

# Plan Enabled Capacity in Hawea and Albert Town

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# Plan Enabled Capacity in Hawea and Albert Town

Prepared for

Queenstown Lakes District Council

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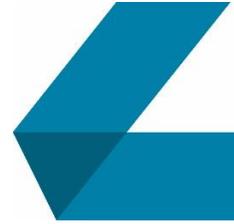
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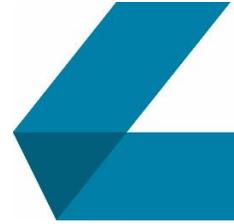


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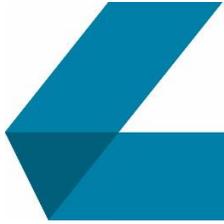
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# 1 Introduction

## 1.1 Context

Queenstown Lakes District Council (QLDC) have commissioned M.E to undertake analysis to estimate the residential dwelling capacity within the Hawea and Albert Town Township Zones under different planning provision scenarios. The objective is to measure the baseline capacity under the current Proposed District Plan (PDP) Decisions Version<sup>1</sup> planning provisions (unchanged from the Operative District Plan by stages 1 and 2 of the District Plan rolling review) and identify the change in capacity from a change in zoning within the township areas. The core purpose of the work is to contribute to Council's evidence base and section 32 evaluation as part of stage 3 plan changes in these areas.

Capacity is defined as the number of additional residential dwellings that could potentially be constructed under the planning provisions. It is a measure of plan-enabled capacity and does not take account of the commercial feasibility of construction or other non-planning factors that may affect the likelihood of construction.

This report summarises our approach to the analysis and provides the key outputs of estimated capacity. Capacity estimates are aggregated by development type (i.e. infill, redevelopment and greenfield) by location (i.e. Hawea vs. Albert Town), with parcel level estimates of capacity provided in Appendix 1.

## 1.2 Spatial Definition of Study Area

The capacity analysis has been undertaken in Hawea and Albert Town. The PDP Township Zone in each area forms the spatial parameters of the study. At the request of QLDC, a small area of the PDP Large Lot Residential A Zone adjacent to Hawea has also been included. This is the Sentinel Park subdivision where lot sizes have already been established at below the 2,000m<sup>2</sup> zone minimum site size. The areas of Local Shopping Centre Zone within these areas have been excluded.

The spatial extent of the analysis is shown in Figure 1-1 and Figure 1-2. These figures also show the areas that were analysed as existing urban areas, and those that were considered greenfield urban expansion within the zone extent. The difference in analytical approach is outlined in Section 2.2.

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<sup>1</sup> Ratified by Council on the 7<sup>th</sup> March 2019.

Figure 1-1: Existing Urban and Greenfield Areas in Hawea

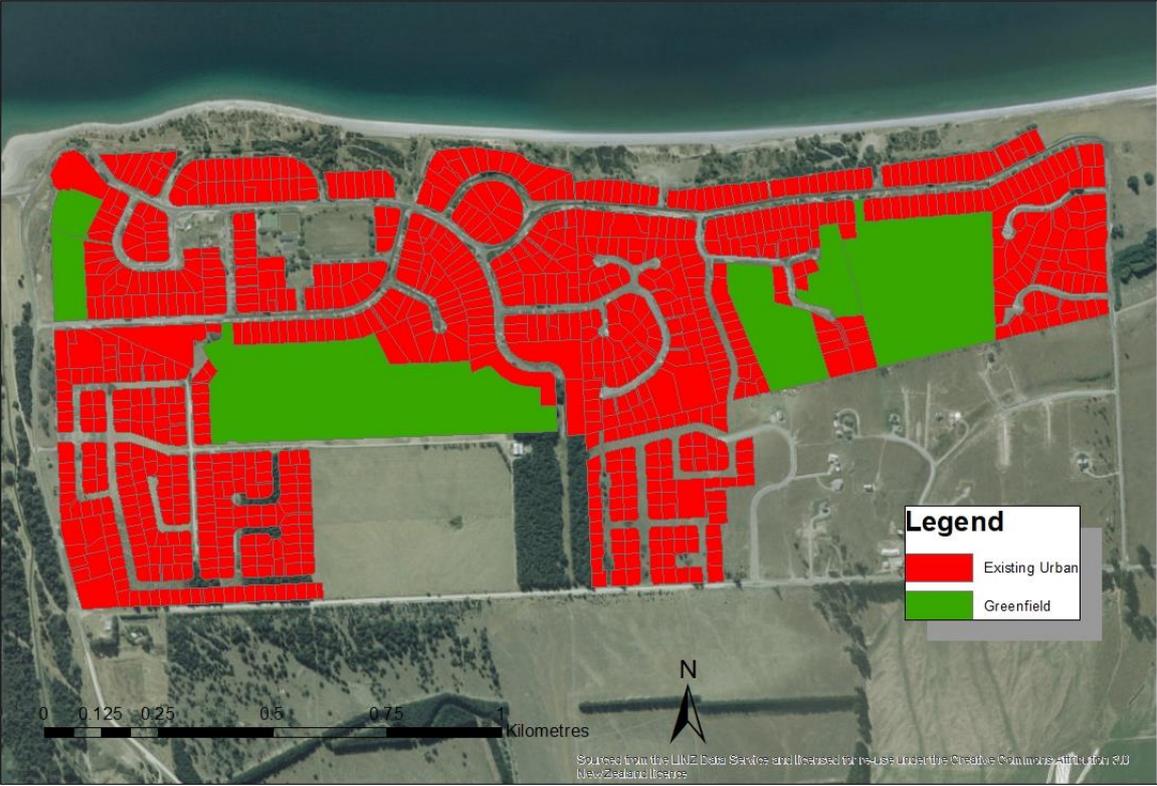
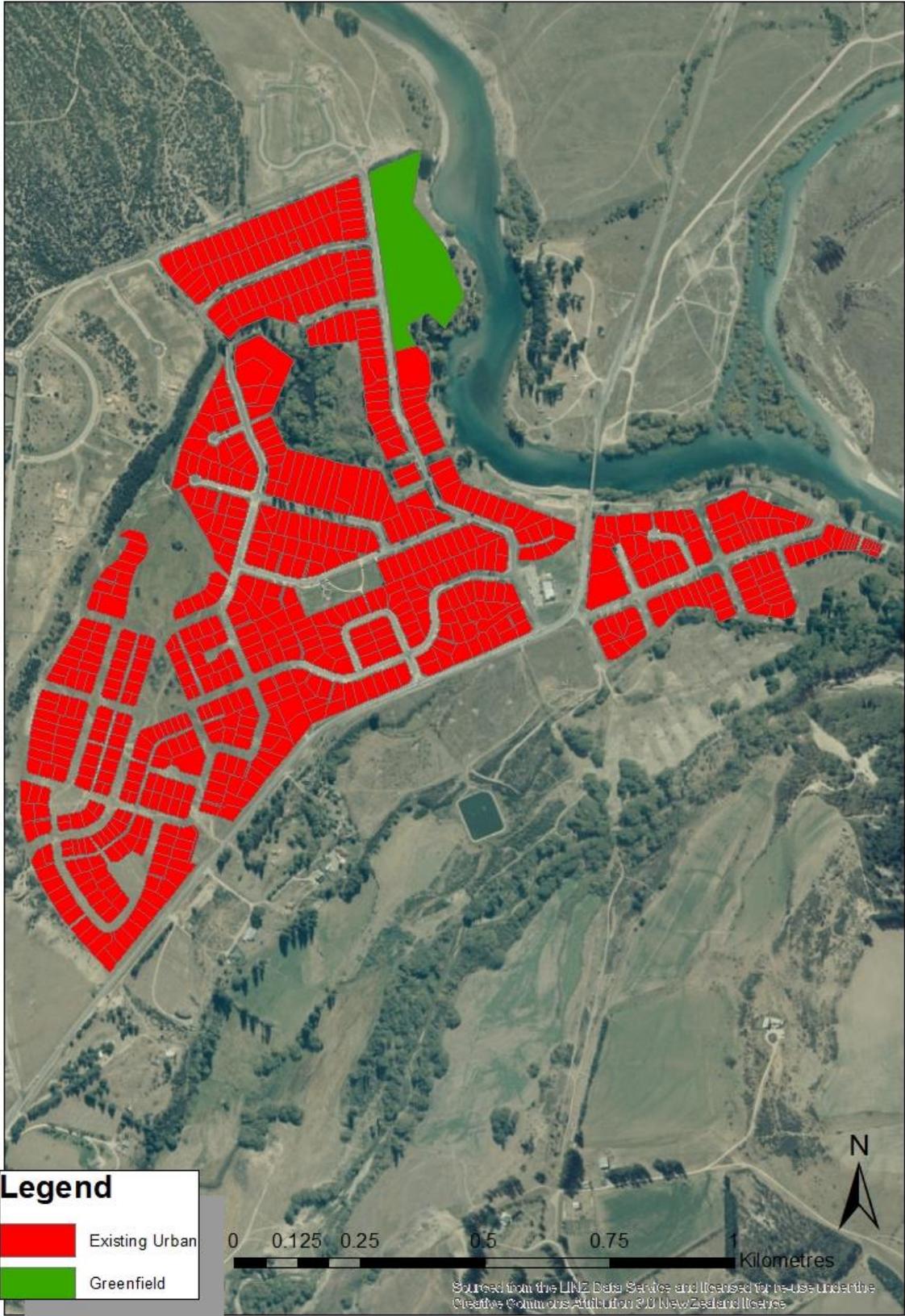
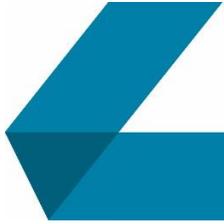


Figure 1-2: Existing Urban and Greenfield Areas in Albert Town





## 1.3 Modelled Planning Scenarios

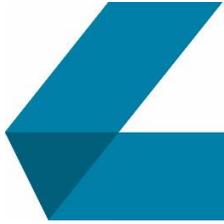
The analysis measures the capacity under three different planning scenarios. It measures the capacity under the PDP Decisions Version provisions to form a baseline estimate of capacity. It then measures the capacity under the proposed changes to those planning provisions to form two other estimates of capacity. The approach therefore identifies how much the capacity would change as a result of changes to the planning provisions.

The modelling planning scenarios are set out as follows:

- The **baseline scenario** applies the existing PDP Township Zone. This has an 800m<sup>2</sup> minimum site size per dwelling. As above, the modelling in Hawea also includes a small area of PDP Large Lot Residential A Zone. This analysis applies the 2,000m<sup>2</sup> minimum site size provision within the area when assessing the ability to establish any further lots than those already established. However, it assumes that the lots that are already established (which are at a higher density than the 2,000m<sup>2</sup> minimum size) can accommodate one dwelling each.
- The **upzoning scenario (LDSRZ 450m<sup>2</sup>)** applies the PDP Low Density Suburban Residential Zone across the extent of the study area. This has a 450m<sup>2</sup> minimum site size per dwelling.
- The **upzoning gentle density scenario (LDSRZ 300m<sup>2</sup>)** also applies the PDP Low Density Suburban Residential Zone across the extent of the study area. However, it instead applies a higher density of 300m<sup>2</sup> per dwelling as included within the Plan<sup>2</sup>.

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<sup>2</sup> This can occur through a land use consent development process where dwellings are firstly constructed on a site at up to this density, and then the site is subsequently subdivided.



## 2 Approach

### 2.1 Development Paths Modelled

Capacity has been estimated for three different development paths under each of the planning scenarios. These include infill development and redevelopment within the existing urban area, and greenfield urban expansion. These are defined as follows:

- **Infill development** includes the construction of additional dwellings within the existing urban area without the demolition or removal of any existing dwelling stock. This includes construction on vacant sites as well as construction on vacant areas of sites that already contain a dwelling. For example, it includes scenarios where part of a yard area of an existing dwelling site is subdivided off with a further dwelling able to be constructed on the undeveloped yard area. As such, all additional dwellings are additive capacity to the existing dwelling stock.
- **Redevelopment** includes the demolition of existing dwellings on a site, within the existing urban area, followed by the redevelopment of a site to a higher intensity (in terms of the number of dwellings). This measure of development, as reported in this report, also includes development of vacant sites. The intent is to enable a comparison of this upper range of capacity to the infill capacity where development of vacant sites are also included in this measure.

The total number of dwellings able to be constructed on a site does not form the measure of additional capacity (to the existing dwelling stock). This is because it requires the demolition of any existing dwellings. As such, this analysis has taken account of any existing dwellings and provided these capacity estimates as net additional dwelling capacity<sup>3</sup>.

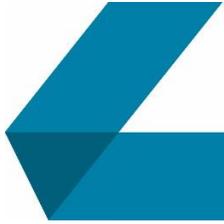
Redevelopment capacity is not additive to infill development. Where possible, a site can either have an additional dwelling(s) constructed on a vacant space within the site, or it can be redeveloped. As such, an appropriate interpretation is such that the infill capacity forms the lower range of the capacity estimate, with the redevelopment capacity forming the upper range<sup>4</sup>.

- **Greenfield development** includes the construction of dwellings in new areas of previously undeveloped larger areas – i.e. the expansion of the existing urban area. For the purposes of this analysis, this includes the potential future development of larger currently un-subdivided land

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<sup>3</sup> For example, if a site that contains one existing dwelling is redeveloped to include three dwellings (i.e. where the existing dwelling is demolished and replaced with three new dwellings), then the redevelopment capacity is recorded in this analysis as a net additional two dwellings. In cases where the site is already developed to a higher intensity than the planning provisions, the redevelopment capacity is recorded as zero.

<sup>4</sup> The propensity of each type of development to occur is a function of the growth and prices within each area, as well as the costs associated with the different options. Generally, infill development is an easier option as it does not involve the purchase and demolition costs of existing dwellings. Redevelopment typically occurs in areas of high demand where it is more feasible to incur these costs and generate a higher return through a greater yield (and higher prices) of the added dwellings. It is also more likely for a parcel containing a smaller or lower value (e.g. older, poorer condition) dwelling to be redeveloped than a parcel containing a more recently constructed dwelling.



parcels within the extent of existing Township Zone/study area. Newly urbanising areas that are already subdivided into smaller lots are instead included within the existing urban area capacity.

Within Hawea, there are several greenfield areas that are already largely surrounded by existing urbanised areas. These are still classified as greenfield areas as they still represent larger parcels that would require the development of subdivisions where smaller lot sizes are established, together with roads, reserves, etc<sup>5</sup>.

## 2.2 GIS and Modelling Approach

The approach involved a combination of GIS geometric analysis and spreadsheet-based modelling. Within the existing urban area, this has been undertaken at the property parcel level. The following sub-sections set out the key stages of our approach.

### 2.2.1 Infill Capacity

#### **Establish Extent and Location of Existing Dwelling Stock**

The initial stages of the infill capacity were to identify the extent and location of the existing dwelling stock. This analysis was undertaken at a parcel level to determine which parcels were already developed. Importantly, it identified the location of dwellings within each parcel to enable the subsequent geometric modelling to determine the potential for further dwellings to be placed within already developed parcels.

The most current, available aerial photographs were imported from Google Earth into the GIS mapping system and aligned with digital LINZ<sup>6</sup> parcel boundaries. This is important given the rate of development and urban expansion occurring within these areas. Aerial photograph imagery was dated the 7 June 2019 for the eastern part of Hawea, and the 8 January 2019 for the western portion of the township. Imagery from 12 January 2019 was available for Albert Town. Dwellings within the aerial photographs were digitised into polygons of the building footprint area. An example is shown in Figure 2-1 below where new building footprints are shown in relation to earlier aerial imagery.

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<sup>5</sup> In some cases, there are larger existing lots that could be subdivided into a small number of smaller lots, but that would not require significant areas of the lots to be set aside for accessways and infrastructure requirements (reserves). These are predominantly larger lots on the edges of, or within, existing urban areas that are already largely served by roads. As such, they have been instead captured within the existing urban area capacity (infill and redevelopment). These are shown in Figure 1-1 and Figure 1-2.

<sup>6</sup> Land Information New Zealand.

Figure 2-1: Example Output of Building Footprint Digitisation

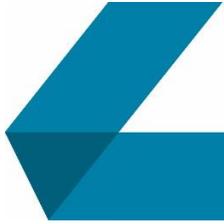


### Identify Vacant/Undeveloped Areas within Property Parcels

A geometric analysis approach within ArcMap and FME was then undertaken to identify the vacant/undeveloped areas within each property parcel. This process used the LINZ parcel outlines together with the building footprints digitised by M.E.

The process is identical to that undertaken for the QLDC Housing Development Capacity Assessment 2017 (HDCA) initial modelling stages. The following are the key stages for identifying these areas:

- Buffer building footprints by 1m.
- Apply a bounding box around the buffered building footprint.
- Clip out the above area from the parcel.
- Triangulate the remaining area.
- Circumscribe the triangles.
- Dissolve the top three circles.
- Clip this area to the property parcel boundary (excluding the removed buffered building footprint bounding box area).



Further technical information on this approach is set out in the HDCA report prepared by M.E for QLDC (published November 2018).<sup>7</sup>

### **Test Vacant Areas for Planning Provision Requirements and Driveway Access**

The vacant areas identified in the above process were then tested to determine whether they could accommodate a dwelling while applying the relevant building standards within the zone planning provisions (by scenario). These include the application of building setback areas and the provision of outdoor living space (as required by each set of zoning provisions).

An additional test was also applied to determine whether the parcel could accommodate a building platform area within the net site area (i.e. net of setback areas). This is not a requirement *per se* of the Plan, however, in our experience it introduces an appropriate level of conservatism into the modelling to ensure that capacity is not identified on sites that are unlikely to be able to contain a reasonable building platform area.

A further test was then undertaken on rear sites to determine whether driveway access could be achieved between the developable area and road around any existing dwellings. This test assumed that driveway access required a minimum 3m wide access strip between the parcel edge and any existing dwellings.

These geometric processes were also undertaken within ArcMap and FME.

### **Application of Minimum Site Sizes Planning Provisions**

Further calculations were then undertaken on the developable areas established in the above process within a spreadsheet-based model. The minimum lot sizes for each scenario (as outlined in Section 1.3) were then applied to determine the number of potential additional dwellings that could be constructed under the plan.

This process also involved adjustments to the total developable area to ensure that the minimum site size requirements were also met for any existing dwellings on each site. The number of existing dwellings on each site were estimated from the QLDC Rating Database<sup>8</sup>. This was important because the building footprints determined from the aerial photographs do not identify the number of dwellings, where one building footprint may contain multiple dwellings on a parcel (e.g. a duplex pair).

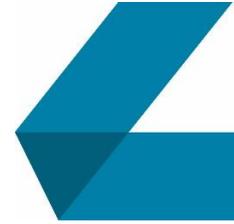
It is possible that a minor number of the dwellings that were identified through M.E's building footprints analysis have not yet reached final completion stage (code of compliance). This means they may be still under construction and therefore still represent additional dwelling stock capacity. Furthermore, additional dwellings may have been constructed on a small number of sites since the date of the available aerial imagery. However, these differences are consistent across all three scenarios and therefore are unlikely to have any significant impact on the net differences in capacity identified between the scenarios.

### **Dwelling Capacity Outputs**

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<sup>7</sup> <https://www.qldc.govt.nz/assets/Uploads/Housing-Capacity-Assessment-2017.pdf>

<sup>8</sup> A snapshot of the Rating Database extracted in April 2019 was used. A more recent snapshot was not available within the time available for this study. There were a number of newly created parcels that were not included within the Rating Database due to further lot formation and dwelling construction since this time. It was assumed that these lots each contained one dwelling.



The final outputs of the infill modelling are a count of the number of additional dwellings that can potentially be constructed, as enabled by the Plan, on each property parcel. There is a separate count for each of the three scenarios. These have been aggregated up, within each scenario, to provide totals for each area and development path.

## 2.2.2 Redevelopment Capacity

Spreadsheet-based modelling was undertaken to calculate the plan-enabled redevelopment capacity of each property parcel.

The total potential dwelling yield for each property parcel was calculated by applying the minimum lot sizes per dwelling for each planning scenario to the total parcel area size. This provided a count of the total number of dwellings that could potentially be constructed on each parcel under each scenario.

As above, the QLDC Rating Database was then used to estimate the number of existing dwellings within each property parcel. These were subtracted from the total potential yields to provide a net additional dwelling count for each parcel under each scenario. These were also aggregated up, within each scenario, to provide totals for each area and development path.

While commercial feasibility has not been considered in this assessment, it should be noted that redevelopment tends to become more feasible as the age of existing buildings increase (and depreciation of the dwelling over time means that the value of improvements decreases relative to the value of the land). A large proportion of the Township Zone in Albert Town (i.e. the Riverside subdivision) has developed recently meaning that there are limited prospects for redevelopment to occur, particularly in the short to medium term and possibly into the long-term. Any redevelopment in Albert town in the short to medium-term will be more likely to occur in the 'old' areas of Albert Town. The same applies to Hawea, where there are a mix of 'original' and new areas of development.

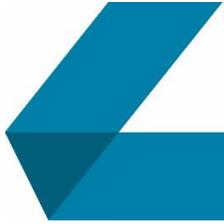
## 2.2.3 Greenfield Capacity

The greenfield areas within Hawea and Albert Town were identified through visual examination of the LINZ parcel areas, zoning and aerial imagery of each area. These are identified in Section 1.2.

The total land area of each greenfield area was then multiplied by a factor of 0.7 to provide an estimate of net land area of the final saleable parcel lot areas. Application of this factor assumes that an estimated 30% of the area is allocated to roads, reserves, road edges, accessways, and other non-saleable parcelled area.

The remaining area was then divided by the minimum lot size requirements under each planning scenario to produce a total estimate of the total number of dwellings able to be developed under the plan within each greenfield area.

The total capacities were then calculated as net additional dwellings (to give a measure of capacity additional to what currently exists) through subtracting any existing dwellings on these larger sites (e.g. any older dwellings such as farmhouses that already exist on the site). It is assumed that the greenfield development of these larger sites will involve the removal of any existing dwellings to enable the most efficient configuration of the final subdivision area.



## 3 Capacity Results

The following sub-sections summarise the modelled results of plan enabled capacity within the different locations and zone types. Each section reports the total plan enabled capacity under each scenario, as well as the net and percentage changes in capacity relative to the baseline level of capacity (and between the LDSRZ 450m<sup>2</sup> and 300m<sup>2</sup> scenarios). Maps of full parcel level results are contained in Appendix 1.

The modelled outputs of capacity under each of the planning scenarios are contained in Table 3-1. It shows the estimated net number of additional dwellings that can be constructed in each area under each set of planning provisions. The first block of columns shows the infill capacity under each scenario, with the last block of columns showing the net redevelopment capacity (with greenfield equivalent under both infill and redevelopment). The capacity estimates are shown for each of Hawea and Albert Town and are disaggregated by existing PDP zone and development type (existing urban area vs. greenfield). Table 3-1 can be considered together with Table 3-2 when examining the differences in plan enabled capacity between the three scenarios.

It should be noted that the capacity results reflect the maximum potential residential yields within these zoned areas. There are a minor number of residentially zoned parcels that currently have non-residential uses, and there are likely to be a small number of additional parcels in the future that also have non-residential uses. However, this does not materially affect the results of the study as the results reflect the maximum potential residential yields and do not make any calculation of the likely residential take-up of the capacity. Rather, it shows the maximum residential yields that could potentially occur<sup>9</sup>.

### 3.1 Baseline Scenario Capacity

Table 3-1 shows that there is a total baseline capacity of between 599 additional dwellings (infill) and 660 additional dwellings (redevelopment). A large majority (86%) of this capacity occurs within Hawea where it is spread relatively evenly across the existing urban and greenfield areas (although the existing urban share increases under the redevelopment capacity).

Under the baseline scenario, a large portion of the capacity within the existing urban area occurs on vacant sites. Overall, it accounts for around two-thirds (65%) of the baseline infill existing urban area capacity. The share is higher (69%) within Hawea (where there are more vacant parcels), and lower (43%) within Albert Town (where there are fewer vacant parcels left). The vacant parcel share of existing urban redevelopment capacity is lower overall at 54% as capacity becomes enabled through redevelopment on a greater number of developed sites.

The existing potential additional capacity equates to around 44% to 49% of the existing dwelling stock (estimated 1,351 dwellings) across the two areas. Within Hawea, the additional capacity equates to 74% to 80% of the existing dwelling stock, compared to 13% to 15% in Albert Town. However, this is due to the larger share of the greenfield capacity that occurs within Hawea. Within the existing urban area, the



additional capacity within Hawea amounts to between 32% and 39% of the existing urban dwelling stock, and in Albert Town, between 8% and 9%.

Table 3-1: Modelled Plan Enabled Capacity by Planning Scenario, 2019

LOCATION	TYPE	CURRENT PDP ZONE	INFILL CAPACITY			REDEVELOPMENT CAPACITY		
			Baseline Scenario	LDSRZ (450m2)	LDSRZ (300m2)	Baseline Scenario	LDSRZ (450m2)	LDSRZ (300m2)
Hawea	Existing Urban	Township	210	470	881	259	903	1,893
		Large Lot Residential A	54	91	152	54	105	204
	Greenfield	Township	252	456	687	252	456	687
<b>TOTAL HAWEA</b>			<b>516</b>	<b>1,017</b>	<b>1,720</b>	<b>565</b>	<b>1,464</b>	<b>2,784</b>
Albert Town	Existing Urban	Township	49	146	281	61	412	1,092
	Greenfield	Township	34	61	93	34	61	93
<b>TOTAL ALBERT TOWN</b>			<b>83</b>	<b>207</b>	<b>374</b>	<b>95</b>	<b>473</b>	<b>1,185</b>
<b>TOTAL EXISTING URBAN</b>			<b>313</b>	<b>707</b>	<b>1,314</b>	<b>374</b>	<b>1,420</b>	<b>3,189</b>
<b>TOTAL GREENFIELD</b>			<b>286</b>	<b>517</b>	<b>780</b>	<b>286</b>	<b>517</b>	<b>780</b>
<b>TOTAL</b>			<b>599</b>	<b>1,224</b>	<b>2,094</b>	<b>660</b>	<b>1,937</b>	<b>3,969</b>

Source: M.E Plan Enabled Capacity Modelling.

## 3.2 Upzoning Scenario (LDSRZ 450m2) Capacity

Table 3-1 also contains the modelled capacity under each of the planning scenarios. These can be viewed in conjunction with the net and percentage changes in capacity, which are contained in Table 3-2. Within the infill and redevelopment blocks of the table, the first columns show the net changes in capacity when the LDSRZ 450m<sup>2</sup> (upzoning) scenario is applied relative to the baseline scenario. The second column within each block of the table shows the changes in capacity between the LDSRZ 300m<sup>2</sup> (upzoning gentle density) scenario and the baseline scenario. The final columns show the change in capacity between the LDSRZ 300m<sup>2</sup> and LDSRZ 450m<sup>2</sup> scenarios.

Under the LDSRZ 450m<sup>2</sup> (upzoning) scenario, the infill plan enabled capacity is double that of the baseline scenario, to reach a capacity of 1,224 additional dwellings. The largest net increase occurs in Hawea Township, with an increase of 501 (of the 625) additional dwellings. This is spread across the existing urban area and greenfield areas, with the largest relative increase within the Township Zone of the existing urban area (increasing by 124%).

Under the redevelopment development path, the LDSRZ 450m<sup>2</sup> planning scenario increases overall redevelopment capacity by 193% (+1,277 dwellings) relative to the baseline capacity scenario. This would bring the total additional capacity to between 1,224 and 1,937 additional dwellings. The capacity for additional dwellings enabled by this scenario, equates to between 91% and 143% of the existing dwelling stock. Within only the existing urban area, this amounts to between 53% and 106% of the existing dwelling stock.

Around half of the net increase in capacity from the baseline scenario occurs within the Hawea Township Zone, with a net increase of 644 dwellings. Larger relative increases of 575% occur within the existing urban

area of Albert Town, increasing potential redevelopment capacity by 351 dwellings. This represents a larger relative increase than other areas. However, as discussed above, redevelopment is less likely to occur within Albert Town, than Hawea, due to the younger age profile of dwellings, with a large share recently constructed.

Table 3-2: Net Change in Modelled Plan Enabled Capacity between Planning Scenarios, 2019

LOCATION	TYPE	CURRENT PDP ZONE	INFILL CAPACITY			REDEVELOPMENT CAPACITY		
			LDSRZ (450m2) to Baseline	LDSRZ (300m2) to Baseline	LDSRZ (300m2) to LDSRZ (450m2)	LDSRZ (450m2) to Baseline	LDSRZ (300m2) to Baseline	LDSRZ (300m2) to LDSRZ (450m2)
			NET CHANGE			NET CHANGE		
Hawea	Existing Urban	Township	260	671	411	644	1,634	990
		Large Lot Residential A	37	98	61	51	150	99
	Greenfield	Township	204	435	231	204	435	231
<b>TOTAL HAWEA</b>			<b>501</b>	<b>1,204</b>	<b>703</b>	<b>899</b>	<b>2,219</b>	<b>1,320</b>
Albert Town	Existing Urban	Township	97	232	135	351	1,031	680
	Greenfield	Township	27	59	32	27	59	32
<b>TOTAL ALBERT TOWN</b>			<b>124</b>	<b>291</b>	<b>167</b>	<b>378</b>	<b>1,090</b>	<b>712</b>
<b>TOTAL EXISTING URBAN</b>			<b>394</b>	<b>1,001</b>	<b>607</b>	<b>1,046</b>	<b>2,815</b>	<b>1,769</b>
<b>TOTAL GREENFIELD</b>			<b>231</b>	<b>494</b>	<b>263</b>	<b>231</b>	<b>494</b>	<b>263</b>
<b>TOTAL</b>			<b>625</b>	<b>1,495</b>	<b>870</b>	<b>1,277</b>	<b>3,309</b>	<b>2,032</b>
			PERCENTAGE CHANGE			PERCENTAGE CHANGE		
Hawea	Existing Urban	Township	124%	320%	87%	249%	631%	110%
		Large Lot Residential A	69%	181%	67%	94%	278%	94%
	Greenfield	Township	81%	173%	51%	81%	173%	51%
<b>TOTAL HAWEA</b>			<b>97%</b>	<b>233%</b>	<b>69%</b>	<b>159%</b>	<b>393%</b>	<b>90%</b>
Albert Town	Existing Urban	Township	198%	473%	92%	575%	1690%	165%
	Greenfield	Township	79%	174%	52%	79%	174%	52%
<b>TOTAL ALBERT TOWN</b>			<b>149%</b>	<b>351%</b>	<b>81%</b>	<b>398%</b>	<b>1147%</b>	<b>151%</b>
<b>TOTAL EXISTING URBAN</b>			<b>126%</b>	<b>320%</b>	<b>86%</b>	<b>280%</b>	<b>753%</b>	<b>125%</b>
<b>TOTAL GREENFIELD</b>			<b>81%</b>	<b>173%</b>	<b>51%</b>	<b>81%</b>	<b>173%</b>	<b>51%</b>
<b>TOTAL</b>			<b>104%</b>	<b>250%</b>	<b>71%</b>	<b>193%</b>	<b>501%</b>	<b>105%</b>

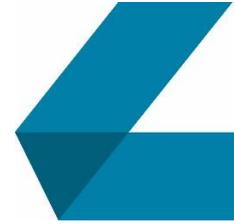
Source: M.E Plan Enabled Capacity Modelling.

### 3.3 Upzoning Gentle Density Scenario (LDSRZ 300m<sup>2</sup>) Capacity

#### Changes Relative to the Existing Baseline

The capacity enabled under the upzoning gentle density (LDSRZ 300m<sup>2</sup>) scenario is between two and a half to five times the capacity enabled under the baseline scenario. Under this scenario, there is an estimated modelled capacity for an additional 2,094 infill and greenfield dwellings relative to the existing dwelling stock. Under the redevelopment pathway, this increases to an additional 3,969 dwellings.

The net additional dwellings equate to between 155% and 294% of the existing dwelling stock. The increase relative to the existing dwelling stock is large as the minimum net site size is just over one-third of the



current provisions within the Township Zone areas and less than one-sixth of that in the Large Lot Residential A Zone area.

Under the alternative zoning scenarios, the share of capacity within the existing urban areas is larger than under the baseline scenario. This is because the smaller minimum site size has a larger relative effect in areas that are already parcelled out. It results in larger numbers of parcels becoming subdividable into two or more smaller lots. It also increases the total number of infill opportunities available as only small portions of the existing sites are required to be undeveloped to form a viable lot size.

The LDSRZ 300m<sup>2</sup> gentle density scenario results in a modelled increase of between 250% and 501% to the additional plan enabled capacity relative to the existing baseline capacity (see Table 3-2). The largest net changes to the baseline capacity occur within the existing urban Township Zone area of Hawea, where there is an estimated further 671 to 1,634 dwellings enabled. However, the relative increases within Albert Town are larger where the additional capacity (relative to the baseline capacity) is modelled to increase by between 351% and 1,147%. Most of this increase occurs as changes to redevelopment capacity within the existing urban area of Albert Town.

#### Changes to the Upzoning LDSRZ (450m<sup>2</sup>) Scenario

The final columns in each block of Table 3-2 show the change in plan enabled capacity between the two proposed planning scenarios (LDSRZ 450m<sup>2</sup> and LDSRZ 300m<sup>2</sup>). It shows that the plan enabled capacity increases by a further 71% to 105% between the LDSRZ 450m<sup>2</sup> and LDSRZ 300m<sup>2</sup> scenarios. This equates to a further net increase of 870 to 2,032 additional dwellings.

The largest further increases in capacity occur within the existing urban areas both under the infill and redevelopment scenarios. The largest share of change occurs within the Township Zone existing urban area of Hawea (+411 to +990 additional dwellings), followed by the existing urban area of Albert Town (+135 to +680 additional dwellings).

### 3.4 Comparison to HDCA

The baseline scenario in the current study has estimated relatively similar levels of capacity to the HDCA analysis undertaken during 2017/2018 within the Township Zone areas of Hawea and Albert Town. Table 3-3 contains the plan enabled capacity estimates from both studies, showing slightly lower capacity in the current study. The capacity on the PDP Large Lot Residential A Zone has been excluded from the table in the current study as this land area was not included within the HDCA.

Table 3-3: Plan Enabled Capacity: Comparison to HDCA

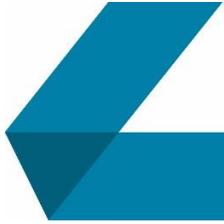
LOCATION	Current Study (2019)		HDCA (2017/2018)	
	Infill + Greenfield	Redevelopment + Greenfield	Infill + Greenfield	Redevelopment + Greenfield
Hawea	462	511	497	575
Albert Town	83	95	100	130

Source: M.E Plan Enabled Capacity Modelling (2019) and M.E HDCA (2018).



There are a few key differences between the two studies. These arise through changes which have occurred to the urban edge through time, as well as updated analysis using more detailed assessment within the current study. The key difference are:

- i. The current study has been updated to include more detailed infill analysis through the inclusion of building footprints (digitised by M.E), which were unavailable for these areas during the HDCA.
- ii. Urban growth since the HDCA has changed the classification of areas as existing urban vs. greenfield locations. Some areas previously classified as greenfield areas have since become urbanised and therefore instead included within the existing urban area. The key difference in the total yield (existing + potential new) capacity estimates is the subdivision of the larger parcels into smaller lots vs. the estimation of the number of lots produced from the larger land area (prior to the establishment of any subdivision plans).
- iii. The inclusion of several large parcels as greenfield capacity to increase conservatism into the capacity estimates, particularly where smaller lot sizes are assessed.



## 4 Concluding Remarks

The modelling has shown that the proposed zone change, to the Low Density Suburban Residential Zone, of the Township Zone areas of Hawea and Albert Town will significantly increase their residential dwelling capacity.

At the lower end of the range, under the lower density assumption of a 450m<sup>2</sup> minimum site size, it will increase the infill and greenfield (combined) capacity by 104%. If redevelopment potential is included, although a less likely occurrence, then the capacity would increase by 193%. This amounts to an additional 625 to 1,277 dwelling units.

At the upper end of the range, under the higher density assumption of a 300m<sup>2</sup> minimum site size, it will increase the infill and greenfield (combined) capacity by 250%. If redevelopment potential is included, although a less likely occurrence, then the capacity would increase by 501%. This amounts to an additional 1,495 to 3,309 dwelling units.

These increases are substantive when considered against the existing dwelling stock. The additional capacity enabled under the current baseline provisions equates to around 44% to 49% of the existing dwelling stock. This would increase to additional capacity of between one and a half to three times the existing dwelling stock.

The relative increases are large given the difference in the minimum site areas between the lower density of the Township Zone and the considerably higher density of the Low Density Suburban Residential Zone. While the greenfield capacity increases are broadly proportional to the minimum lot sizes, the number of existing urban lots that become subdividable substantially increases.

# Appendix 1 – Parcel Level Maps of Plan Enabled Capacity by Scenario

The following maps show the full modelled outputs of plan enabled capacity in Hawea and Albert Town under each of the planning scenarios. They are colour coded to show the net number of additional dwellings that are estimated to be enabled by the planning provisions on each parcel. Darker areas of colour shading show larger numbers of dwellings (typically greenfield areas), and lighter colours, smaller numbers of additional dwellings.

## Hawea – Plan Enabled 2019

Figure 0-1: Infill & Greenfield Capacity in Hawea: Baseline Scenario



Figure 0-2: Infill & Greenfield Capacity in Hawea: LDSRZ 450m<sup>2</sup> Scenario

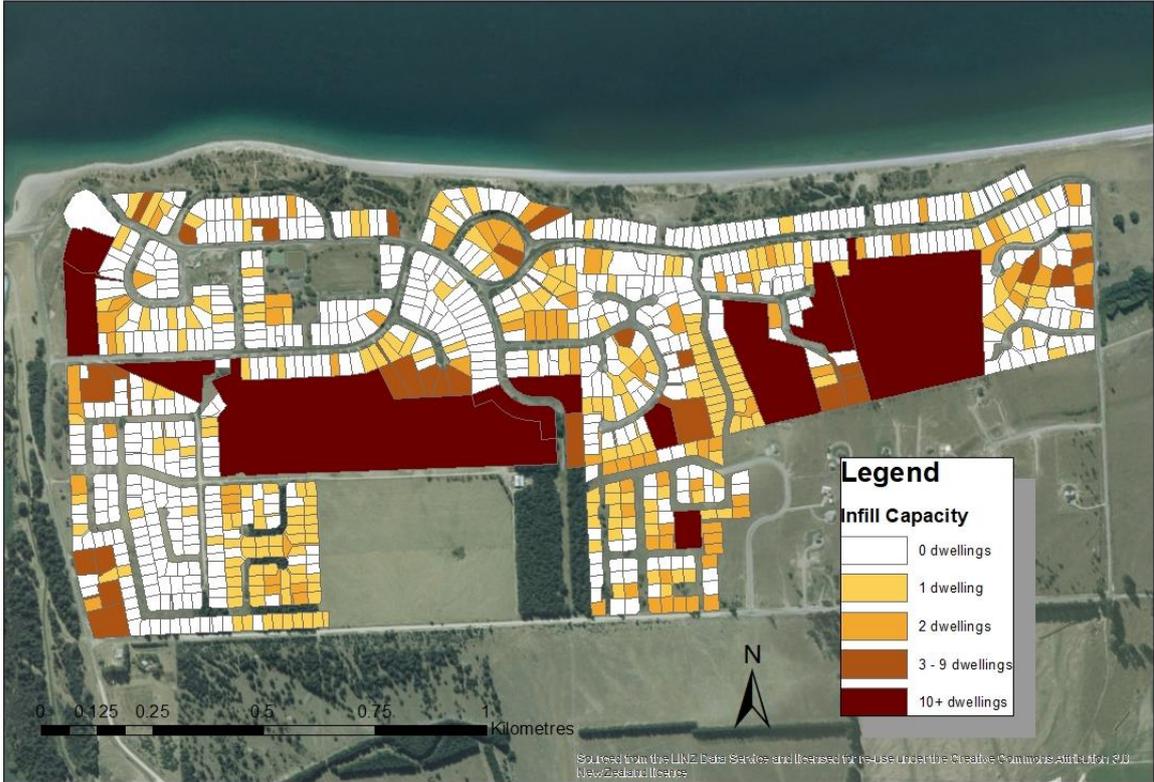


Figure 0-3: Infill & Greenfield Capacity in Hawea: Gentle (LDSRZ 300m<sup>2</sup>) Scenario

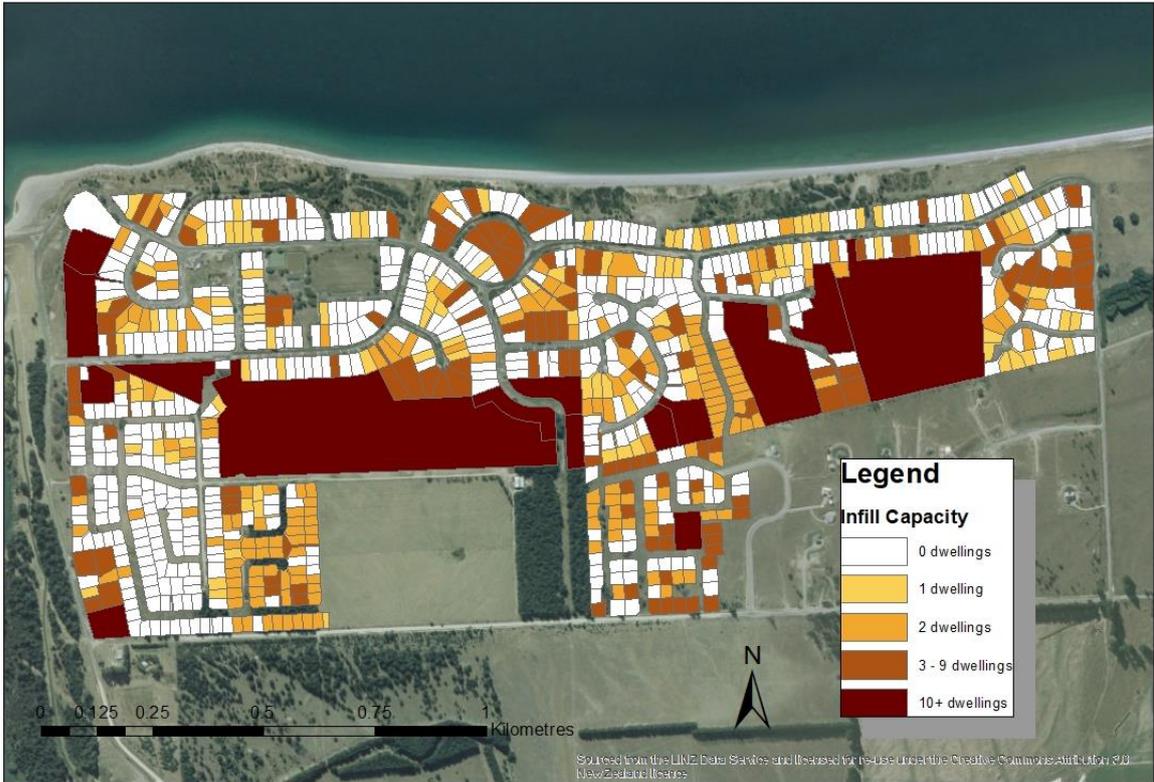


Figure 0-4: Redevelopment & Greenfield Capacity in Hawea: Baseline Scenario

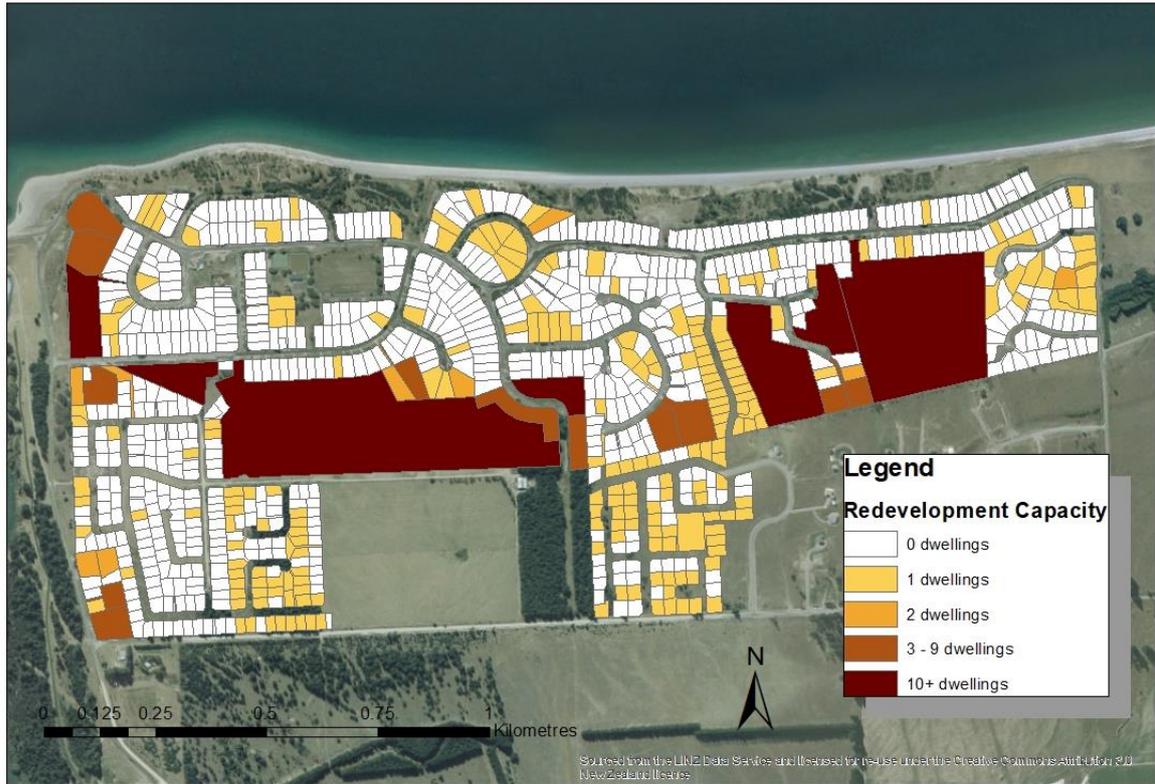
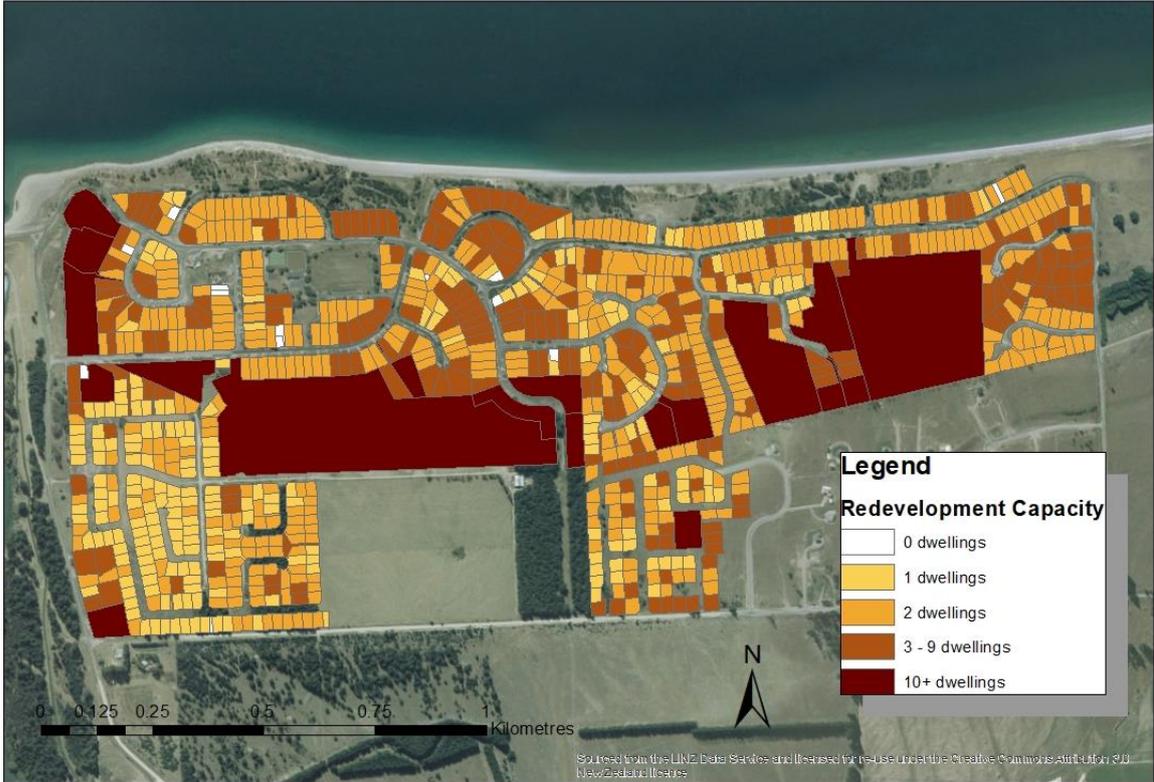


Figure 0-5: Redevelopment & Greenfield Capacity in Hawea: LDSRZ 450m<sup>2</sup> Scenario



Figure 0-6: Redevelopment & Greenfield Capacity in Hawea: Gentle (LDSRZ 300m<sup>2</sup>) Scenario



# Albert Town – Plan Enabled 2019

Figure 0-7: Infill & Greenfield Capacity in Albert Town: Baseline Scenario

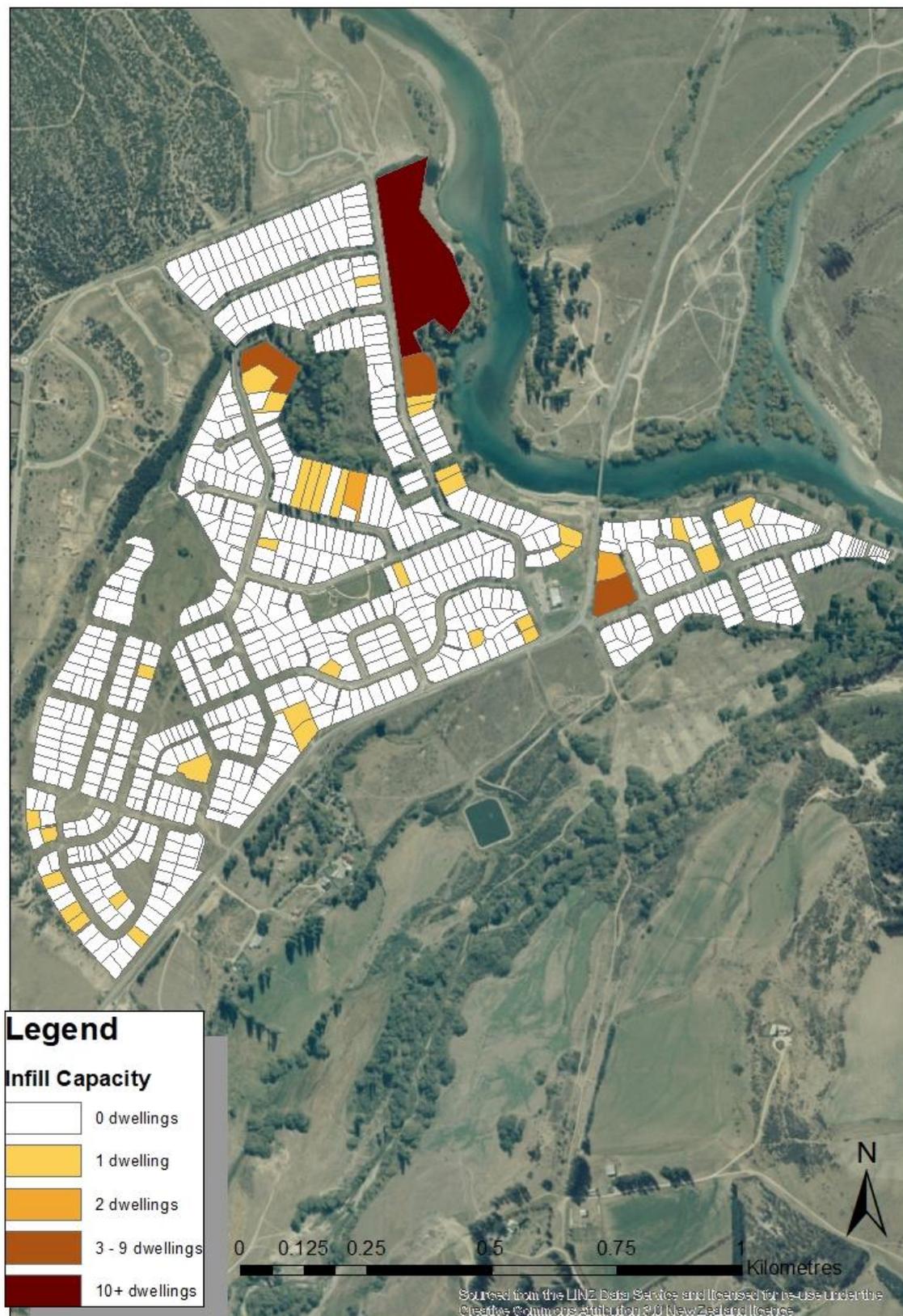


Figure 0-8: Infill & Greenfield Capacity in Albert Town: LDSRZ 450m<sup>2</sup> Scenario

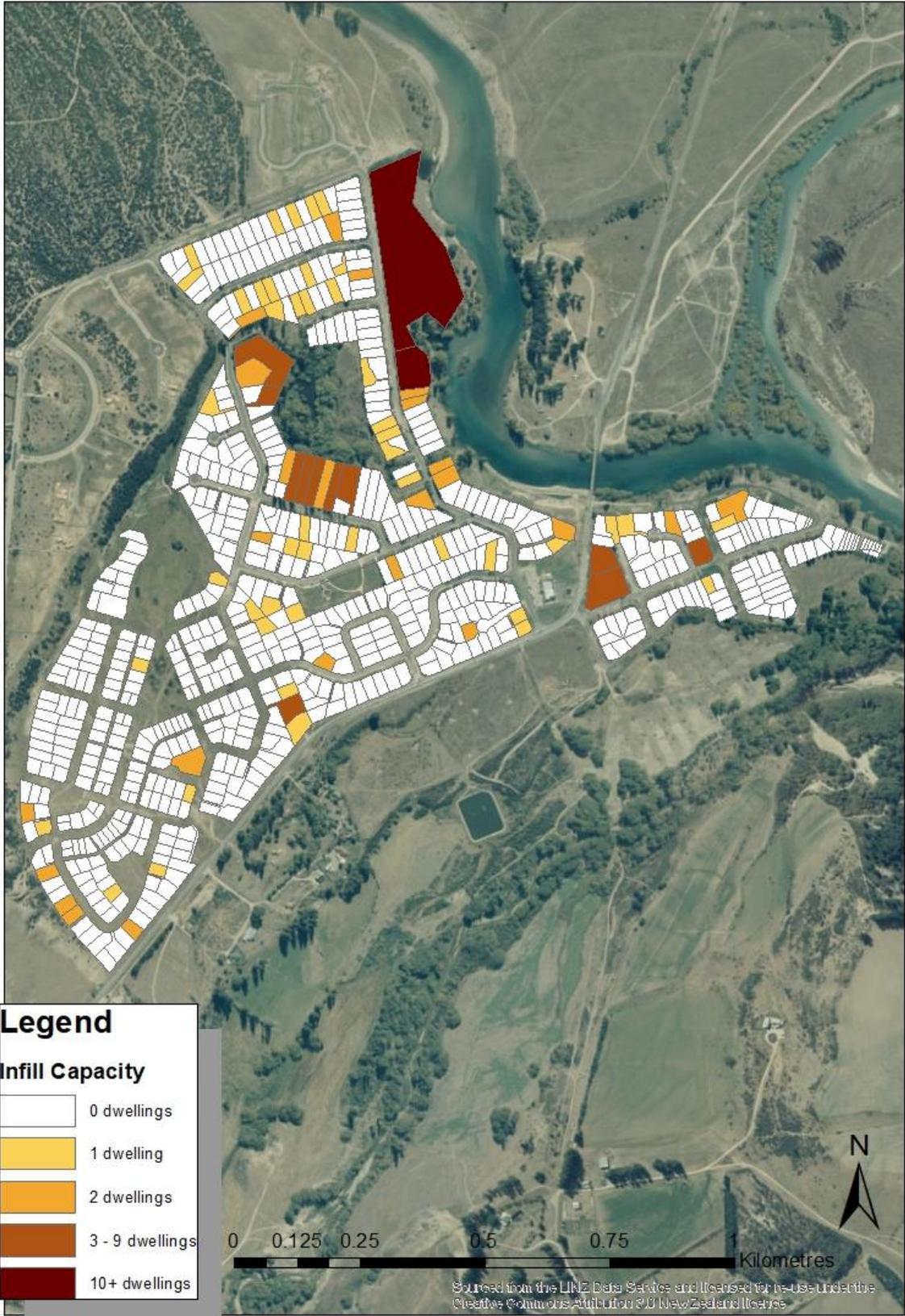


Figure 0-9: Infill & Greenfield Capacity in Albert Town: Gentle (LDSRZ 300m<sup>2</sup>) Scenario

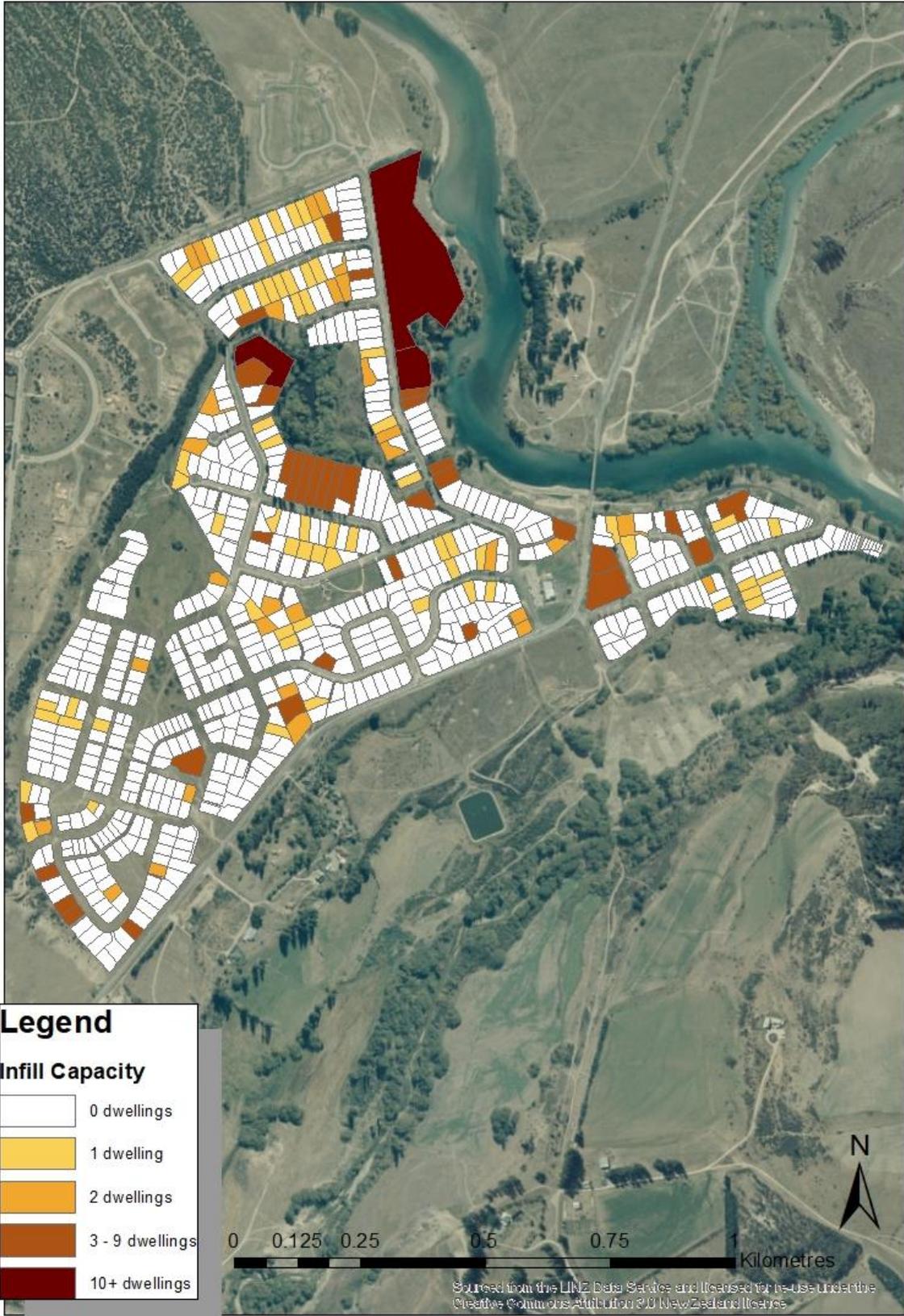


Figure 0-10: Redevelopment & Greenfield Capacity in Albert Town: Baseline Scenario

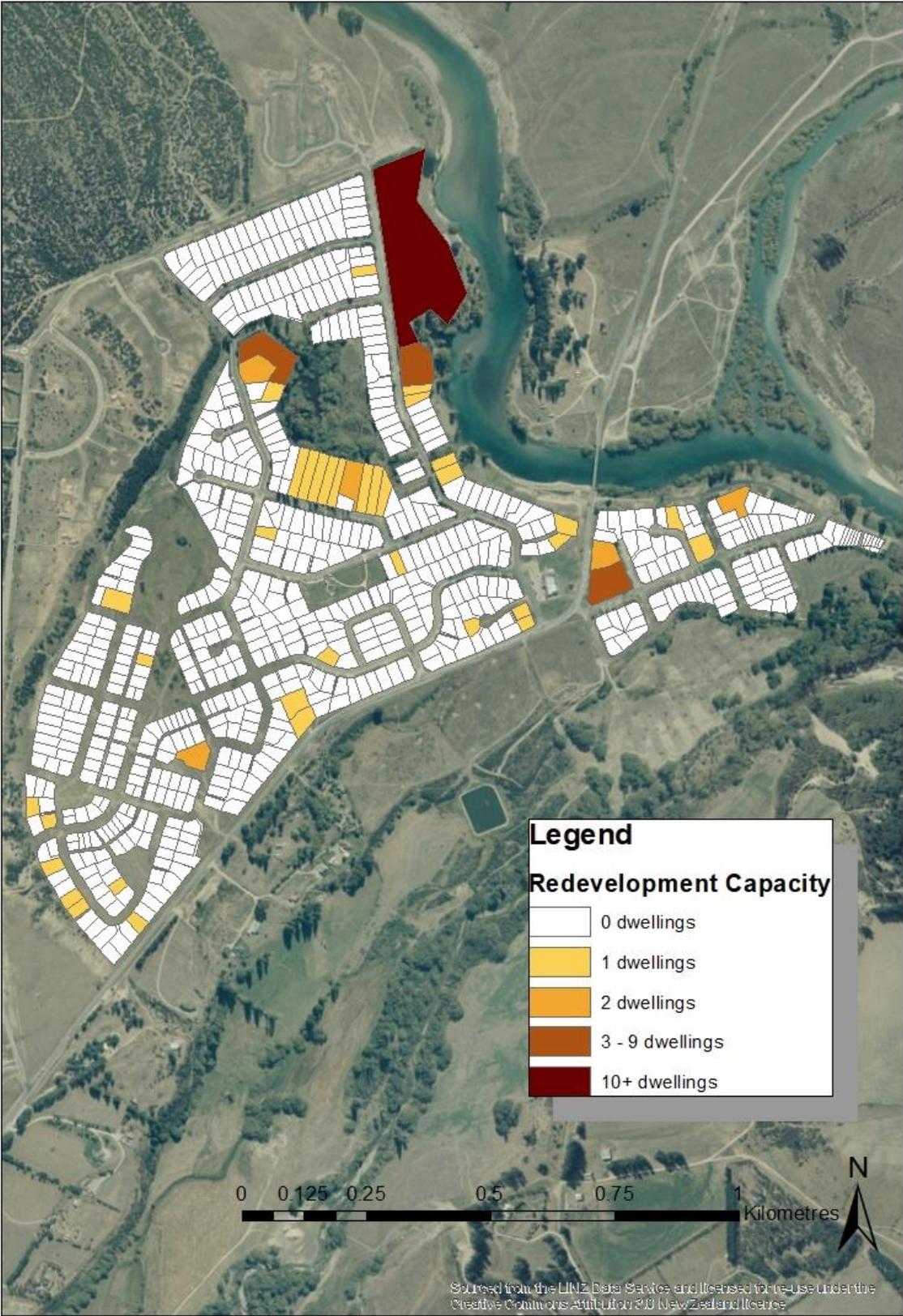


Figure 0-11: Redevelopment & Greenfield Capacity in Albert Town: LDSRZ 450m<sup>2</sup> Scenario

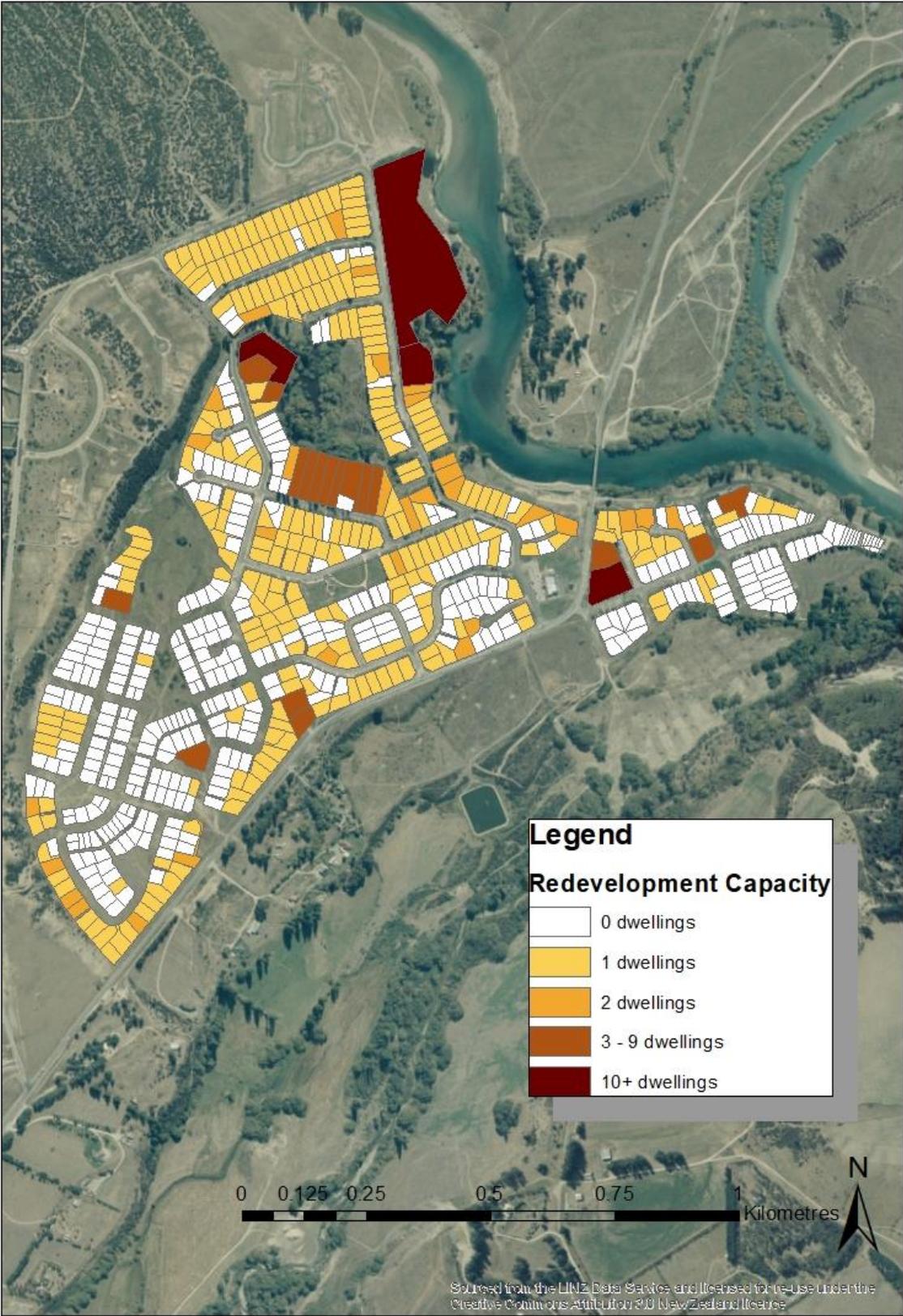


Figure 0-12: Redevelopment & Greenfield Capacity in Albert Town: Gentle (LDSRZ 300m<sup>2</sup>) Scenario

