

5 October 2023

Queenstown Lakes District Council

To the Queenstown Lakes District Council,

## **Submission on Urban Intensification Variation**

### **Context**

The purpose of the New Zealand Infrastructure Commission, Te Waihanga, is to co-ordinate, develop, and promote an approach to infrastructure that improves the well-being of New Zealanders, including their economic wellbeing. With this strategic and whole of system focus, Te Waihanga does not usually submit on individual District Plan proposals.

We consider the Urban Intensification Variation to the Queenstown Lakes District Council (QLDC) Proposed District Plan to be nationally significant. The Variation is significant because:

- it directly relates to Rautaki Hanganga o Aotearoa, the New Zealand Infrastructure Strategy, which has specific recommendations about providing for growth through effective spatial planning and increasing housing development, including through upzoning to enable increased housing density;
- it sets a precedent about the planning for urban intensification in the New Zealand city with the least affordable homes and fastest growth rate (i.e., the highest growth rate of any Tier 1 or Tier 2 city between 1996 and 2020, averaging 5.3%);
- the implementation of sub-optimal minimum lot sizes and maximum height limits in areas to be upzoned may negate 'high-density' development and contribute to urban sprawl, with the associated problems of traffic congestion (and consequent emissions increases) and worsening housing affordability;
- Queenstown is one of the formal Urban Growth Partnerships established between central and local government, so there is a strong central government interest in ensuring robust District Plan processes that will deliver on regional and national priorities, including reducing carbon emissions and making housing more affordable.

Consequently, Te Waihanga, welcomes the opportunity to submit on the Queenstown Lakes District Council (QLDC) Variation to the Proposed District Plan.

### **Introduction**

Our submission focuses on aspects of the Variation that relate to Rautaki Hanganga o Aotearoa, the New Zealand Infrastructure Strategy, specifically Recommendations 23 and 20 (see Appendix 1). The key points of our submission are summarised below:

*Affordable housing is an important contributor to wellbeing.*

New Zealand has among the least affordable housing globally. Queenstown is an extreme outlier, even within the New Zealand market, with a house price to income ratio almost

double that of the New Zealand average. Well-designed intensification policies can improve affordability along with numerous other amenity and environmental benefits. Consequently, we agree with the intent of the policy.

*Our evaluation suggests that the policy will not achieve its intent to increase housing supply.* To successfully enable higher density housing development there are some optimal characteristics of upzoned land. Specifically, available packages of upzoned land need to be of a suitable size (minimising any package amalgamation expenses); the upzoned land needs to have a relatively low existing capitalisation, and the height restrictions must allow for increased density. Our evaluation suggests that the proposed Variation does not meet these requirements and consequently is unlikely to result in any meaningful intensification over the next ten years. We estimate the policy will result in an additional 31-149 houses over 10 years, which will have no impact on housing availability or affordability.

This potential sub-optimal result is because the proposed upzoning, which should enable higher density housing, is incremental, includes only minor changes to height restrictions, covers land that is already highly capitalised, comprises a high proportion of small lot sizes, and includes a provision to increase minimum lot sizes. These factors combined will likely make the proposed upzoned areas unattractive for the development that is required to increase housing density.

*It may do the opposite.*

Policy documentation suggests that this Variation will be matched with greater limitations on greenfield development. If this occurs, the overall strategic direction is likely to result in higher house prices and more pressure on funding infrastructure for a more dispersed urban form.

*Land use regulations and zoning are almost certainly impacting housing affordability.*

Queenstown has the second highest price to cost margins in the country. By one estimate, this means that house prices are more than three times higher than construction costs; the difference between urban and rural land prices has increased by almost three times over the last decade. Rising infrastructure costs may account for around 39% of the rising land values, with stringent land use regulations accounting for the remaining 61%.

*Housing policy locks in climate outcomes.*

Insufficient housing supply in Queenstown may be displacing urban growth to places like Cromwell, contributing to increasing transport emissions. Outcomes 2, 3 and 4 of the Queenstown Climate and Biodiversity Plan 22-25 will likely require a significantly higher density urban form than is enabled by this Variation. The Biodiversity Plan is targeting a 44% reduction in greenhouse gas emissions by 2030 and states that transport is the largest source of emissions. With this in mind, QLDC needs to consider what degree of urban intensification will be sufficient to materially reduce the per-unit emissions associated with housing and transport choices available to Queenstown district residents.

**To achieve the full benefits of intensification, we make three recommendations.**

- First, QLDC should look for opportunities to vastly upzone Queenstown, enabling increased housing density, to reduce house prices and concentrate development to better enable funding of infrastructure. Consistent with the New Zealand Infrastructure Strategy, we recommend a 'least regrets' approach that enables housing supply sufficient for an urban Queenstown population size of two to three times its existing population.

- Second, the National Policy Statement for Urban Development (NPS-UD) could be implemented as if Queenstown was a Tier 1 city. The benefit-cost ratio (BCR) for full implementation of the NPS-UD for Queenstown is 4.3, meaning that for every dollar of investment, the social return is \$4.30. By comparison, the Queenstown NZTA program BCR for recommended projects is 2.3. Better use of existing infrastructure is a key principle of the New Zealand Infrastructure Strategy and intensifying urban development around areas already serviced by infrastructure generates far better economic value and significant environmental benefits.
- Third, intensification policies should be designed in a way that avoids an incremental approach to supply in highly capitalised areas, since these are likely to be ineffective in attracting development of higher density housing.

**This submission is structured in four parts.** Section one provides our evaluation of the intensification policy. Section 2 discusses the impact of land use regulations in Queenstown; Section 3 discusses the role of intensification in improving urban outcomes; and Section 4 sets out three recommendations for consideration.

We note that this submission has been developed in an expedited timeframe; and further, that we do not gain an advantage in trade competition through this submission.

## SECTION 1: Evaluating the Urban Intensification Variation

To analyse the impact of the proposed plan change, and alternative approaches, we use two economic models. The first model, developed by PwC for assessing the National Policy Statement for Urban Development (NPS-UD) and the Medium Density Residential Standards (MDRS), uses real-world data to estimate how zoning changes flow through to changes in housing construction in upzoned areas. The second model, a standard urban economics model (the Alonso-Muth-Mills model), is used to assess how different intensification policies affect housing supply and prices in the city as a whole. We use the first model to quantify the likely impacts of QLDC's proposed Variation, and the second model to understand whether an alternative approach would deliver better outcomes.

### Modelling Approach 1: PwC model

#### *Study area and proposed upzoning*

From the maps provided, we estimate that approximately 881 properties will be upzoned from low density zoning to medium density zoning (and an additional 341 in Wanaka). We estimate a further 181 properties will be upzoned to high density zoning. We have focused our analysis on the impact of the policy on Queenstown properties, and consider it could be reasonably extrapolated to the properties in Wanaka with some adjustments.

The Queenstown properties are concentrated in two SA2<sup>1</sup> areas, Queenstown East and Frankton Arm. Using 2021 CoreLogic data, we determine that the average building area in Frankton Arm SA2 is 126m<sup>2</sup>. The average building area in Queenstown East SA2 is 154m<sup>2</sup>. Both areas have relatively small property sizes. The mean property size in Frankton Arm and Queenstown East is 328m<sup>2</sup> and 373m<sup>2</sup> respectively. The 90<sup>th</sup> percentile is 923m<sup>2</sup> and 907m<sup>2</sup>.

#### *Upzoning under the urban intensification variation*

We understand that the medium density zoning allows for between 8m-11m of height. In comparison, the existing low-density zone allows for heights up to 8m. We infer from this that the policy change is up to 3m of additional height, notwithstanding a number of other technical details. High density zoning allows for a maximum of 16.5m of height (up from 11m), with various additional restrictions that limit this in certain situations.

#### *We distinguish between enabled capacity and feasible capacity*

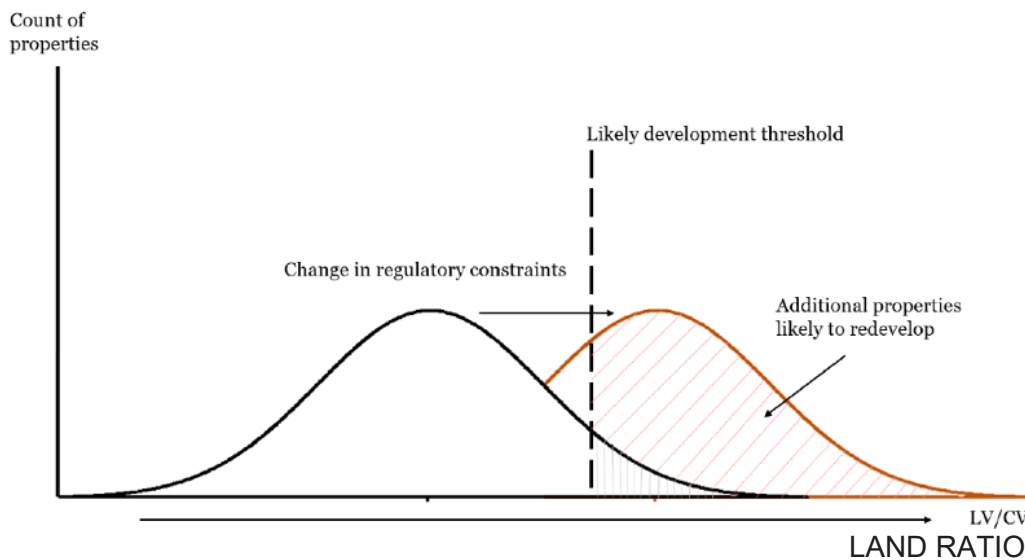
In evaluating the likely impact of the policy change, we differentiate between enabled capacity in planning provisions and feasible capacity, since not all housing development opportunities are of equal value to a homeowner or developer. The existing level of capitalisation is one way to differentiate between enabled and feasible capacity under an upzoning policy and the land ratio is a good measure of capitalisation. The land ratio equals land value divided by capital value. Properties with a low land ratio are highly capitalised and less likely to be redeveloped. In contrast, properties with a high land ratio (approaching 1), are more likely to be redeveloped. Zoning policy, including regulated maximum height, can impact on likely development by increasing the land value, thereby increasing the land ratio. This is shown in Figure 1 .

---

<sup>1</sup> SA2 is an output geography used by Statistics New Zealand that provides aggregations of population data. According to Statistics New Zealand, the SA2 geography aims to reflect communities that interact together socially and economically. In populated areas, SA2s generally contain similar sized populations.

**Figure 1:** Removing regulatory constraints increases development feasibility

*Stylised impact of upzoning on land ratios and development feasibility*



**Source:** PwC, 2020, *Cost benefit analysis for a National Policy Statement on Urban Development*

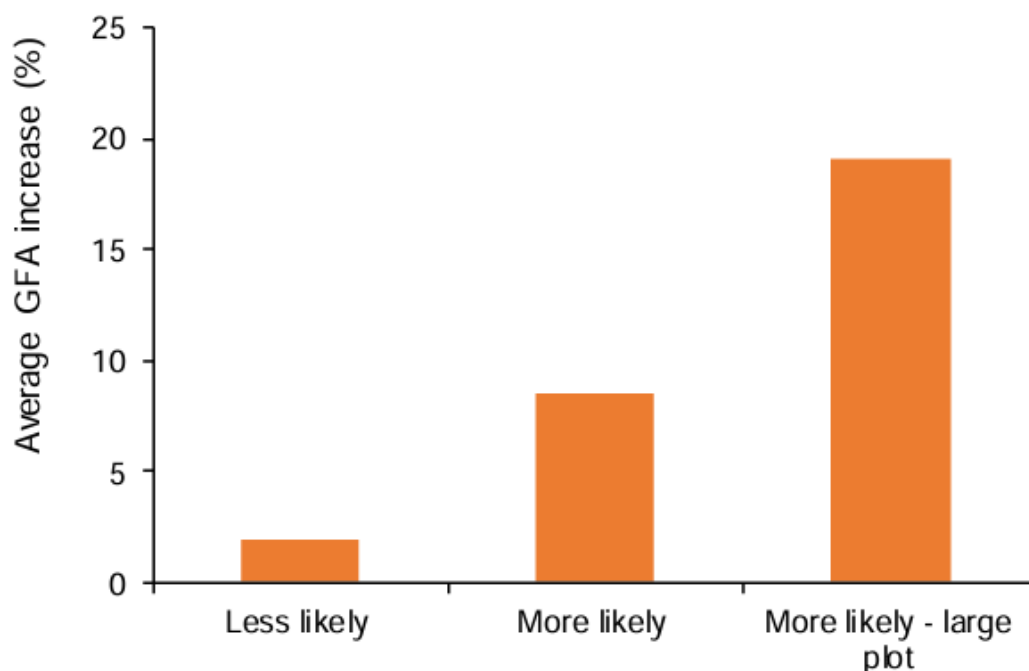
*The likelihood of development is related to the land ratio*

Using actual development between 2012 and 2018, PwC estimate the likelihood of development as a function of the land ratio. The PwC model uses Gross Floor Area (GFA) as an indicator of increased density. The model shows that properties in Auckland with similar land values to those in the Queenstown study area<sup>2</sup> and with a low land ratio (labelled “less likely” and defined as a land ratio below 85%) experienced a 1.9% GFA increase between 2012-2018. This compares with properties that had a high land ratio (greater than 85%) where GFA increased by approximately 9% - almost 5 times higher. Furthermore, large plots with a high land ratio experienced a 19% increase in GFA - 10 times higher.

These results make intuitive sense. When the relative price of a land parcel rises, it is a signal that people want to live and work in that location. Land with low capitalisation (and a high land ratio) is easier to develop because most of the value is in the land. Put another way, it is costly to demolish an asset and start again or build on top of existing structures.

Loosening stringent regulations in high demand areas, which is the intent of the Urban Intensification Variation, will increase land values and therefore the land ratio. This in turn increases the probability of redevelopment, enabling more supply. The extent to which the land ratio rises depends on the extent of upzoning relative to the existing capitalisation, as shown in Figure 2 below.

<sup>2</sup> Around the Mount Eden train stations, the land value per square metre was \$3,399. In comparison, the 50<sup>th</sup> percentile property in Queenstown East residential is \$2,881 and Frankton Arm residential is \$1,533.

**Figure 2:** The probability of development increases with the land ratio*Likelihood of development by land ratio, 2012-2018*

*Source: PwC, 2020, Cost benefit analysis for a National Policy Statement on Urban Development*

#### *Queenstown East and Frankton Arm have low land ratios*

According to Corelogic data, the average land ratio of properties in the SA2 district impacted by the upzoning (Frankton Arm and Queenstown East) in 2021 is 54% and 57% respectively. This is below the average in Queenstown for residential sections (62%) and significantly below the average for Tier 1 cities (72%). This implies that Queenstown's urban land is highly capitalised relative to Tier 1 cities and that the areas targeted for upzoning are highly capitalised relative to the Queenstown average. Put another way, this data suggests that properties in the study area are likely using most of the existing enabled capacity of the area and their existing capitalisation makes them less attractive for investment in further housing development.

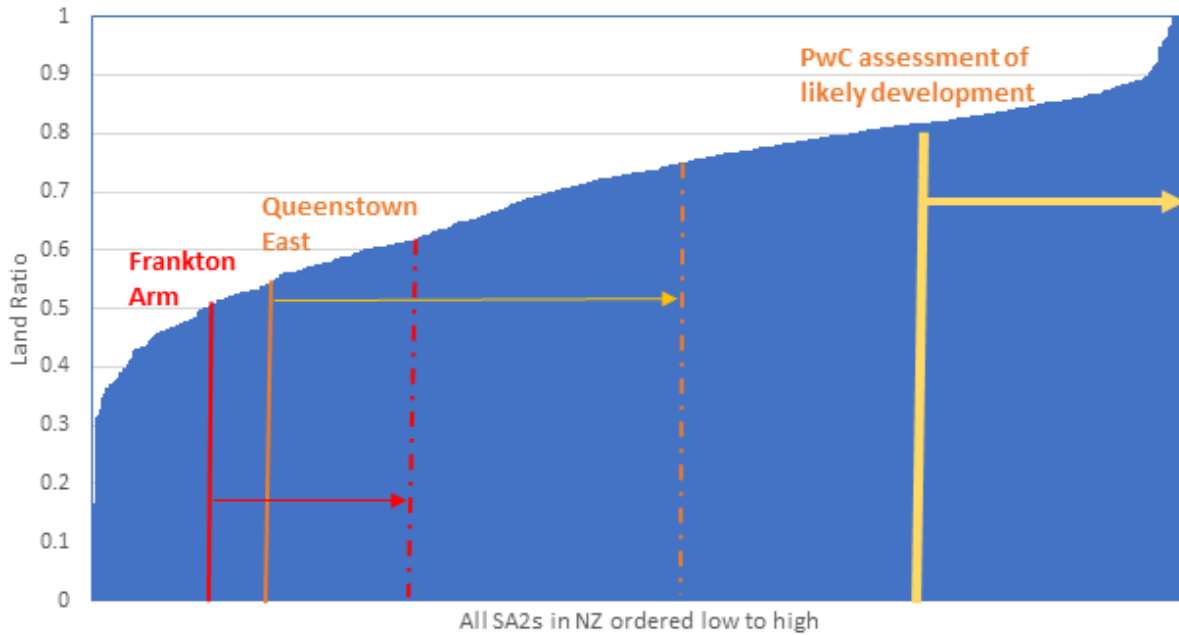
#### *The policy has a small impact on land ratios*

As described previously, the intensification policy provides for additional height allowances which are expected to increase land values in the study area. PwC<sup>3</sup> estimate that for each additional metre of height allowed for, land values rise by \$64 per metre. Accounting for this increase, we find that the land ratio increases to 63% (from 54%) for Frankton Arm and 76% (from 57%) for Queenstown East. This is illustrated in Figure 3 below, where the land ratio for each SA2 moves to the right. The analysis suggests that, on average, the intensification policy does not improve the land ratios to the point of making further development likely; and where it does occur, is more likely to be taken up in Queenstown East than Frankton Arm.

<sup>3</sup> PwC, 2019, Leverage the CRL for a Compact City.

**Figure 3:** Areas tagged for intensification in Queenstown have low land ratios

Land ratio for residential SA2 zones in Tier 1 cities, ordered low to high



Source: Te Waihanga Analysis

*We expect the policy will likely result in 31 additional houses in Queenstown*

Since there is evidence that land use regulations in Queenstown are stringent, we expect the change in zoning will have some effect (if regulations were not stringent, then upzoning efforts would be unlikely to influence development). However, the policy applies to only 992 properties in Queenstown (and an additional 341 in Wanaka) with relatively low land ratios. The policy only allows for a very modest increase in height, which is reflected by modest increases in land values and the land ratio, for the average property. To estimate the impact on supply, we use the ‘likelihood to develop’ metric calculated by PwC. Our preferred estimate is 1.9% of GFA (equivalent to 3.17% over a ten-year period), because the study areas have low land ratios (even after the policy change), with relatively small land parcels (we estimate that roughly 97 percent of all properties impacted are small).

Multiplying the empirical figure of achieved GFA (for small lots with low land ratios) by the number of properties impacted nets an additional 31 housing units over a ten-year period; or 3.1 additional houses per year. To derive an upper bound, we use an achieved GFA of 15% over a ten year period (consistent with properties that have high land ratios in Tier 1 cities). This could occur if our estimates of land ratios are biased downwards, or if newly constructed houses are materially smaller than existing averages. Under these more optimistic parameters, the impact could be an additional 149 houses. Under both scenarios, the impacts on intensification efforts are negligible (see Table 1 below).

To give some context to this, over the past 6 years QLDC has issued 1263 building consents annually<sup>4</sup>. The modelled increase in housing of between 3.1 and 14.9 houses per annum represents between 0.25 and 1.2% of the average number of consents issued.

<sup>4</sup> <https://www.stats.govt.nz/information-releases/building-consents-issued-june-2023/>

**Table 1:** The impact on housing supply is small

	Estimated number of properties	Average property size (SA2)	Average building floor area (SA2)	Total floor area (SA2)	Preferred		Optimistic	
					Increase in GFA	Additional housing units	Increase in GFA	Additional housing units
Frankton Arm	811	328	126	126,000	3.1%	26	15%	122
Queenstown East	181	373	154	27,874	3.1%	5	15%	27
Total						<b>31</b>		<b>149</b>
Wanaka	341	Analysis not undertaken						

*Source: Te Waihanga Analysis*

### *The impact could be lower*

Realised housing capacity from this zoning change will be impacted by other planning rules not considered in the analysis above. Most significantly, these could include:

#### A smaller policy impact than our assessment:

Our policy impact has been limited to increases in height allowances. In reality, some of the policies introduced may make it more difficult to achieve enabled capacity. This could occur through either additional provisions that increase construction costs or other planning overlays that take precedence over zoning capacity. A possible example of the former is the inclusion of new outdoor living space and outlook space standards in the Variation. An example of the latter is heritage designations which exist in the areas targeted for upzoning (likely exempting them from the policy change). There may be other overlays that have greater stringency than zoning policy that we are not aware of.

#### Land amalgamation requirements that raise costs of intensification:

To achieve the enabled capacity, land amalgamation will be necessary. According to rules for minimum lot areas (27.6 and 27.6.1), the minimum lot size for high density zoning is 450m<sup>2</sup>. This compares to a minimum lot size of 250m<sup>2</sup> for medium density and 300m<sup>2</sup> for lower density. Changing the zoning allowance for properties in the medium density zone will not be sufficient for many property owners to realise enabled capacity. Instead, it will be necessary to amalgamate land, which can carry significant time and cost. Property owners may decide to do this if the return is sufficient. But we question whether the marginal changes proposed will provide a meaningful incentive to undertake such activities. Evidence from Fredrickson & Fergusson (2016) shows that land amalgamation is difficult and costly and that land owners need to be adequately incentivised to do so<sup>5</sup>.

#### Changes in minimum lot sizes that amplify the need for land amalgamation:

The land amalgamation problem will likely be magnified by a decision to change the rules for minimum lot sizes as part of the Variation. According to the Urban Intensification Factsheet<sup>6</sup> the minimum lot dimensions for the high density residential zone will increase from 450m<sup>2</sup> to 600m<sup>2</sup>. This could be material to the overall policy impact because 75% of properties in Queenstown East (where the change to high density is concentrated) have a property size of less than 647m<sup>2</sup> (Corelogic, 2021). This means that for perhaps two thirds of all properties, land amalgamation would be necessary to realise enabled capacity. The bar for realising the enabled capacity of these properties is therefore significantly higher.

<sup>5</sup> Fredrickson & Fergusson, 2016, Residential property amalgamation and aggregation in Auckland, 2004-2014.

<sup>6</sup> [qldc-urban-intensification-variation-a4-factsheet-aug23-web.pdf](#)



## Modelling approach 2: The Alonso Muth Mills Model

A proposed outcome of the Urban Intensification Variation is to reduce the need for greenfield expansion. If the Urban Intensification Variation is matched with a reduction in greenfield capacity of more than between 31-149 houses, it remains possible that overall, enabled supply of housing could be reduced, accelerating prices and further deteriorating housing affordability in Queenstown, relative to the counterfactual.

*A narrowly focussed high density regime leads to a more spread-out population and higher house prices*

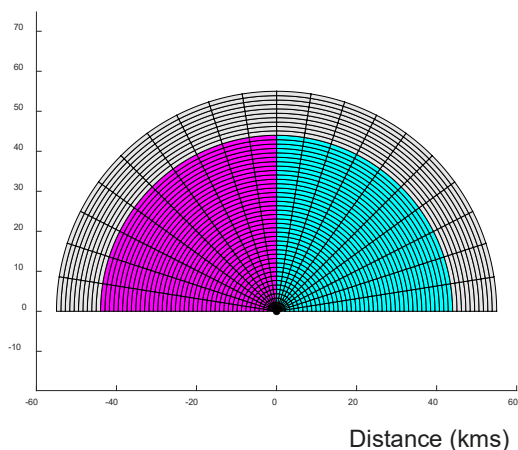
We have used the Alonso Muth Mills model to understand the possible impact of stringent land use regulations both in the vertical (intensification policy) and horizontal (greenfield and urban limit policy) direction on house prices in Queenstown.

We developed 2 scenarios to be loosely consistent with some of the observable characteristics of the existing regulatory environment for Queenstown. The first is a regulatory scenario that allows for considerably more intensification potential but with a soft limit on greenfield expansion. The second, is a regulatory scenario that makes intensification difficult, with only a small proportion of the city zoned for intensification and also allows for a soft limit on greenfield expansion. These scenarios are shown in Figure 4 below.

**Figure 4:** We model two scenarios using a measure of Floor Area Ratio (FAR)<sup>7</sup> limit, where FAR=6 is high density housing and FAR=1 is lower density housing

### Scenario A: Widespread high-density

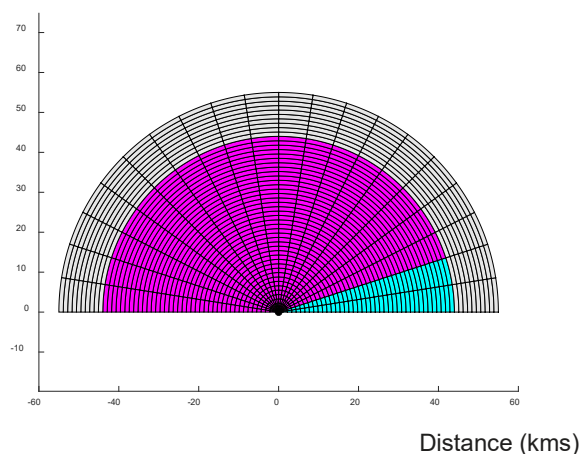
50% of residential land has a FAR limit of 6 (cyan), and 50% has an FAR limit of 1 (magenta). Beyond 40km of the CBD, land is zoned to a FAR of 0.15



Source: Greenaway-McGrevy, University of Auckland

### Scenario B: Narrow high-density regime

10% of residential land has a FAR limit of 6 (cyan), and 90% has an FAR limit of 1 (magenta). Beyond 40km of the CBD, land is zoned to a FAR of 0.15

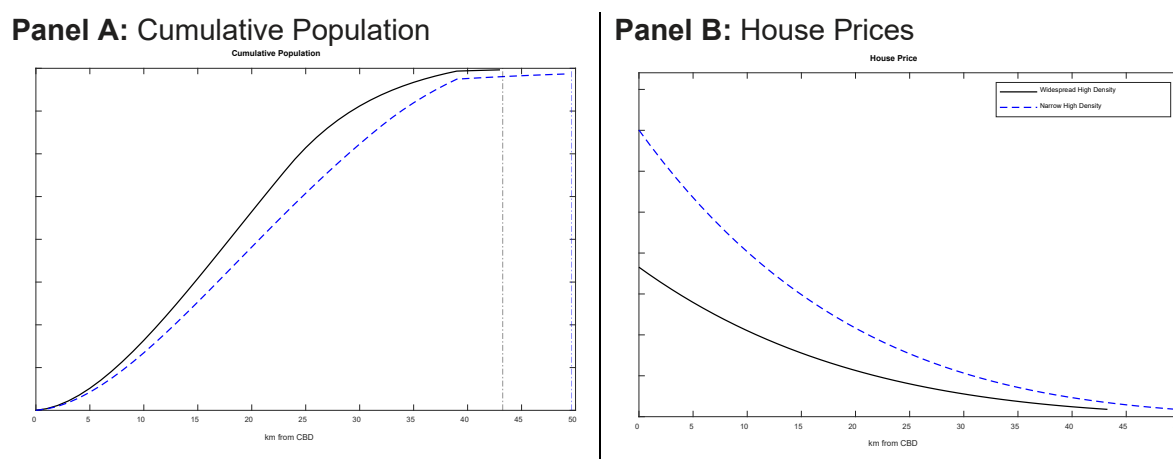


<sup>7</sup> A floor to area ratio is the measurement of a building's floor area in relation to the size of the lot that the building is located on. It is derived by dividing the total area of the building by the total area of the lot (building area / lot area). A FAR limit therefore summarises the impact of building height limits, boundary setbacks, and maximum site coverage ratios on development potential.

Scenario B, the *narrow high-density* regime results in an urban form that is more spread out, with lower density at each point in the city (see, Panel A of Figure 5 below). The total area of the urban footprint is broadly similar for each scenario because both have similar urban limit policies. House prices are dramatically different across the two scenarios however (see Panel B, Figure 5 below). House prices are roughly twice as high under scenario B at each location from the city centre. This demonstrates that if a policymaker cares about avoiding greenfield development and increasing housing affordability, it is important to allow for ample intensification.

We conclude from this analysis that if the proposed Queenstown Intensification Variation results in a negligible amount of new housing. This result is because the Variation targets areas that are already highly developed and/or because minimum lot size changes result in land amalgamation requirements. Furthermore, if policymakers have greater leeway to tighten urban expansion (as stated in the Variation policy documentation), then house prices are likely to rise, perhaps significantly.

**Figure 5:** The choice of intensification policy has a substantial impact on house prices



**Source:** Dr Ryan Greenaway-McGrevy, University of Auckland

## SECTION 2: Land use regulations are likely binding in Queenstown

### House prices in Queenstown are substantially above the cost of construction.

The price to cost ratio is one approach to evaluate the extent to which construction costs explain house prices. In a competitive land market, prices rise in line with construction costs but they cannot rise significantly above construction costs because this encourages greater development until price is equal to marginal cost (and a price to cost margin of 1).

In markets where land use is constrained, prices will usually move significantly above the cost of construction. There is evidence of this in Queenstown. Lees (2019) shows that Queenstown is second only to Auckland in terms of the price to cost margins.<sup>8</sup> Lees estimates that prices were more than three times higher than construction costs. A report<sup>9</sup> by the Ministry of Housing and Urban Development on price to cost ratios found lower levels

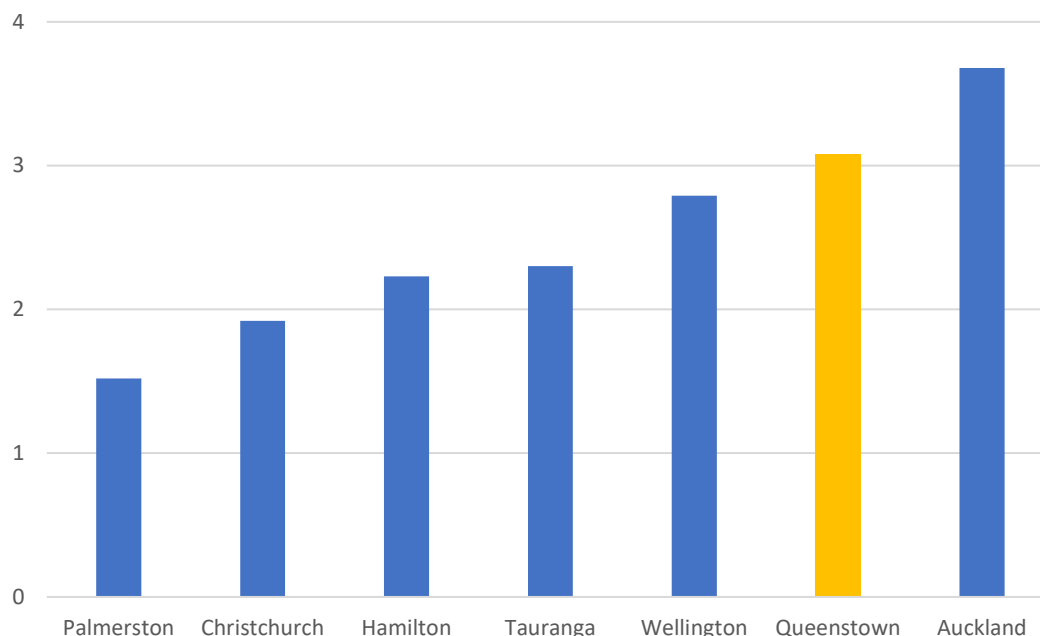
<sup>8</sup> Lees, K. (2019). Quantifying the costs of land use regulation: Evidence from New Zealand. *New Zealand Economic Papers*, 53(3), 245-269.

<sup>9</sup> MHUD, NPS-UD price efficiency indicators technical report

but similar to Lees (2018), showed Queenstown was second only to Auckland and equal with Tauranga (see figure 6 below).

**Figure 6:** Queenstown’s price to cost margin ratios are among the highest in the country

*Price to Cost Margins for New Zealand Cities*



Source: Lees, 2018

### **Increasing infrastructure costs is a factor but regulatory stringency is more important in Queenstown**

While a high price to cost margin is suggestive that zoning policy is likely stringent to the supply of housing, it is not definitive. A price to cost margin could conceivably result from either rising infrastructure costs or increasing zoning stringency, or both. Te Waihanga has published analytical work to distinguish between the two drivers in various New Zealand cities<sup>10</sup>, including Queenstown.

One indication of regulatory stringency as a house price driver is the difference between rural and urban land values at the urban/rural boundary. Over the last ten years, the difference between land values on either side of the rural/urban line in Queenstown have increased by \$284 per square metre. This means that the price of a 500m<sup>2</sup> section on the Queenstown urban boundary has increased by \$142,000. This is illustrated in figure 7 below, which shows the per square metre land values on either side of the urban limit in Queenstown.

Over this time, costs to subdivide a section and service it with infrastructure have risen from an average of approximately \$95,000 per household equivalent to around \$150,000.<sup>11</sup> This analysis suggests that rising infrastructure costs may account for around 39% of the rising land values. Stringent land use regulations could be playing a significant role in the remaining 61%. Stringent land use regulations on the boundary of a city will tend to push up

<sup>10</sup> New Zealand Infrastructure Commission. (2023). Urban land prices – a progress report. Wellington: New Zealand Infrastructure Commission / Te Waihanga.

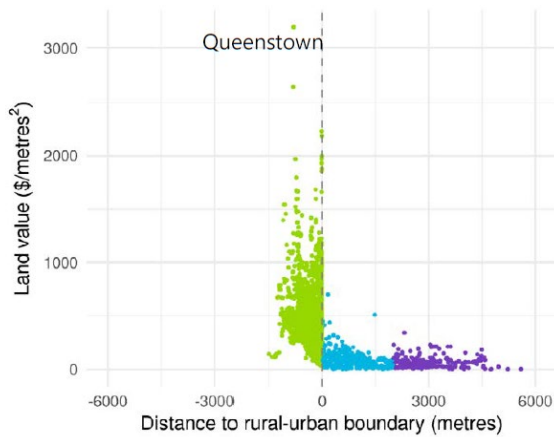
<sup>11</sup> New Zealand Infrastructure Commission. (2023). Urban land prices – a progress report. Wellington: New Zealand Infrastructure Commission / Te Waihanga.

demand for housing within the city limits, thereby increasing the likelihood of regulatory stringency of intra-urban land use regulations. Such increasing intra-urban regulatory stringency is further evidence of the impact of land use regulations on housing affordability.

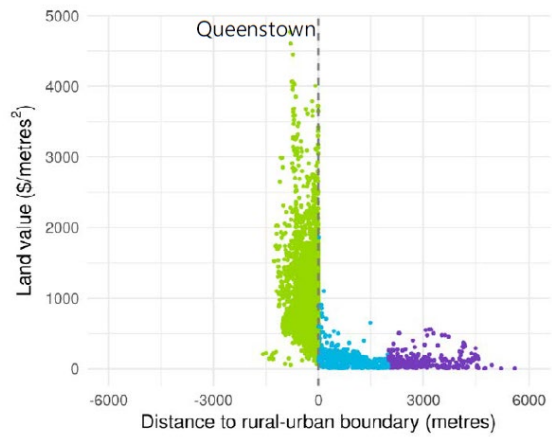
**Figure 7:** The urban/rural land differentials in Queenstown suggest increasing regulatory stringency

*Urban/rural land differentials in Queenstown by distance to the urban boundary*

**Panel A: 2010**



**Panel B: 2021**



**Source:** New Zealand Infrastructure Commission. (2023). *Urban land prices – a progress report*. Wellington: New Zealand Infrastructure Commission / Te Waihanga.

## SECTION 3: Intensification in Queenstown can improve the urban environment.

We agree with the intent of the Variation policy to enable greater intensification and increase housing supply. Intensification has many benefits, including a greater variety of housing near public services and infrastructure, reducing the need for greenfield expansion into sensitive landscapes and over land with other uses, and creating an urban form that will reduce the need to travel thereby lowering emissions. Intensification also improves housing affordability. In Auckland, upzoning enabled a 4% increase in dwellings over five years that led to a decline in rents of 22-35% for three-bedroom dwellings and 14-22% for two-bedroom dwellings<sup>12</sup>.

### **Intensification also makes infrastructure more affordable.**

Intensification often enables lower cost infrastructure solutions. For instance, MRCagney, Beca, and Covec (2016) show that the infrastructure costs for urban intensification development (\$46,162 - \$91,771) is lower on average than for greenfields development (\$94,245 - \$171,164)<sup>13</sup>. Analysis from one water provider shows that when renewals are necessary, the difference between investing for a low and high population growth scenario is negligible, with significant economies of scale. For instance, supporting 70% more enabled housing in one area required only a 30% increase in infrastructure costs<sup>14</sup>. A recent report by the New South Wales Productivity Commission estimated that development in more peripheral locations of a city could cost up to \$75,000 more per household compared to development close to the city centre<sup>15</sup>. The report warns that long-term urban sprawl will lead to higher taxes and rates, increased debt and poorer quality of life.

### **Queenstown's natural environment is distinct, but its land markets are not**

Queenstown has a landscape that is unrivalled in New Zealand but its land markets are not unique. Like every other city in New Zealand, average land values (per square metre) decline as a function of distance from the city centre (see figure 8 below). Queenstown is smaller geographically than some other cities in New Zealand, but in terms of land prices and geographic size, it shares some characteristics with other New Zealand cities, most notably with Tauranga.

Land prices are ultimately a signal to developers to economise on land and build density<sup>16</sup>. Consequently, zoning capacity should follow land prices per square metre. Economic modelling using the Alonso-Muth-Mills model shows that if zoning is not stringent on market participants, intensification will occur in close proximity to a high concentration of jobs. In a competitive land market, 77% of density should occur in 25% of the urban land closest to the city centre<sup>17</sup>. Where this density is not achieved, because of stringent zoning policy, rising house prices within the urban footprint place more pressure on greenfield locations and a city sprawls more than would otherwise be the case<sup>18</sup>.

---

<sup>12</sup> Greenaway-McGrevy and Phillips (2023), The impact of upzoning on housing construction in Auckland.

<sup>13</sup> MRCagney, Beca & Covec. Cost benefit analysis of policy options for a National Policy Statement on Urban Development Capacity. Job Number: NZ2052, Prepared for Ministry for the Environment. Auckland: 2016

<sup>14</sup> See <https://tewaihanga.govt.nz/media/xxwls2vs/submission-on-pc-78.pdf>

<sup>15</sup> NSW Productivity Commission, 2023, 'Building more homes where infrastructure costs less'

<sup>16</sup> Brueckner, J. K. (2011). *Lectures on urban economics*. MIT Press.

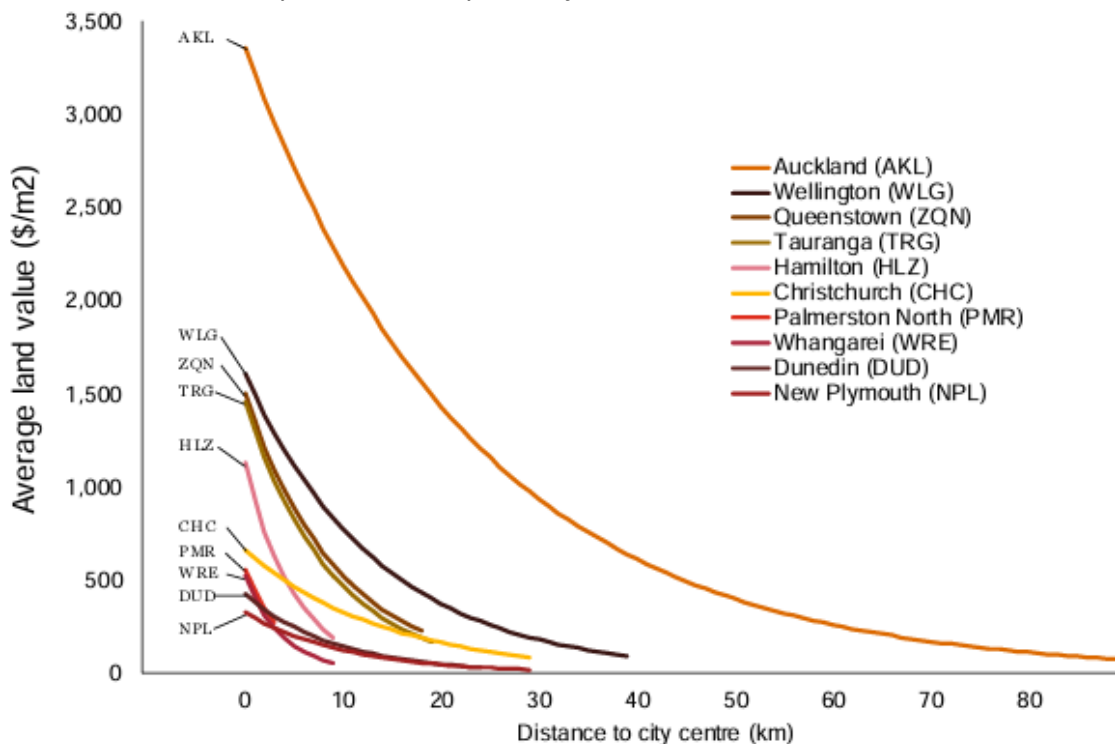
<sup>17</sup> Modelling of the Alonso Muth Mills model of urban development as used in: New Zealand Infrastructure Commission. (2022). The decline of housing supply in New Zealand: Why it happened and how to reverse it. Wellington: New Zealand Infrastructure Commission / Te Waihanga. Te Waihanga Research Insights series.

<sup>18</sup> Reserve Bank of Australia, 2011, Urban Structure and housing prices: some evidence from Australian cities

Such lack of concentrated densification and increased sprawl creates challenges for infrastructure because high fixed costs are spread over smaller funding bases. If stringent zoning policy (preventing intensification) is matched with stringent urban limit policy, then high house prices will be met with low rates of construction, widening price to cost margins and deteriorating housing affordability. Queenstown’s growth shares some of these characteristics, with a high proportion of low-density greenfield development, such as through the proposed Ladies Mile development and existing developments in Hanley’s Farm and Jacks Point.

**Figure 8:** Land values fall by distance to the city centre, for all cities

*Standardised land value by distance to city centre for New Zealand cities*



Source: PwC, 2020, Cost benefit analysis for a National Policy Statement on Urban Development

## SECTION 4: Recommendations

**Recommendation 1:** *Vastly increase enabled housing supply and plan for growth that is two to three times the existing size of Queenstown.*

Queenstown needs more housing supply and considerably higher density to address the current housing and infrastructure shortfall. Queenstown has experienced the highest annual growth rate of any Tier 1 or Tier 2 city in New Zealand between 1996 and 2020, with an average annual population growth rate of 5.3% (see table 2 below); fluctuating between 1.4% and 9%. The growth rate is more than twice the next city (Tauranga) over this period. Looking to 2048, the Statistics New Zealand medium projection for Queenstown is an average of 1.7% per annum; the next highest tier 2 city is Whangarei at 0.9%.

Queenstown will almost certainly grow faster than 1.7% per annum in the short term, since this is less than a third of the actual growth rate between 1996 and 2020. There would be

benefit in taking a least regrets approach and planning for vastly more growth to accommodate up to three times the existing urban Queenstown population. The New Zealand Infrastructure Strategy recommends providing enough capacity for a doubling or tripling in the urban Queenstown population.

*Relationship to the New Zealand Infrastructure Strategy*

<b>Recommendation 20c</b>	<p><b>Improve the efficiency and outcomes of infrastructure through spatial planning</b></p> <p>c. Provide for cities to double or triple in population and provide alternative scenarios for the spatial distribution of growth, rather than providing only for a single growth scenario.</p>
---------------------------	--

**Recommendation 2: Implement the National Policy Statement - Urban Development (NPS-UD) as for a full Tier 1 city.**

The Cost Benefit Analysis for the NPS-UD included Queenstown as a Tier 1 city. For Queenstown, implementing the NPS-UD as a Tier 1 city returned a cost-benefit ratio (BCR) of 4.3<sup>19</sup>, meaning that for every dollar of investment, the social return is \$4.30. For comparison, the Queenstown NZTA program BCR for recommended projects was 2.3. The programme BCR for the full programme in Queenstown was 1.5<sup>20</sup>. This suggests that intensification policies may provide almost twice the return of proposed transport investments.

We understand that Queenstown was included in the original evaluation of the NPS-UD. This seemed appropriate given the growth rate of Queenstown (see table 2 and figure 9 below), the stringency of existing land use policy in the area, the highest house prices of any Tier 1 city, and the observation that Queenstown is on the growth frontier of New Zealand cities (see figure 10 below).

**Table 2:** Queenstown has a higher growth rate than any tier 1 city

*Distribution of annual population growth rates between 1996 and 2020*

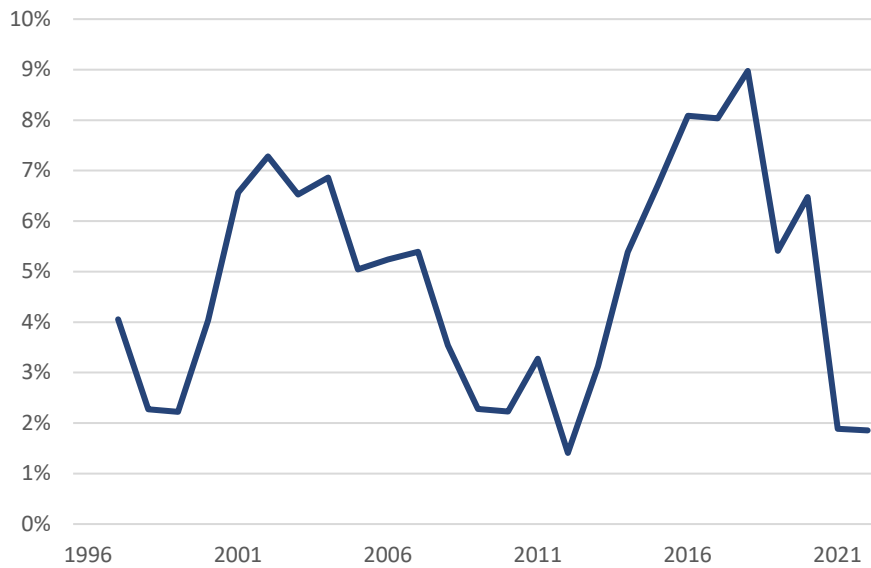
	Auckland	Hamilton	Tauranga	Wellington	Christchurch	<b>Queenstown</b>
0th percentile	1.1%	0.5%	0.6%	0.3%	-2.2%	<b>1.4%</b>
25th percentile	1.3%	1.5%	1.7%	0.7%	1.2%	<b>3.2%</b>
50th percentile	1.8%	1.8%	2.6%	1.0%	1.4%	<b>5.3%</b>
75th percentile	2.1%	2.4%	3.0%	1.4%	1.9%	<b>6.6%</b>
100th percentile	3.3%	3.3%	4.4%	1.8%	3.0%	<b>9.0%</b>

**Source:** Statistics New Zealand

<sup>19</sup> <https://environment.govt.nz/assets/Publications/Files/NPS-UD-CBA-final.pdf>

<sup>20</sup> [www.qldc.govt.nz/media/dombeggs/5ab-queenstown-business-case-summary-report.pdf](http://www.qldc.govt.nz/media/dombeggs/5ab-queenstown-business-case-summary-report.pdf)

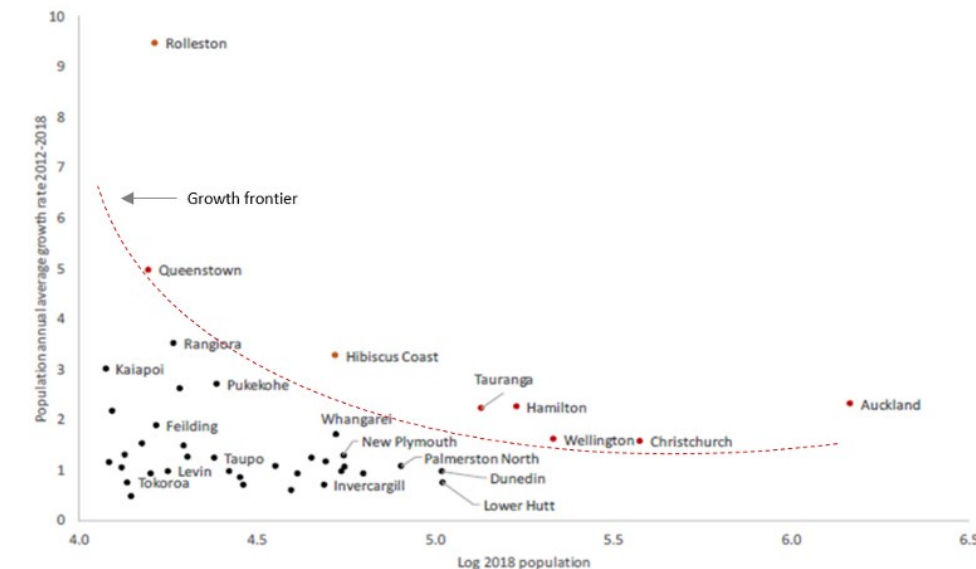
**Figure 9:** Queenstown population growth rate, 1996-2022



**Source:** Statistics New Zealand

**Figure 10:** Queenstown is on New Zealand's "growth frontier"

New Zealand cities over 10,000 inhabitants by growth rate and 2018 population



**Source:** PwC, 2020, Cost benefit analysis for a National Policy Statement on Urban Development

*Relationship to the New Zealand Infrastructure Strategy*

<p><b>Recommendation 23a-c</b></p>	<p><b>Increase housing development opportunities in areas with good access to infrastructure.</b></p> <p>a. Accelerating the implementation of the National Policy Statement on Urban Development and monitoring compliance, including requirements to upzone around rapid-transit and employment centres.</p>
------------------------------------	--



	<p>b. Enabling greater urban development, including requirements for minimum levels of mixed-use zoning and upzoning.</p> <p>c. Prioritising provision of human necessities, such as housing, over preservation of subjective preferences (e.g. heritage, character and amenity).</p>
--	---

**Recommendation 3:** *Avoid an incremental approach to intensification.*

To achieve intensification in brownfield areas that are already highly capitalised (i.e., with low land ratios), upzoning efforts need to raise the land ratio substantially. This can occur by implementing stringent land use policy that forces house prices higher still, but at the cost of housing affordability. Alternatively, land values need to increase through meaningful intensification efforts. The existing incremental approach to intensification is likely to result in a very slow path to urban intensification, if it happens at all.

*Relationship to the New Zealand Infrastructure Strategy*

<p><b>Recommendation 23d</b></p>	<p><b>Increase housing development opportunities in areas with good access to infrastructure.</b></p> <p>d. Using national direction to set binding targets for increased housing and business capacity commensurate with future growth expectations, guided by land prices in high-demand areas.</p>
----------------------------------	---

Thank you for the opportunity to make our submission.

Yours sincerely

Geoff Cooper

General Manager, Strategy  
Infrastructure Commission

## Appendix 1: New Zealand Infrastructure Strategy Recommendations 20 and 23

<p><b>20 Improve the efficiency and outcomes of infrastructure through spatial planning</b></p> <hr/> <p> BUP, RAN</p> <hr/> <p> 2022-2026</p>	<p>Resource management reforms should include requirements for regional spatial plans that:</p> <ol style="list-style-type: none"> <li>Provide clear direction to district plans and funding plans.</li> <li>Include mechanisms for participation by relevant central government infrastructure suppliers and Māori.</li> <li>Provide for cities to double or triple in population and provide alternative scenarios for the spatial distribution of growth, rather than providing only for a single growth scenario.</li> <li>Identify future infrastructure requirements, including future transport networks and other major infrastructure.</li> </ol>
<p><b>23 Increase housing development opportunities in areas with good access to infrastructure</b></p> <hr/> <p> BUP, RAN</p> <hr/> <p> 2022-2031</p>	<p>Improve development opportunities in areas already well served by infrastructure by:</p> <ol style="list-style-type: none"> <li>Accelerating the implementation of the National Policy Statement on Urban Development and monitoring compliance, including requirements to upzone around rapid-transit and employment centres.</li> <li>Enabling greater urban development, including requirements for minimum levels of mixed-use zoning and upzoning.</li> <li>Prioritising provision of human necessities, such as housing, over preservation of subjective preferences (e.g. heritage, character and amenity).</li> <li>Using national direction to set binding targets for increased housing and business capacity commensurate with future growth expectations, guided by land prices in high-demand areas.</li> </ol>