model.

The following are the key changes and updates that were applied to the HBA 2021 model for this assessment:

- Parcel level input files were updated to reflect the proposed zoning within the four options mapped above.
- The vertical development sub-component within the model was expanded to include vertically-attached apartment buildings within the HDR zone.
- The provisions within the proposed commercial zones were mapped to the existing modelling assumptions within commercial zones based on their spatial alignment.
- Additional stages were included within the general suburban residential component of the model to first form residential lots based on the base zone subdivision requirements, then develop up to three dwellings on each lot as applicable to the options.
- The model was expanded to enable additional dwelling typologies to occur within each zone to reflect the higher density development patterns enabled under the provisions.

Modelling parameters were then developed to reflect minimum land areas required to accommodate the different dwelling typologies within each site. These assumptions were verified by QLDC.

Appendix 3 – Relaxing MDR Zone Minimum Lot Sizes (Options 1 & 2)

Plan Enabled Capacity – Option 1

Zone	INFILL					REDEVELOPMENT						GREENFIELD[3]					
	Detached	Attached[1]	Terraced	Vertical Apartments	Max Infill	Detached	Attached[1]	Terraced	Vertical Apartments	Max Redevelopment	Max Infill or Redevelopment	Detached	Attached[1]	Terraced	Vertical Apartments	Max Greenfield	Greenfield Max and Infill or Redevelopment
High Density Residential	400	600	900	3,500	3,500	1,400	2,300	3,700	15,100	15,100	15,200	500	700	1,000	3,500	3,500	18,600
HDR Subzone A	-	-	10	20	20	40	70	100	400	400	400	-	-	-	-	-	400
HDR Subzone B	60	90	100	500	500	300	400	800	3,100	3,100	3,100	70	100	100	500	500	3,600
Medium Density Residential	2,100	2,900	4,300	-	4,300	5,800	8,600	14,400	-	14,400	14,400	500	500	1,000	-	1,000	15,300
Medium Density Residential-Arrowtown	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lower Density Suburban Residential	5,400	5,400	-	-	5,400	16,700	16,700	-	-	16,700	16,700	8,800	8,800	-	-	8,800	25,500
Arrowtown Residential Historic Management	10	20	-	-	20	30	70	-	-	70	70	-	-	-	-	-	80
Settlements	70	-	-	-	70	400	-	-	-	400	400	300	-	-	-	300	700
Large Lot Residential A	400	-	-	-	400	800	-	-	-	800	800	400	-	-	-	400	1,100
Large Lot Residential B	40	-	-	-	40	60	-	-	-	60	60	-	-	-	-	-	60
Queenstown Town Centre	-	-	-	100	100	-	-	-	1,000	1,000	1,000	-	-	-	-	-	1,000
Wanaka Town Centre	-	-	-	200	200	-	-	-	500	500	600	-	-	-	-	-	600
Arrowtown Town Centre	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Local Shopping Centre	-	-	-	100	100	-	-	-	300	300	300	-	-	-	300	300	500
Business Mixed Use	-	-	-	1,300	1,300	-	-	-	4,000	4,000	4,000	-	-	-	2,400	2,400	6,400
TOTAL	**8,400**	**9,000**	**5,400**	**5,800**	**16,000**	**25,400**	**28,100**	**18,900**	**24,400**	**56,700**	**56,800**	**10,500**	**10,100**	**2,100**	**6,600**	**17,100**	**73,900**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] Dwellings within this category are horizontally attached and occur at low to medium densities, dependant upon the zone. They range from single-level pairs of attached units up to terraced housing. Terraced housing has also been provided as a category to demonstrate either the upper end of the horizontally-attached typologies, or more intensive terraced housing if enabled under the zone.

[2] Dwellings enabled under a Comprehensive Development Plan (CDP).

[3] Greenfield capacity does not include dwellings within Special Zones, which are reported separately largely based on structure planning or other developer information.

Plan Enabled Capacity – Option 2

Zone	INFILL					REDEVELOPMENT						GREENFIELD[3]					Greenfield Max and Infill or Redevelopment
	Detached	Attached[1]	Terraced	Vertical Apartments	Max Infill	Detached	Attached[1]	Terraced	Vertical Apartments	Max Redevelopment	Max Infill or Redevelopment	Detached	Attached[1]	Terraced	Vertical Apartments	Max Greenfield	
High Density Residential	800	1,200	1,800	6,400	6,400	2,000	3,200	5,200	21,000	21,000	21,000	500	700	1,000	3,500	3,500	24,500
HDR Subzone A	-	-	10	20	20	40	70	100	400	400	400	-	-	-	-	-	400
HDR Subzone B	60	90	100	500	500	300	400	800	3,100	3,100	3,100	70	100	100	500	500	3,600
Medium Density Residential	2,000	2,700	4,100	-	4,100	5,900	8,800	14,900	-	14,900	14,900	600	600	1,200	-	1,200	16,000
Medium Density Residential-Arrowtown	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lower Density Suburban Residential	5,200	5,200	-	-	5,200	16,300	16,300	-	-	16,300	16,300	8,700	8,700	-	-	8,700	25,000
Arrowtown Residential Historic Management	10	20	-	-	20	30	70	-	-	70	70	-	-	-	-	-	80
Settlements	70	-	-	-	70	400	-	-	-	400	400	300	-	-	-	300	700
Large Lot Residential A	400	-	-	-	400	800	-	-	-	800	800	400	-	-	-	400	1,100
Large Lot Residential B	40	-	-	-	40	60	-	-	-	60	60	-	-	-	-	-	60
Queenstown Town Centre	-	-	-	100	100	-	-	-	1,000	1,000	1,000	-	-	-	-	-	1,000
Wanaka Town Centre	-	-	-	200	200	-	-	-	500	500	600	-	-	-	-	-	600
Arrowtown Town Centre	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Local Shopping Centre	-	-	-	100	100	-	-	-	300	300	300	-	-	-	300	300	500
Business Mixed Use	-	-	-	1,300	1,300	-	-	-	4,000	4,000	4,000	-	-	-	2,400	2,400	6,400
TOTAL	**8,600**	**9,200**	**6,000**	**8,700**	**18,500**	**25,700**	**28,900**	**20,900**	**30,300**	**62,700**	**62,800**	**10,600**	**10,200**	**2,300**	**6,600**	**17,200**	**80,000**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] Dwellings within this category are horizontally attached and occur at low to medium densities, dependant upon the zone. They range from single-level pairs of attached units up to terraced housing. Terraced housing has also been provided as a category to demonstrate either the upper end of the horizontally-attached typologies, or more intensive terraced housing if enabled under the zone.

[2] Dwellings enabled under a Comprehensive Development Plan (CDP).

[3] Greenfield capacity does not include dwellings within Special Zones, which are reported separately largely based on structure planning or other developer information.

Commercially Feasible Capacity – Option 1

Zone	INFILL					REDEVELOPMENT						GREENFIELD[3]					Greenfield Max and Infill or Redevelopment
	Detached	Attached[1]	Terraced	Vertical Apartments	Max Infill	Detached	Attached[1]	Terraced	Vertical Apartments	Max Redevelopment	Max Infill or Redevelopment	Detached	Attached[1]	Terraced	Vertical Apartments	Max Greenfield	
High Density Residential	400	600	900	3,100	3,200	700	1,400	2,800	3,800	5,800	7,500	70	100	600	-	600	8,100
HDR Subzone A	-	-	10	20	20	20	50	100	30	100	100	-	-	-	-	-	100
HDR Subzone B	60	90	100	500	500	200	300	600	1,900	2,100	2,300	70	100	100	500	500	2,800
Medium Density Residential	2,000	2,800	4,300	-	4,300	4,800	7,300	13,600	-	13,600	13,700	400	300	900	-	900	14,600
Medium Density Residential-Arrowtown	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lower Density Suburban Residential	4,900	4,500	-	-	4,900	11,400	9,400	-	-	11,400	11,800	8,700	7,500	-	-	8,700	20,500
Arrowtown Residential Historic Management	-	10	-	-	10	-	10	-	-	10	20	-	-	-	-	-	20
Settlements	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Large Lot Residential A	300	-	-	-	300	500	-	-	-	500	500	100	-	-	-	100	600
Large Lot Residential B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Queenstown Town Centre	-	-	-	100	100	-	-	-	600	600	600	-	-	-	-	-	600
Wanaka Town Centre	-	-	-	40	40	-	-	-	40	40	80	-	-	-	-	-	80
Arrowtown Town Centre	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Local Shopping Centre	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Business Mixed Use	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	**7,700**	**8,100**	**5,400**	**3,700**	**13,300**	**17,600**	**18,500**	**17,100**	**6,400**	**34,100**	**36,500**	**9,400**	**8,000**	**1,600**	**500**	**10,900**	**47,400**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] Dwellings within this category are horizontally attached and occur at low to medium densities, dependant upon the zone. They range from single-level pairs of attached units up to terraced housing. Terraced housing has also been provided as a category to demonstrate either the upper end of the horizontally-attached typologies, or more intensive terraced housing if enabled under the zone.

[2] Dwellings enabled under a Comprehensive Development Plan (CDP).

[3] Greenfield capacity does not include dwellings within Special Zones, which are reported separately largely based on structure planning or other developer information.

Commercially Feasible Capacity – Option 2

Zone	INFILL					REDEVELOPMENT						GREENFIELD[3]					Greenfield Max and Infill or Redevelopment
	Detached	Attached[1]	Terraced	Vertical Apartments	Max Infill	Detached	Attached[1]	Terraced	Vertical Apartments	Max Redevelopment	Max Infill or Redevelopment	Detached	Attached[1]	Terraced	Vertical Apartments	Max Greenfield	
High Density Residential	800	1,200	1,800	5,100	5,400	1,300	2,300	4,300	7,700	10,300	12,100	70	100	600	-	600	12,700
HDR Subzone A	-	-	10	20	20	20	50	100	30	100	100	-	-	-	-	-	100
HDR Subzone B	60	90	100	500	500	200	300	600	1,900	2,100	2,300	70	100	100	500	500	2,800
Medium Density Residential	1,900	2,600	4,100	-	4,100	4,700	7,100	13,800	-	13,800	13,800	500	400	1,100	-	1,100	14,900
Medium Density Residential-Arrowtown	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lower Density Suburban Residential	4,700	4,400	-	-	4,700	11,200	9,300	-	-	11,200	11,500	8,700	7,500	-	-	8,700	20,200
Arrowtown Residential Historic Management	-	10	-	-	10	-	10	-	-	10	20	-	-	-	-	-	20
Settlements	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Large Lot Residential A	300	-	-	-	300	500	-	-	-	500	500	100	-	-	-	100	600
Large Lot Residential B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Queenstown Town Centre	-	-	-	100	100	-	-	-	600	600	600	-	-	-	-	-	600
Wanaka Town Centre	-	-	-	40	40	-	-	-	40	40	80	-	-	-	-	-	80
Arrowtown Town Centre	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Local Shopping Centre	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Business Mixed Use	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	**7,800**	**8,300**	**6,000**	**5,700**	**15,200**	**17,800**	**19,000**	**18,800**	**10,300**	**38,500**	**41,000**	**9,400**	**8,100**	**1,800**	**500**	**11,000**	**52,100**

Source: M.E QLDC Residential Intensification Capacity Model, 2022/2023.

Notes:

[1] Dwellings within this category are horizontally attached and occur at low to medium densities, dependant upon the zone. They range from single-level pairs of attached units up to terraced housing. Terraced housing has also been provided as a category to demonstrate either the upper end of the horizontally-attached typologies, or more intensive terraced housing if enabled under the zone.

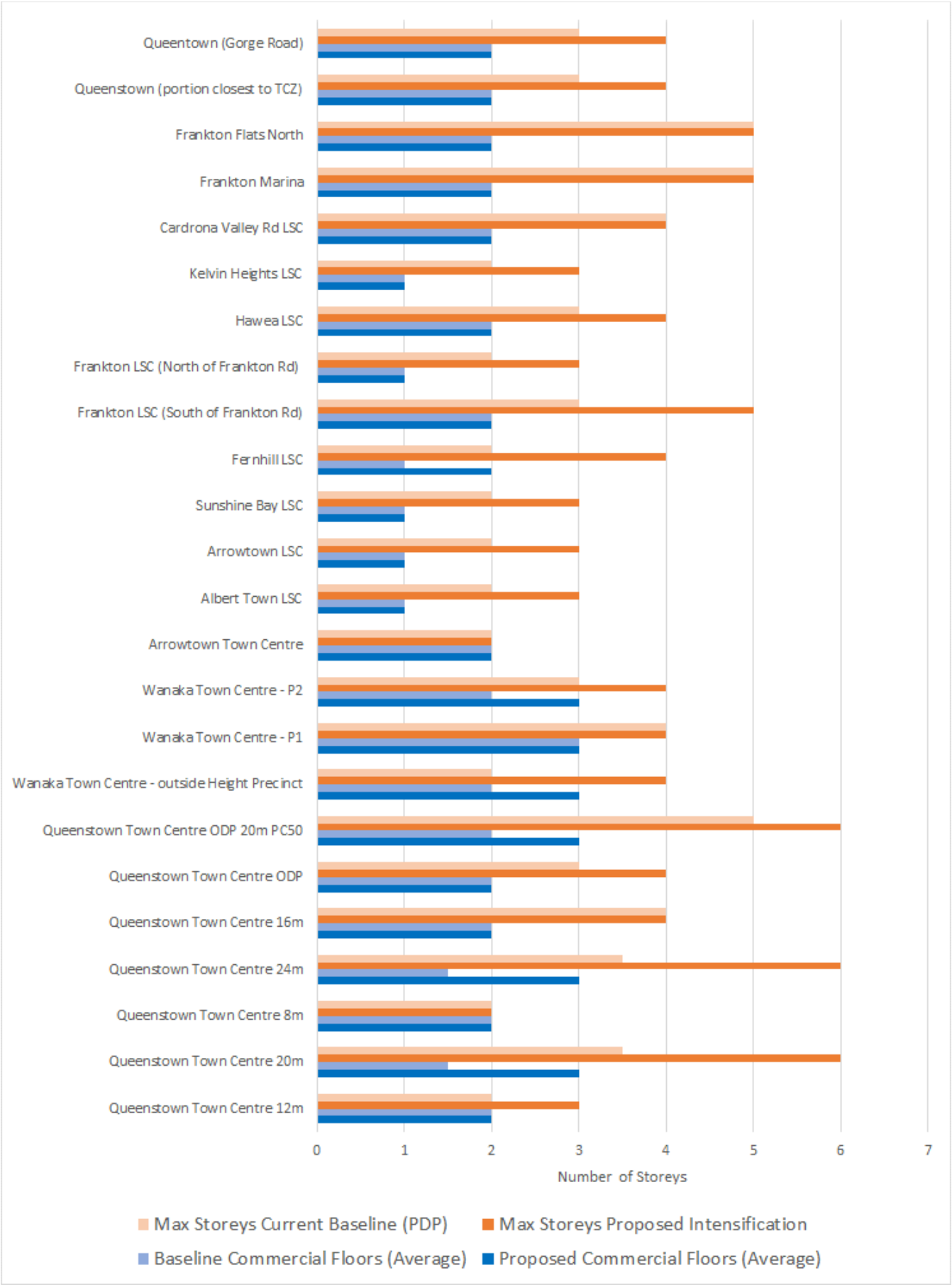
lings enabled under a Comprehensive Development Plan (CDP).

nfield capacity does not include dwellings within Special Zones, which are reported separately largely based on structure planning or other developer information.

Appendix 4 – Business Take-up Assumptions in Commercial Zones

The following table provides a summary of maximum number of plan enabled storeys applied in the capacity modelling under the Baseline (PDP) scenario and proposed Plan variation options for commercial and mixed-use zones in the district. This is based on conversion of maximum building heights (meters) to number of storeys (inclusive of the ground floor). In addition, it shows the assumptions adopted on how many of the plan enabled storeys would, on average, be taken up by business activities (which includes commercial visitor accommodation). By default, the remaining storeys are assumed to be taken up by residential activity (i.e., vertically-attached apartments).

We note (**), that in the Frankton LSC Zone, the change in height reflects a change to BMU Zone in the plan variation. All assumptions have been agreed in consultation with Council. While not shown in the table, in any one zone, the maximum number of storeys may be lower than shown depending on the size of the parcel being modelled in the zone once recession planes/set-backs, height in relation to boundary geometries are applied. The numbers in the table therefore represent the upper limit that can be applied. Refer Appendix 2 for any changes in the maximum plan enabled storeys adopted in the Baseline (PDP) scenario for this report relative to equivalent assumptions applied in the earlier HBA 2021 for those same zones.


Queentown (Gorge Road)
Queenstown (portion closest to TCZ)
Frankton Flats North
Frankton Marina
Cardrona Valley Rd LSC
Kelvin Heights LSC
Hawea LSC
Frankton LSC (North of Frankton Rd)
Frankton LSC (South of Frankton Rd)
Fernhill LSC
Sunshine Bay LSC
Arrowtown LSC
Albert Town LSC
Arrowtown Town Centre
Wanaka Town Centre - P2
Wanaka Town Centre - P1
Wanaka Town Centre - outside Height Precinct
Queenstown Town Centre ODP 20m PC50
Queenstown Town Centre ODP
Queenstown Town Centre 16m
Queenstown Town Centre 24m
Queenstown Town Centre 8m
Queenstown Town Centre 20m
Queenstown Town Centre 12m
0
1
2
3
4
5
6
7
Number of Storeys
Max Storeys Current Baseline (PDP)
Max Storeys Proposed Intensification
Baseline Commercial Floors (Average)
Proposed Commercial Floors (Average)

Appendix 5 – Existing Capacity Cluster Analysis

Memo

To: Elias Matthee, Senior Policy Planner, Queenstown Lakes District Council

From: Euan Forsyth, GIS Analyst, Natalie Hampson, Director

Date: 21 June 2022

Re: Stage 1 – Concentrations of Existing Infill and Redevelopment Capacity

1. Introduction

The purpose of this memo is to demonstrate parcel-level dwelling capacity (outside of special zones) as assessed in the HBA 2021. This is followed by an analysis of how that parcel-level capacity translates into statistically significant clusters of dwelling capacity in existing urban areas. This memo covers (where not covered in the HBA report) the approach, assumptions, limitations and findings of the capacity and cluster analysis, with results shown in map form. It is understood that this information may be used to help inform the development of options for further intensification of the existing urban area, to give effect to Policy 5 of the NPS-UD.

2. Mapping of Existing HBA Capacity

This section drills down into the detail of M.E's QLD Capacity Model to pull out results of infill and redevelopment capacity at a parcel-level. Mapping this existing Excel-based data shows where capacity (excluding estimated capacity in special zones) is concentrated on the ground (noting that final capacity had not previously been mapped at the parcel-level and was only reported by broad location in the HBA 2021 and by zone and location for internal Council use).

Prior to this memo, M.E has supplied all the relevant HBA parcel-level capacity data to Council in the form of GIS shape files. In the full data set provided, infill capacity shows the number of additional dwellings that can be added on existing lots under operative and PDP zoning without removal of existing dwellings. Redevelopment capacity shows the number of net additional dwellings that can be added on existing lots (with no change in lot boundaries) if developed to the plan maximums. Note, this is not the total dwellings that could be on each parcel, just the net increase over and above the existing dwelling count on that parcel.

The layers provided in the shape files can be set up to display combinations of the following for either Plan Enabled capacity or Commercially Feasible capacity over the short, medium or long term:

- Infill standalone
- Infill duplex
- Infill apartments
- Infill Max

- Redevelopment standalone
- Redevelopment duplex
- Redevelopment apartments
- Redevelopment max
- Infill and Redevelopment max
- Greenfield standalone
- Greenfield duplex
- Greenfield apartments
- Greenfield Max

It was recommended to Council, and adopted for the purpose of this memo, that the count of additional dwellings on each parcel be displayed using a colour ramp approach with meaningful thresholds (e.g. 1, 2, 3-5, 5-10, 10-20, 20+ additional dwellings). This creates a 'heat map' style output where concentrations of parcels with infill and/or redevelopment capacity can be identified. Contrasting the maps for Plan Enabled capacity and Commercially Feasible capacity in each location provides further insight on locations where development is most likely to be realised under current planning provisions (because it would be commercially profitable to pursue).

The benefit of this analysis is that it identifies the overlap between where capacity is currently, and where up-zoning might be considered. This provides an early indication of the potential net increase in capacity associated with future intensification options. I.e. if there is still considerable capacity outside of the prospective up-zoning (accessible) areas then the greater the net increase in overall capacity generated by the Intensification Plan variation will be. Conversely, if a lot of the existing capacity falls within the areas of proposed intensification, then the net increase in overall capacity under the Intensification Plan variation will be relatively less as it will 'replace' capacity that was reported in the HBA under current zoning.

Understanding where infill and redevelopment capacity currently exists (under current zoning) also helps inform the development of intensification options, particularly changes that may be more effective in delivering more supply because they include multiple sites with infill or redevelopment potential already. This may contribute to some 'easy wins' or signal 'early adopters'. Or alternatively, it helps guide where intensification is not needed as current zoning is already anticipated to deliver feasible supply increases.

Relevant Considerations, Assumptions and Limitations of Parcel-Level Capacity Results

The methodology, data and assumptions used to develop the parcel-level capacity estimates have been explained in detail in the Council's HBA 2021 report (including Technical Report). Further detail on estimating infill capacity was also set out in the HBA 2017 published in 2018. It is not the intention to repeat that here. However, there are some important considerations associated with making the parcel-level capacity data available.

1. The data was a snap-shot of capacity as at 2020 and based on parcel boundaries at the end of 2017. Dwellings built between 2017 and 2020 were taken into consideration by excluding any infill or redevelopment capacity on those lots, even if the 2020 lot boundaries are not shown.

2. Changes in capacity in the short, medium and long term took account of zone changes (including indicative long-term zoning in identified greenfield growth areas), but these were applied to the situation on the ground as at June 2020.

3. Given that we are now mid-way through 2022, there has been dwelling growth (and further subdivision) that is likely to have taken up some[54] of the capacity identified in 2020. In other words, some of the capacity shown in the data is no-longer available (it has been 'consumed'). It may or may not have been consumed in a manner estimated by the capacity analysis. Understanding that up-take of 2020 capacity is a matter for council monitoring and is outside of the scope of this memo.

4. The key risk of revealing parcel-level data is that findings for individual parcels can be easily disputed (including by the property owner). It is therefore recommended that this data be used for internal Council/plan variation purposes only. The estimates of capacity on any single parcel are the result of a number of assumptions applied through desk-top modelling. There may be some anomalies where parcels should have been excluded from the capacity analysis (the list of spatial constraints was not exhaustive). The parcel-level results have not been ground-truthed. The modelling lends itself best to aggregated results where the margins of error can be averaged out. This is how the data was used in the HBA. M.E highly recommend that with any parcel-level mapping of the capacity results, that users focus on the broad patterns, and do not scrutinise individual parcels too closely.

[54] There may have been some net additional dwelling growth occurring on lots not identified by M.E as providing infill or redevelopment capacity in 2020.

Results – Parcel Level Heat Maps

While Council can generate its own maps from the parcel-level capacity data supplied, the following is a series of maps focussed on the following parameters (which are a key focus of the HBA results and discussion):

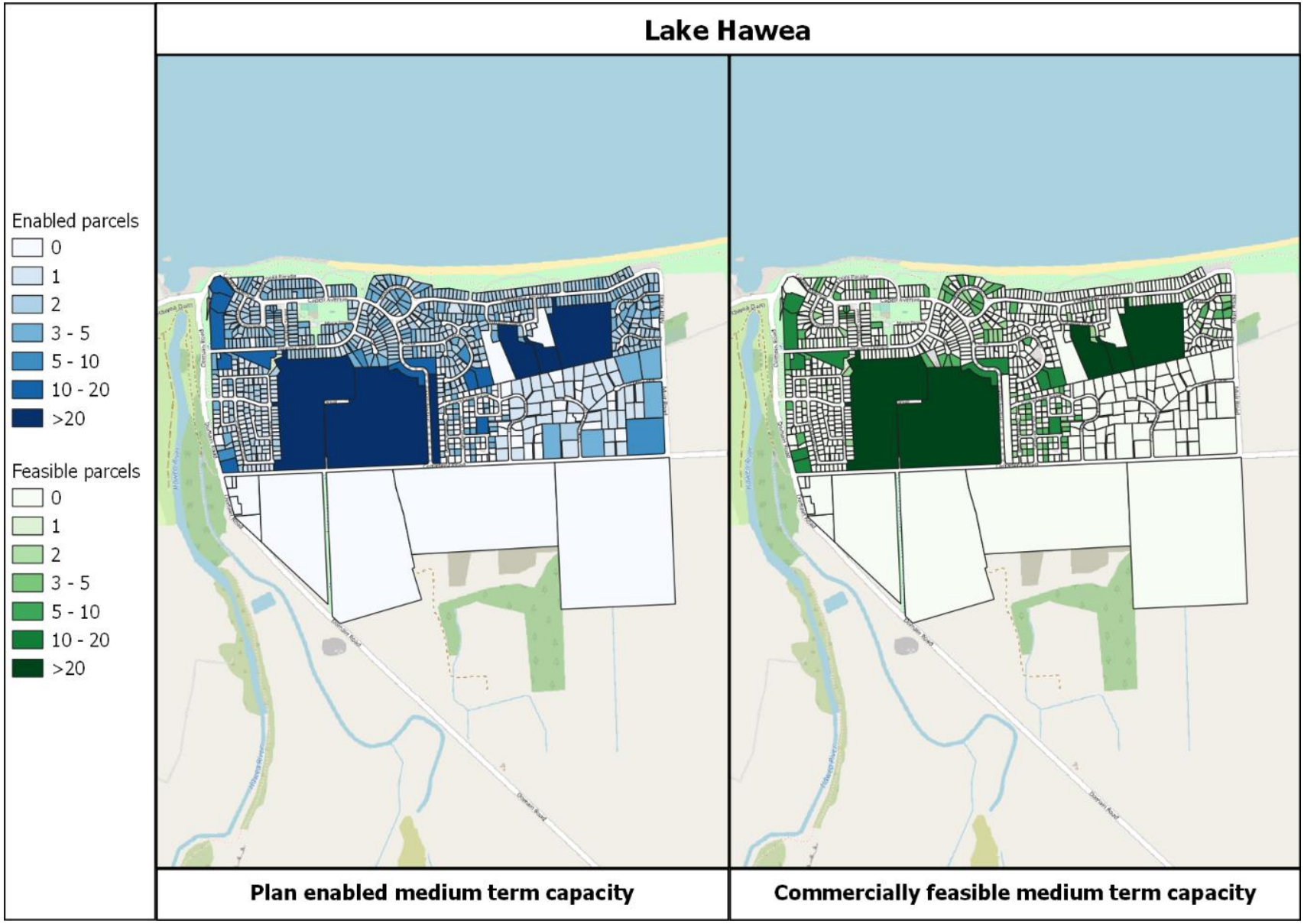
- Medium term (2020 base)
- Maximum greenfield capacity (excluding greenfield in special zones), plus
- Maximum of infill or redevelopment capacity.

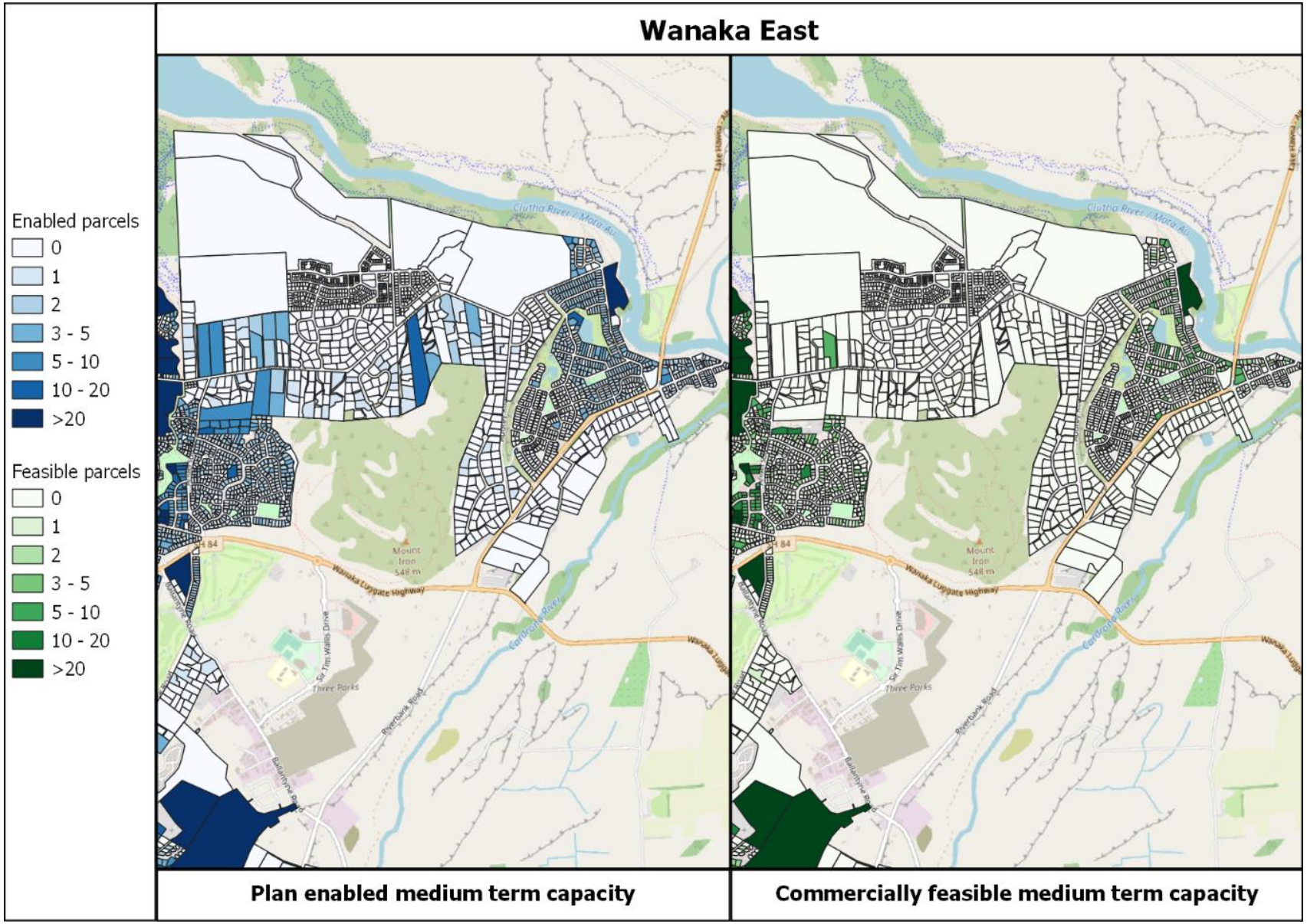
These parameters apply to mutually exclusive parcels, and so can be shown simultaneously and added together to give/show total capacity. The maps below show Plan Enabled capacity on the left and Commercial Feasible capacity on the right for each map extent. In the medium term (i.e. 2030), commercial feasibility is based on 2020 costs and prices and is therefore likely to be conservative (assuming that prices continue rise faster than costs). The maps show that not all Plan Enabled housing development is commercially feasible to develop under the modelling assumptions. Importantly though, not all infill development is motivated by commercial feasibility considerations (i.e. yielding a 20% profit). It may still be feasible (at a lower margin) for the property owner to build and then subdivide, or subdivide and sell. Such opportunities are captured in the Plan Enabled maps but the development outcomes may not be shown in the Commercially Feasible maps.

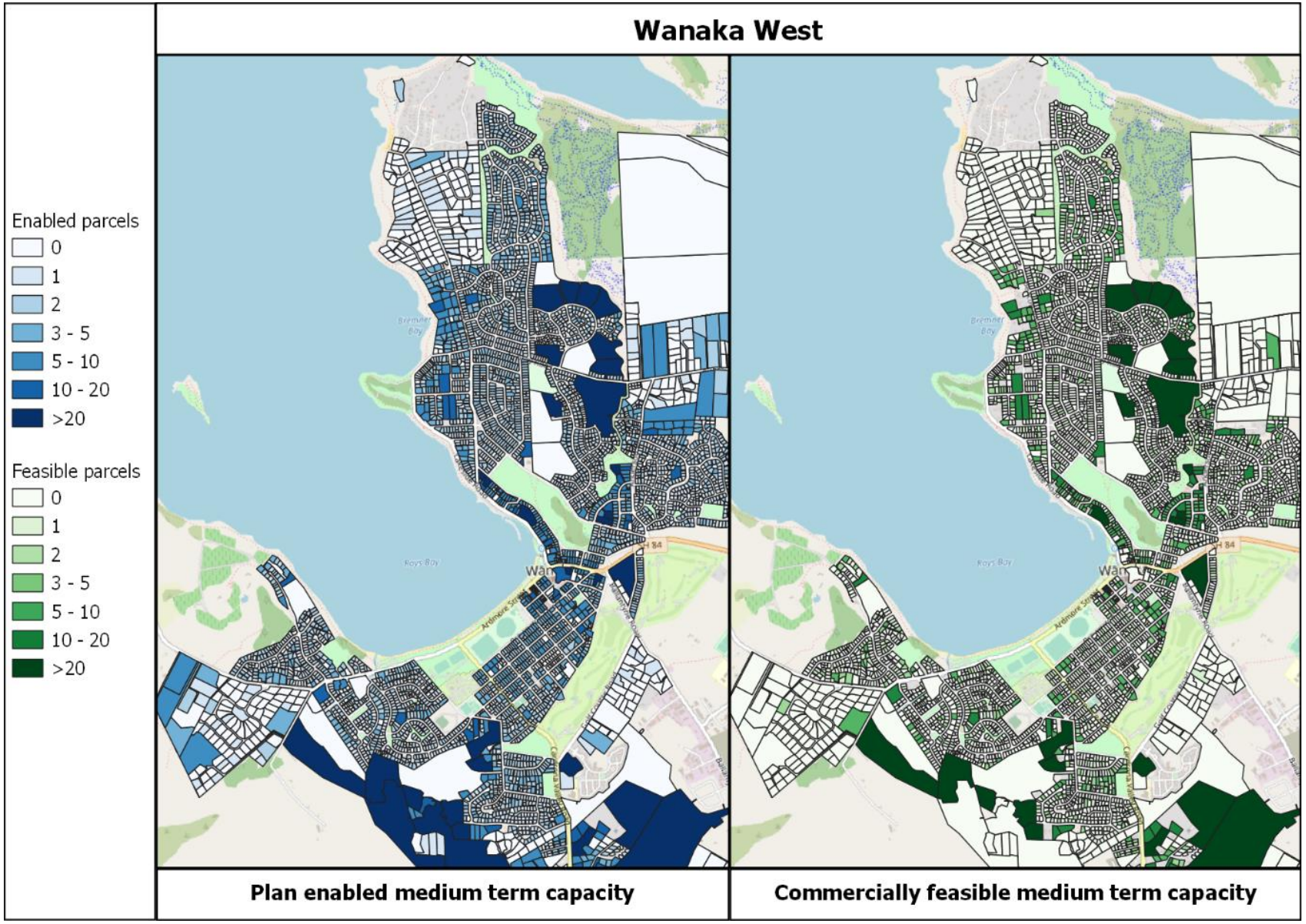
Without going into specific details of where medium term dwelling capacity occurs 'on-the ground' in the following maps (the HBA report provides commentary on capacity by location), some key observations can be made:

- where there is quite widespread Plan Enabled capacity across existing residential areas, the maps reveal that either the land developer chose not to subdivide to the minimum plan densities at the time, or, the PDP has subsequently increased the plan enabled density – creating new opportunities for intensification. The latter is evident in Hawea and old Albert Town for example, where the PDP zoning reduced the minimum lot size.
- Large greenfield land parcels are generally always commercially feasible to develop.
- Large lot residential zone areas rarely meet the commercially feasible test due to the high land cost relative to one standalone dwelling yield (but are still likely to be taken up by individuals looking to live on such properties).
- High density zone areas consistently show extensive plan enabled and commercially feasible capacity as at 2020 (and according to medium term zoning provisions). This is because recent developments have often not developed to the plan maximums or there are still a large number of older sites that have yet to undergo any form of redevelopment at a higher intensity.
- Business Mixed Use zone areas that were previously Business Zones under the operative plan consistently show plan enabled and commercially feasible capacity as at 2020 (and according to medium term zoning provisions). This is because the rezoning enabled residential development (to several storeys) in what was otherwise relatively low-intensity commercial and service development. As such, nearly all sites qualify for more intensive redevelopment and the multi-storey yields contribute to feasibility.

- In the same way that the recent PDP zone changes (up-zoning) have created net additional dwelling capacity in existing urban areas, the upcoming Intensification Plan variation will have the same effect.


Lake Hawea
Enabled parcels
0
1
2
3 - 5
5 - 10
10 - 20
>20
Feasible parcels
0
1
2
3 - 5
5 - 10
10 - 20
>20
Plan enabled medium term capacity
Commercially feasible medium term capacity


Wanaka East
Enabled parcels
0
1
2
3 - 5
5 - 10
10 - 20
>20
Feasible parcels
0
1
2
3 - 5
5 - 10
10 - 20
>20
Clutha River / Mata-Au
Mount Iron 548 m
Wanaka Luggate Highway
Cardrona River
Sir Tim Wallis Drive
Three Parks
Riverbank Road
Ballantyne Road
Plan enabled medium term capacity
Commercially feasible medium term capacity


Wanaka West
Enabled parcels
0
1
2
3 - 5
5 - 10
10 - 20
>20
Feasible parcels
0
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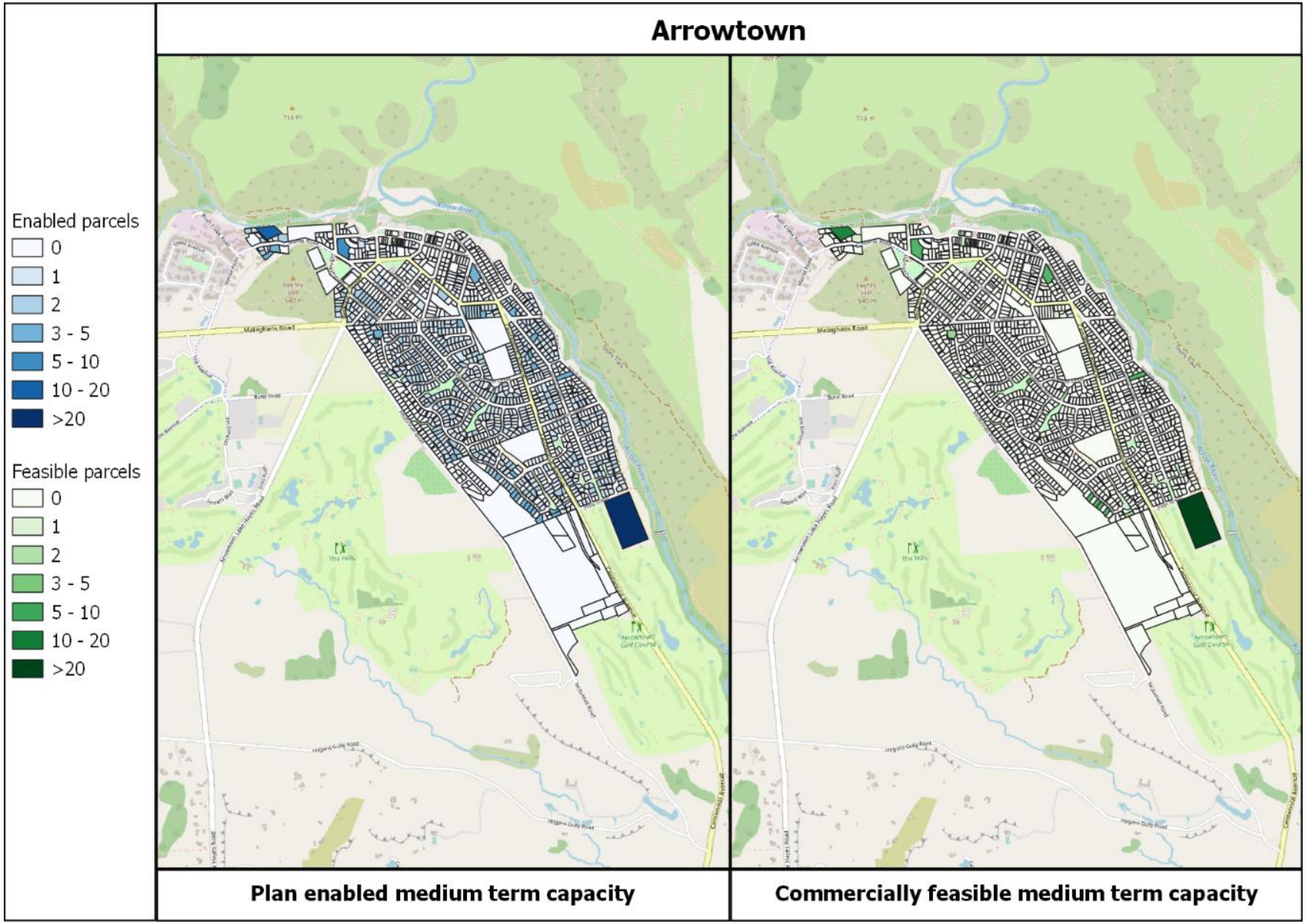
2
3 - 5
5 - 10
10 - 20
>20
Plan enabled medium term capacity
Commercially feasible medium term capacity


Arrowtown
Enabled parcels
0
1
2
3 - 5
5 - 10
10 - 20
>20
Feasible parcels
0
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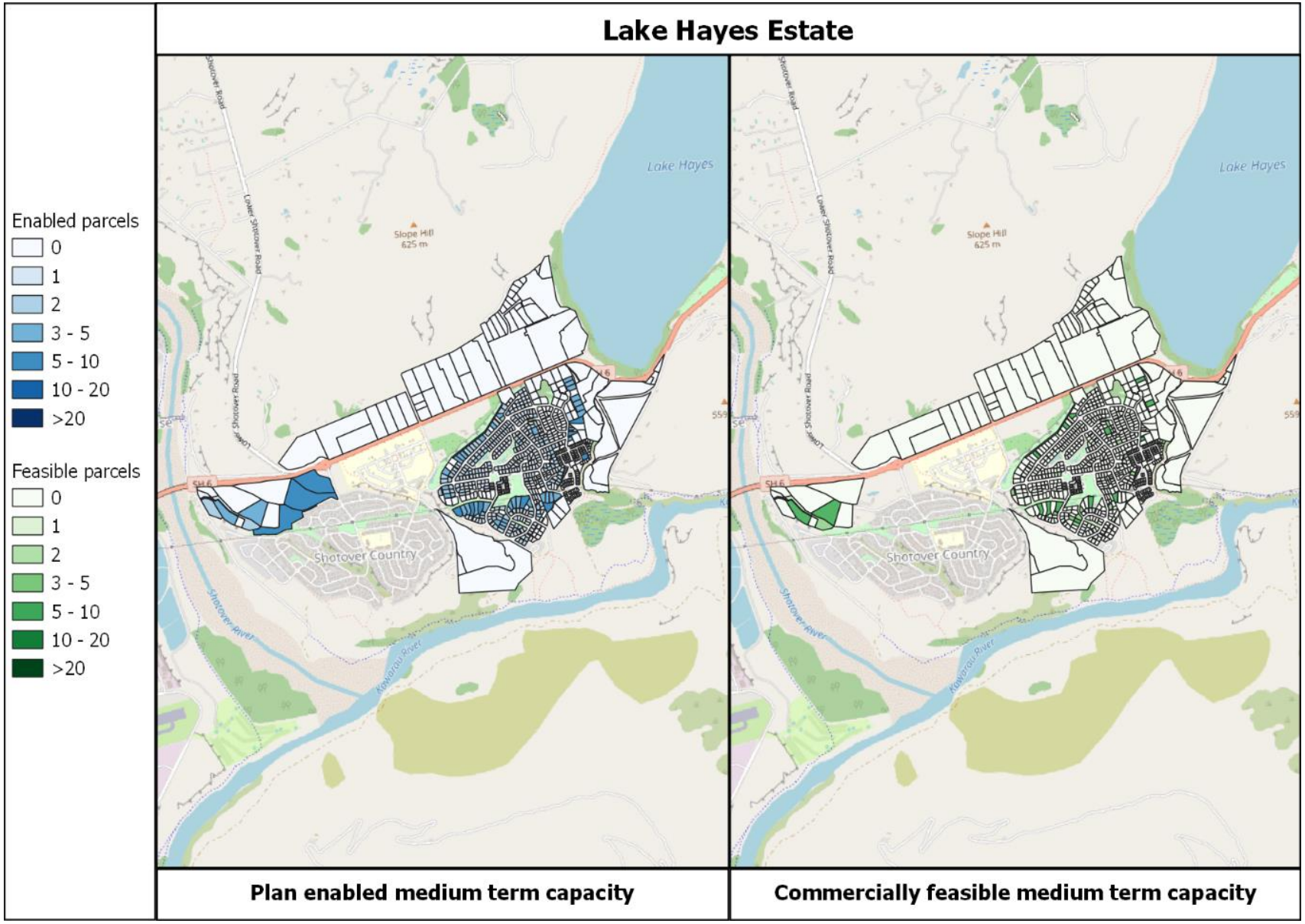
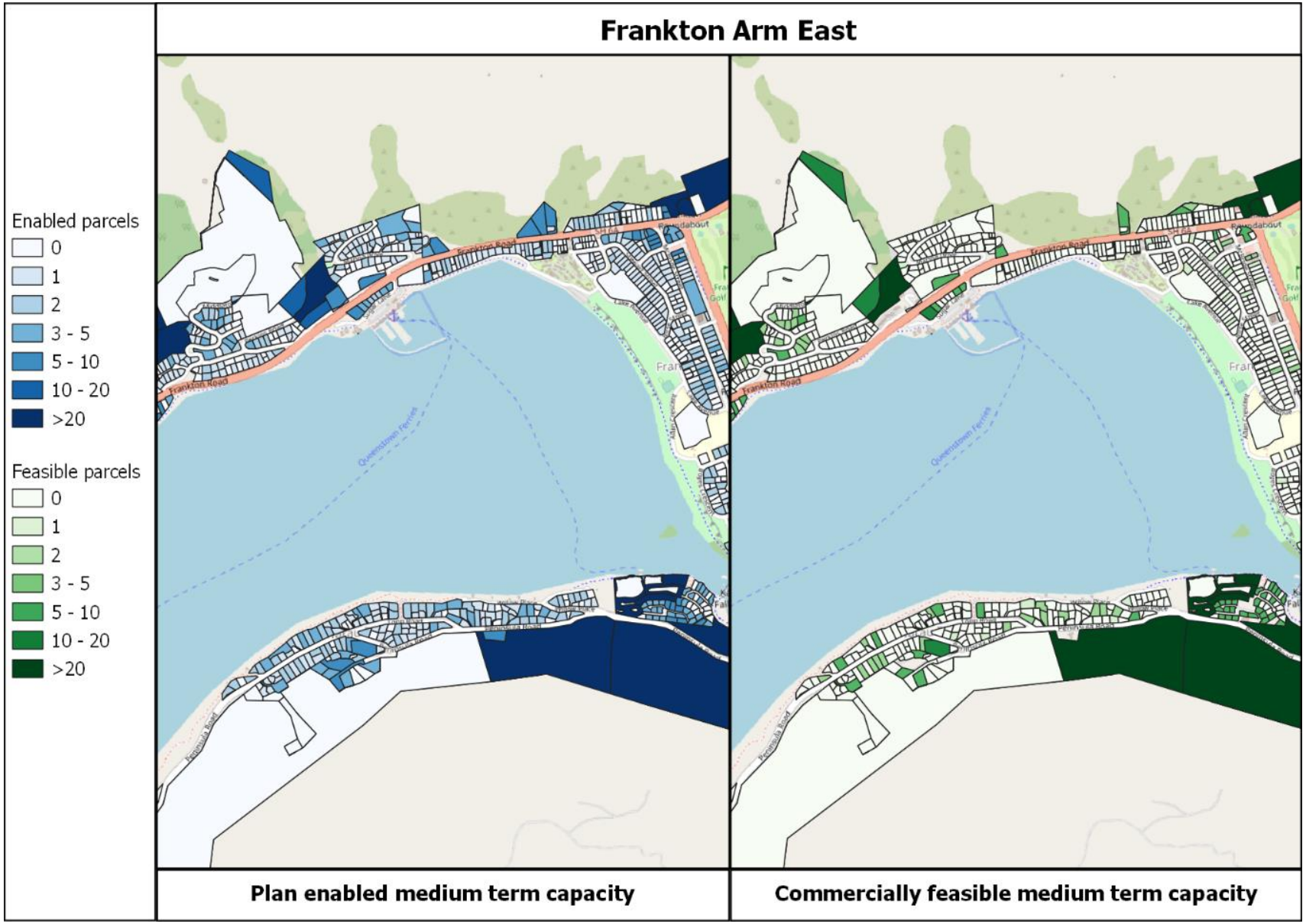
2
3 - 5
5 - 10
10 - 20
>20
Plan enabled medium term capacity
Commercially feasible medium term capacity


Lake Hayes Estate
Enabled parcels
0
1
2
3 - 5
5 - 10
10 - 20
>20
Feasible parcels
0
1
2
3 - 5
5 - 10
10 - 20
>20
Lake Hayes
Slope Hill
625 m
Lower Shotover Road
Shotover Country
Shotover River
Kawarau River
Plan enabled medium term capacity
Commercially feasible medium term capacity


Frankton Arm East
Enabled parcels
0
1
2
3 - 5
5 - 10
10 - 20
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Feasible parcels
0
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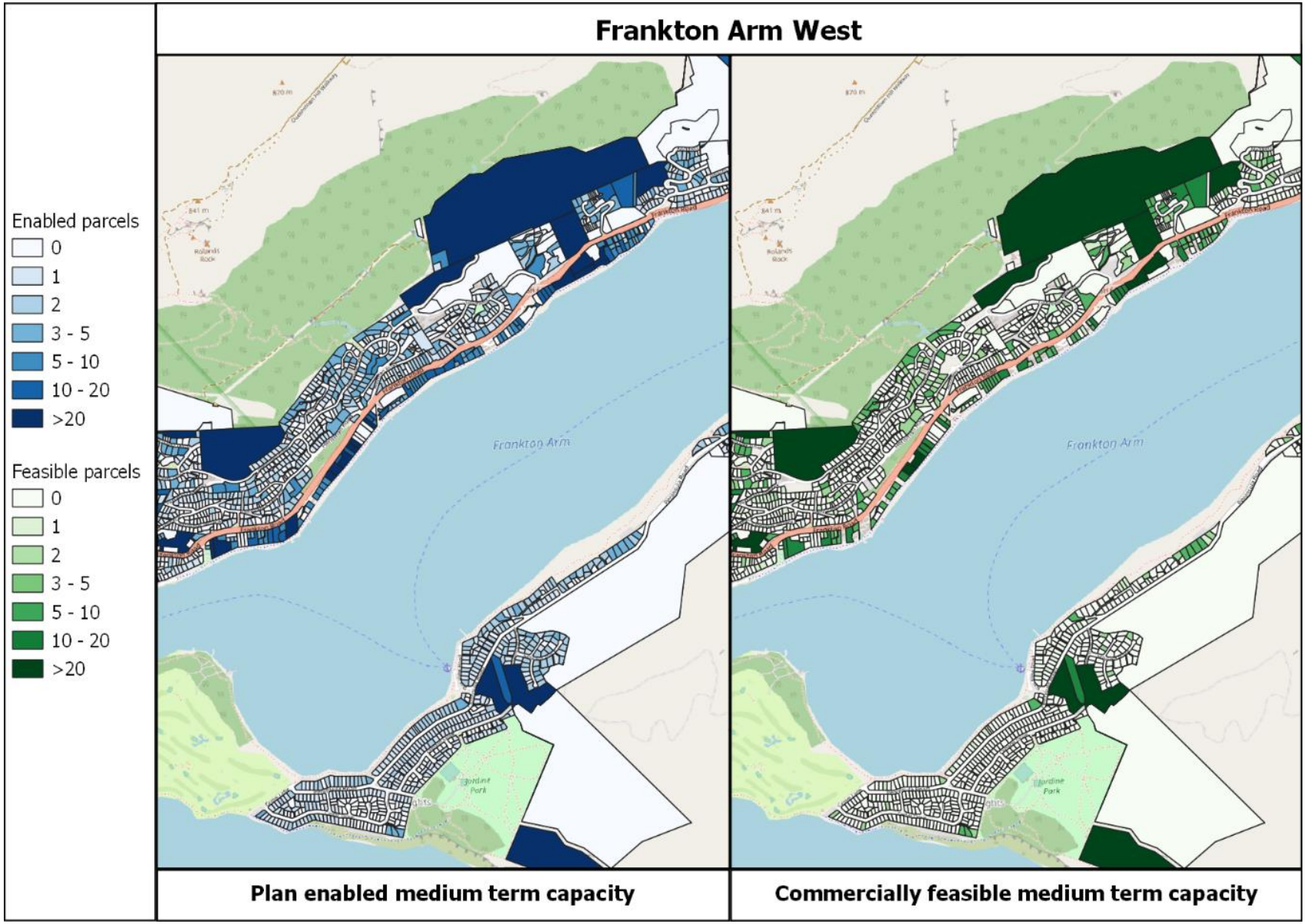
Plan enabled medium term capacity
Commercially feasible medium term capacity


Frankton Arm West
Enabled parcels
0
1
2
3 - 5
5 - 10
10 - 20
>20
Feasible parcels
0
1
2
3 - 5
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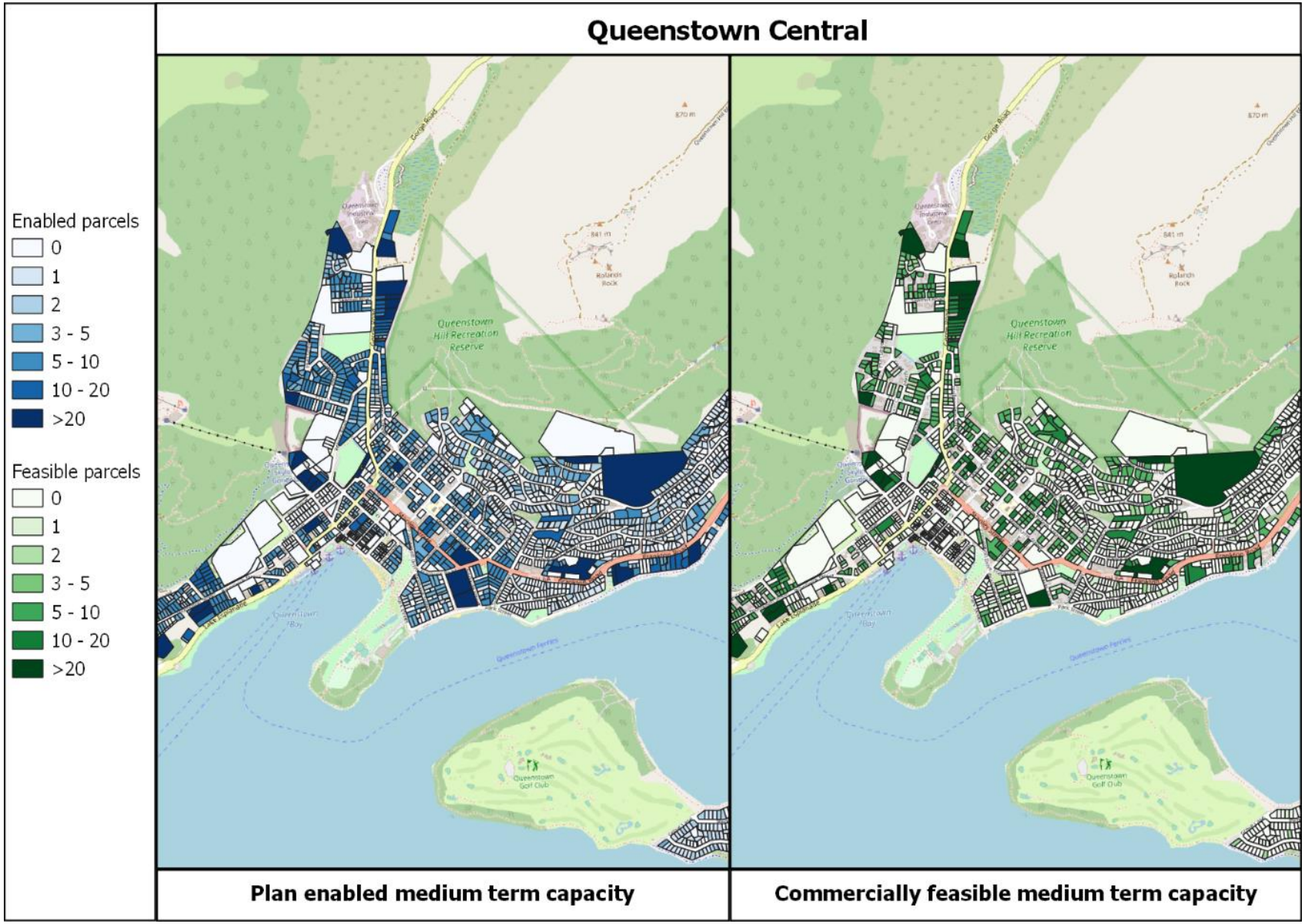
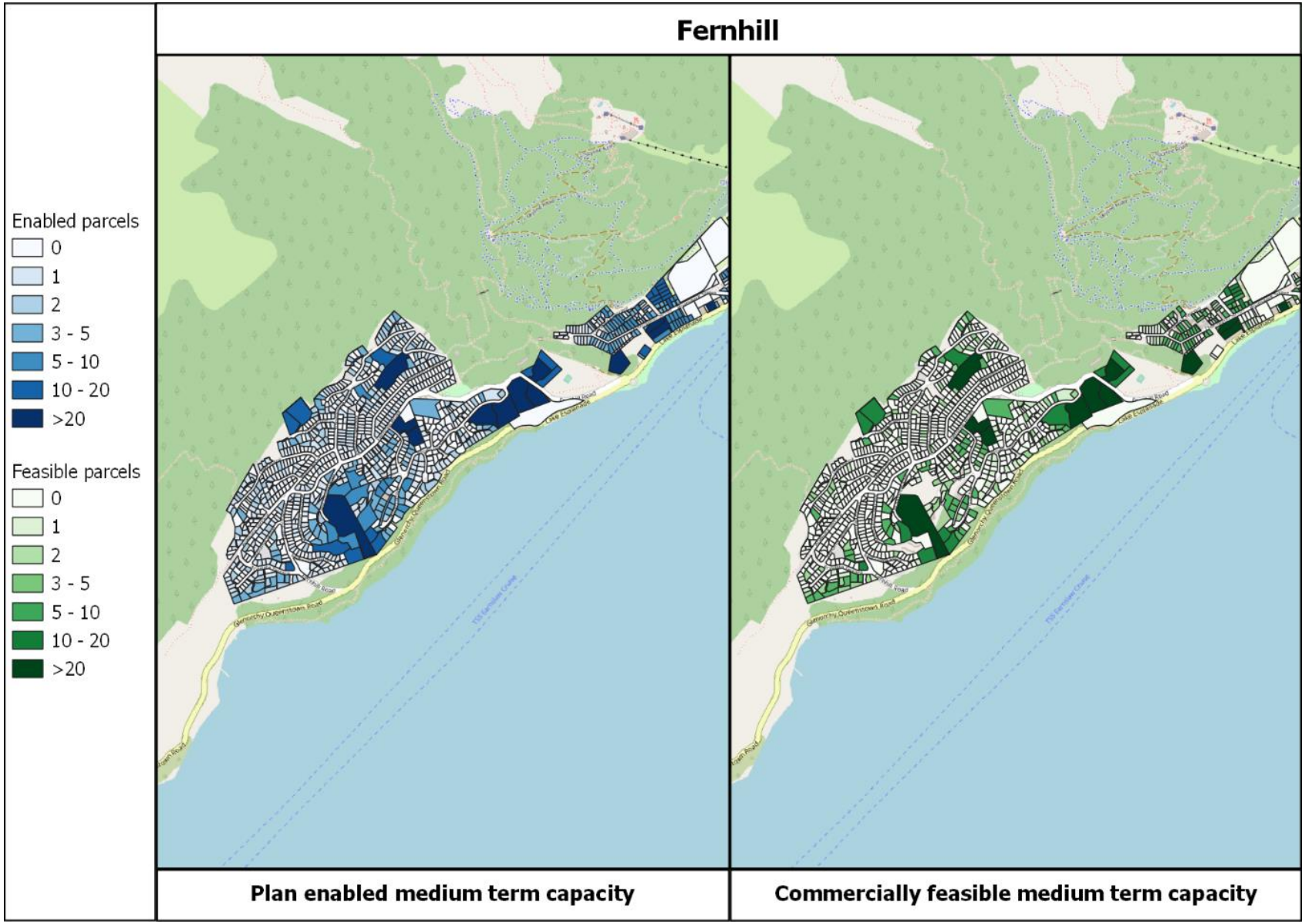
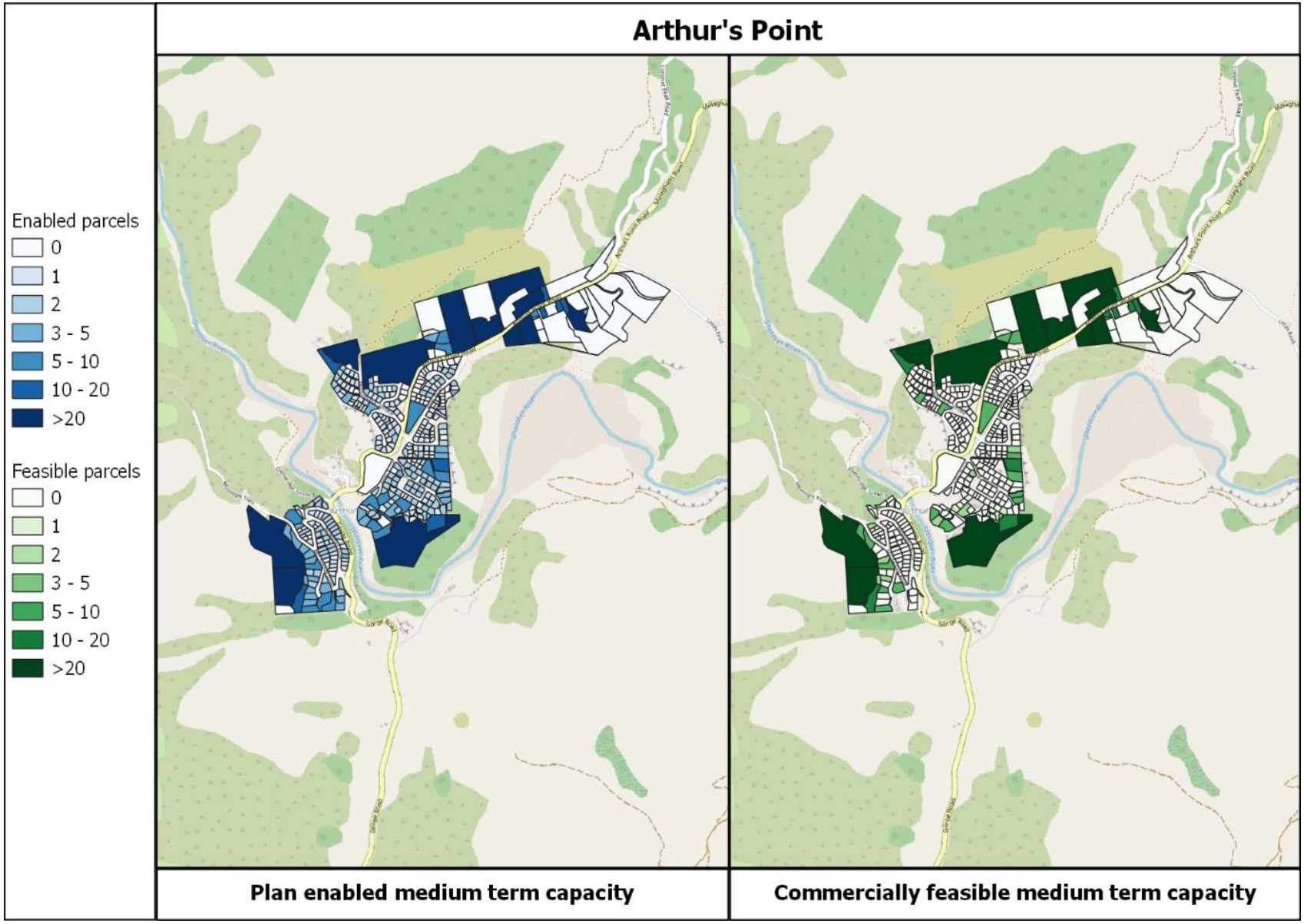
10 - 20
>20
Frankton Arm
Frankton Arm
Plan enabled medium term capacity
Commercially feasible medium term capacity


Queenstown Central
Enabled parcels
0
1
2
3 - 5
5 - 10
10 - 20
>20
Feasible parcels
0
1
2
3 - 5
5 - 10
10 - 20
>20
Plan enabled medium term capacity
Commercially feasible medium term capacity


Fernhill
Enabled parcels
0
1
2
3 - 5
5 - 10
10 - 20
>20
Feasible parcels
0
1
2
3 - 5
5 - 10
10 - 20
>20
Plan enabled medium term capacity
Commercially feasible medium term capacity


Arthur's Point
Enabled parcels
0
1
2
3 - 5
5 - 10
10 - 20
>20
Feasible parcels
0
1
2
3 - 5
5 - 10
10 - 20
>20
Plan enabled medium term capacity
Commercially feasible medium term capacity

One thing that the parcel-level mapping of Plan Enabled and Commercially Feasible capacity does not do, is identify statistically significant clusters of existing capacity. This can be estimated visually from the maps but grouping of parcel-level capacity into clusters that are significant in the context of all urban capacity requires additional analysis.

3. Statistically Significant Clusters of Capacity

As discussed above, we can go a step further with the parcel-level capacity results to carry out an analysis of statistically significant clusters of capacity. This spatial statistical analysis is carried out in the R statistical computing language and removes the 'noise' from the capacity maps (the ad-hoc and dispersed parcels with additional capacity) to focus just on aggregated (more extensive) areas with significant combined capacity potential.

Approach, Assumptions, Limitations

We carry out this analysis of statistically significant clusters of capacity using the concept of spatial auto-correlation. Spatial auto-correlation is a term encapsulating the fundamental geographic idea that spatial data from near locations are more likely to be similar than data from distant locations. More specifically, spatial auto-correlation measures provide an objective basis for deciding whether or not there truly is a spatial pattern and, if so, the structure of that pattern. In other words, is the empirical pattern significantly different from a completely random spatial pattern? If so, where, and how far, does it deviate most from a randomised pattern?

Such comparisons to a completely random spatial pattern are important because spatial auto-correlation methods are designed to reject the null hypothesis. In spatial statistics, the null hypothesis is that of complete spatial randomness; or that there is no spatial pattern. If we can reject the null hypothesis of no spatial patterning, then the alternative must be that there are spatial structures, or clustering, within the data.

Estimations of whether or not a true spatial pattern exists is where global spatial auto-correlation is employed. In this context, 'global' means 'across the entire dataset'. A global spatial auto-correlation metric provides a high level yes/no answer as to whether there are spatial patterns within the data, as well as an indication of the overall level of clustering. It will not, however, provide any indication of the variation within the spatial structure.

To find this variation, and identify the actual clusters themselves, we use local spatial auto-correlation. Where the global case looks for patterns across a dataset, the local case looks for patterns within a dataset. Local auto-correlation focuses on deviations from the global trend, searching for areas that exhibit significant clustering of high or low values from the global mean. To summarise:

- Global spatial auto-correlation: Is this data geographically clustered? To what degree?
- Local spatial auto-correlation: Where are the clusters of high and low variation?

While we speak of 'areas that exhibit significant clustering of high or low values', it is more accurate to say that we are looking at areas that exhibit significant clustering of high or low values and whose neighbours also exhibit such patterns. We want to consider the values of the neighbours because we are looking for spatially concentrated clusters of capacity, not individual cells with large values that may, or may not, happen to be near to, or even next to, each other. The focus is finding the more

extensive, contiguous areas of housing capacity (clusters) as opposed to isolated pockets of high capacity (which may still be significant in their own right).

The parcel-level boundaries of the capacity data in the HBA vary in size and shape. While there are areas that are more uniform, this is often interspersed with larger parcels, roads, parks etc. Topography and zone type can also influence the shape of land-parcels. To ensure that the uneven granularity of land parcels, roads, etc do not distort the analysis of statistically significant clusters of capacity, the existing urban area (excluding special zones) has been converted into a grid of uniform 100m x 100m 'cells' (Figure 1).

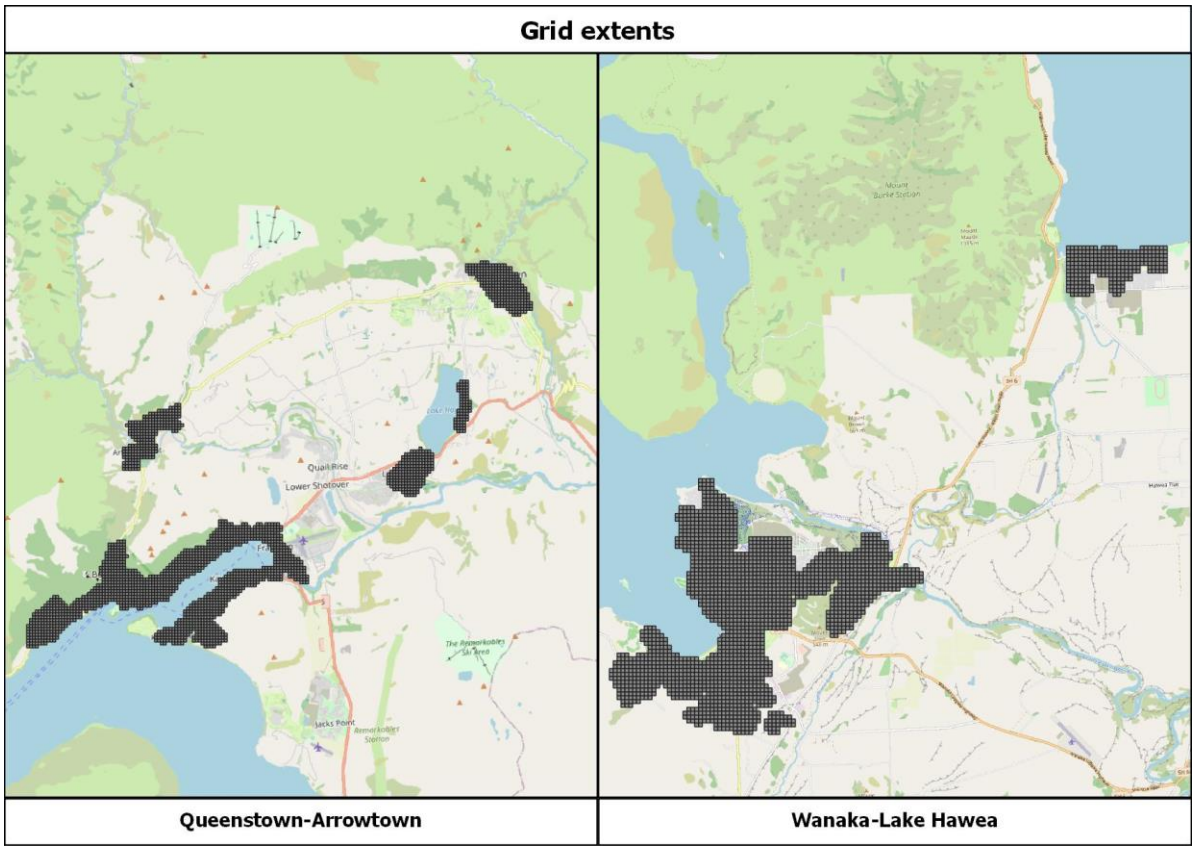


Figure 1: Extent of defined grid area for the purpose of cluster analysis (cells = 100sqm)

Parcels, and their respective dwelling capacity, are assigned to cells based on their centroid. M.E has made the decision to exclude large greenfield land parcels from the grid area as this complicates which cell the capacity can be assigned to. In most cases, greenfield parcels can be considered as significant areas of capacity given their scale and yield, as so should be considered separately, but in addition to, the clusters of capacity in existing residential areas. This analysis also excludes small settlements that are within the urban environment (Luggate, Glenorchy, Kingston and Cardrona) on the assumption that they are not a key focus of the intensification plan variation.

Considering the values of neighbours is a key part of any spatial auto-correlation measure. Consequently, it is first required that we formally delineate the spatial structure of the data, for which there are two requirements:

1. A measure of how similar or different the locations are.
2. A measure of how geographically related the locations are.

The former is the numeric variable(s) we are interested in (specifically, plan enabled or feasible dwelling capacity per cell, in this case). The latter requires formal definitions of neighbourhoods. Such definitions are necessary because the concept of spatial auto-correlation revolves around what places are considered to be '*near*' one another. Once we know what data are nearer, and more relevant, and what data are further away, and less relevant, then we can begin producing spatially aware statistics. In this assessment the spatial structure is defined based on the contiguity of the cells in the defined grid area.

Contiguity, or adjacency, based measures are used with polygon data (such as the generated grid cells) and use the boundaries of the polygons to define neighbours. There are two potential methods available to use: Rook and Queen case methods. The difference between these two is that, in the Rook case, neighbours are defined based on cells that share at least one boundary edge, while Queen case contiguity defines neighbours based on a shared boundary edge or corner. Figure 2, below, visualises this difference. Queen case contiguity is the *de facto*, and more permissive, approach and the one utilised in this assessment.

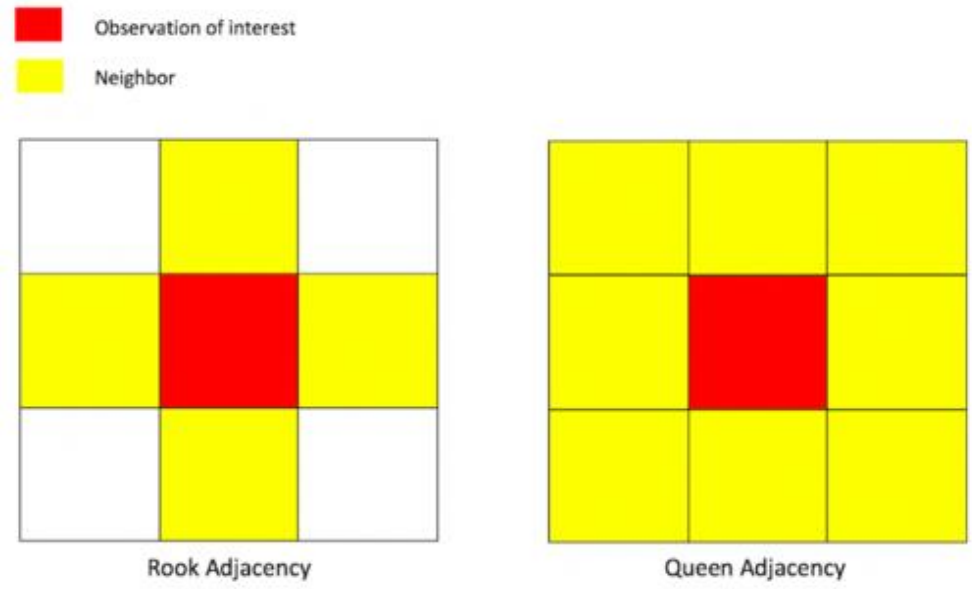


Figure 2: Rook and Queen case adjacency neighbour definitions

Once the conceptual definition of a neighbourhood of cells is established, the nature of the relationship is formalised via a spatial weight matrix. As with the neighbour definition, there are many ways to define a spatial weight matrix. The method used here is the commonly used neighbour-standardised method, which is simply calculated as 1/n, where n is the number of neighbours (being 8 cells as per the Queen case adjacency method). Thus, for most cells in the grid, this will be 1/8 = 0.125.

Cells at the periphery of the grid (i.e. on the urban edge or edge of the residential enabled zones) will naturally have fewer neighbours. These weights are used to calculate the weighted mean capacity of each cell's neighbours. These weighted means are used in the spatial auto-correlation assessments to measure whether the neighbouring cells also have a significantly greater than expected level of capacity, relative to all other values in the dataset. In a grid this is a simple calculation with almost all values being weighted by 0.125. Such that, for instance, a neighbouring cell B with a capacity value of

3 will contribute 0.375 (3*0.125) to the overall weighted neighbourhood capacity value of cell A. The other seven cells neighbouring cell A will have their own capacity values weighted by 0.125 and the total of all eight neighbours summed and recorded as the weighted mean capacity of cell A. The process then repeats for cell B through to n.

As previously outlined, spatial auto-correlation methods are designed to reject the null hypothesis. Naturally this means we need to formulate the null hypothesis of complete spatial randomness to test the empirical pattern against. This is achieved through Monte Carlo simulations. These are simulations which generate hundreds of alternative, completely randomised, spatial patterns of the capacity data, while keeping the geography (the grid cells, in our case) constant. In other words, they randomly reshuffle the capacity values across the cells. With sufficient randomisation/reshuffling (999 for global spatial auto-correlation and ~4 million times for local spatial autocorrelation[55]), we can compare the observed plan enabled and feasible capacity patterns to these random distributions and derive a p-value describing the probability that our observed pattern is the results of pure chance. A p-value threshold of 0.05 was used for local spatial auto-correlation analysis as this is a standard threshold for significance. Setting this threshold means there is a <5% chance that the observed pattern is the result of a purely random distribution and a basis with which to reject the null hypothesis and assert that the identified grid cells are statistically significant deviations from the many, many randomised alternatives.

For the sake of brevity, some final methodological notes and clarifications are considered. First, local spatial auto-correlation considers the capacity values within the cell itself and the average capacity values of its neighbours. To qualify as an identified cell, both these values must be statistically significant. This is why there may be some instances whereby a cell has a relatively large amount of housing capacity but is not identified as significant, as the mean values of its neighbours would not also have a significantly large amount of capacity. It therefore does not meet the test of being an extensive area (cluster) of capacity (of greater than 100m in diameter).

Following on from the above, the overall distribution of the data is important. Particularly the distance from the minimum value to the mean. If the data is strongly right skewed (or positive skewed), and the mean not far from zero, then we run the risk that any value >0 is significant because many non-zero values will be greater than the mean. As a result of these considerations, these identified clusters broadly identify the core of the cluster and do not define the exact shape of it.

Third, aggregating the parcels to a grid will induce bias through what is termed the modifiable areal unit problem. This is the term given to issues that arise from aggregating spatial data from one scale to another (for e.g., parcel-level results to assessment grid cells). In the context of this assessment, the primary issue lays with the size and placement of the grid itself. As noted above, we utilised a 100 x 100m grid and aggregated the parcel level results by their centroid location. However, a different sized grid – either smaller or larger – may produce different results as the data would be aggregated differently. The placement of the grid itself will also impact the results, regardless of what size the

[55] The exact value is 4,290,705 simulations for local spatial auto-correlation. This is because the neighbours of each cell are randomised 999 times. So, with 4,295 cells in our defined grid, we get 4,295 * 999 = 4,290,705 total simulations. Such a large number of simulations is required to confidently calculate the localised p-value for each cell.

cells are. Our grid was generated from the bounding box of all input parcels, so alternative generation methods might alter the placement of the cells, and thus, the aggregation of the results.[56]

Finally, alternative clustering methods exist that work in both pure 'data space' (meaning they do not explicitly consider geographic space), such as k-means clustering, as well as in 'geographic space' (meaning that do explicitly consider geographic space). Pure data space methods are not guaranteed to produce cohesive spatial clusters, as that is not their purpose. While the geographic space methods will produce cohesive clusters, they require *a-priori* specification of the number of clusters to find (this also applies to k-mean clustering). A strength of spatial auto-correlation metrics is that they require no such specification and allow patterns to emerge from the data itself, within the constraints of the previously discussed parameters.

This analysis uses statistical and spatial relationships to identify clusters using the defined grid layout. The resulting clusters are categorised as either statistically significant or not-significant bearers of capacity in the context of the total urban area. This is important as the clusters are not significant in the context of specific urban growth boundaries (i.e. within Wanaka) or significant in the context of the Upper Clutha (say), they are significant relative to total urban residential capacity included in the HBA capacity modelling (although excluding special zone capacity, some large greenfield land parcels and excluded settlements).

We begin by reporting the summary statistics for the medium-term Plan Enabled and Commercially Feasible capacity[57] below (Table 1) and visualised via the histograms in Figures 3 – 4[58]. From the summary statistics we can see that both variables have a small interquartile range. The Feasible capacity in particular has an interquartile range of one, with the mean residing outside of the range. These skewed distributions are reflected in the two histograms, with both our capacity datasets are right skewed, but the Feasible capacity values are particularly skewed. In both cases there are large numbers of cells with no capacity.

Table 1: Gridded dwelling capacity summary statistics – medium-term (2020 base year)

Variable	Min	Max	25th percentile	75th percentile	Mean	Zero capacity cells
Enabled capacity	0	291	0	8	5.33	2,310
Feasible capacity	0	291	0	1	2.51	3,097

[56] While we have not tested other grid placements or grid sizes for this assessment, consideration went into the appropriateness of a 100 x 100m grid cell relative to typical parcel dimensions and the size of street blocks etc.

[57] As per the parcel-level analysis mapped earlier in this memo, the capacity variable that the cluster analysis is based on is 'maximum of infill or development capacity' plus 'maximum greenfield capacity' (where included).

[58] The x-axis has been limited to 100 in both instances to provide a better visualisation of the distribution. In total there are seven parcels with both plan enabled and feasible capacity >100, ranging from 104 to 291.

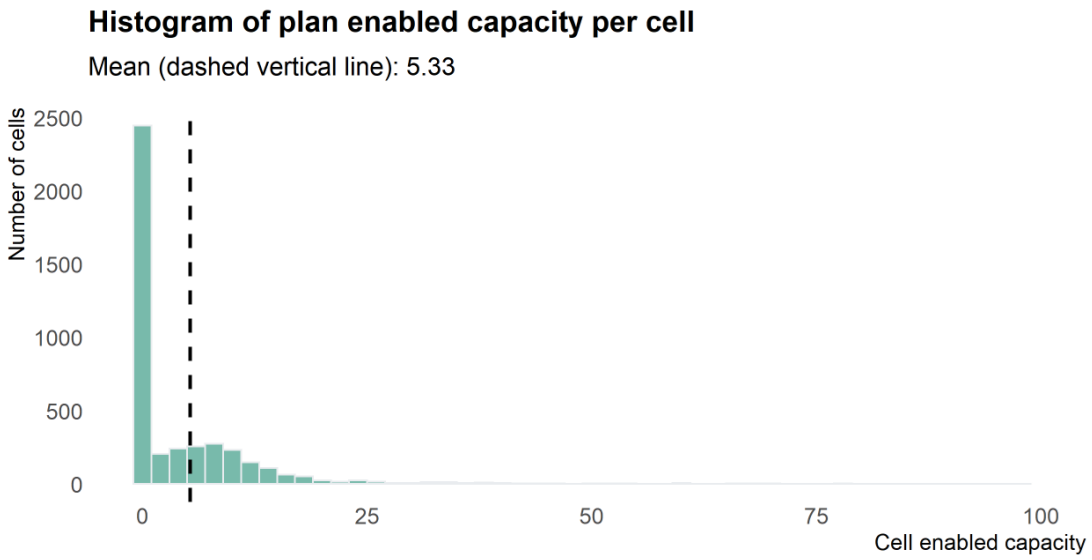


Figure 3: Histogram of gridded Plan Enabled dwelling capacity - medium-term (2020 base year)

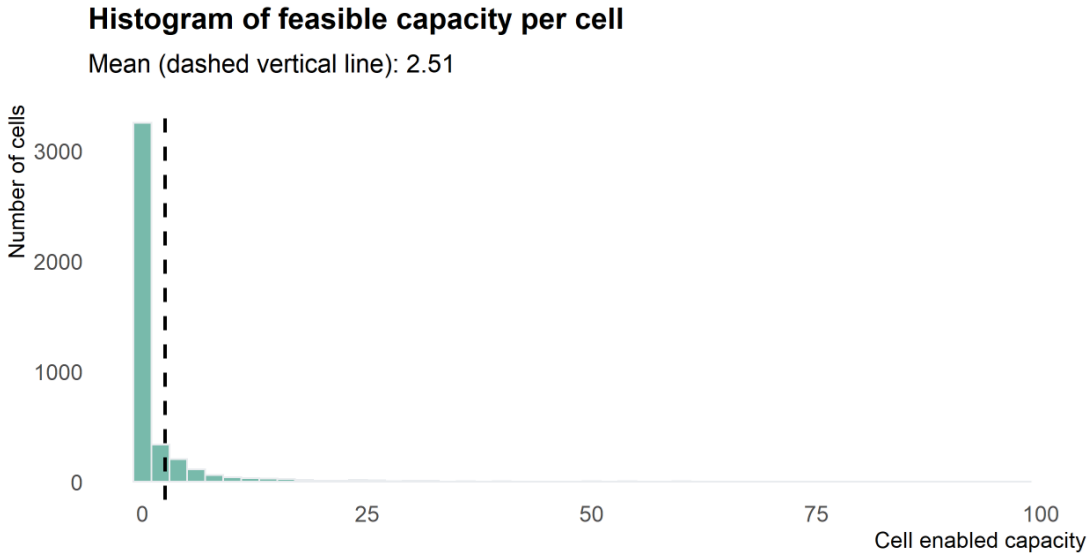


Figure 4: Histogram of gridded Commercially Feasible dwelling capacity - medium-term (2020 base year)

From the global spatial auto-correlation results, we find that the Plan Enabled capacity has a statistic value of 0.286 and the Feasible capacity a value of 0.217. Both with p-values <0.001. This indicates that the Plan Enabled capacity exhibits moderate-to-strong clustering across the entire dataset, while the Feasible capacity values exhibiting a moderate clustering. Both capacity results, then, demonstrate some overall degree of clustering, with the plan enabled capacity being more clustered than the feasible capacity. This is evident in our parcel-level maps, where Commercially Feasible capacity is confined to relatively few parcels (and therefore cells) compared to Plan Enabled capacity.

Proceeding to the local spatial auto-correlation results, 219 cells are classified as having significantly greater than expected Plan Enabled capacity, and 160 cells significantly greater than expected Feasible

capacity. These cells are highlighted in the two scatterplots below (Figures 5 and 6). These scatterplots present the classifications within the 'data space'. Visualised within the data space, these scatterplots clearly demonstrate the underlying logic of the spatial auto-correlation metrics; namely that it considers both the capacity values of the cell itself and the weighted mean value of its neighbours. Therefore, while one cell in the data has a Plan Enabled and Feasible capacity of 291[59], it's eight neighbouring cells have a total Plan Enabled capacity of three and a total Feasible capacity of one. Thus, while it has a huge capacity itself, its neighbours low weighted mean capacity of 0.375 (Plan Enabled) prevents it from being identified as a cluster cell because it is not significantly greater than the overall Plan Enabled weighted neighbour mean of 5.524.

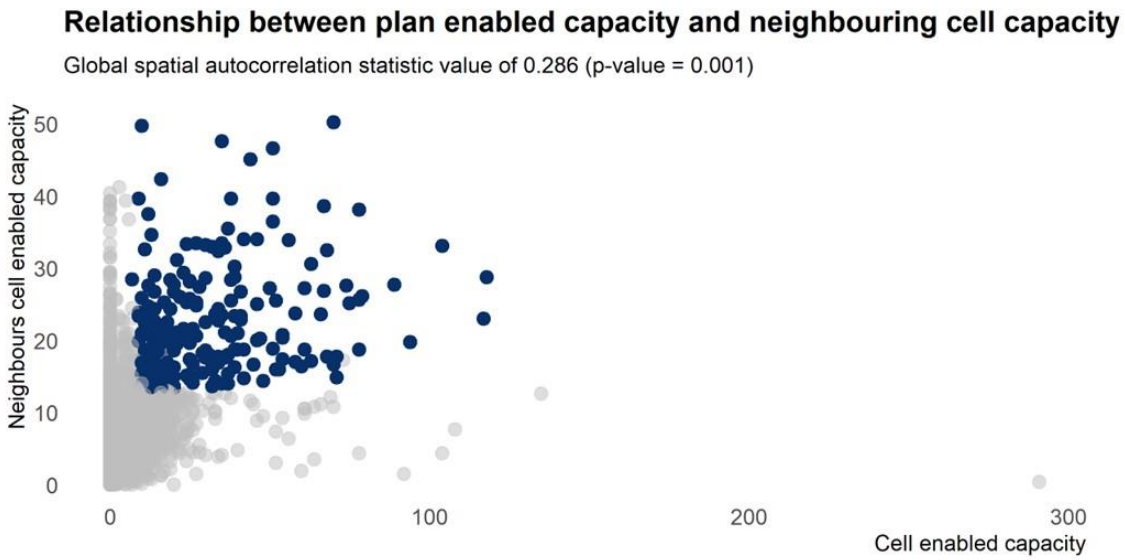


Figure 5: Plan Enabled dwelling capacity local spatial auto-correlation scatterplot - medium-term (2020 base year)

[59] This cell captures 'The Heights' development on Aubrey Road (recalling that the capacity – quantified at the time with input from Council - was an estimate as at June 2020). That capacity is now extensively taken up.

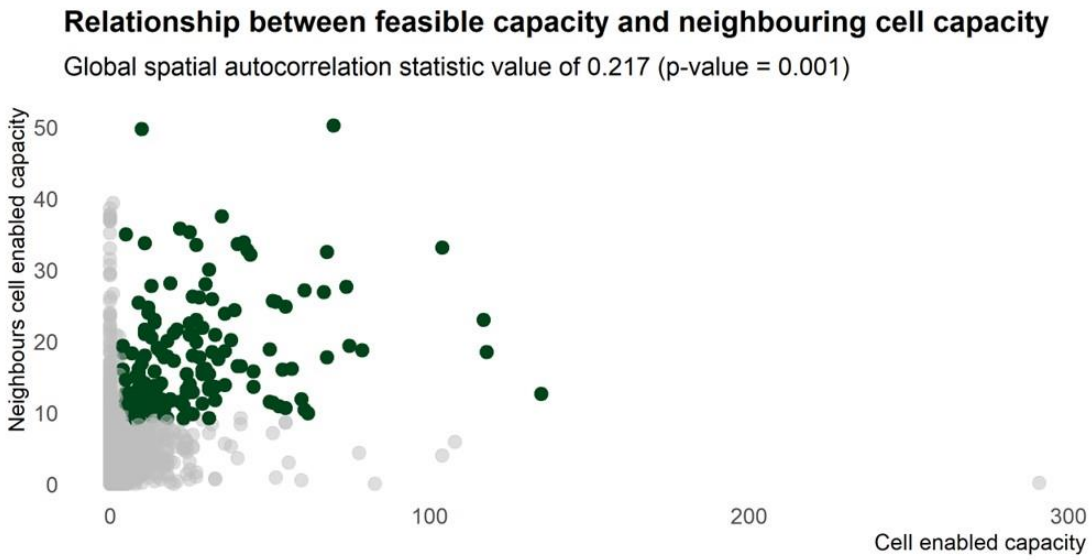


Figure 6: Feasible dwelling capacity local spatial auto-correlation scatterplot - medium-term (2020 base year)

Similarly, there are many cells that have neighbours with large amounts of capacity (both Plan Enabled and Feasible) but have no capacity themselves. It is worth reiterating that the distribution of the data impacts the classifications. In a different dataset, with many larger values, the cell with a value of 291 surrounded almost entirely by zeroes would be classified as an outlier. However, the distribution of the capacity values is such that having so many zeroes and small mean capacity values (5.33 and 2.513, as per Table 1, above) precludes the identification of outliers to a statistically significant degree.

Results – Statistically Significant Clusters of Dwelling Capacity

The geographic extents of these highlighted cells are mapped out in Figures 7 – 12, below. Recall, the highlighted cells are the core of the clusters and they only qualify if their neighbouring cells also meet the significance test. Hence, the actual extent of the cluster would include a buffer of approximately 100m around the mapped cells.

At a high level, significant amounts of Plan Enabled capacity exist in Queenstown, Wanaka, Arthurs Point and Lake Hawea. In terms of Commercially Feasible capacity, however, the clusters are found solely in Queenstown (Figures 6-9), Wanaka (Figure 11), and Arthurs Point (Figure 12).

Summary statistics for the two sets of local spatial auto-correlation results are found in Tables 2 and 3, below. Overall, all of the Queenstown clusters account for 84% of the total Plan Enabled dwelling capacity included in the analysis and 80% of the total Feasible capacity. The Wanaka clusters host 12% of the total Plan Enabled capacity and Feasible capacity, and the Arthurs Point clusters account for 4% of the Plan Enabled capacity and 8% of Feasible capacity included in the analysis.

Starting in Queenstown, the main (feasible) cluster of Queenstown Central (Figure 6) extends across 79 cells encompassing the central urban area from the south of the Industrial Place business/industrial area in the north down to the Frankton Arm inlet. In terms of the local spatial auto-correlation statistic (Table 3, below), this cluster is the second most strongly clustered locale across the existing residential area (and excluding special zones etc), second only to Arthur's Point and just ahead of the nearby Lake

Esplanade cluster. This cluster is characterised by an expansive amount of moderate-to-high Feasible capacity (mean of 28.823) across a large area (79 cells). This equates to a total potential of 2,277 additional Feasible dwellings in total. This is, by far, the largest total value of any cluster.

Down the road from the Queenstown Central cluster is the nearby Lake Esplanade cluster. Feasible capacity in this cluster is focused on infill between Lake Esplanade and Thompson Street. Taken together, there is a total potential for 3,164 Plan Enabled dwellings (or 67% of total clustered Plan Enabled capacity) and 2,754 potential Feasible dwellings (or 63% of total clustered Feasible capacity) located within this central part of Queenstown.

The smaller Queenstown clusters are located at Kawarau Falls (Figure 8), Fernhill (Figure 9), and along Frankton Road (Figures 7-8). At Kawarau Falls, the cluster is centred upon the Kawarau Falls Bridge development (High Density Residential Zone). The large interquartile range (47) and small number of cells (10) suggests that much of the Feasible capacity in this cluster is focused on a small number of cells. This is confirmed via a manual inspection of the results indicating that four cells account for 248 of the cluster's 321 potentially Feasible dwellings as estimated at 2020 (or 77%).

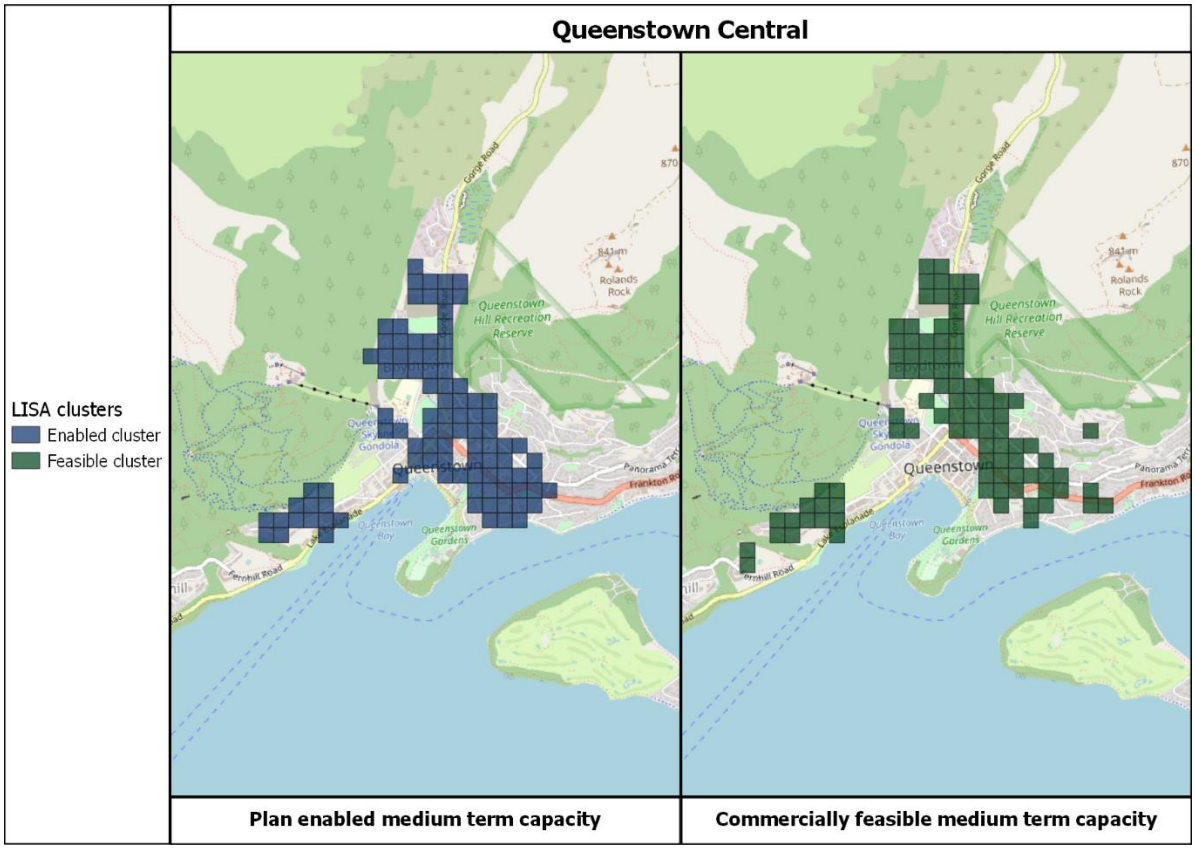


Figure 6: Cluster map of Queenstown Central and Lake Esplanade clusters

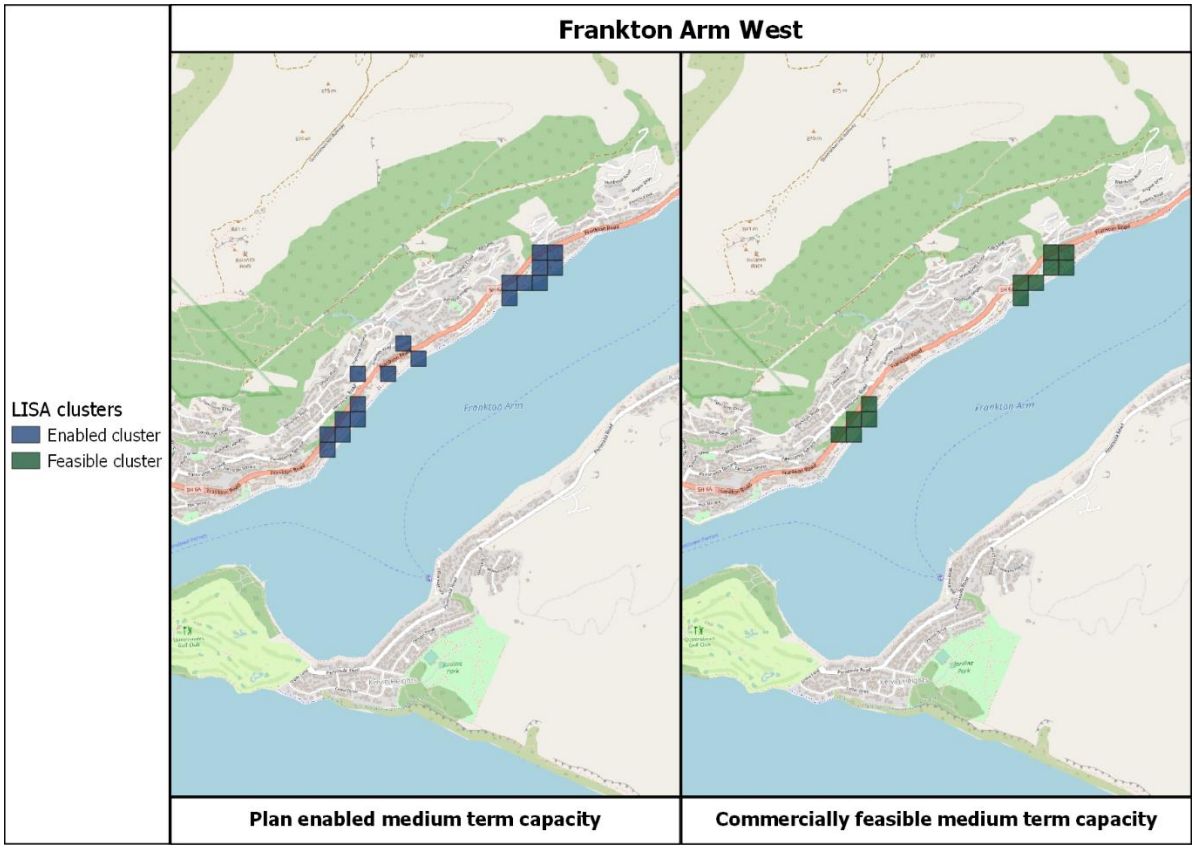


Figure 7: Cluster map of Frankton Road West and Central clusters

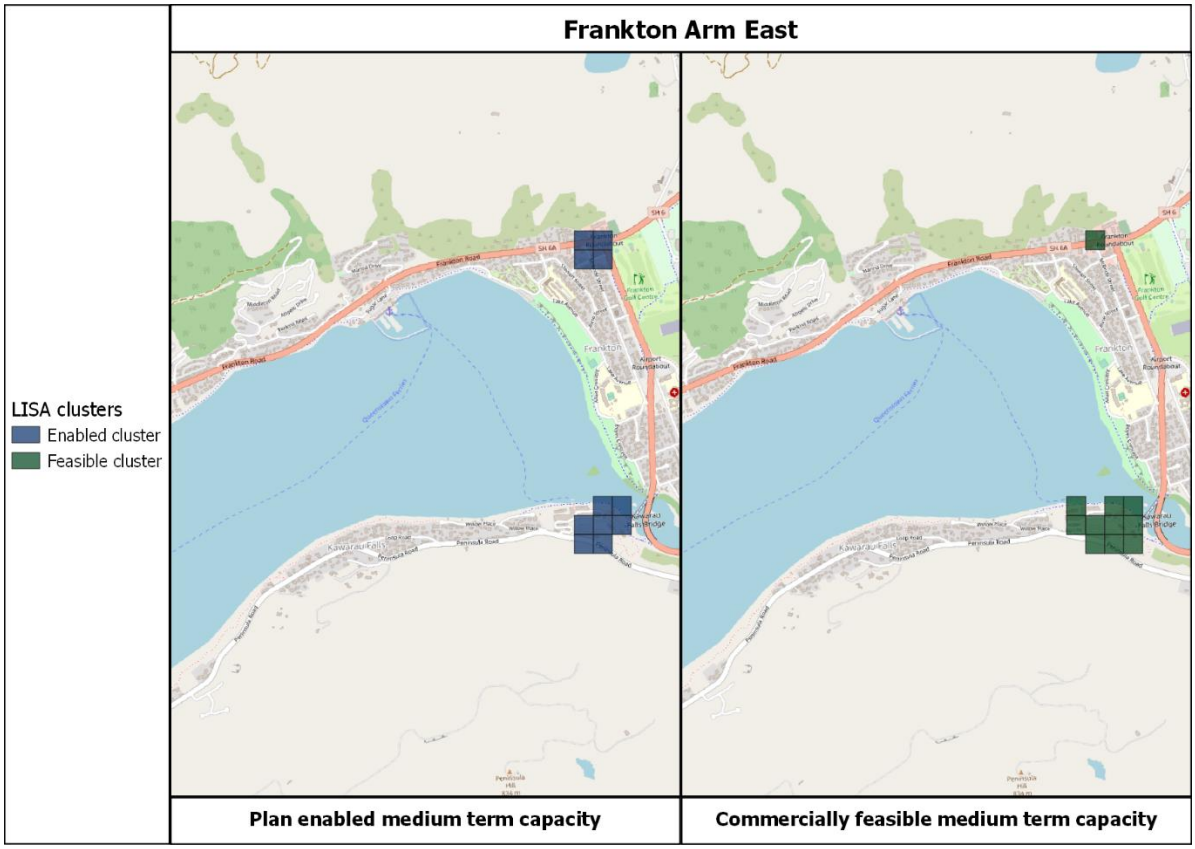


Figure 8: Cluster map of Frankton Road East and Kawarau Falls cluster

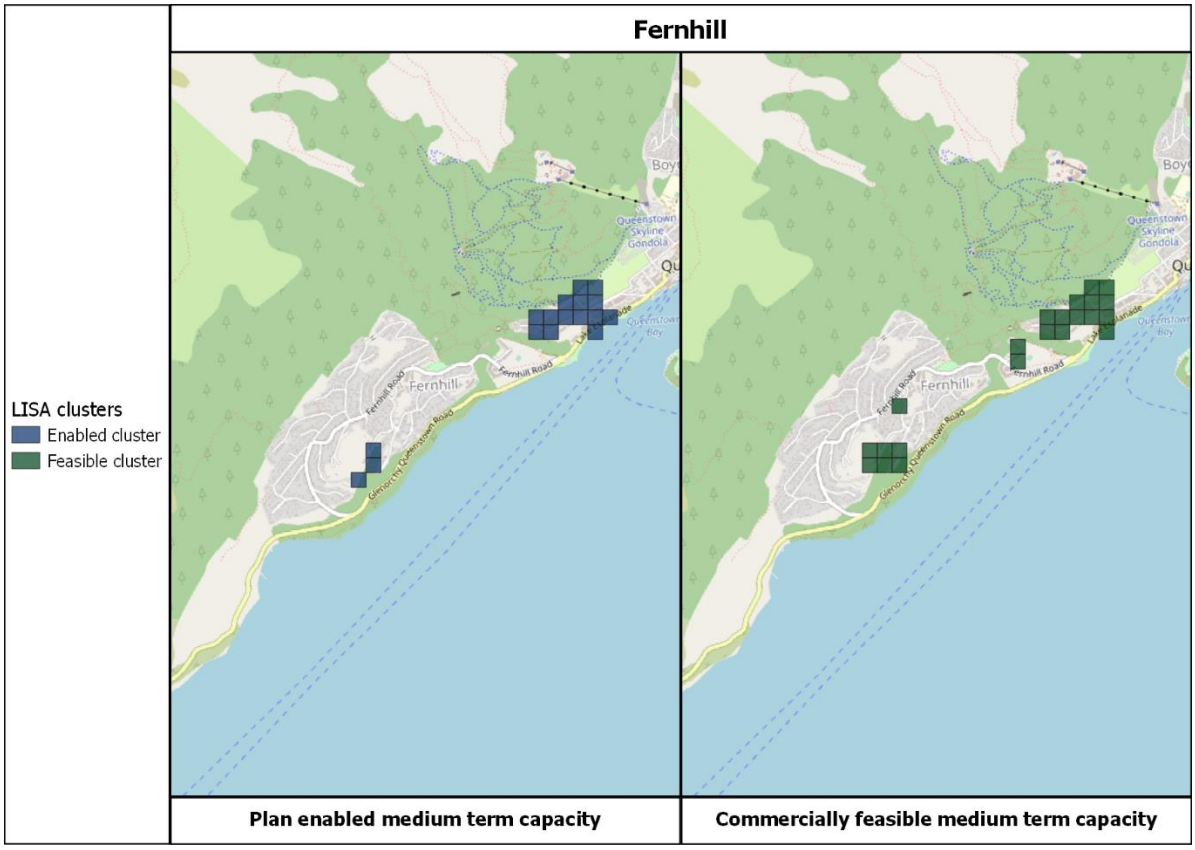


Figure 9: Cluster map of Fernhill (and Lake Esplanade)

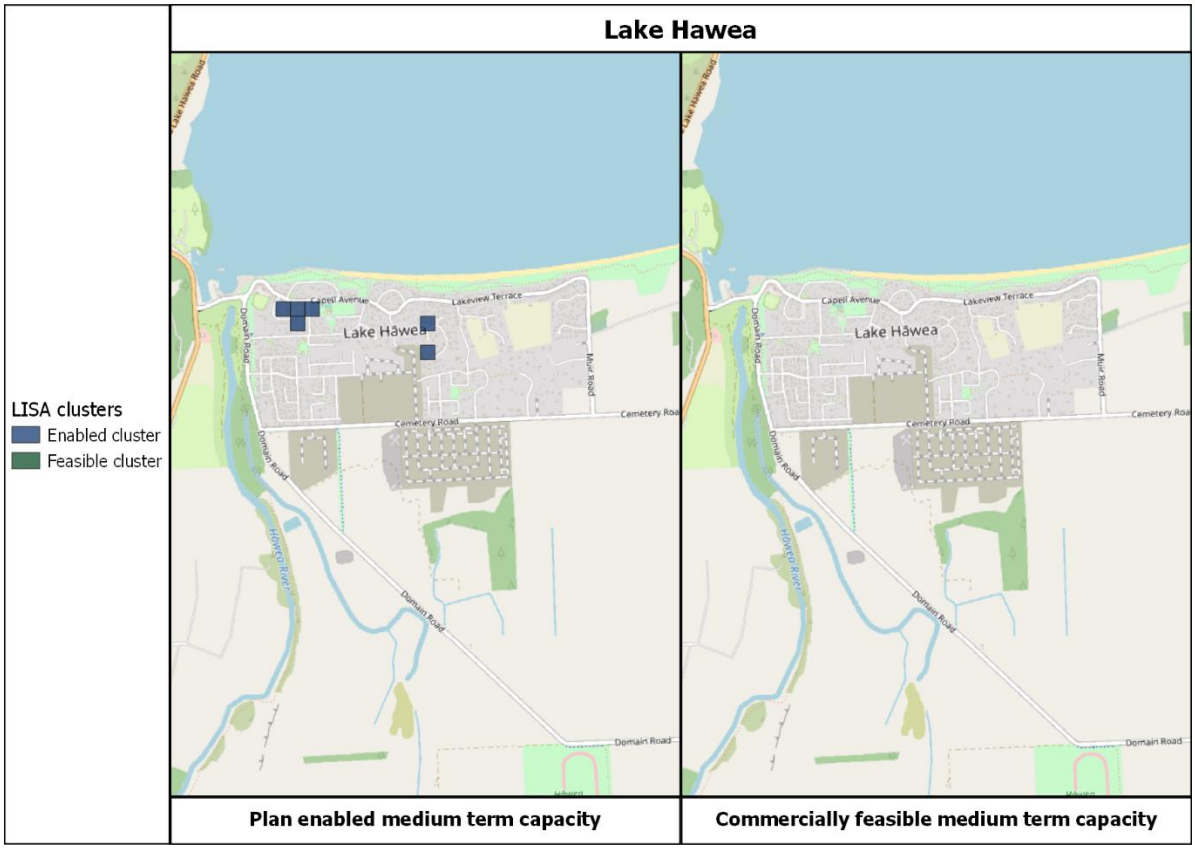


Figure 10: Cluster map of Hawea

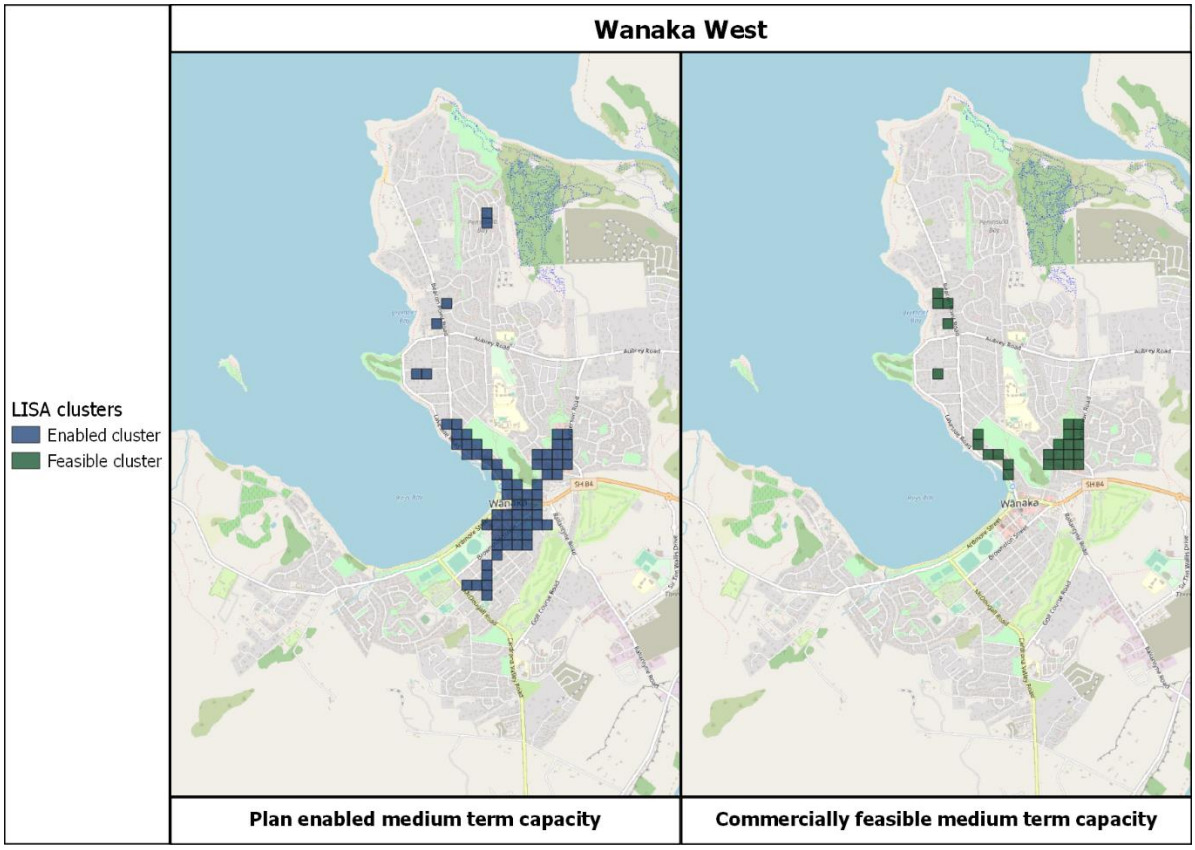


Figure 11: Cluster map of Wanaka

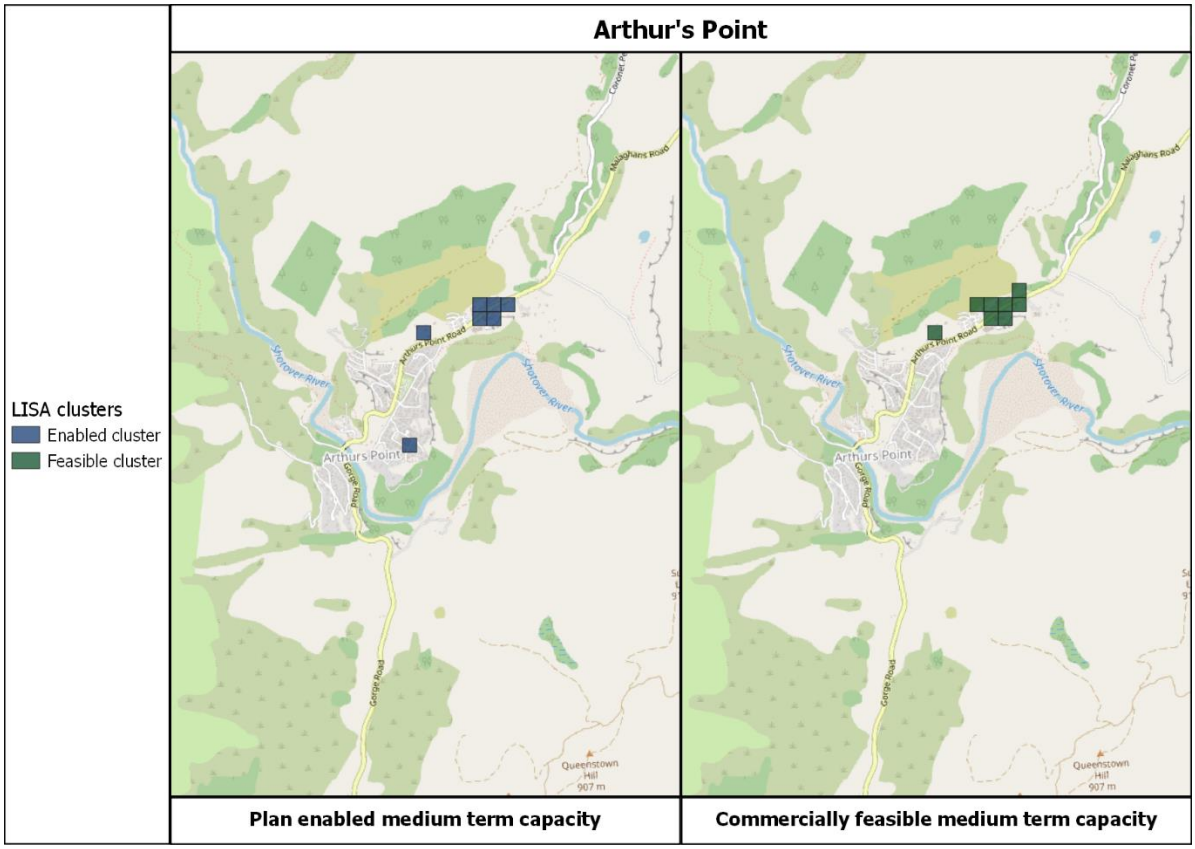


Figure 12: Cluster map of Arthurs Point

Frankton Road hosts three significant clusters – west, central, and east – along the Frankton Arm. As per Table 3, the western cluster is the most intensive vis-à-vis degree of clustering (3.253) and mean Feasible capacity (29.400), though it is the central cluster with the greatest overall Feasible capacity (186). Finally, the small Fernhill cluster capacity resides on the slopes of Fernhill (and includes land zoned Visitor Accommodation sub-zone), overlooking the Glenorchy-Queenstown Road.

Meanwhile, in Wanaka (Figure 11), the major cluster is centred on the recently up-zoned mixed-business area at Anderson Road. At 17 cells in size, this cluster is the second largest across the existing urban area, in terms of geographic extent. Across Lismore Park from the Anderson Road cluster is the Lakeside Road cluster stretching some ~600m along the shore of Lake Wanaka (and zoned High Density). With a small interquartile range of 15-17 Feasible dwellings per cell, this cluster is hallmarked by a consistent, compact, structure[60]. Taken together with the nearby Anderson Road cluster, these two clusters total 463 potentially Feasible dwellings (or 89% of all Wanaka's Feasible capacity), indicating that a significant amount of Wanaka's Feasible capacity is concentrated just north of the town centre. Two smaller clusters are also identified at Eely Point Road and Bremner Bay, offering potentially an additional 56 Feasible dwellings.

At Arthurs Point (Figure 12), the cluster of Feasible dwelling capacity is located in the towns northern gateway, along Arthurs Point Road. While small (8 cells), this cluster is dense with a mean feasible capacity of 42.625 leading to a total capacity of 341 feasible dwellings within this small area (zoned High Density). This compactness is represented in the mean local spatial auto-correlation value of

[60] Some of this capacity has since been taken up by the Marina Terrace apartment complex.

7.617, making it the most intensely clustered locale of Feasible capacity across the district[61]. There is a single cell of significant Plan Enabled capacity at the south-western part of the town at Mathias Terrace, yielding 14 Plan Enabled dwellings. This cell, however, yields no feasible dwellings so is naturally not identified as a significant cluster of Feasible capacity.

Note that the total Feasible capacity for the Arthurs Point cluster (341) is far greater than the Plan Enabled capacity (192). This is because the cluster is not the exact same shape. The difference in shape is due to the distributions of the data between the two variables being different. The additional cell added to the right of the main cluster of five Plan Enabled cells contains a Feasible capacity of 135 dwellings. It is worth remembering that these clusters broadly identify the core of the cluster and do not define the exact shape of it.

[61] We note that some of this capacity may have been taken up by recent developments in Arthur's Point which occurred after the baseline of June 2020 for the capacity analysis.

Table 2: Summary statistics of Plan Enabled clusters of dwelling capacity (medium-term, 2020 base year)

Cluster	Locale	Mean local autocorrelation	Min capacity	Max capacity	Mean capacity	25th percentile	75th percentile	Total capacity	Cells
Lake Esplanade	Queenstown	6.397	7	118	42.692	16	58	555	13
Queenstown central	Queenstown	5.507	9	117	37.812	20	51	2609	69
Frankton Road – west	Queenstown	5.424	12	78	47.600	40	58	238	5
Frankton Road – central	Queenstown	4.777	9	94	43.571	18	66	305	7
Arthurs Point	Arthurs Point	3.913	14	74	32.000	20	32	192	6
Kawarau Falls	Queenstown	3.851	10	68	34.286	12	59	240	7
Lakeside Road	Wanaka	3.436	14	41	31.667	31	37	190	6
Frankton Road – east	Queenstown	2.142	24	24	24.000	24	24	24	1
Anderson Road	Wanaka	1.895	10	60	23.643	15	28	331	14
Eely Point Road	Wanaka	1.394	25	25	25.000	25	25	25	1
Fernhill	Queenstown	0.635	12	16	14.000	13	15	28	2
Bremner Bay	Wanaka	0.454	12	12	12.000	12	12	12	1

Table 3: Summary statistics of Commercially Feasible clusters of dwelling capacity (medium-term, 2020 base year)

Cluster	Locale	Mean local autocorrelation	Min capacity	Max capacity	Mean capacity	25th percentile	75th percentile	Total capacity	Cells
Arthurs Point	Arthurs Point	7.617	14	135	42.625	17	44	341	8
Queenstown central	Queenstown	5.889	4	117	28.823	11	37	2277	79
Lake Esplanade	Queenstown	5.873	7	118	31.800	13	44	477	15
Kawarau Falls	Queenstown	5.746	4	68	32.100	12	59	321	10
Frankton Road - west	Queenstown	3.253	5	50	29.400	26	36	147	5
Anderson Road	Wanaka	2.787	5	60	21.824	14	29	371	17
Frankton Road - central	Queenstown	2.481	5	62	26.571	11	37	186	7
Eely Point Road	Wanaka	1.564	23	23	23.000	23	23	23	1
Lakeside Road	Wanaka	1.150	8	19	15.333	15	17	92	6
Fernhill	Queenstown	0.967	5	24	12.857	9	15	90	7
Bremner Bay	Wanaka	0.510	7	9	8.250	8	9	33	4
Frankton Road - east	Queenstown	0.405	6	6	6.000	6	6	6	1

4. Final Comments

This analysis has been carried out as a potential input to the development of intensification options to meet Policy 5 of the NPSUD in QLD. Once those options are developed, the next stage of work by M.E will be to re-model (off the same 2020 base and at a parcel level) Plan Enabled capacity and Commercially Feasible capacity under the proposed provisions and zoning extents for intensification.

The modelling of the intensification options will produce new distributions of capacity (including potentially new significant clusters of capacity) in areas that have proposed zone changes. Where zones/areas are not impacted by the intensification options, the parcel-level capacity in the above maps holds true although the significance of existing clusters may change when measured in the context of new capacity enabled by the intensification options.

Future updates of the HBA will provide a fresh snap-shot of dwelling capacity in the short, medium and long term that will supersede the results in this memo and incorporate the final outcomes of the intensification plan variation (once operative).

Appendix 6 – Commercial Feasibility Sensitivity Testing

Memo

To: Elias Matthee, Senior Policy Planner, Queenstown Lakes District Council

From: Susan Fairgray-McLean, Associate Director

Date: 8 June 2022

Re: Testing Impacts of Planning Parameter Adjustments on Commercial Feasibility of Capacity

5. Introduction

Queenstown Lakes District Council (QLDC) is currently undertaking assessment to understand the effects of a proposed plan variation to intensify certain residential areas (including potentially commercial areas than enable housing) within the urban environment. The plan variation seeks to meet the National Policy Statement on Urban Development (NPS-UD) Policy 5 requirements by providing for greater density within key areas of accessibility. These are typically around centres, main transport routes and other areas of high amenity.

As part of this process, M.E have been commissioned to conduct further assessment on the capacity enabled by potential changes to planning provisions. This includes changes to both the plan enabled capacity as well as the share of this capacity which is estimated to be commercially feasible. Economic modelling undertaken by M.E to inform the plan variation will build off earlier modelling capability developed by M.E for the 2021 QLD NPS-UD Housing and Business Assessment (HBA).

Prior to the development of the intensification options to be tested by M.E, an initial stage of assessment seeks to understand how changes to planning parameters – in a general sense - may affect the feasibility of potential dwelling capacity. Increasing the feasibility of capacity within core areas of accessibility is likely to contribute to positive urban form outcomes sought through the intensification plan variation.

This memo contains our findings from the first stage[62] of the assessment. This stage involves further testing of parameters within the HBA feasibility model, together with drawing upon our analyses of residential intensification modelling across other urban economies in response to the NPS-UD (Policies 3 and 5) and Medium Density Residential Standards (MDRS) within the Resource Management (Enabling Housing Supply and Other Matters) Amendment Act 2021[63].

The first part (Section 6) of this memo briefly sets out an urban capacity type framework. This provides a useful spatial economic structure for the development of provisions affecting feasibility of capacity. The next part (Section 7) then provides a description of the existing HBA modelling capability and identifies how this has been applied to test the effects of planning provision changes on feasibility, with the outputs of the testing contained in Section 8. This section summarises the direction and nature of effects on feasibility,

[62] Stage 1 is to understand the effect of planning provisions on feasibility and how changes are likely to enable or encourage development in core nodes to support the urban form objectives.

[63] For clarity, M.E understands that QLDC is not adopting the MDRS. However, recent modelling of the feasibility of MDRS in different economies provides useful context for intensification planning generally.

drawing upon the key relationships within the model. The next stage of the memo (Section 9) outlines further how the relationship between planning provisions and feasibility is affected through the implementation of urban intensification provisions. This section draws upon M.E's more recent MDRS and NPS-UD urban intensification modelling. Conclusions are contained in Section 10.

6. Urban Capacity Spatial Structure Framework

This assessment delineates residential development into three types, which correspond to the nature of their location and development patterns. These are generally reflected in the zoning structure of urban economies, thus providing a useful framework for considering how changes in parameters may influence feasibility.

It is helpful to make this distinction for two reasons. Firstly, in some cases, there are differences in the response to feasibility between these areas from planning provisions. Part of this is a function of the correlation with different types of zoned provision. Secondly, the spatial distribution of changes to provisions in relation to this structure influences the types of effects on urban form.

The broad types of residential development areas considered here include:

- Areas of higher density residential development in key centres/nodes of accessibility. These are generally areas in and around centres, where zoning provides for higher density, including vertical apartment, development. Within QLDC, this generally relates to the centre zones (Town Centres and other commercial centres), Business Mixed Use and some areas of the High Density Residential Zone.
  Key planning factors affecting feasibility within these areas typically relate to height and site cover provisions. In QLD, there are also parameters of minimum land area per dwelling units in some higher density zones that affect feasibility.
- Balance of general residential suburban area outside of commercial centres and key nodes within the existing urban area. This covers most of the suburban area within the existing urban edge and usually includes development patterns of standalone dwellings up to higher density attached dwellings. Within QLDC, this generally relates to the Low, Medium and High (some areas) Density Residential, Township and Settlement Zones.
  Key planning factors affecting feasibility within these areas typically relate to minimum site size requirements (per dwelling unit) and any differences in density for different typologies. The relaxation of height in relation to boundary (HIRB) and required setbacks with attached dwellings are also typically relevant parameters.
- Areas of residential urban greenfield expansion. Greenfield areas are outside the main focus of this assessment.

7. M.E QLD HBA Modelling Capability and Application in Testing Effects on Feasibility of Changing Planning Provisions

This section provides a brief overview of the existing M.E QLD HBA modelling capability and how this has been able to be applied to test the effect of changes in planning provisions on feasibility. It is not intended

to be a detailed technical documentation of the feasibility model, which is available within the QLD HBA[64]. This section identifies the core parameters within the model which drive feasibility and provide scope for further testing of changes in parameters. Importantly, it also outlines the market structure/conditions which the model is calibrated around and therefore sets out the limitations and appropriateness of how it can be applied to test changes (and informs the considerations needed to understand the likely effects of the provisions).

Existing HBA Modelling Capability

M.E have undertaken detailed residential capacity modelling for QLDC in 2017 and 2021 for the NPS-UDC/NPS-UD HBAs[65]. This involved the development of models that calculated total capacity enabled by the Plan and then estimated whether this is likely to be commercially feasible for a developer to construct[66].

The model operates at a parcel level where it applies the relevant planning parameters to determine the number of additional/total dwellings that can theoretically be constructed on each parcel under the Plan. The commercial feasibility component of the model then estimates the likely size and nature of the dwellings that would be likely to be constructed on each parcel (within the permitted development envelope of the parcel and local market conditions and development patterns) if the capacity were taken up. The model then calculates the feasibility of each potential dwelling option based on the estimated costs of construction[67] and likely sales prices (based on the dwelling size, type and location). Dwellings where the modelled sales price is likely to exceed the estimated costs by a sufficient margin are estimated to represent commercially feasible development options and form part of the commercially feasible capacity.

The main parameters[68] that influence feasibility within the model include:

- Minimum site size requirements (per dwelling unit and in total).
- Building height allowances.
- Levels of permitted site coverage.

Limitations

The above factors can be adjusted within the model to test the effect of planning provision changes on the feasibility of capacity. However, it is important to understand the limitations of this approach and consider the findings together with subsequent analyses undertaken by M.E in constructing urban intensification models to inform the effects of the MDRS and NPS-UD (policies 3 and 5).

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[64] M.E, 2021. *Housing Development Capacity Assessment: Queenstown Lakes District,* prepared for Queenstown Lakes District Council and Otago Regional Council, 15 September 2021.

[65] The 2021 model is used here to test feasibility.

[66] The model identifies whether each plan enabled dwelling would be likely to represent a feasible development option for a developer. It does not identify the total number of dwellings that would be feasible to construct in aggregate within the market size.

[67] These include land, site preparation costs, build costs, utilities connections, development contributions and other ancillary costs associated with the construction and sale of the dwelling.

[68] Other parcel level planning provisions may also affect feasibility through the flexibility of on-site design. Initial testing during the model development determined that, from a capacity modelling perspective, most of these factors were superseded by the parameters listed above, or were not able to be modelled without detailed individual site specific surveying.

The HBA feasibility model is calibrated to reflect the development patterns within the 2020 market and are based on the existing (and proposed) planning provisions. An important part of the feasibility modelling involves estimating the dwelling size and type likely to be constructed on different site sizes across different locations.

If new planning provisions were introduced that enabled substantial changes to the type and size of dwellings that could be constructed, or large changes to density, then this would result in a shift to the types of dwelling stock enabled. These would not be reflected within the current model calibrations as they would not form part of the potential or likely market response.

The application of MDRS provisions is a core example where a higher level of development would be enabled on most sites. This would change the model relationships between site and dwelling size/type and generate a shift in the types of dwellings constructed. In many areas where the MDRS are being proposed, this would quite substantially change the potential yield of parcels and would result in larger dwellings able to be constructed on smaller sites through a combination of smaller site size requirements and greater levels of development on each site. The types of dwellings scaled to each parcel would shift in response, generally resulting in significantly larger floorspace to land area ratios and a much greater proportion of multi-level (horizontally-attached) dwellings. In addition to changes in the cost structure of different components (i.e. land, dwellings, ancillary, etc), this would change the required cost rate inputs to construct different types of dwellings[69].

Appropriate Application of HBA for Sensitivity Testing

Given the above, it is important that parameters in the existing commercial feasibility model are only adjusted within ranges that corresponded with or close to the range of model calibration. The QLD HBA model is calibrated to reflect the types of development that would be expected to occur with the types of capacity enabled by the Plan, with some areas restricted further to reflect local market conditions[70]. This means that the modelling is able to test changes to provisions that would deliver the same type of dwellings at a different density, but without significant shifts in the nature of dwellings being delivered. For example, the modelling is able to test changes in minimum site size requirements that would produce relative similar types of dwellings, albeit at a different density. The modelled ranges within the sensitivity testing are specified within the following section.

Further sensitivity testing can be conducted using the model to show the effect of changes in costs and prices together with adjusted planning provisions. Economic changes in the wider residential and construction markets may have affected the feasibility of existing development patterns, therefore having corresponding effects on the level of feasibility change observed from changes to planning parameters.

Further changes to feasibility are likely to occur with additional shifts in planning provisions beyond those appropriate to test within the existing model calibration. These include changes such as the introduction of MDRS-type provisions that enable a higher level of development and potential yield on each parcel. The

[69] For example, Low Density Residential Zones or Settlement Zones, currently have minimum site size requirements of 450m^2 (excluding the land use consent development pathway) and 600m^2, respectively. In many areas, the market responds by delivering single-level standalone dwellings. In contrast, the market would be likely to deliver multi-level dwellings on much smaller site sizes, which have significant differences in build cost per m^2 rates.

[70] In this way, the HBA modelling remained conservative as feasible capacity would otherwise be over-stated in some areas where development patterns have historically occurred at densities substantially lower than that enabled by the Plan.

market (and therefore, feasibility) would be likely to respond to these changes through shifts in the relationships between dwelling type, size and site size. These are beyond the scope of development pattern structures contained within the model, but are investigated in subsequent sections (Section 9) in relation to M.E's recent intensification model development undertaken for the MDRS/NPS-UD (policies 3 and 5) in other territorial authorities.

8. Sensitivity Testing Outputs from the HBA Feasibility Model

Modelled Scenarios

Sensitivity testing has been undertaken using the existing HBA model to understand the effect of changes in planning provisions on the feasibility of capacity (and within the constraints outlined above). Changes were made to the key planning parameters within the model, together with costs and prices. Sensitivity testing of these factors provides a partial picture of how feasibility may be affected by planning provisions.

Two indicative scenarios where planning parameters were adjusted were tested to model changes to feasible capacity. The first (Scenario 1) makes indicative adjustments to the minimum site size requirements[71] and vertical building height limits (in zones where apartments are provided for) at a city-wide scale (as set out below), without any adjustment for selected local areas. Scenario 1 tests a wider range of parameters (than Scenario 2), where smaller minimum site sizes, and greater height allowances, are enabled. Under this scenario, height limits have been increased indicatively to 6 storeys across all areas, with the exception of the Business Mixed Use area in Gorge Road, where an indicative allowance of 8 storeys has been applied.

The second indicative modelled scenario (Scenario 2) applies city-wide changes to minimum site size areas and vertical height allowances (in zones where apartments are provided for), but also retains some of the local areas' adjustment for certain areas[72]. The city-wide changes to minimum site areas and height limits are smaller than under Scenario 1 to test a range of outcomes. Under this scenario, height limits have indicatively been increased by an additional storey across each area, from that which has been applied under the HBA modelling (as informed by QLDC assumptions).

The indicative minimum site sizes in the modelled scenarios are set out in the table below, along with the existing planning parameters modelled through the 2021 HBA. In each scenario, the minimum site area under the land use consent development pathway has been applied.

[71] Further investigation within the model found that site sizes were the main parameter affecting plan enabled capacity, and consequently commercially feasible capacity.

[72] The HBA modelling used a localised scenario to apply larger site sizes in areas where development patterns are well below densities enabled under the Plan. This ensured modelling remained conservative and that capacity was not over-stated.

Table 0-1: M.E Residential Indicative Minimum Site Area (per Dwelling) Modelled Scenarios (For Sensitivity Testing Purposes Only)

ZONE	Minimum Site Area Requirements (m2)		
	Baseline (HBA)	Scenario 1	Scenario 2
High Density Residential	115	90	100
Medium Density Residential	250	200	200
Low Density Residential	300	250	250
Settlements	800	600	600
Township	800	600	600
Arrowtown Residential Historic	650	600	600
Queenstown Town Centre	115	90	100
Wanaka Town Centre	115	90	100
Local Shopping Centre	115	100	100
Local Neighbourhood Centre	115	100	100
Business Mixed Use	200	150	175

Source: QLDC ODP/PDP and M.E QLDC Feasibility Model Sensitivity Testing Parameters, 2022.

The indicative building heights in the modelled scenarios within the zones (excluding High Density Residential Zone[73]) providing for vertically-stacked apartment developments are shown in the table below. The number of indicative modelled storeys for each scenario is shown, together with that in the HBA baseline modelled scenarios. These are the total building heights where residential development is a subset within the total building.

[73] The High Density Residential Zone capacity is determined through the minimum site per dwelling parameters.

Table 0-2: M.E Indicative Vertical Building Height in Modelled Scenarios (For Sensitivity Testing Purposes Only)

ZONE	Model Areas	Total Storeys Modelled		
		Baseline (HBA)	Scenario 1	Scenario 2
Business Mixed Use	W-Mixed Use Remarks, UC-Northlake	2	6	3
Business Mixed Use	W- Arthurs Point, UC-Cardrona (MU), W-Fernhill, W-Frankton Terrace junction, UC - Luggate (MU), W-Jacks Point, UC-Wanaka South (MU), UC-Hawea (MU)	3	6	4
Business Mixed Use	UC-Wanaka Town Centre (MU), UC - Wanaka North (MU), W-Frankton Road (Marina), W-Frankton Flats North & South (2), W-Queenstown Town Centre, W-Frankton Road (near Town Centre), W-Frankton Road (Sherwood), W-Frankton Road (Oaks Club), UC-Three Parks (west), W-Ladies Mile (MU)	4	6	5
Business Mixed Use	W-Gorge Road	6	8	7
Local Neighbourhood Centres	W-Arowtown, W-Lakes Hayes Estate & Shotover Country, UC- Albert Town, UC-Cardrona (LNCs), UC-Hawea (LNCs), UC-Luggate, UC-Wanaka North (including Northlake and near the Lake)	2	6	3
Local Neighbourhood Centres	W - Arthurs Point (LNCs), W-Frankton Terrace, W-Frankton Road, W - Remarks Park, UC-Wanaka Town Centre (LNCs), W-Fernhill/Sunshine Bay, W-Kelvin Heights, UC-Wanaka South (LNCs)	3	6	4
Local Neighbourhood Centres	W - Queenstown Town Centre, W-ladies Mile (LNCs)	4	6	5
Town Centre	W - Queenstown Town Centre	4	6	5
Town Centre	UC-Wanaka Town Centre (LNCs)	3	6	4

Source: QLDC Assumptions from HBA and M.E QLDC Feasibility Model Sensitivity Testing Parameters, 2022.

The feasibility of capacity under each indicative scenario has been tested through time (from the 2020 modelled base year, to the end of the modelled medium-term in 2030) through applying changes in costs and prices. Three scenarios of indicative costs and prices have been tested to understand how feasibility under each set of parameters may be affected by changes in costs and prices. Importantly, this provides a partial picture of how feasibility is likely to change as the model responds to changes in density through planning parameters. It is calibrated to building patterns corresponding to the current market and (current and proposed) planning provisions. Therefore, it does not capture any increases in feasibility which may occur through market adjustments in the relationship between dwelling development patterns and site sizes with changes in planning provisions or market conditions.

The three tested changes in indicative costs and prices, applied to each of the modelled scenarios, are:

- Annual growth of 1% in costs and 1.5% in dwelling and land sales prices.
- Annual growth of 3% in costs and 2% in dwelling and land sales prices.
- Annual growth of 5% in costs and 2% in dwelling and land sales prices.

The first modelled combination gradually increases feasibility through time, while the second and third combinations decrease feasibility through time. These scenarios have been modelled to test the effect of recent increases in construction costs on the feasibility of current development patterns within the capacity provided for under the Plan.

The indicative modelled scenarios have been applied to plan enabled residential capacity within the existing urban area of QLD (excluding Special Zones and other Structure Plan areas).

Key Findings

The two indicative modelled scenarios increase the commercially feasible capacity across nearly all zones and locations. Part of this increase occurs through an overall increase in the amount of plan enabled capacity (through an increase in yields), and part through an increase in the feasibility of sites developed at different densities as tested through the modelled scenarios.

The modelled plan enabled capacity within the existing urban area by zone[74] is shown in Table 0-3 below. The modelled scenarios increase the plan enabled capacity by between 68% and 89%. The increases are larger under Scenario 1 due to the higher density of the indicative modelled provisions.

The largest net increases occur within the general residential suburban area across the Low and High Density Residential zones. The largest increase, within the Low Density Residential Zone, is due to the spatial extent of the zone. Larger proportional increases occur within the shared residential and commercial zones through the modelled additional height allowances on vertically-attached apartment developments.

Table 0-3: Existing Urban Area Modelled Plan Enabled Capacity (Net Additional Dwellings) by Indicative Scenario

	Plan Enabled Capacity			Net Change from Baseline HBA		% Change from Baseline HBA	
ZONE	Baseline (HBA)	Scenario 1	Scenario 2	Scenario 1	Scenario 2	Scenario 1	Scenario 2
High Density Residential	5,200	9,900	7,900	4,700	2,700	91%	51%
Medium Density Residential	1,900	2,500	2,500	700	700	36%	36%
Low Density Residential	12,500	21,300	21,300	8,900	8,900	71%	71%
Township	300	600	600	300	300	74%	74%
Arrowtown Residential Historic	20	30	30	-	-	14%	14%
Queenstown Town Centre	600	2,200	1,400	1,600	700	257%	122%
Wanaka Town Centre	500	2,300	1,300	1,700	800	311%	143%
Local Shopping/Neighbourhood Centre	200	700	500	400	200	194%	104%
Business Mixed Use	1,000	2,600	1,900	1,600	900	155%	85%
TOTAL	**22,300**	**42,200**	**37,500**	**19,900**	**15,100**	**89%**	**68%**

The estimated commercially feasible capacity under each of the modelled scenarios is shown in Table 0-4. This table provides the modelled feasible capacity as applied to the 2020 base year of the model. The base year has been applied to identify changes in feasibility from the baseline modelled capacity.

The feasible capacity nearly triples under Scenario 1. While part of this effect is due to an increase in the plan enabled capacity overall, the feasibility of capacity increases with higher density development provisions. This is seen in the increase in share of plan enabled capacity that is estimated to be commercially feasible.

The estimated feasible capacity also increases under Scenario 2, albeit to a lesser extent. A sizeable share of this effect is likely to be associated with increases in the plan enabled capacity where the share of plan enabled capacity as feasible remains broadly in line, increasing from 53% to 57%.

[74] Capacity within the Large Lot Residential zones have not been included within the modelling.

Table 0-4: Existing Urban Area Estimated Commercially Feasible Capacity (Net Additional Dwellings, 2020 base year) by Modelled Scenario

ZONE	Commercially Feasible Capacity			Net Change from Baseline HBA		% Change from Baseline HBA		Share of Plan Enabled Capacity as Feasible		
	Baseline (HBA)	Scenario 1	Scenario 2	Scenario 1	Scenario 2	Scenario 1	Scenario 2	Baseline (HBA)	Scenario 1	Scenario 2
High Density Residential	3,800	8,800	6,000	5,100	2,300	135%	61%	72%	89%	77%
Medium Density Residential	900	2,100	1,600	1,200	700	126%	74%	51%	84%	64%
Low Density Residential	5,700	16,700	10,000	11,000	4,400	195%	77%	45%	78%	47%
Township	10	100	100	100	100	2267%	2267%	2%	23%	23%
Arrowtown Residential Historic	10	10	10	-	-	38%	38%	36%	44%	44%
Queenstown Town Centre	200	1,300	800	1,100	600	533%	281%	33%	58%	56%
Wanaka Town Centre	100	2,100	300	2,000	200	1818%	208%	20%	93%	25%
Local Shopping/Neighbourhood Centre	200	600	400	500	300	319%	185%	66%	95%	93%
Business Mixed Use	1,000	2,600	1,800	1,600	800	163%	86%	95%	99%	96%
TOTAL	**11,800**	**34,400**	**21,200**	**22,600**	**9,400**	**191%**	**79%**	**53%**	**82%**	**57%**

Higher Density Development Areas

The nature of the modelled provisions' effects on the feasibility of capacity differs between the higher density areas and the general suburban areas. Within the higher density areas, there are larger percentage increases in feasible capacity between the HBA baseline and the modelled scenarios than within other zones. These include the mixed residential/commercial zones (i.e. Town Centre, Shopping/Neighbourhood Centres and Business Mixed Use).

Increases in the modelled height allowances increase the feasibility of capacity through both an increase in the parcel yield as well as a reduction in the average construction cost per dwelling. Yield increases result in a reduction in the land cost per dwelling. It is assumed that increases in storeys are unlikely to reduce estimated per dwelling sales prices if dwellings are already configured as vertically-attached dwellings. The market size for this dwelling typology is an important determinant of the ability to construct buildings at higher densities.

Average per dwelling construction costs vary by building height. An increase in costs per dwelling typically occurs between lower rise buildings (up to 2-3 storeys) and taller buildings where dwellings are typically vertically-attached. Dwelling construction costs are generally lower within low-rise buildings as dwellings are typically horizontally-attached 2-3 level walk-ups, do not require the additional expense of lifts, or have lower sub-structure construction costs.

Construction costs generally increase once buildings reach three or more storeys with a vertically-attached dwelling configuration. This occurs due to the additional costs associated with constructing a building sufficiently strong to support higher levels and the additional building code requirements for this form of development (e.g. lifts).

Within medium to higher rise developments (3+ storeys with vertically-attached dwellings), an increase in the modelled feasibility occurs where buildings are developed to a greater number of storeys as the average cost per dwelling decreases. The average per m^2 construction cost (and therefore average dwelling cost) decreases as the increased cost associated with constructing stronger buildings is spread across a greater amount of floorspace/dwellings[75].

[75] While there is some increase in the cost of building strengthening as buildings increase in height (beyond the initial piling, etc requirements for a vertically-attached tenancy/dwelling building), the cost typically increases at a slower rate than the rate of floorspace increase with additional levels, therefore resulting in a decrease in the average construction cost per m^2.

Overall, there is generally a sizeable increase in building construction costs per dwelling when density increases from 2-3 level horizontally-attached walk-up dwellings to vertically stacked apartment dwellings. Once this has occurred, the rate per dwelling decreases with additional storeys, generally resulting in highest construction costs for 3-4 level vertically-attached dwellings and lower construction costs for dwellings in higher buildings.

Table 0-2 shows that a large proportion of the apartment dwelling capacity within the initial HBA modelling was in buildings of 3-4 storeys, generally falling within the higher dwelling construction cost rates. The indicative modelled scenarios increase the storeys, reducing construction cost rates, therefore increasing feasibility. The greatest increases occur under Scenario 1 due to the higher modelled storeys having a lower cost rate.

The modelling has also found that the land area per dwelling requirements[76] (currently 115m^2 per dwelling) within the High Density Residential Zone are likely to limit dwellings constructed to around 3 to 4 levels. As outlined above, this corresponds with the higher rates of construction costs. It is likely that feasibility would increase across this zone if this control were reduced together with increases in the height allowances. However, it is important to consider that much of the increase in feasible capacity would be associated with an increase in plan enabled capacity as HBA modelling has estimated that high shares of the capacity (72%) may already represent feasible development options. It is therefore important to consider the appropriateness of providing for additional capacity within this zone and the locations where it occurs.

The above modelling reflects the changes in feasibility associated with height and does not take into account the application of other planning provisions (such as landscaping and viewshaft provisions) that guide the appropriateness of building height.

Balance of General Residential Suburban Area

The modelling has found that the estimated feasible capacity also increases within the general residential suburban area under Scenarios 1 and 2. Similarly, a share of this increase occurs through an increase in the plan enabled capacity, while a share occurs through increased feasibility with developing sites at a higher density. The larger increases in capacity occur under Scenario 1 where minimum site areas are applied on a citywide basis, while local area densities are still applied, albeit to a lesser extent, under Scenario 2.

The largest net increase in feasible capacity occurs within the Low Density Residential Zone, which corresponds to the large spatial extent of the zone. This increases the potential yield on many parcels, and also increases the number of parcels that can be developed as infill capacity. Increases in yield on each site can increase the feasibility of capacity to a larger extent than as a direct proportionality through a decrease in average land costs per dwelling. This is because the total sales price of all dwellings across the parcel, in aggregate, increases at a faster rate as a large proportion of dwelling value is associated simply with the existence of a dwelling (and then increases with dwelling/land size[77]).

The indictive increase in feasible capacity within the Low Density Residential Zone is smaller under Scenario 2 due to the application of lower densities within selected areas. It is important to understand this range because any actual development patterns may occur at lower densities than those enabled by the Plan. A

[76] It is noted that the ODP and PDP also contains building shade requirements that would also limit development within this zone to around 3 to 4 levels (and lower in some areas). These fall outside the scope of the feasibility model.

[77] That is, the gradient of the relationship between dwelling sales price and size is less than 1.

range of dwellings at different densities are likely to be constructed based on the size of each market segment.

There are also modelled increases in the feasible capacity within the Medium Density Residential Zone areas under Scenarios 1 and 2. A large share of the increase occurs through the attached dwelling typology as sites are able to be developed more efficiently (i.e. the construction of larger floorspace dwellings on smaller sites than detached dwellings) through this typology. The plan enabled capacity is also smaller for detached dwellings due to the application of assumptions around the minimum site sizes required to feasibly construct standalone dwellings. The overall increase in feasible capacity within this zone is smaller than the Low Density Residential Zone due to the smaller spatial extent of the zone.

The modelling found increases in the feasibility of capacity within the Township Zone. Although, the total net increases are small due to the limited area across which this zone is applied. Feasibility constraints within this zone were initially identified within the HBA with the existing large site size requirement per dwelling (800m2 per dwelling). The modelling has reduced this indicatively to 600m^2 (to appropriately remain within the calibration of the model), resulting in some increase in feasibility while maintaining the lower density character of these areas.

Impact of Changes in Costs and Prices on Modelled Feasible Capacity

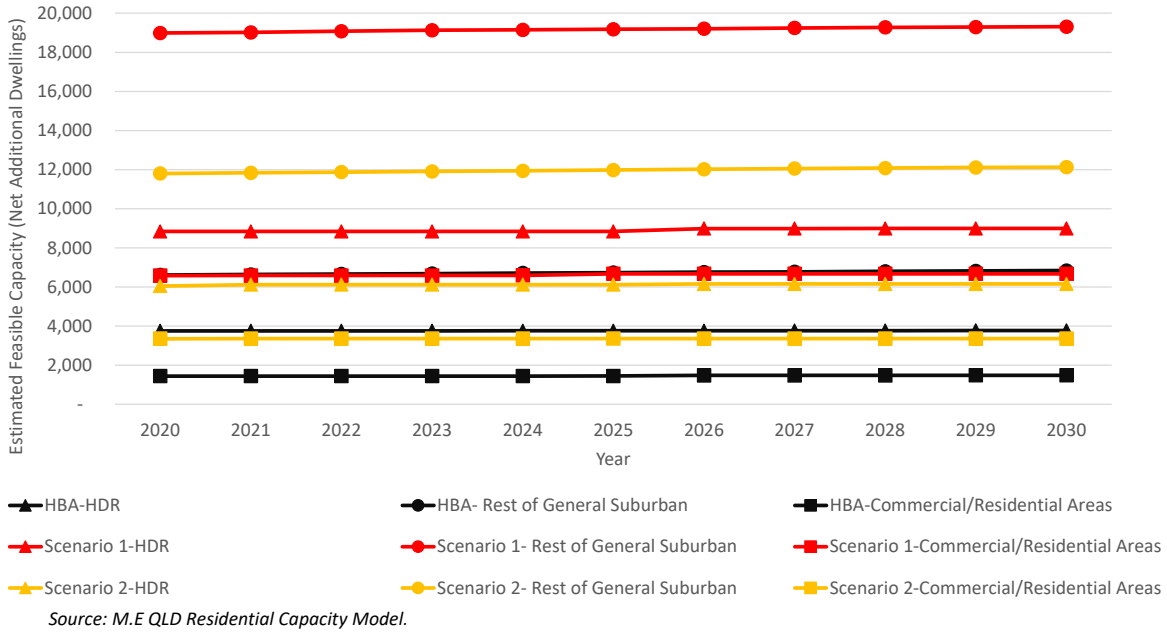
The impact of changes in indicative costs and prices on feasibility was modelled as further sensitivity tests. Changes were modelled for the existing HBA feasible capacity to understand the effects on the feasibility of existing development patterns within the current provisions. The effects of cost and price changes were also modelled for Scenarios 1 and 2.

While construction cost rates are determined by factors beyond planning provisions, it is important to understand how they affect feasibility. For instance, it is useful to understand whether current development patterns remain feasible with recent increases in construction costs that have occurred since the HBA baseline modelling.

At a high level, feasibility generally increases when dwelling sales prices increase at a greater rate than construction costs, and decreases when the reverse holds true. The following graphs show the modelled effect on feasible capacity under each situation. Figure 0-1 models the feasible capacity where prices increase slightly faster than costs, while Figure 0-2 models capacity where costs increase at a faster rate. As outlined above, it is important to note that this only provides a partial picture as it is based on model calibrations to the existing development patterns. Changes in costs and prices may result in changes to development intensities on each site (within the enabled planning provisions) to adjust to cost/price changes to maintain feasibility.

Figure 0-1 shows small increases in feasibility through time with a gradual increase in costs, exceeded slightly by the increase in prices. The increases are small, and are relatively similar in proportion across the three modelled scenarios. A relatively high share of the plan enabled capacity in some categories is estimated to potentially represent feasible options in the base year, meaning that there is limited scope for further increases.

Figure 0-1: Modelled Commercially Feasible Capacity by Zone Type and Scenario: Annual Prices +1.5% and Annual Costs +1% (For Sensitivity Testing Purposes Only)

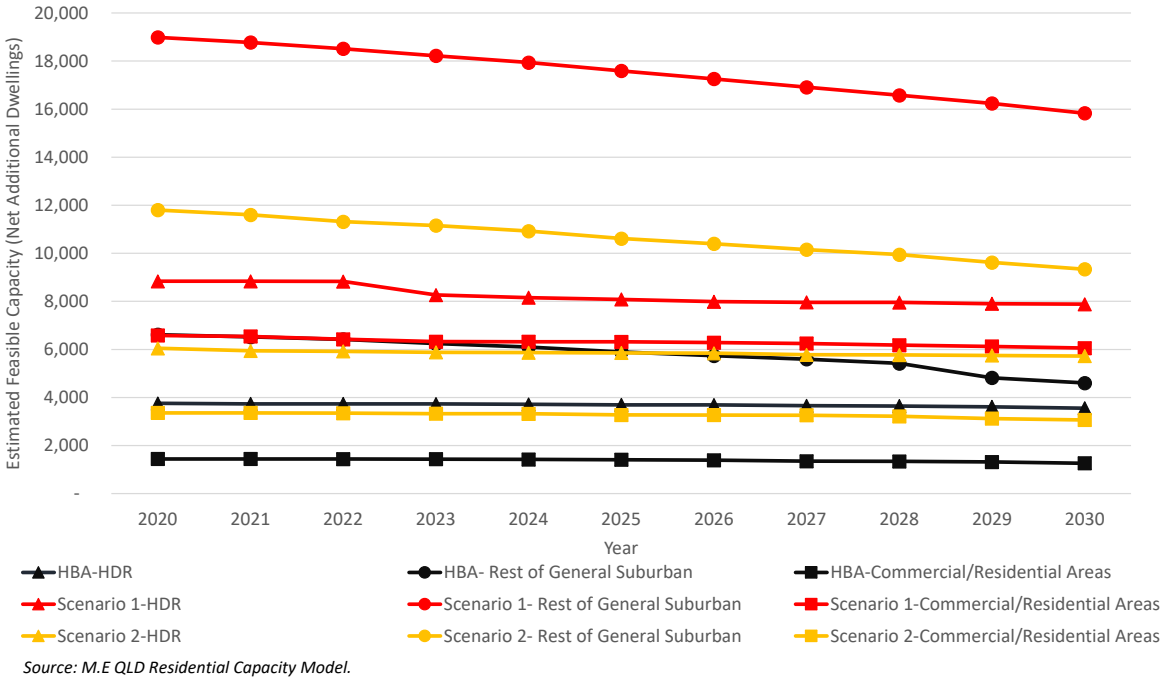


Source: M.E QLD Residential Capacity Model.

Figure 0-2 shows decreases in modelled feasible capacity through time where indicative costs increase at a faster rate than growth in indicative dwelling sales prices. The largest decreases occur within the rest of the general suburban area (beyond the High Density Residential Zone), both in terms of net and percentage decreases. Part of this effect is likely to occur through the current development densities becoming less feasible through time (and therefore, potentially over-stated) where the market is instead likely to show a level of adjustment through time with increases in the intensity of site use.

Other areas of higher density capacity have smaller modelled decreases in feasible capacity than the general suburban area. While the decreases are proportionately smaller, there may be larger decreases in the margins within these types of capacity. This may suggest that capacity remains feasible, but at a lower profit margin.

Figure 0-2: Modelled Commercially Feasible Capacity by Zone Type and Scenario: Annual Prices +2% and Annual Costs +5% (For Sensitivity Testing Purposes Only)



Source: M.E QLD Residential Capacity Model.

The above results indicate the changes in feasibility as a result of changes in planning provisions where the same nature of development patterns remain. The following section provides commentary on the types of changes in feasibility that may occur through the implementation of intensification provisions that provide for a shift in development patterns.

9. Effects on Feasibility from Application of Intensification Provisions

M.E have recently developed modelling capability in other territorial authorities to calculate the impact of intensification planning provisions on residential development capacity. The modelling estimates the effects of the MDRS and NPS-UD Policy 3 and 5 requirements, which provide for much greater levels of development across urban areas.

NPS-UD Policies 3 and 5 require the provision for higher density vertical development (vertically-attached apartments) in key nodes of accessibility (centres and other high amenity areas). The above sensitivity testing has been able to reflect much of this type of development through modelling increased height allowances within areas where it is already provided for.

The MDRS provisions enable a much greater level of development across all residential urban zones. This occurs through a combination of increased yields on parcels (up to 3 dwellings per site) together with an expansion of the permitted three-dimensional building envelope[78]. The provisions often enable a shift in development patterns from those enabled under existing ODPs and PDPs. If similar provisions were applied within QLD, these would be likely to enable a much greater level of development within the Medium

[78] This is formed through the combination of height allowances (up to three storeys), setbacks and height in relation to boundary rules.

Density Residential, Low Density Residential and Township zones, and smaller potential increases within the High Density Residential Zone.

The effects on feasibility of these sorts of provisions are not likely to be captured by the current modelling. This is because they enabled much greater intensity of use on each site, thus shifting the relationship between dwelling and site sizes. The higher intensity development generally increases feasibility as smaller site sizes are required per dwelling. Beyond the smaller site sizes, the dwellings able to be constructed are larger (within the greater building envelope) and therefore able to achieve higher sales prices and meet a wider portion of the market demand.

The greater building envelope tends to alter the relativity of feasibility across different dwelling typologies to cause an increase in the relative feasibility of attached dwellings. This is because it is relatively more efficient to develop sites as attached dwellings as site sizes decrease.

Increased yields from these provisions generally increase the feasibility of redevelopment capacity options. Existing dwelling costs are spread across a greater number of constructed dwellings. The increase in total sales from the increased dwelling yield also generally exceeds the increase in sales price achieved from a smaller number of larger dwellings with the same combined floorspace. This is because a sizeable portion of the value of a dwelling occurs through its existence.

The relative feasibility of redevelopment options is also increased through the potential for higher yields on each parcel. This occurs through the efficiency increases through development of multiple dwellings, including through scale economies in construction costs.

It is noted that the increased potential yields on parcels is likely to increase the parcel land prices over the medium-term. The scale of this effect on each development type is unclear, however, it is likely to increase the relative attractiveness of redevelopment options as the cost increases are spread across a greater number of dwellings.

10.Conclusions

The sensitivity testing within the QLD HBA residential capacity model has identified increases in feasible capacity across most of the urban area with indicative increases in the density of provisions. A large share of the increase in feasible capacity is likely to be associated with the increases in plan enabled capacity that occur with increased density allowances. Increases in feasible capacity (net additional dwellings) also occur through increases in the feasibility of development at these higher densities as seen through the increases in the share of plan enabled capacity estimated to represent potential commercially feasible development options.

The modelled increases in capacity are widespread across the urban area. Modelled feasible capacity increased across all zones and locations. Part of this is likely to be due to the existing relatively high rates of feasibility within the current market in QLD. Increases in feasible capacity were shown within the general residential zones as well as the higher density areas of vertical development.

The effect of increased density on feasibility may be understated, within the general suburban residential areas, in the sensitivity testing through the existing HBA model. This is because the testing is limited to testing ranges of development that are similar to the development patterns already within the model as a function of existing ODP and PDP provisions. These are also limited to the calibrations between dwelling

and site size arising from these provisions with no allowance for market adjustment of this relationship to increase feasibility.

We consider it is important to appropriately spatially apply any intensification provisions within the urban area to achieve urban form objectives. The spatial extent of the provisions in relation to the market size is likely to affect the ability to achieve intensification within appropriate locations that support the development and viability of core nodes within the urban environment.