

## Appendix L: GIS analysis of capacity for additional dwellings development in proposed zones

	Recommended Wakatipu Basin Rural Amenity	Recommended Ladies Mile Gateway Precinct	Recommended South Arrowtown Precinct	Recommended Wakatipu Basin Lifestyle Precinct	Recommended Large Lot Residential	TOTAL
<b>Landscape Character Units</b>	1, 3, Part 4, Part 8, 11, 13, 15, 17, 18, 19, 20, 22, Part 23	10	Part 23, 24	2, Part 4, 5, 6, 7, Part 8, 9, 12, 14, 21	Part 25	
<b>Area (m<sup>2</sup>)</b>	44,214,474	1,679,236	1,036,180	15,895,854	108,183	
<b>Area (ha)</b>	4,421.45	167.92	103.62	1,589.59	10.82	
<b>Current Number of Lots</b>	700	86	17	603	4	
<b>Potential Number of Lots</b>	<b>Min Lot Size</b> <b>No. Lots</b>	<b>Min Lot Size</b> <b>No. Lots</b>	<b>Min Lot Size</b> <b>No. Lots</b>	<b>Min Lot Size</b> <b>No. Lots</b>	<b>Min Lot Size</b> <b>No. Lots</b>	
	100 ha            700	450 m <sup>2</sup> <i>low density</i> 3,690	450 m <sup>2</sup> <i>low density</i> 2,296	4,000 m <sup>2</sup> 3,763	4,000 m <sup>2</sup> 27	
	80 ha             700	250 m <sup>2</sup> <i>medium density</i> 6,674	250 m <sup>2</sup> <i>medium density</i> 4,137			
<b>Existing Dwellings</b>	328	40	6	387	2	763
<b>Consented Dwellings</b>	164	24	2	149	1	340
<b>Total Existing &amp; Consented</b>	<b>492</b>	<b>64</b>	<b>8</b>	<b>536</b>	<b>3</b>	<b>1,103</b>
<b>Additional Dwellings</b>	<b>Min Lot Size</b> <b>Dwellings</b>	<b>Min Lot Size</b> <b>Dwellings</b>	<b>Min Lot Size</b> <b>Dwellings</b>	<b>Min Lot Size</b> <b>Dwellings</b>	<b>Min Lot Size</b> <b>Dwellings</b>	
	100 ha            265	450 m <sup>2</sup> <i>low density</i> 3,626	450 m <sup>2</sup> <i>low density</i> 2,288	4,000 m <sup>2</sup> 3,231	4,000 m <sup>2</sup> 24	9,434 <i>low density</i>
	80 ha             265	250 m <sup>2</sup> <i>medium density</i> 6,610	250 m <sup>2</sup> <i>medium density</i> 4,129			14,259 <i>medium density</i>

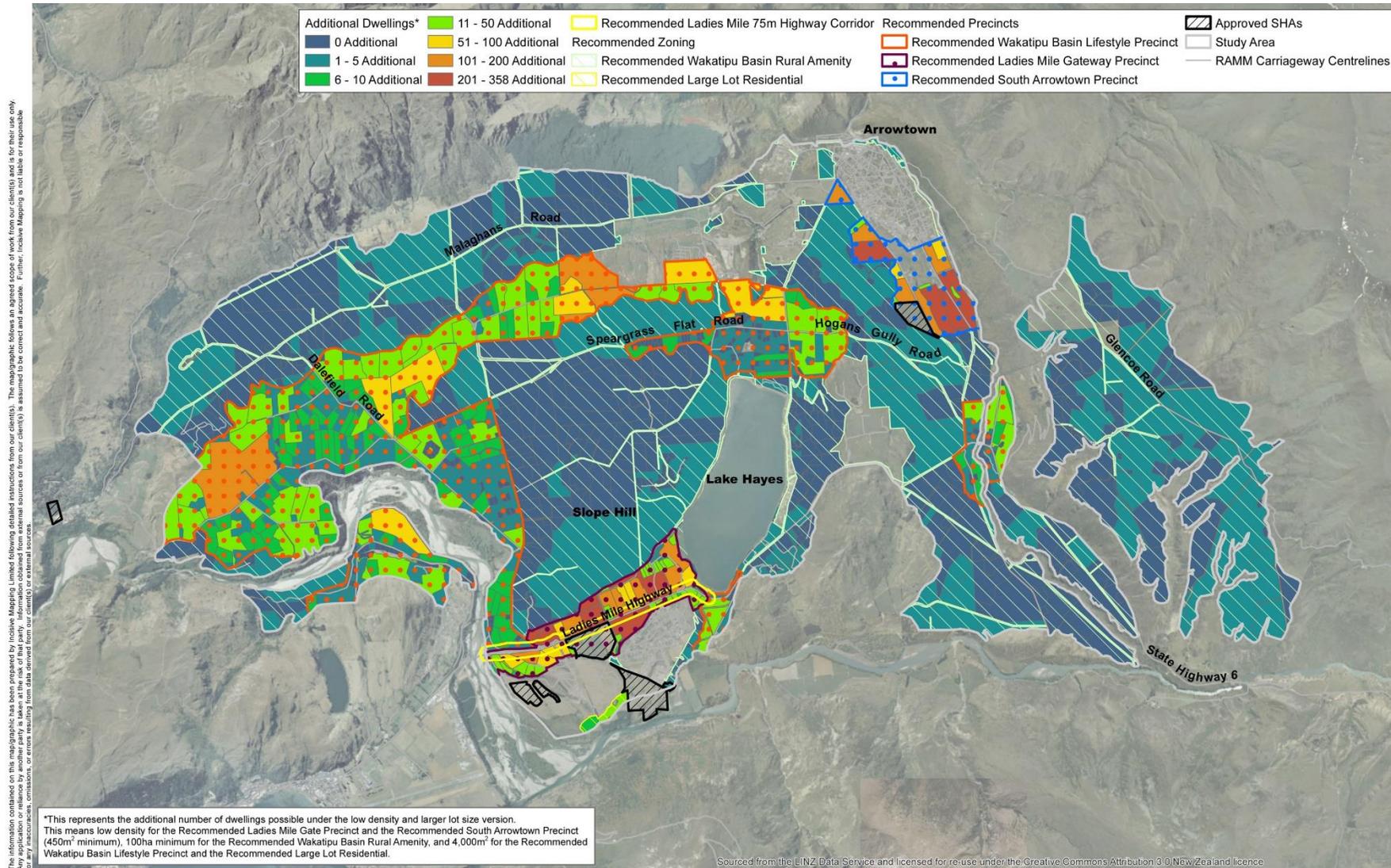
Refer maps of proposed zones overleaf (for low density and medium density scenarios)

## Assumptions

1. The Potential Number of Lots is a total and includes the Current Number of Lots. For instance, in the Recommended Wakatipu Basin Rural Amenity zone, the Current Number of Lots equals the Potential Number of Lots in both scenarios because no lot in this zone is large enough to subdivide.
2. The Additional Dwellings listed represents the number of dwellings that can be added to the Total Existing and Consented Buildings. So, the total number of dwellings possible in the Recommended Wakatipu Basin Rural Amenity zone equals 757 (492 + 265). This number is higher than the Potential Number of Lots because some lots already have more than one dwelling built or consented.
3. If a title boundary went across the study area, only the part and size of the title within the study area was considered.
4. If a title boundary crossed zone boundaries, it was split by the zone and the separate pieces in each zone were then considered separately. If a house existed on the property before the split, it was only counted on the portion of the lot in the corresponding zone after the split. This means the portion without the house after the split was allowed at least one dwelling.
5. If an existing lot was smaller than minimum size for the zone, it was still allowed one dwelling. This also counted for lots that were split by zones. So, if the lot size resulting from the split ended up being smaller than the minimum size, it was still allowed one dwelling.
6. The analysis excludes land subject to approved Special Housing Areas (SHAs) and all other zones not listed.

## Dataset Issues

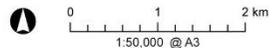
1. The potential yields were determined in the ArcGIS software by intersecting, or combining the recommended zoning with the lot / title boundaries. The recommended zoning was based off the Proposed District Plan zoning layer provided by Queenstown Lakes District Council (QLDC) and the title boundaries were derived from a property dataset provided by QLDC. Both original datasets are large with several thousands of records in each dataset. In such large datasets, slight misalignments often occur which results in very small “slivers”, or inaccurate records that represent very small areas (sometimes smaller than 1m<sup>2</sup>). When the two datasets were combined, there were 102 records that were smaller than 1m<sup>2</sup>, and 200 records that were smaller than 50m<sup>2</sup>. Again, these records are general alignment errors. To prevent from counting these records and over estimating the number of potential lots and houses, it was decided to only consider lots that were 200m<sup>2</sup> or larger. This size was chosen because there was one potential lot within the Recommended Arrowtown Urban zone that was 200m<sup>2</sup>.
2. Another issue with the original property dataset was the existence of multiple titles or records for one lot of land. This results in several records that are stacked on top of each other, meaning the same piece of land is repeated multiple times which would over inflate the potential lots and buildings. To eliminate this problem, a process was run to identify records that were on top of each other. Several duplicate records were found (965), but there is the potential that some duplicates were missed. The process only works when the duplicate records are identical in size and shape.
3. Some records in the property dataset were also common driveways between lots in certain subdivisions. There was no way to identify these driveways using the tabular, or attribute records. As a result, these records were removed from the analysis based on visual observation while working with the dataset. Since the removal was purely based on visual observation, it is likely some of the records were missed and remain in the analysis.
4. Within the original property dataset, a number of holes, or missing records existed. Since it was unknown how many lots were missing from the holes, they were excluded from the analysis. As a result, this decreased the number of lots and dwellings possible.



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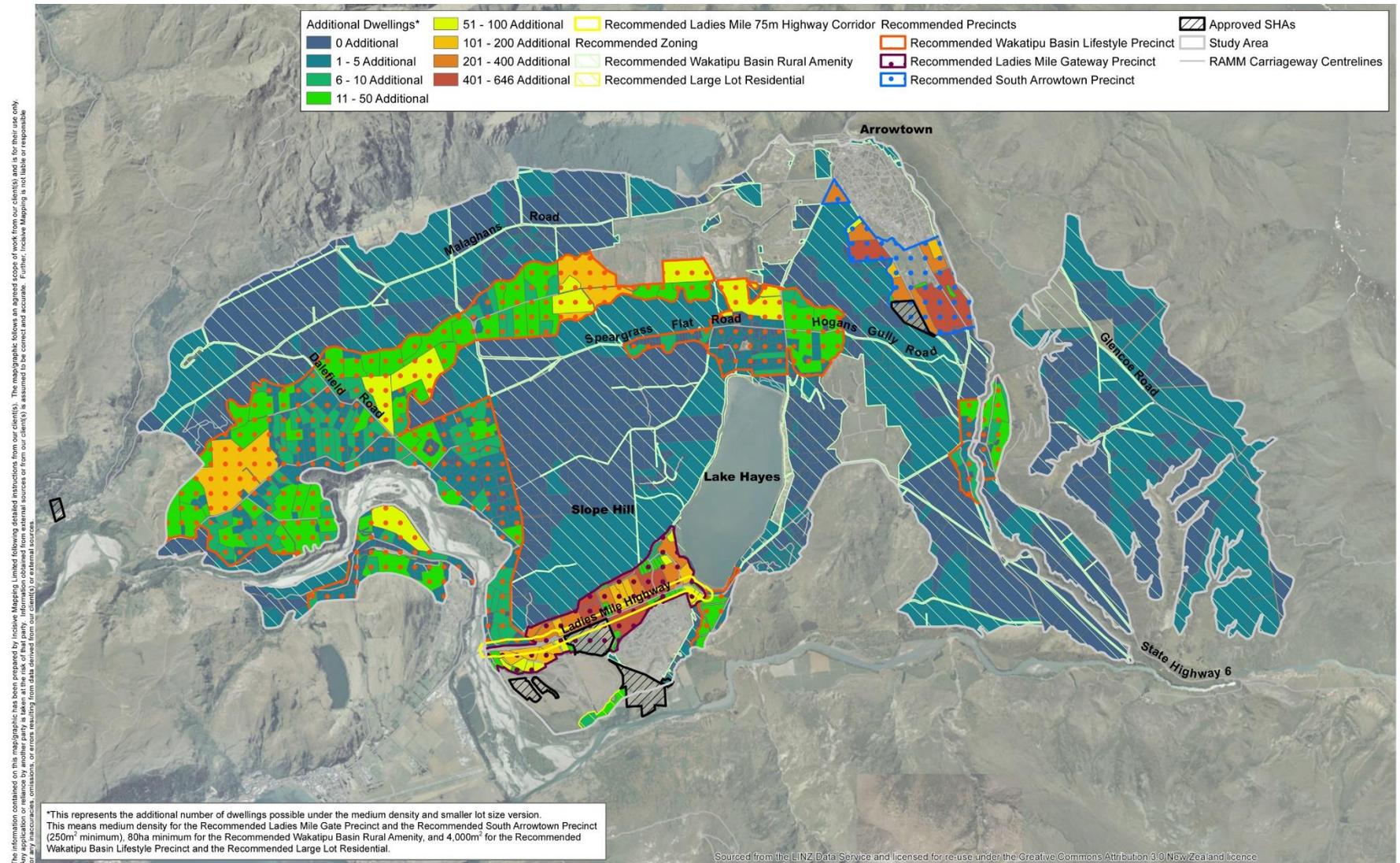


Author: Matt Daniels (matt.daniels@incisivemapping.co.nz) | Reviewed: Bridget Gilbert  
 Data Sources: LINZ/Eagle (Aerial), Queenstown Lakes District Council (Property, SHAs, Zoning, Roads), Bridget Gilbert / Incisive Mapping (Recommended Zoning, Additional Dwellings)  
 File Ref: 2016-13\_Wakatipu\_Basin\_Additional\_Dwellings\_Low\_Density\_RevA.mxd



Wakatipu Basin Landscape Study  
 Additional Dwellings  
 Low Density / Larger Lots

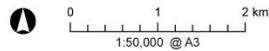
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 File Ref: 2016-13\_Wakatipu\_Basin\_Additional\_Dwellings\_Medium\_Density\_RevA.mxd



Wakatipu Basin Landscape Study  
 Additional Dwellings  
 Medium Density / Smaller Lots

Date: 16 February 2017