Appendix G: Rural Landscape Character Assessment Assumptions and Data Sources

GIS Data

1.1 The key GIS data relied on in determining the landscape character units (and absorption capability analysis) included (in no order of importance): topography; hydrology; vegetation; recreation; ODP and PDP zoning, overlay and heritage feature mapping; elevation analysis; aspect; slope analysis; hazards; geology; soils; unbuilt consented platforms and, land use capability. It is acknowledged that the vegetation, geology, soils, and land use capability data is extremely broad-brush. (Refer **Appendix I Figures 1-18**)

Unbuilt Consented Platforms

1.2 The unbuilt consented platform (UCP) information was provided by Council in mid-November 2016 and it is understood that this takes into account lapsed consents. Council updated the UCP data in September 2016. It is possible that the extent of UCPs may have altered since that time.

1.3 The UCPs have been factored into both the identification of the landscape character units within the basin and the appraisal of each unit's absorption capability.

1.4 The Council GIS Team provided a dataset of existing dwellings and unbuilt consented platforms for the Rural General, Rural Lifestyle, and Bendemeer Special Zone. This dataset consisted of polygons that defined the actual building footprints in some cases, or in other cases the polygons were basic squares that approximated the building locations. The square shapes were often larger than the actual buildings or the unbuilt consented platforms, and sometimes crossed parcel and ownership boundaries. When this occurred, the square polygons representing the buildings had been split into separate pieces on each side of the parcel boundary. In other words, there were often two or more pieces that made up a single dwelling or unbuilt platform. To eliminate double counting, these individual pieces were merged together so each individual polygon represented a single dwelling or unbuilt platform.

1.5 The centre location of each building was then used to determine the corresponding parcel, or title, where the dwelling or unbuilt platform resided. Using this methodology, it was possible to map the location of each existing dwelling and unbuilt platform along with the parcels, or titles, containing each dwelling and unbuilt platform. This was again only for the Rural, Rural Lifestyle and Bendemeer Special Zone.

1.6 In addition, the dataset provided by Council used several codes in an attribute (column) of the dataset to denote which buildings were existing dwellings and which were unbuilt consented platforms. For this exercise, the coded values used for the existing dwellings were: BUILT and BUILT NO BP (there was also a spelling mistake (BUIT NO BP) that was corrected and included). The coded values used for the unbuilt consented platforms were: APPROVED and ACTIVE. These values and their explanation can be found on page 3, Section 6 of the Hearing Panel for the Queenstown Lakes Proposed District Plan report titled, "Memorandum in Response to Request for Maps Identifying Building Platforms and Landscape Units in the Wakatipu Basin" by Simpson Grierson dated 29 April 2016.

1.7 Lastly, there were a number of codes that were not used in the analysis. These include 17 occurrences of APPROVED NON RES, 9 occurrences of BUILT NON RES, 2 occurrences of EXPIRES 12/02/18, 1 occurrence of Placemark, and 2 occurrences of PROPOSED.

SHAs and Special Zones

1.8   There are a series of recently approved SHAs within the study area, including: Shotover Country, Bridesdale, Shotover Country SHA, Queenstown Country Club (Ladies Mile Highway), and Arrowtown Retirement Village (McDonnell Road). The latter two are of particular importance for this report. Whilst the development plans for each of these SHAs are included in the supporting mapping (refer **Appendix I Figures 19-32**), and have been factored into the landscape character and absorption capability analysis that follows, they do not register as UCP in Council's platform mapping.

1.9   Similarly, the three Special Zones that coincide with the rural landscape character assessment study area (Arrowtown South, Bendemeer, and Millbrook) are accompanied by detailed Structure Plans. The layout of each Structure Plan is included within **Appendix I Figures 33-40** and has been factored into the following landscape character and absorption capability assessment; however, the various platforms referenced in each Structure Plan do not register on Council's platform mapping.

Covenants

1.10   It is understood that the majority of subdivisions consented over the past 15-20 years have been accompanied by covenants and/or consent notices protecting open space areas, mitigation plantings and / or applying detailed building development controls including consent notices in regards to approved building platforms (many of which have not been built on). Time has not allowed a detailed evaluation of the parts of the study area that are subject to such covenants. Clearly as a private contract between the consent holder and Council, covenants can (and do) change over time.

1.11   For the purposes of this study it is assumed that such covenants remain in place and that, should a unit be identified as capable of absorbing additional development, the covenants relied on to manage the landscape and visual effects of an existing development would be carried over. An obvious example of this are the dense hawthorn and exotic shelterbelt plantings around Landscape Character Unit 09 Hawthorn Triangle. It is assumed that any potential future development change in this area would not interfere with these vegetation features which are critical to the integration of the existing level of rural residential development within the triangle.

Lot Size and Land Ownership Analysis

1.12   The Council GIS team provided a property ownership dataset that contained individual parcels. A title of ownership is comprised of one or more individual parcels. In order to determine which parcels make up a single title, unique information for each title must be provided within the dataset. After reviewing the dataset, QLDC GIS advised that an attribute (column) called 'valuation_no' contained this unique information. However, upon further review there were many instances where the valuation no. was blank and could not be used. During this review, it was observed that three attributes used together had a unique combination of values for each unique valuation_no, and they contained information when the valuation_no was blank. Using these three attributes (owners, legal description, and certificate of title) in combination, it was possible to dissolve, or join, the individual parcels into a single title of ownership.

1.13   It should be noted that the certificate of title could not be used alone as it also contained numerous blanks. Also, when using the valuation_no as the unique identifier for individual titles, areas of joint ownership (such as the common areas in Bendemeer Special Zone) were joined together with individual house titles as they shared the same valuation_no. This would have incorrectly made each house title larger in area as it would have added the common area to each individual house title. This error was overcome by using the combination of the three attributes (owner, legal description, and certificate of title).

1.14   By joining the parcels together into single titles of ownership, a single polygon within the dataset came to represent an individual title. All polygons within GIS datasets have the size (area) of the polygons embedded, making it possible to determine the square metres or hectares of each polygon. Since each polygon represent a single title, it was possible to determine the hectares of each title and then map this information based on predetermined groupings, or breaks. For the final mapping, the breaks used were: Under 1ha, 1-2 ha, 2-4 ha, 4-20ha, and Over 20ha).

1.15   Using the same property ownership dataset provided by Council, it was possible to determine contiguous areas under a single ownership. Using only the owners attribute (as described above), the property ownership was dissolved, or joined, together where the ownership information was the same. Ideally, this would have been done only to areas, or polygons which were contiguous (shared a common boundary). However, roads and paper roads sometimes separated two properties that were under the same ownership and the preference was to count these as a single ownership for the analysis. So, all properties under a single ownership were merged together regardless if they touched or shared a common boundary. In some cases, this merged properties that were not close and in different locations within the basin. Fortunately, there were few instances of this and by going through the individual records these instances were identified and split into separate properties. This resulted with only properties that were next to each other or across the road from each other being joined together when they had the same ownership.

1.16   Once the ownership information was joined together, a single polygon represented areas under the same ownership. Consistent with the lot size analysis exercise, the size (area) of each polygon is embedded in the GIS layer which made it possible to determine the square metres or hectares of each polygon under a single ownership. This information was then mapped based on predetermined groupings which were: Under 4 hectares, 4-10 ha, 10-20 ha, 20-50 ha, 50-100 ha, 100-500 ha, and Over 500 ha.

1.17   When running this analysis, it was determined that some areas had multiple titles such as the common areas at Bendemeer Special Zone. This resulted in stacked records in the GIS dataset where a polygon is repeated in an area based on the number of titles. In regards to the ownership areas, these look like a single large area under one ownership, where one record is visible while the other title records are stacked underneath and hidden. Using a methodology of intersecting the individual titles with any overlapping titles, it was possible to determine where these multiple titles occurred and place an overlay on the map to indicate their locations.

1.18   Using this data, we have examined existing lot size and land ownership patterns in order to gain an understanding of the existing environment in regards to fragmentation of rural land in particular. That data has been analysed in tandem with our mapping of identified dwellings and consented building platforms. Refer to **Appendix I Figures 41-43** mapping.

1.19   Our finding from that analysis is that there are few large titles remaining in the study area and that where large areas are held in single ownership but multiple titles, the location of such land means that there is unlikely in the foreseeable future to be any sound reasons for enabling through planning provisions, any changes to that context. That information supports the establishment of a minimum lot size for the WBRAZ in the order of 75-100ha. This standard effectively will prevent inappropriate future subdivision and any variation to the minimum should be only by way of non-complying activity application (we do not see any basis for a prohibited activity status).

1.20   Further, the analysis of the lot sizes patterns agglomerated by specific lot size range sets indicates that the existing patterns do not support characterisation of the PDP rural zoned land as being productive or agricultural in a traditional farming sense.

Boundary Delineation of Landscape Character Units

1.21   Given that the fundamental drivers of the landscape character of the basin relate to landform and hydrological patterning, the delineation of landscape character units sought to use geomorphological boundaries (ridgelines, streams etc.) wherever practicable.

1.22   ONLs and ONFs form the boundary (at least in part) for many of the landscape character units. The District Plan policy context which seeks to discourage development in these areas, in combination with the evidence of very few dwellings in these areas (within the wider Basin context), suggests that reliance on ONL and ONF boundaries is robust.

1.23   Where geomorphological or ONL and ONF boundaries are not evident, the 'next preferred' delineation method was to use indigenous vegetation features (e.g. 15 Hogans Gully / 22 The Hills landscape units).

1.24   In some locations, the Special Zone boundaries were relied upon (e.g. 16 Bendemeer and 23 Millbrook). The structure plans for these areas reveal that, typically, a landscape buffer between development within the Special Zone and the surrounding landscape is required, suggesting that the zone boundaries are a reasonably robust edge.

1.25   Elsewhere, local roads (e.g. Hawthorn Triangle) and marked changes in land use patterns / cadastral boundaries were relied on to delineate the boundary of landscape character units. Within the context of a study specifically aimed at identifying areas where additional development can or cannot be absorbed it should be noted that each of these methods is considerably less robust with respect to 'containing' potential development areas (i.e. limiting the potential for 'development sprawl'), which is likely to be an issue in a landscape setting that is vulnerable to adverse cumulative effects.